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NIROP FRIDLEY
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NAVY RESPONSES TO U S EPA REGION V COMMENTS ON OUTSTANDING ISSUES
NIROP FRIDLEY MN

NAVFAC MIDWEST

**NIROP FRIDLEY – 2006 AMR
SUMMARY OR RESPONSE TO COMMENTS OUTSTANDING ISSUES**

| EPA | ORIGINAL EPA COMMENT | NAVY RESPONSE | REPLY TO RESPONSE | FINAL RESOLUTION |
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| G3 | <p>The procedures used to perform the Mann-Kendall trend analysis are not provided. At a minimum, the time window used and the minimum number of data points used for analysis should be provided. In cases where no data have been collected within the last three years, no trend evaluation should be performed. The trend graph of well 13-S demonstrates why at least some current data should be required before performing a Mann-Kendall analysis. At 13-S, the result was a significant upward trend, but no data appear to have been collected since 1999.</p> | <p>A macro was used to perform the Mann-Kendall Analysis. The time window used and the minimum and maximum number of data points were presented on page 4-36, Section 4.3.3, paragraph 3. Wells that were not sampled in the past three years should still be evaluated for trend analysis, since some wells are sampled at greater intervals than three years. However, columns will be added to the Mann-Kendall trend analyses tables that indicate the last year the well was sampled. Text throughout Section 4.3.3 in future AMRs will be revised to reflect this change.</p> | <p>Section 4.3.3 provides the time window for evaluating the trends at each monitoring well. However, the minimum number of data points required for the test is not stated. Based on Table 4-9, it appears that no evaluations were performed for wells with less than four data points. In the 2007 Annual Monitoring Report (2007 AMR), clarify the minimum number of data points used to perform the Mann-Kendall analyses.</p> | |
| S4 | <p>Section 4.3.2.2, Summary of Contamination, Page 4-28. When discussing the contamination found in the vicinity of MS-54I, the text identifies three wells as upgradient of MS-54I. These wells are 8-IS, 12-IS and 13-IS. The text further indicates that "all three wells appear to be in the capture zone depicted on Figure 5-2." However, as the potentiometric surface depicted for the intermediate flow zone in Figure 4-7 indicates, groundwater near monitoring well 12-IS does not appear to be captured by pumping from intermediate zone. This is the area frequently referred to as the 'nose' and has long been thought to be an area through which contaminated groundwater may bypass the hydraulic barrier created by the extraction system. The contamination observed in MS-54I since its installation may be the result of the failure to capture the contaminant plume in this area. This issue appears to have been acknowledged later in the AMR (Section 5.2.3), and the text in Section 4.3.2.2 should be revised to reflect the potential bypass of contamination in the area of MS-54I.</p> | <p>The text will be revised in future AMRs to state: "13IS and 8IS appear to be in the capture zones depicted on Figure 5-2. The hydraulic "nose" associated with well 12-IS is an area of uncertainty, and potential for bypass of the groundwater remediation system in this area exists, particularly during intervals of poor extraction well system performance."</p> | <p>The response is partially adequate. The language proposed in the response acknowledges the potential bypass in the area of 12-IS. However, the proposed language appears to qualify the statement by indicating that bypass may occur "particularly during periods of poor extraction system performance". While the potential for bypass in the area of 12-IS may be greater during periods of poor extraction system performance, the hydraulic "nose" has been regularly observed in this area, including during times of adequate extraction system performance. It is suggested that the portion of the proposed language regarding periods of poor extraction system performance be removed to avoid any suggestion that hydraulic control in the area of 12-IS is not of concern during normal system operations.</p> | |
| S9 | <p>Section 5.2.1, September-December 2005 Water Level Study, Page 5-11. When discussing the results of the pump testing on monitoring well 11-S, Section 5.2.1 states that "although 11-S responded to the shut-off of AT-3A (an intermediate extraction well) and did not respond as strongly to the shut off of AT-8 and AT-9 (shallow extraction wells), 11-S cannot be classified as an intermediate well because it is screened in the shallow zone." The section further states that "instead, it indicates that the pumping of AT-3A affects the shallow drift zone and the intermediate drift zone, at least locally in the vicinity of 11-S."</p> <p>This test was specifically designed by the USGS to determine whether monitoring well 11-S should be identified as a shallow or an intermediate zone well. When discussing the results of the September-December 2005 water level study and the subsequent changes to the USGS Capture Analysis Report, Hal Davis of the USGS has indicated in his e-mail of April 4, 2007 that "well 11-S ... responded to the pumping well AT-3A being turned off, but did not respond to wells AT-9 or AT-8 being turned off, indicating that it is hydraulically connected to the intermediate flow zone." Hal Davis further indicated that "this was expected so the only affect on the report was to remove the uncertainty of the zone this well was connected to."</p> <p>While the depth of monitoring well 11-S would appear to indicate that it is screened in the shallow flow zone, this test clearly indicates that it is not hydraulically connected to the shallow flow zone. The test indicates that the water levels and contaminant concentrations measured in 11-S are more representative of the intermediate than the shallow flow zone. The NIROP site is a complex hydrogeologic environment where such apparently anomalous results have frequently been observed. Monitoring wells cannot be assigned to flow zones based solely on their screen depths. The 2006 AMR should be revised to identify monitoring well 11-S as an intermediate zone well.</p> | <p>Monitoring well 11-S has always been considered a shallow-zone monitoring well by the Navy because it is screened across the shallow water table. Recent field testing by the USGS ("Evaluation of Contributing Area for Recovery Wells at the Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota") indicated that 11-S did not respond to pumping of the shallow zone extraction wells, but did respond to the pumping of intermediate zone extraction wells. The September – December 2005 water level study data suggests that there may be a potential response to the pumping of shallow well AT-8, and there are other shallow wells in the vicinity of the extraction system that also show drawdowns related to pumping from the intermediate zone. Water levels in 11-S historically have been more similar to water levels in nearby wells for the intermediate zone than to water levels in nearby wells in the shallow zone. Close examination of boring logs for 11-S and surrounding wells revealed that no clay was present at the bottom of 11-S, and that the clay layer present in AT-2 may not be continuous through MS-34, as it was depicted in cross section A-A'. The absence of this clay layer below the maximum depth of 11-S and the presence of a thin clay layer at the top of the screened interval in 11-S would explain why the water levels in 11-S are similar to water levels in nearby intermediate zones rather than similar to water levels in shallow wells, and why the water level in 11-S responded to pumping of intermediate extraction wells in the USGS report. Based on the results of the USGS evaluation, other well testing activities, and closer examination of the boring logs for this area, 11-S will now be considered an intermediate well. As a result, water level elevations in 11-S will be carefully evaluated in drawing potentiometric surface contours for the shallow and intermediate zones in future AMRs.</p> | <p>The response appears to be adequate. The response indicates that 11-S will now be considered as an intermediate well. However, the response also indicates that "water level elevations in 11-S will be carefully evaluated in drawing potentiometric surface contours for the shallow and intermediate zones in future AMRs". Since 11-S is now considered an intermediate well, water levels from 11-S should not be considered when drawing potentiometric contours in the shallow zone.</p> | |

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| S10 | <p>Section 5.2.3, Capture Zone Evaluation, Page 5-14. When discussing the capture in the shallow flow zone, the text states that "there appears to be no major bypass of TCE-contaminated shallow groundwater around or through the extraction well network." While this statement appears correct based on TCE concentrations detected in 2006 immediately downgradient of extraction wells AT-7, AT-8 and AT-9, the potentiometric contours depicted in Figure 4-6 for the shallow zone indicate a potentially significant area of contaminant bypass north of the capture zone created by AT-9. It is also important to note that while TCE concentrations of 93 ug/l and 44 ug/l were observed in 2006 in monitoring wells MS-56S and MS-36S, respectively, much higher TCE concentrations (410 ug/l and 270 ug/l) were observed in these same wells in 2005. At this point, it is not possible to determine if the 2006 data are indicative of a downward trend or if these reduced concentrations are only the result of the natural variability in groundwater quality in this area. It is also important to note that the concentration of cis-1,2-dichloroethene (cis-1,2-DCE) observed in MS-56S in 2006 was 920 ug/l, indicating potentially significant bypass of the chlorinated VOC plume in shallow groundwater around the northern end of the capture zone. The 2006 AMR should be revised to acknowledge this area of potential bypass of the chlorinated VOC plume in shallow groundwater around the northern portion of the extraction system.</p> | <p>TCE concentrations in MS-36S have been monitored since 1999, and overall do indicate a downward trend, especially when 2006 data is included. However, TCE concentrations were elevated in 2004 and 2005 and were decreased in 2006. The variable concentrations in MS-36S over the past few years may be due to lapses in extraction system operation. If one or more of the extraction wells AT-7, AT-8, or AT-9 are not operating, potential for contaminated groundwater to bypass or slip through the extraction well network in this area increases. Although TCE concentrations in MS-56S have only been monitored for two years, it is reasonable to state that MS-56S and MS-36S (approximately 175 feet apart in distance) are subject to the same hydrologic conditions and that location MS-56S, like MS-36S, probably had a declining trend in TCE values just as MS-36S.</p> <p>The 2006 data is only a part of a long-term series of observations in this area and it is likely that reduced concentrations in this area are indicative of a downward trend. Decreases in TCE concentrations in this area have been consistent over at least the past 7 years in nearby monitoring wells MS-42I, 17-S, and MS-24S. MS-24S is in close enough proximity to AT-9 to be highly influenced by extraction well pumping, so lapses in AT-9 operation generally should not adversely affect overall TCE concentrations at MS-24S. Additionally, it seems likely that MS-42I and 17-S are outside of the influence of contaminated groundwater flow and are acting as sentinel wells.</p> <p>The elevated concentrations of DCE in monitoring well MS-56S combined with a decrease in TCE concentrations at this location indicate biodegradation of TCE to DCE. This situation does not necessarily indicate that the chlorinated VOC plume is bypassing the extraction system.</p> <p>Some uncertainty does exist in the area north of the extraction system in the shallow zone, and the potential bypass of some contaminated groundwater through and around the extraction system to the north (as suggested by Figure 5-1) will be more clearly discussed in future AMR text. Bypass of contaminated groundwater through the extraction system in the area of AT-7, AT-8, and AT-9 (between AT-7 and AT-8, and between AT-8 and AT-9) is likely a result of poor extraction system performance. Specifically, when wells are not operating, gaps are created in the capture zones and contaminated groundwater slips through. The potential for bypass of contaminated groundwater to the north of the extraction system has always been acknowledged in the AMRs. The implications of bypass north of the extraction system and bypass through the extraction system in terms of the impact of groundwater contamination in the ACP will be more thoroughly discussed in future AMRs.</p> | <p>The response is partially adequate. The summary in the final paragraph of the response appears appropriate. However, several statements in discussion presented in the previous paragraph raise some concerns. It does not appear correct for the response to state that MS-56S and MS-36S are subject to the same hydrologic conditions. MS-56S is much further to the north and more likely to be located in a potential area of bypass. In addition, the discussion indicates that high levels of DCE observed in MS-56S do not necessarily indicate that the chlorinated volatile organic compound (VOC) plume is bypassing the extraction system. However, the response does not provide another reasonable explanation for these elevated levels of contaminants in this area.</p> | |
| S15 | <p>Figure 5-4, Approximate Capture Zone Configurations. A vertical cross-section aligned perpendicular to the predominant groundwater flow direction is shown in Figure 5-4. This cross-section depicts the capture zones created by each pumping well. This figure depicts a capture zone created by AT-3A in the intermediate zone that extends northward to MS-34I, MS-35I and 11-S. However, as the potentiometric surface depicted for the intermediated zone in Figure 4-7 indicates, the capture zone created by AT-3A does not extend into these areas. Figure 5-4 should be revised to more accurately depict the capture zones created by AT-3A.</p> | <p>The capture zones in Figure 5-4 depict the calculated capture zones' maximum extents, approximately 250-500 feet upgradient of the extraction wells, per the figure note.</p> | <p>The response is not adequate. The meaning of the response is not clear. If the response is intended to indicate that Figure 5-4 is showing calculated rather than actual capture zones interpreted from water level data, this fact is not clearly specified on the figure. Regardless, depictions of estimates of capture zones based on water level data would be more useful to evaluating capture than estimates based on capture zone calculations. If the response is intended to indicate that the capture zones are presented for a vertical plane 250 - 500 feet upgradient from the extraction zones wells, it does not appear appropriate to extend the capture zone northward to the area of MS-34I, MS-35I, and 11-S. As acknowledged in the previous response to comment (RTC No. 14), it has been conceded that groundwater is likely bypassing the extraction system in the area of MS-34I and MS-35I. Based on an examination of the groundwater contours depicted on Figure 4-7, it does not appear likely that groundwater 250 - 500 feet upgradient from these wells is being captured.</p> | |
| S19 | <p>Section 6.2, Recommendations, Groundwater Monitoring Program, Page 6-9. Recommendations are included in the second bullet on page 6-9 to include the newer wells MS-54I, MS-55I and MS-56I in the annual groundwater monitoring program. This list should be expanded to include the shallow wells installed at these new locations (MS-54S and MS-56S). In addition, since these wells are only recently installed and have only been sampled twice, the recommendations should be revised to include semiannual monitoring for these newly installed wells. Semiannual sampling should continue until contaminant concentration trends have been established in these wells.</p> | <p>The text in the 2007 AMR will be revised to state: "Newer well clusters MS-54, MS-55, and MS-56 should be included in the annual groundwater monitoring program to populate a database to the extent necessary to test for trends in changes in contaminant concentrations. Trend testing for these wells may support evaluations of groundwater capture system bypass potential."</p> | <p>The response is partially adequate. While the response indicates an agreement to include a statement that the "newer well clusters MS-54, MS-55, and MS-56 should be included in the annual groundwater monitoring program", the current agreement is to monitor these wells on a semiannual basis for at least the next couple of years. The proposed statement should be revised to reflect this agreement.</p> | <p><i>Sample Semi- annual for two years</i></p> |

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| 2 | <p>Section 1.2.2 Five-Year Review, Third Bullet, Page 1-3 What evidence has the Navy identified to conclude that "investigation of the ACP indicates that contamination west of East River Road (ERR) is not attributable to any source of contamination located in the ACP?" If the Navy has no such evidence, the MPCA staff requests that this item be eliminated from the 2006 AMR.</p> | <p>This section in the AMR presents a summary of conclusions from the 5-Year Review (TiNUS, 2003). This conclusion in the 5-Year Review (page 5-3, second bullet) is based on data evaluation presented in the Field Investigation at NIROP and Anoka County Riverfront Park (TiNUS, 2000), the subsequent finalized Technical Memorandum for Additions to the 1999 Annual Monitoring Report and Field Investigation Report (TiNUS, 2001, Sections 2.3.1 and 4.0), and the Completion Report, Anoka Park Data Acquisition Work (Morrison Knudsen Corp, 1998).</p> | <p>The MPCA staff believes that the Navy RTC does not address the MPCA staff's requested modifications to the 2006 AMR. The MPCA staff requests that the Navy either agree to modify the 2006 according to the original MPCA staff request or add these requested modifications to the list of agenda items for discussion leading to possible resolution at the next available NIROP Technical Subcommittee meeting.</p> | <p>NO known sources of TCE</p> |
| 5 | <p>Section 1.5 Potential Source Areas, First Bullet, Last Sentence, Page 1-8 The Navy has presented no evidence for an upgradient perchloroethylene source so the MPCA staff considers this statement as speculation and requests that the Navy eliminate this sentence from the 2006 AMR.</p> | <p>A cursory review of the NIROP Fridley Partnering Team's meeting minutes from past years indicates strong conviction from MPCA that Kurt Manufacturing was the source of the PCE. At a May 06 2003 Team Meeting, MPCA Hydrogeologist John Betcher said that when the Kurt recovery wells were not pumping, it looked to him that flow would be straight towards Fridley well 5-PC. Navy is aware that MPCA subsequently attempted to investigate the extent of the Kurt releases and was unable to confirm this view, but only because of the Agency's admitted uncertainty about DNAPL transport in fractured bedrock. Still, Navy has presented strong evidence that suggests that PCE contamination across the NIROP Fridley site originates upgradient of the NIROP Fridley site, in both the 2006 AMR and in earlier versions. A discussion of PCE contamination in the bedrock aquifer is provided on Page 4-35, Section 4.3.2.6 (Prairie du Chien Wells Screened in the Bedrock Aquifer). Figure 4-9 and Figure 4-22 present, respectively, the groundwater flow directions and groundwater concentrations of selected contaminants (including PCE) for the bedrock aquifer. The groundwater flow direction in the bedrock aquifer is toward the south-southwest. PCE concentrations in bedrock monitoring wells, moving in a south-southwest direction (in the same direction of groundwater flow in the bedrock aquifer) from 5-PC (whose location is upgradient and outside the NIROP boundary), were 86 ug/L in 5-PC, 66 ug/L in 2-PC, and 5.3 ug/L in 4-PC, decreasing from upgradient (offsite) to downgradient.</p> <p>Elevated PCE concentrations moving onto the NIROP property from upgradient areas, combined with historically low TCE concentrations in bedrock wells clearly indicate that a different (and non-Navy) source area for the PCE contamination exists upgradient and offsite. Navy concurs with MPCA's oft-stated conclusion that it is MPCA's responsibility, not the Navy's, to identify and address non-Navy sites that are impacting groundwater in the area. The bullet will not be further revised at this time, although Navy welcomes MPCA input into their continued efforts to address the nature and extent of the Kurt contamination.</p> | <p>The MPCA staff believes that the Navy RTC does not address the MPCA staff's requested modifications to the 2006 AMR. The MPCA staff requests that the Navy either agree to modify the 2006 according to the original MPCA staff request or add these requested modifications to the list of agenda items for discussion leading to possible resolution at the next available NIROP Technical Subcommittee meeting.</p> | <p>DO3 - S-PC is unknown upgradient</p> |
| 8 | <p>Section 2.4, Pilot-Scale Study of Enhanced In-Situ Bioremediation - Anoka County Park, Page 2-6, Last Bullet This section refers to "Hot spots" in Anoka County Park. The MPCA staff requests that the Navy identify the location of hot spots in Anoka County Park.</p> | <p>This set of recommendations is copied directly from "Report for A Field Application to Enhance In-Situ Bioremediation of Chlorinated Solvents via Vegetable Oil Injection at Naval Industrial Reserve Ordnance Plant Fridley, Minnesota". We believe that a read of the statement that suggests knowledge of any additional Anoka Park 'hot spots' is out of context. Additional source areas in Anoka Park are not consistent with our current conceptual site model. The conceptual site model is supported by multiple site investigations.</p> <p>Since these bullets are recommendations taken from the final Parsons "Report for A Field Application to Enhance In-Situ Bioremediation of Chlorinated Solvents via Vegetable Oil Injection at Naval Industrial Reserve Ordnance Plant Fridley, Minnesota", the Agency's concerns about the conclusions of that report should instead be addressed in the comment-review process for that document.</p> <p>For the <u>third</u> bullet on page 2-6, the statement will be revised to state "Organic substrate addition in the form of vegetable oil injection should be considered as a future remedial option for ACP", removing the phrase "full-scale". The phrase "full-scale" will be removed because it is inconsistent with the recommendations from the final Parsons report, and was a remnant of the previous AMR's reporting of the draft vegetable oil pilot study recommendations.</p> | <p>The MPCA staff believes that the Navy RTC does not address the MPCA staff's requested modifications to the 2006 AMR. The MPCA staff requests that the Navy either agree to modify the 2006 according to the original MPCA staff request or add these requested modifications to the list of agenda items for discussion leading to possible resolution at the next available NIROP Technical Subcommittee meeting.</p> | <p>def. no "hot spots" - no other source material</p> |
| 12 | <p>Section 4.3.2.2, Summary of Contamination, Page 4-29, First Sentence This sentence identifies a trend between two data points. The agreed-upon method that the Navy evaluate trends is by the Mann-Kendall statistical analysis involving more data points; therefore, the MPCA staff requests that the delete this sentence and refrain from this analysis in all future "trend" analyses.</p> | <p>In the first sentence on page 4-29, the text "show a decreasing trend" will be replaced with the word "declined".</p> | <p>The MPCA staff believes that the Navy RTC does not address the MPCA staff's requested modifications to the 2006 AMR. The MPCA staff requests that the Navy either agree to modify the 2006 according to the original MPCA staff request or add these requested modifications to the list of agenda items for discussion leading to possible resolution at the next available NIROP Technical Subcommittee meeting.</p> | <p>Unchanged</p> |

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| 14 | <p>Section 4.3.3, Statistical Analysis of Concentration Trends, Pages 4-37, 4-38 and 4-40 In this section, the Navy discusses upward trends, but does not explain the reasons for their occurrence. The MPCA staff requests that the Navy provide an explanation for the observations.</p> | <p>Discussion of trends in contaminant concentrations are presented in Sections 4.3.2.3, 4.3.2.4, and 4.3.2.5, and 4.3.2.6. Section 4.3.3 is merely meant to present the results of the statistical analysis.</p> | <p>On pages 4-31 through 4-33 of Section 4.2.2.4 of the 2006 Annual Monitoring Report (AMR), the Navy does discuss upward trends of trichloroethene (TCE) concentrations in Anoka County Park (ACP), but the Navy neither discusses nor offers to discuss one obvious explanation for the trends, which is that contamination has blown by the capture system in recent years. The MPCA staff requests that the Navy address this comment in the 2007 AMR.</p> | <p><i>done in 2007 AMR</i></p> |
| 15 | <p><i>PASE</i> Section 4.4, Surface Water and Water Works Intake Monitoring Data, Page 4-41, Second Paragraph The Navy's trend analysis for surface water compliance wells and contaminants listed in Tables 4-9 and 4-10 shows two wells with upward trends that exceed their respective Minnesota Surface Water Criteria. The trend for TCE at well MS-43S is upward and this is beyond the capture zone to the north of the extraction system. The concentration exceeds the surface water compliance standard at this well.</p> <p>The trend for cis-1,2-dichloroethene (DCE) at well MS-44I is upward and the surface water compliance standard of 70 ug/L is exceeded at this well. This well is beyond the capture zone of extraction wells in the intermediate zone.</p> <p>The trends in these wells indicate that a ground water remedy is needed in Anoka County Park. As articulated in the MPCA staff letter of November 13, 2006 to the Navy and EPA regarding the MPCA staff position on protecting the Mississippi River as a drinking water source, the MPCA staff requests that the Navy implement a full-scale vegetable oil remedy for meeting the Minnesota Surface Water Criteria at the surface water compliance wells in Anoka County Park. Also please see this letter regarding the MPCA staff recommendation for adding the remedial design of this remedy to the upcoming Technical Subcommittee meeting agenda.</p> <p>The flow described in the second paragraph on page 4-4 of the 2006 AMR indicates that flow in the shallow zone heads northwest then southwest to the Mississippi River. This interpretation is difficult to substantiate. The MPCA staff requests that the Navy revise this discussion or delete it from the 2006 AMR.</p> | <p>The discussions at the January 2007 Partnering Team Meeting confirmed the consensus opinion that the persistent operational issues with the groundwater recovery system had some impact on the Anoka Park monitoring wells, including those where contaminant concentration increases were evident. Navy believes the Team agreed to adjust the monitoring well network to collect additional data to refine trend analysis and that Navy committed to improve operational performance of the recovery system. In addition, full-scale vegetable oil remedy over the area of the compliance wells in the ACP would not, per the findings and recommendations of the final vegetable oil pilot study report, be effective. In consideration of these data points, Navy believes there is currently insufficient justification to support a full-scale vegetable oil remedy in Anoka Park.</p> <p>The text states that in one small area of the site, in the shallow zone, groundwater flow is northwest then southwest. This is not a blanket statement for shallow zone groundwater flow. Based on groundwater flow direction in this area around AT-5A, it is reasonable to state that a portion of the groundwater flow from the UDLP property is channeled to the south of AT-5A from the southern end of the property, and flows northwest. The groundwater then flows southwest and discharges to the Mississippi River. This is a natural hydraulic condition enhanced by pumping.</p> | <p>The MPCA staff does not detect a northwestward flow in the shallow zone during non-pumping conditions at the southern end of ACP as described in the RTC, page 7, first full paragraph. There is a northwestward flow in the ACP in the shallow zone toward AT-5A during pumping conditions, but this may not be drawing from contamination originating on the FMC Superfund Site facility to the southwest because of the intervening ridge feature present. The MPCA staff requests that the Navy address this comment in the 2007 AMR.</p> | <p><i>addressed 2007</i></p> |
| 16 | <p>Section 4.7, Attainment of Data Quality Objectives, Conclusions Regarding Attainment of Data Quality Objections for Problem B, Page 4-44 Due to the significant down time for AT-7, AT-8, and AT-9 identified in Section 3.3, "Extraction Wells and Pumps" and shown in Figures 3-4, 3-5, and 3-6, the MPCA staff requests that this matter be added to the agenda of the upcoming Technical Subcommittee meeting with the objective reaching a Technical Subcommittee-endorsed plan for addressing this problem to be presented by the Navy at the next full NIROP partnering meeting.</p> <p>As indicated in Section 5.1.1.9, "AT-10," page 5-6, the median pumping rate for AT-10 for 2006 is 200 gallons per minute which is 26 percent less than 2005. The MPCA staff requests that the Navy add well AT-10 to the other wells cited above for discussion by the Technical Subcommittee.</p> | <p>The issue was addressed at the January 2008 Technical Committee Meeting. Navy has committed to providing resources to improve operational performance of the recovery system.</p> | <p>The MPCA staff requests that the Navy identify what resources that the Navy has committed to improve operational performance of the recovery system, what improvements the Navy plans to implement, and provide the MPCA staff with a schedule for implementing the improvements.</p> | <p><i>Schedule</i> <i>AMR plan</i> <i>preventative</i> <i>iron</i></p> |
| 20 | <p>Table 4.9 Three wells, 15-S, 25-S and 14-D, listed in Table 4-9 as having significant upward trends had no TCE detected in them. The MPCA staff requests that the Navy review and revise this determination as necessary.</p> <p>Three wells, 17-S, MS-29I, and MS-45I, listed in Table 4-9 as having significant downward trends experienced increases in TCE concentration from 2005 to 2006 and the curve since 2003 appears to be asymptotic or flat. The MPCA staff requests that the Navy review and revise this determination as necessary. The MPCA staff requests that the Navy assess at what point the concentration of these wells might be determined by parameters other than natural attenuation.</p> <p>For future AMRs, the MPCA requests that Navy identify the beginning date of the sampling data used for all Mann-Kendall trend analyses such as in Table 4-9 for each well for which this analysis is conducted.</p> | <p>The Navy has reviewed and corrected this discrepancy. No upward trend is evident, the TCE concentration for these three wells was non-detect. Relevant tables and figures will be corrected throughout the 2006 AMR.</p> <p>Table 4-9 lists the results of the statistical analyses of data over an extended period of time. The statistical result of wells 17-S, MS-29I, and MS-49I is not determined by a slight increase over a period of one year. An increase in concentration over one year does not statistically determine what trend the data is following, and is not statistically valid. As stated on page 4-36, the results of the Mann-Kendall trend analysis for each well included the last 8 years of data.</p> <p>The Navy will include the beginning date for sampling data used for all Mann-Kendall trend analyses for future AMR's.</p> | <p>The MPCA staff notes and appreciates the RTC. The MPCA notes that in recent years, TCE concentrations may no longer be decreasing at wells 17-S, MS-29I and MS-45I. The MPCA staff requests that the Navy assess at what point the TCE concentrations in these wells might be determined by parameters other than natural attenuation.</p> | <p><i>maintain plan</i> <i>see 14</i></p> |

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