

Kieling, John, NMENV

From: Shean, Frederic [fshean@abcwua.org]
Sent: Tuesday, September 13, 2011 4:34 PM
To: Berardinelli, Thomas F Civ USAF AFMC 377 ABW/DS
Cc: msanchez@abcwua.org; JStomp@abcwua.org; Kieling, John, NMENV;
John.Pike@kirtland.af.mil; dprice@abcwua.org; bgastian@abcwua.org; Moats, William,
NMENV; alieuwen@abcwua.org; Arvizu, Janine S.
Subject: Water Authority Comments on the KAFB BFF Spill Quality Assurance Project Plan
Attachments: Memo-ABCWUA-Response to Shaw QAPJP.pdf

Good afternoon, Mr. Berardinelli:

The Water Authority would like to provide you and KAFB with our comments on the KAFB BFF Spill Quality Assurance Project Plan (QAPP) submitted to the NMED in July. We hope our input can assist KAFB and Shaw with providing the best work product available and ensure that the upcoming sampling activities and laboratory analyses are completed in a manner that ensures dependable data collection.

I am happy to answer any questions about our memo.

Sincerely,

Rick Shean
Water Quality Hydrologist
Albuquerque Bernalillo County Water Utility Authority P.O. Box 1293 Albuquerque, NM 87103
505-768-3634 (office)
505- 366-7561(mobile)

Technical Memo

To: Tom Berardinelli, Director of Staff, 377th Air Base Wing KAFB (via email)

From: Rick Shean, Water Quality Hydrologist, ABCWUA

CC: Mark Sanchez, Executive Director, ABCWUA
John Stomp, Chief Operating Officer, ABCWUA
John Kieling, Hazardous Waste Bureau Chief, NMED
Will Moats, Project Manager, NMED-HWB

Date: 9/13/2011

Re: ABCWUA comments on the KAFB BFF Quality Assurance Project Plan

1. Introduction

The Albuquerque Bernalillo County Water Utility Authority (Water Authority) is submitting its comments to Kirtland Air Force Base (KAFB) on the Quality Assurance Project Plan for the KAFB Bulk Fuel Facility Spill Project submitted to the New Mexico Environment Department (NMED) on July 26, 2011. As a member of the Technical Working Group for the KAFB Bulk Fuel Facility Spill Task Force, the Water Authority is pleased to provide KAFB and the NMED with an independent review of the QAPjP. We have listed our comments in the section that our concerns can be found.

2. Water Authority Comments

<u>Section</u>	<u>Comment</u>
3.1.3.1	States that 30 wells groundwater monitoring wells will be installed for monitored natural attenuation (MNA) assessment effort. Please provide a figure, or at a minimum a list, with the wells to be used for MNA purposes.
3.1.7	Discussion regarding the investigation-derived waste (IDW) management mentions a project specific Waste Management Plan. Please provide as an appendix to the QAPjP. Also, please describe the process of collecting and storing the waste manifests for the liquid IDW that will be removed and disposed of off-site.

- 3.6.1.1 States "...accuracy for these analyses will be assessed through a review of field duplicates, laboratory duplicates...".
Results from duplicates may be used for an assessment of measurement precision, but are not appropriate for use in a determination of measurement accuracy.
- 4.3.1.2 The formula for computation of percent recovery uses "Spiked Sample True Value" in the denominator. The inclusion of the word 'sample' could lead to confusion, and use of the wrong value. More conventionally, and more descriptively, the terms "Spike Added" or "Amount Spiked" are used.
- Table 3-1 Footnote 8 refers to "Chlorine, bromine, fluorine, ...". These target analytes are probably incorrect. It is likely that the target analytes of interest are chloride, bromide, and fluoride.
- Table 3-2 The reference methods for determination of ammonia are listed as SM 4500B, D, but in the next column, the methods for preparation and analysis are listed as EPA 4500 B, D. The reference to EPA 4500 appears to be in error; it should reference Standard Methods.
Also, the reference to Standard Methods should include a version number (e.g., 18th, 19th, online edition).
SM 4500 B is a preparative distillation method that is appropriate for some analytical methods. However, SM 4500 D is an ion selective electrode method for determination of ammonia; for this analysis method, distillation is unnecessary.
- Table 3-8 The QC acceptance limits for the QC study include the statement "LOQ>LOD>DL". This is incorrect. The terms LOD (Limit of Detection) and DL (Detection Limit) are two alternative means of expressing the same value, and they represent the same value.
- Table 3-16 SM 4500 D is described as a Colorimetric technique. This is incorrect. SM 4500 D is an ion selective electrode method for the determination of ammonia.
- Table A-1 The SVOC compound pentachlorophenol in groundwater is listed with a project comparison limit of 1.0 µg/l, a project reporting limit of 20 µg/l, a lab-specific MDL of 5.0 µg/l, and a lab-specific LOQ of 20.0 µg/l. Neither the project reporting limit nor the laboratory MDL meet the project comparison limit. This anticipated failure to meet project needs is not identified in the description of sensitivity exceptions in section 3.2.1 (page 3-10). In addition, the described corrective action (reporting results to the MDL) will not address the project's need to identify this compound at levels between 1 and 5 µg/l.

- Table A-1 The Laboratory-specific MDLs and LOQs for TPH as Gasoline and TPH as Diesel are incorrect. TPH as Gasoline is listed with an MDL of 150 µg/l and an LOQ of 50 µg/l. Similarly, TPH as Diesel is listed with an MDL of 100 µg/l and an LOQ of 100 µg/l. The value of the LOQ for a given method must be greater than the value of its corresponding MDL. It would appear that because project comparison values have not been established for these important parameters, the project Reporting Limits were set to correspond to the laboratory's LOQ, yet the listed LOQs do not appear reliable.
- Table A-1 The Method Reporting Limit for ammonia is listed as 5.00 mg/l. However, the method reference for ammonia (SM 4500 D) specifically calls for reporting results as the concentration of ammonia-nitrogen (rather than the concentration of ammonia).
- Table A-2 The first three pages of Table A-2 are titled as containing Method Control Limits - Soil, but should be titled as containing Method Reporting Limits – Soil (analogous to Table A-1 Method Control Limits – Groundwater) and the following five pages.
- Table A-2 Several analytes in soil are listed with project reporting limits that do not meet project comparison limits: benzo(a)anthracene; benzo(k)fluoranthene; bis(2-chloroethyl)ether; dibenzo(a,h)anthracene; hexachlorobenzene; indeno(1,2,3-cd)pyrene; and N-nitroso-di-n-propylamine.
- For each of these compounds, the laboratory-specific MDL is lower than the project comparison limit, so the corrective action described in section 3.2.1 (reporting results to the MDL) should be sufficient to identify, if not quantitate, the analytes. However, these compounds should be added to the narrative description of sensitivity exceptions in section 3.2.1. In addition, several of these compounds do not have their project comparison limits and associated reference bolded to indicate the inconsistency with project requirements.
- However, although N-nitrosodiethylamine and N-nitrosodimethylamine are identified as a sensitivity exception in section 3.2.1, the described corrective action (reporting results to the MDL) will not address the project's need to identify contaminants at the project comparison limit. In each of these cases, the laboratory's MDL is well above (one to two orders of magnitude above) the project comparison limit.
- Table A-2 This table does not include the end note indicating: ***Bold values indicate the LOQ exceeds the standard.***

Table A-3	The Laboratory-specific MDLS and LOQs for nine analytes are incorrect, because the listed MDL = LOQ = Project RL. The value of the LOQ for a given method must be greater than the value of its corresponding MDL. It appears that because project comparison values have not been established for these analytes, the project Reporting Limits were set to correspond to the laboratory's LOQ, yet the listed LOQs do not appear reliable.
Table A-1	<p>The target analytes for anions in groundwater are listed as nitrate, sulfate, and chloride. This appears inconsistent with Table 3-1 in which the "Common parameters" are listed in footnote 8 as being "chlorine (<i>sic</i>), bromine (<i>sic</i>), fluorine (<i>sic</i>), nitrate, nitrite, phosphate, sulfate."</p> <p>In addition, in Appendix B-2, Empirical Laboratories Control Limits are provided only for nitrate, nitrite, sulfate, and chloride. Also Empirical Laboratories references SW-846 method 9056, rather than EPA 300.0 as specified in Table 3-2.</p>
Table A-1/2	The tables of reporting limits do not include requirements for discrete analytes or reporting limits for explosives, but Table 3-1 specifies sample requirements for explosives testing.
Table 3-2	<p>The specified reference methods for determination of dissolved iron and manganese, for determination of cations, are EPA 3005A/3010A for preparation and EPA 6010C for analysis. However, in Appendix B-2, Empirical Laboratories references SW846 method 6010B for analysis.</p> <p>The specified reference method for determination of ammonia is SM 4500 NH3 B, D (an ion selective electrode technique). However, in Appendix B-2, Empirical Laboratories references SM 4500 NH3 B, G for ammonia. This is an automated phenate method.</p>
Appendix B-4	The RTI QA Acceptance Criteria for ASTM 2504 reports equivalent values for the MDL and PQL for each of the seven analytes. This is not accurate. The PQL must be greater than the MDL.
Appendix C	Most of the field forms proposed for use are not controlled documents.
Form C-3	This Form for documenting water level field measurements is apparently a two page form, but only page 1 of 2 is provided.