



# Record of Modification

to the  
Troy Sampling and Quality Assurance Project Plan  
Field Activities  
TFO-00001

**Instructions to Requester:** Fax to contacts at bottom of form for review and approval.

File approved copy with Data Manager at the Troy Field Office (TFO).

Data Manager will maintain legible copies in a binder that can be accessed by TFO personnel.

If Modification is Temporary for a single Parcel, Data Manager will scan this and place in parcel's electronic file.

**Project Work Plan/QAPP** (check one):

- Outdoor Ambient Air Study Work Plan
- Other (Title and approval date): \_\_\_\_\_

**Site-Specific Guidance/SOP:**

Title NA

Number/Revision): NA

Requester: Catherine LeCours  
Company: DEQ/Tetra Tech

Title: Project Manager  
Date: March 2, 2010

Description of Modification (attach additional sheets if necessary, state section and page numbers of each document that are affected by the proposed modification): **Sections 4.3.3 and 4.4.7 in the Final Remedial Investigation Work Plan Outdoor Ambient Air Study – Operable Unit Number 7 of the Libby Asbestos Superfund Site.** These Sections reference the use of .45 micrometer (µm) pore size, 25-millimeter diameter mixed cellulose ester filter cassettes for air sample collection during the Operable Unit 7 (Troy) ambient air study. The choice of .45 µm filter pore size was originally made to coincide with the EPA Asbestos Sampling SOP #2015, Section 5.2 - Filter Cassettes, Paragraph 5.2.1 - TEM Cassette Requirements, which recommends “The cassette shall be loaded with an MCE filter of pore size 0.45 µm, and supplied from a lot number which has been qualified as low background for asbestos determination”. However, sampling at high air volumes can create excessive filter loading which may lead to air pump faults. This problem is greater using the finer-mesh 0.45 µm filter pore size and may be reduced by using an alternative 0.8 µm pore size filter.

Prior to beginning the Operable Unit 7 Ambient Air Study, Tetra Tech discovered that the 0.8 µm filter was used for TEM air monitoring in Libby during the Operable Unit 4 Ambient Air Study. Tetra Tech also selected 0.8 µm filters for the Operable Unit 7 ambient air sampling to minimize sample pump faults due to the high air volumes being collected (approximately 14,400 liters was typically collected during the Libby study). The Operable Unit 7 study has proposed to collect between 14,400 and 21,600 liters of air per sample which increases the likelihood of pump faults due to filter loading; therefore, upon discovering the protocol that was used during the Operable Unit 4 study, Tetra Tech decided to alter the procedure during the Operable Unit 7 study as well.

Provided below are the Operable Unit 4 Work Plan sections that reference the use of the 0.8 µm filter pore size. The text is from the Summary of Outdoor Ambient Air Monitoring For Asbestos At The Libby Asbestos Site - Libby, Montana (October 2006 to June 2008).

### 2.1.2 Year 1 Sampling Protocol

#### Filter Type

Samples were collected using 25-millimeter diameter, 0.8 µm pore size mixed cellulose ester (MCE) filter cassettes. In order to investigate whether the choice of pore size is an important determinant of observed concentrations, samples using 0.45 µm pore size filters were collected intermittently at selected stations. These stations were selected so that sampling stations from the each study area were represented.

4.5 Effect of Pore Size (0.8 µm vs. 0.45 µm)

Table 4-3 presents a comparison of 20 sample pairs matched on collection time, location, and height, but with differing filter pore sizes (0.45 µm vs. 0.8 µm). Results for each sample pair were compared using the Poisson ratio test (Nelson 1982). As seen, there were no pairs that were statistically different from each other for total LA at the 95% confidence level, although there was one pair that was different for chrysotile (p < 0.05). These results are consistent with the hypothesis that filter pore size has no substantial effect on the retention or analysis of LA structures. The basis for the one sample that was different for chrysotile is uncertain. However, because the difference was quite large, it seems unlikely that the reason could be differences in filter retention only.

Field Sampling Data Sheet where Modification is documented (attach associated correspondence): **N/A**

Potential Implications of Modification: This modification will not impact the air sampling protocol for Operable Unit 7, nor should it affect the analytical protocol.

Duration of Modification (Check one):

- Temporary

Date(s): \_\_\_\_\_ Station Number- \_\_\_\_\_

TA- \_\_\_\_\_

- Permanent (Proposed Text Modification Section) Effective Date: Throughout the duration of the Operable Unit 7 Outdoor Ambient Air Study

Proposed Text Modifications in Associated Document (attach additional sheets if necessary): Sections 4.3.3 and 4.4.7 in the Final Remedial Investigation Work Plan Outdoor Ambient Air Study – Operable Unit Number 7 of the Libby Asbestos Superfund Site: (Only changes are shown)

4.3.3 Inventory and Procurement of Equipment and Supplies

- Sample media – 0.45 0.8 micrometer (µm) pore size, 25-millimeter diameter mixed cellulose ester filter cassettes

4.4.7 Filter Type – Pore Size

**Samples will be collected using 25-millimeter diameter, 0.45 0.8 µm pore size, as specified in EPA SOP 2015.**

Data Quality Indicator (circle one) – Please reference definitions on reverse side for direction on selecting data quality indicators:

**Not Applicable**      **Reject**      **Low Bias**      **Estimate**      **High Bias**      **No Bias**

Technical Review and Approval: \_\_\_\_\_  
(DEQ Project Manager or designate)

*Catherine LeCours*

Date: March 3, 2010

EPA Review and Approval: \_\_\_\_\_  
(USEPA RPM or designate)

N/A

Date: \_\_\_\_\_

**REMEDIAL INVESTIGATION WORK PLAN  
OUTDOOR AMBIENT AIR STUDY**

**Operable Unit Number 7  
of the Libby Asbestos Superfund Site**

Tetra Tech, Update March 2010

**DOCUMENT REVISION LOG**

<b>Revision</b>	<b>Date</b>	<b>Primary Changes</b>
TFO-00001	March 3, 2010	Changed filter size from 0.45 µm to 0.80 µm
TFO-00002	March 15, 2010	Flow rate change

## DATA QUALITY INDICATOR DEFINITIONS

**Reject** - Samples associated with this modification form are not useable. The conditions outlined in the modification form adversely effect the associated sample to such a degree that the data are not reliable.

**Low Bias** - Samples associated with this modification form are useable, but results are likely to be biased low. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimated low.

**Estimate** - Samples associated with this modification form are useable, but results should be considered approximations. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimates.

**High Bias** - Samples associated with this modification form are useable, but results are likely to be biased high. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimated high.

**No Bias** - Samples associated with this modification form are useable as reported. The conditions outlined in the modification form suggest that associated sample data are reliable as reported.