

## **MEMORANDUM**

SUBJECT: Comments on The Fort Worth Method Phase 2 Demolition's Method, Quality Assurance Project Plan, and Asbestos Remediation Plan

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TO: David Bond and Mark Hansen  
Region VI

The Asbestos Coordination Team (ACT) has reviewed the documentation describing the methods and procedures associated with the City of Ft. Worth's proposed test project of an asbestos NESHAP alternative, the "Fort Worth Method." The ACT appreciates the opportunity to provide comments on this test project to the Region. As requested by the Region, the ACT has limited its review to the information contained in the following three documents and associated appendices:

***The Fort Worth Method For Asbestos Management in the Demolition of Substandard Structures as a Nuisance Abatement***, Phase 2 Demolitions, (February 20, 2004)

***Quality Assurance Project Plan***, Ambient Air Monitoring for Asbestos during Demolition of Substandard Structures in the City of Fort Worth, Texas (Project XL), (February 20, 2004)

***Asbestos Remediation Plan Phase 2 Demolition*** (February 20, 2004)

It is critical to this project to not only ensure the safety of the surrounding community, but also to evaluate all aspects of the technical performance of both technologies. Considering those objectives, the members of the ACT have identified several issues regarding the current design of this project.

While the ACT would have liked to include all the comments prepared by our members in this memo, due to time constraints, we have summarized what the ACT collectively identified

as its major comments. The individual comments from the ACT members are included as an attachment and should be considered with equal weight when working with Fort Worth on revisions to this method. In addition, several Program Offices represented by the ACT (i.e., Office of Research and Development, Office of Air and Radiation, and the Office of Policy, Economics and Innovation) have submitted their comments separately to the Region VI Administrator via their Administrators.

## **2. Asbestos Health Effects**

The health effects and risks associated with asbestos exposure should be clearly described in all the Fort Worth documentation. The documents should mention the full breadth of potential health impacts resulting from exposure, including asbestos's potential carcinogenic effect, mesothelioma, and other types of lung cancer. The City of Ft. Worth should incorporate information from the EPA's web page on asbestos into the documents to describe the full scope of risks of exposure: "Researchers have not determined a safe level of exposure, but we know the greater and longer the exposure, the greater the risk of contracting an asbestos related disease." The ACT also recommends that communication materials to the public include this statement, a description of the types of health impacts associated with asbestos exposure; and the uncertainties related to limited exposure associated with this project.

## **3. Lack of Scientific Information to Support Project Assumptions and Design**

The ability of this experiment to provide adequate data to compare to the NESHAP is dependent on the scientific validity of the sampling design and methodology yet, there are numerous protocols in the documents for which the details of the method are not completely given, or where a rationale or scientific basis is not provided to support assumptions or approaches used. For example:

- there is no rationale given for the decision regarding the amount of Transite material (quantities greater than 20% coverage for every 1 LF) that will be removed.
- The rationale for the sampling procedure is not provided.
- What is the scientific basis for setting acceptable wind speeds (less than 25 mph) for sampling?
- What about low wind speeds?
- What is the basis for the number of samplers?
- How was the determination made that 25% is adequately wet?
- No rationale for the demolition sequencing (Building #4 >> Building #3 >> Building #2) is presented; however, this decision may have direct and significant impacts on the dispersion of fibers and quality of monitoring data obtained during demolition. For example, it is unclear whether Fort Worth considered leaving Building #3 in place (i.e., sequencing Building #4 then Building #2) to serve as a physical barrier so that collected fibers could be more definitively associated with Building #2 demolition rather than potentially branded as fibers resuspended during mechanical disturbances of the former Building #4 site.

Due to the lack of clarity and detail in this Fort Worth Method, the ACT is concerned that the method may fail to meet the requirements contained within the Agency's Information Quality Guidelines (IQGs). The ACT recommends providing sufficient information to support the sampling and design methodology and to meet the IQG requirements.

### **3. Reportable Quantity Guidelines Misunderstood**

The *Asbestos Remediation Plan* briefly mentions the Reportable Quantity requirements and sets forth estimated release amounts that trigger response actions (see Section 6.0 Response Actions, *Surface Water Impacts*). Several points are noteworthy. First, this appears to be the only Fort Worth Project-related discussion pertaining to CERCLA section 102(b) reportable quantity (RQ) requirements. The ACT, however, views RQ provisions as being broadly applicable to any Fort Worth Project demolition or asbestos management activity that potentially could result in a release into the environment. Second, it is unclear why the RQ discussion is limited to surface water. Unless an exemption applies (e.g., Federally permitted releases), RQ reporting is required regardless of the release mechanism (i.e., airborne fibers, surface runoff, ground water infiltration). Third, no discussion is presented relating the stated thresholds (i.e., <10 gal; >10 - <50 gal; >50 gal; 7 million structures per liter) to the asbestos RQ. The ACT recommends reevaluating each of the supporting documents and inserting the RQ-related language, as appropriate.

### **4. Air Monitoring Techniques Not Certified for Outdoor Monitoring**

The ACT was unable to find references in the QAPP that would validate the sampling protocol for outdoor air. Without validating the sampling methodology, it is not clear that the asbestos monitors will detect the actual amount of asbestos that is released. The ACT recommends referencing the appropriate documents that provide the background for this approach.

### **5. Compliance with OSHA**

By design, OSHA asbestos regulations mirror those that are contained in the EPA NESHAP. The OSHA asbestos regulations specify permissible exposure limits for asbestos, respiratory protection, work practices such as containment, and certain other engineering controls. Although page 43 of the Ft. Worth Method indicates that the demolition activities will comply with all applicable OSHA requirements, it appears to the ACT that some deviation may be inevitable if the Ft. Worth method is followed. The ACT recommends that the City of Ft. Worth thoroughly review the OSHA requirements and determine if some type of regulatory flexibility for worker protection would need to be requested.

### **6. It is Not Evident That The Proposed Analytical Techniques Will Adequately**

## **Identify Asbestos**

Materials with asbestos concentrations below 1% (i.e., those which could be found to have trace or non-detectable asbestos concentrations using the routine method of PLM, and therefore declared non-asbestos containing for demolition purposes), can release very high airborne concentrations of asbestos when disturbed. Several studies (including the EPA Versar study of vermiculite insulation containing non-detectable asbestos concentrations by PLM) have shown that even with wetting, these materials can still serve as a source of significant airborne fiber releases when disturbed. Thus, we anticipate that buildings containing larger amounts of unabated asbestos prior to demolition could release larger concentrations of airborne fibers, even with wetting.

It is important to thoroughly and accurately sample the air around the demolition site. However, only a very small portion of the air in only a very small area can be sampled using air samplers, which are usually employed for indoor sampling. In contrast to indoor sampling where there is less asbestos (after removal), lower air flow, more fluidity and less variability; outside conditions create air “currents” and differential air flow from mechanical and atmospheric stresses and mixing that may make the outdoor air concentrations very heterogeneous and inconsistent. Although the use of smoke tubes may help, sampling downwind from variable sources at variable times and at several locations affords limited confidence of extrapolating the concentration from the sampling locations to other locations. EPA has limited experience in evaluating the inference from outdoor sampling points after demolition. EPA has no validated sampling procedure for measuring outdoor asbestos concentrations at numerous sampling points around the perimeter of a demolition “point source” and extrapolating the measurements to estimates of exposures at various locations distant from these sampling points. What is the rationale for the location of sampling devices (other than upwind and downwind); and what is the assumption about asbestos concentrations distant from the samplers?

### **7. The Rational for Removing Some Types of Asbestos Prior to Demolition is Unclear**

The documentation does not include a justification or explanation for how asbestos removal amounts and material types were chosen. Furthermore, it is unclear whether or not any regulated asbestos containing material (RACM) will be removed from the Cowtown Inn before demolition. A rationale for removing some types/quantities of asbestos containing materials and not others, prior to demolition, should be included in the documentation.

### **8. Vermiculite**

Any asbestos assessment conducted should address vermiculite and should be discussed in both the Fort Worth method and QAPP. The ACT is particularly concerned that there is no consideration for the identification, assessment or removal of materials such as vermiculite attic insulation, Monokote fireproofing, vermiculite-containing ceiling tile, and other types of vermiculite containing products that might have been previously mis-classified as non-asbestos, but for which the Agency now has renewed concern. Vermiculite is not mentioned in the Fort

Worth Method (particularly not in the asbestos assessment requirements) and the QAPP states that it is the type of material that may be present in buildings to which the Fort Worth Method may be applied (QAPP, p.11).

It is important to consider that while airborne release from some ACM may be adequately controlled by wetting, releases from other ACM may not. EPA has demonstrated that airborne release from certain ACM is only minimally controlled by wetting. This is clearly demonstrated in the case of vermiculite attic insulation and may also be true of other vermiculite containing materials such as wall board, ceiling tile, concrete decking and Monokote spray-on fireproofing. Given the uncertainties surrounding vermiculite releases to the air, the document should state that vermiculite would need to be removed prior to FW demolition. EPA also needs verification from Ft. Worth that the previously conducted asbestos assessment is still valid, or is updated, as necessary.

There are also concerns regarding the ability of NESHAP asbestos sampling techniques to detect the presence of the more toxic forms of asbestos fibers that are associated with vermiculite. The Ft. Worth Method indicates that PLM will be used to determine the types and quantities of asbestos that are present in the buildings prior to demolition. Research at Libby, Montana has shown that PLM is not capable of detecting the more toxic forms of asbestos, such as tremolite, that is present in Libby vermiculite. The Dallas, Texas area was the second largest recipient of vermiculite shipments from Libby, Montana. Is there vermiculite in the building? The ACT recommends that TEM be used to characterize the types and quantity of asbestos in a building prior to demolition despite the fact that this is not a requirement under the NESHAP.

## **9. A Clear Decision Tree Needs to Be Developed For Stop Work Authority**

Stop work measures and metrics for making a stop work determination must be clearly stated. The QAPP should include a new section outlining situations that may require the project to be terminated. For example, pg. 32 of the QAPP states, “Should the wind direction change outside of this 67 degree sector for more than a 60-minute period, the sampling and demolition will be terminated. In addition, should sustained winds exceed 30 mph for more than a 30-minute period, both sampling and demolition will be suspended for the day.” There are similar statements about rainfall and temperature. These types of statements should be compiled and restated in one location.

Additionally, an individual from OSHA, EPA, and the Texas Department of Health should each have the authority to stop work. The documents should clearly identify these individuals and their on-site authority.

## **10. The Term Adequately Wet is not Clear**

“Adequately Wet” is not used consistently. This is an important definition because it is

integral to determining when the structure is wet enough for demolition. This definition should be consistent with NESHAP and EPA guidance. In the QAPP, the Criteria for Acceptance of the Secondary Objectives states that moisture levels in excess of 25 percent will be judged "Adequately Wet." (QAPP page 27). The Method cites 40 CFR §61.141, which states, "adequately wet means sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet." (Method page 50)

## **11. Segregation Rational and Handling of Debris**

The issue of segregating ACBM versus non-ACBM is confusing. The method states that debris that is "not containing RACM be demolished first, the debris treated as construction debris, and kept segregated from the RACM." Segregation of the non-RACM and RACM should be very strictly monitored under this scenario.

Where the document specifies the ACM that would be removed under the Fort Worth Method, some of these thresholds are based on the NESHAP thresholds (160 sq. feet; 35 cubic feet). However, for Transite material, it states "in quantities greater than 20% coverage for every 1LF of building exterior." Where does this figure come from? In the terms of the Cowtown Inn, does that mean Transite will be removed?

Although a breakdown of the total amount of ACM for the entire complex is given, it is unclear what is contained within the specific buildings. What amount of asbestos is actually in building #4 (to be demolished using the NESHAP), and buildings #2 and 3 (to be demolished using the Ft. Worth Method) specifically?

It is not clear based on the information provided, what will be removed comparatively between the buildings. The differences in the removal amounts between the buildings have the potential to be much greater than they might initially appear by the way the information is presented. The documents should clarify the specific materials and quantities to be removed from the buildings for the two different methods.

Under "Handling of Demolition Debris," it seems to lack detail on how non-RACM will be isolated to prevent contamination with RACM. Will the piles be labeled with signs or be labeled in some other way?

Finally, it is not clear in the documentation whether full NESHAP methods, including containment, will be used to remove RACM prior to demolition with the Ft. Worth Method. The removal procedure should be clarified.

## **12. Visible Emissions**

There are inconsistencies between the documents on how visible emissions will be treated during the tests. Some documents stipulate that work will be stopped if visible emissions

are seen, while other documents indicate that work will continue. The QAPP seems to introduce a new policy for determining if building materials have met the definition of “adequately” wet based on moisture content of the debris.

### **13. Concern Regarding Risk Criterion**

The risk evaluation in the Fort Worth QAPP incorrectly assumes that NESHAP’s regulation of ACM is health-based. For example, the assumption that the NESHAPS cutoff for 1% asbestos in the ACM is a health-based limit is not correct. EPA and independent investigations have demonstrated that bulk ACM concentrations below the PLM limit of detection can create elevated airborne asbestos concentrations.

### **Conclusions**

As discussed in our comments, the authors of the Fort Worth method have made numerous assumptions that are not clearly supported by scientific studies. Consequently, there is concern about the ability of this method to detect asbestos releases from the buildings and to provide meaningful, verifiable results. At this time, we recommend that for purposes of conducting an external peer review, a more detailed set of documents should be provided to those reviewers based on these comments and concerns. A critical aspect of the comments with regard to implementation of the project is concern about the strength of the asbestos sampling methodologies, for which little information is provided regarding their development and evaluation.

We encourage the City of Fort Worth to address the ACT’s comments and revise the documentation accordingly prior to any further peer review.

### **Contributors to ACT Comments**

In 2001, EPA established an Asbestos Coordination Team to provide a comprehensive cross-Agency technical overview of actions needed to address asbestos. The ACT is comprised of senior scientists from the Office of Solid Waste and Emergency Response; Office of Prevention, Pesticides, and Toxic Substances; Office of Research and Development; Office of Air and Radiation; Office of Policy, Economics and Innovation; Office of General Counsel; Office of Enforcement and Compliance Assurance; and the EPA Regions. The team has been charged with coordinating technical activities across the Agency, to work in collaboration with relevant Federal agencies and other stakeholders, and to increase the knowledge and awareness of the public and relevant stakeholders about asbestos and the activities of the Agency. The following individuals contributed their time in reviewing and providing comments:

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Attachments