

**Fort Worth Asbestos Demonstration Project**

Facilitated Team Meeting

11 May 2004

Ariel Rios North Room 3530

Review of External Peer Review Comments:

Preliminary Issue Identification (by Charge Question 1-7 and Other)

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
Charge Question 1: Are the methods and procedures set forth in the documents adequate to ensure that the Phase 2 demolitions will be carried out such that scientifically valid information is collected on which decisions can be made on NESHAP equivalence and protectiveness?				
... there is absolutely no information who will be onsite and who will have legal and professional responsibility and authority when decisions need to be made.	X	See CQ7		
The biggest unknown is the name (not even nominees) of the demolition contractor. What will happen if a demolition contractor cannot be found, and what are MINIMAL standards for such a company?	X			
... there were no definitions of "adequately wet"? What testing will be done to determine that all RACM is adequately wet?	X			X
... there were no... details of the procedures to place water sprays into attic spaces. Who is doing this, and under what conditions, the sort of PPE needed to get a worker under the roof and into the attic spaces?	X			
There is no provision for overloaded samples. Unfortunately the most important sample may be the one that has a high amount of particulate present caused by a dust release from the site. Although it causes a number of difficulties in comparing results, the use of ISO 13794 should be considered for any overloaded samples that cannot be prepared and analyzed by the direct procedure.		X		
If ... gypsum fibers will be counted, it may add considerably to the cost of analysis and will produce results for which there are no criteria for interpretation provided in the documents.		X		
One of the statistical analyses proposed in the QAPP treats the 27 downwind samples as replicates (i.e., as if they measure the same downwind airborne concentration). The 27 upwind samples also are treated as replicates.... Clearly this interpretation is not correct - the 27 samples in these groups are not replicates. Even the 5 downwind samples collected at ground level may not be replicates because they will be located along an arc: 3 sampling locations within 67 degrees of the center of the wind direction; and 2 sampling locations judiciously placed outside the 67 degree arc.			X	

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
This plan for locating the 9 samples seems to be well-thought out and will likely lead to useful data. But the statistical characteristics of this design were not addressed in the QAPP.			X	
Because the current QAPP does not contain an adequate discussion of the probability model to be employed and does not explain why certain samples will be treated as replicates, it is not possible to determine the statistical power for the comparison of upwind and downwind airborne asbestos concentrations. Therefore, whether or not the number of samples to be collected is sufficient for the intended purpose of the study has not yet been determined.			X	
... measurements of ground-level samples should be distinguished from measurements of elevated samples.			X	
I disagree with both statistical analysis suggestions because both require assumptions about homogeneity of variances and the question of which samples are legitimate replicates remains. The ANOVA model would conceal the consequences of averaging samples that are not replicates and heterogeneity of variances. The most likely outcome would be high estimates of variability and statistical tests that find no difference between downwind and upwind concentrations when, in fact, these concentrations may be different. Formal statistical tests should be based on multiple comparisons using appropriate estimates of variance and adjustment of significance levels, rather than a formal ANOVA model.			X	
The issues discussed above for air samples also should be addressed in the QAPP for soil samples and water samples.			X	
The method needs to specifically identify which RACM materials will be allowed to remain in the structure before demolition occurs.				X
On-site monitoring is inadequately [sic] to monitor momentary releases of particulate matter if it does not pass over a stationary monitor.				X
The method does not include an immediate enforceable stopping point if emissions are visually observed, rather it relies on air monitoring data to determine if asbestos fibers may have been released.				X
To be ensured of meeting equivalence and protectiveness all RACM should be adequately wetted and removed before the structure is demolished. When this is done there will not be any RACM allowed to be airborne during demolition.				X
If asbestos fibers are detected on the monitor there is not any way to measure what the release was beyond that point.				X
One test (Cowntown Inn) is not sufficient to determine equivalency to other types of construction (brick/concrete versus wood) and other types of ACM or significantly different concentrations of asbestos.				X

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
<p><b>Charge Question 2: Are the methods and procedures set forth in the documents adequate to ensure that the monitoring data will be a valid measure of any RACM released during the Fort Worth Method and NESHAP method Phase 2 demonstrations?</b></p> <p>... this reviewer felt that Phase [1] work was not appropriate for comparison with planned Phase 2. Phase 1 was a demolition of asbestos-containing building that IS NOT comparable with any of the Fort Worth Method plans applied to Cowtown site in Phase 2. Most of the asbestos in the demolition undertaken in Phase 1 was in the linoleum and mastic, not in either blown in asbestos or asbestos panels, and would not have become airborne (unless the building was blown up for demolition) during application of the Fort Worth method. This was the reason for what looked like an excellent result in phase 1. However, the Cowtown motel buildings have asbestos in TSI, transite panels, ceiling tile, surface texture as well as sheetrock. Thus, the finding of no measurable fugitive asbestos fibers from phase 1 tells us nothing about the success of plans for Phase 2 on the Cowtown Inn site or any other remediation of vacant structures where the method would be used.</p> <p>The ISO 10312 air asbestos method that is essentially the same as the ASTM D6280-04 method provides the most complete analysis of asbestos. ISO 10312 is more difficult and prone to differences in interpretation among analysts than the other air methods. Assuming the samples are not overloaded, ISO 10312 should provide the best airborne asbestos data that can be gathered.</p> <p>the statement "The current federal drinking water standard is 7 million structures per liter" is not correct. The correct federal drinking water standard is 7 million fibers longer than 10 um per liter.</p> <p>It is not clear whether all fiber sizes are to be considered in Fort Worth/NESHAPS comparison. The counting of all fiber sizes is required in EPA 100.1, but counting only those longer than 10 um are required in the water method EPA 100.2.</p> <p>Because the project will involve wastewater rather than drinking water the requirement... that the water be filtered through a 0.2 um filter could be a considerable challenge for the demolition crew.... There are equivalent treatment procedures using treatment additives and media filters that are better suited for large amounts of water.</p> <p>The last sentence on page 41 of Doc 2, "Prior to collecting the sample, allow the water from the water source to run to waste for a sufficiently long period to ensure that the sample collected is representative of fresh water" was taken from the drinking water situation and is not appropriate in this wastewater case.... The water should be collected without waiting.</p>	X		X	
			X	
			X	
			X	

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
On page 11 of Doc 3 the soil impact assessment is to use the Texas Risk Reduction Program applicable standards of 2,900 mg/kg and 1,500 mg/kg. These values are 0.29% and 0.15% respectively. Although the method the samples are to be analyzed is not stated on page 11 of Doc 3, a soil method is provided as Appendix C to Doc 2. This method (EPA Region 1 Standard Operating Procedure for the Screening and Analysis of Soil and Sediment Samples for Asbestos Content) and its addendum for more accurate quantitation is thought to be accurate in the 1.0% range but has not been validated at the 0.1% level. Data showing that this method is applicable for the Texas soil standards should be provided.		X		
The dust samples are to be collected and analyzed in accordance with D5755-02... [Dust methods D5755-02 and D5756] should only be used when there is fine dust and not when there is debris present. The debris should be analyzed by the EPA bulk methods.		X		
Chances of monitoring a small release of RACM are less likely to be detected than a larger visual release of particulates from the demolition activity.				X
Using a health/risk-based 0.003 asbestos fibers/cubic centimeter for PCM-equivalent fibers, as an acceptance criteria based on a one-month exposure. However, there is no known safe level of exposure to airborne asbestos fibers.				X
There are too many variables to collect reliable data and presume the data collected at the Cowtown Inn can be extrapolated to another demolition site.				X
There isn't any scientific data available that indicates how long asbestos fibers will stay airborne in the ambient air.				X
There doesn't seem to be a way to improve the monitoring. Additional monitors may not be sufficient to capture airborne fibers.				X
<b>Charge Question 3: Are the methods and procedures set forth in the documents adequate to ensure that the project has been designed to reduce the potential risk to people living in the area around the site in the event that there is a release of RACM during the demolition?</b>				
no clear authority for who decides if there are exceedences, and what will happen in that event... Who will do these things, and who has the legal responsibility if they are not done, or not done appropriately?	X	See CQ7		

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
<p>Fort Worth will use the criterion of 0.003 fibers/cc determined by TEM analysis of PCM/E fibers. This differs from the value of 0.0009 fibers/cc by TEM analysis of PCME fibers used in conjunction with the New York City 9/11 assessment and cleanup. This value is listed as a risk-based criterion for asbestos on the EPA website which says, "EPA is committed to setting the most stringent standards that can be technically achieved when testing residences for asbestos in air. We have set an initial risk-based clearance criteria for asbestos of 0.0009 fibers per cubic centimeter (f/cc)" (Ref: Testing Criteria and Limits, USEPA Response to September 11, www.epa.gov). The discussion of why another (higher and appearing to be less sensitive) value is more appropriate in the Fort Worth situation needs to be explained in more detail than is given on page 24 of Doc 2. On page 24 of Doc 2, the third full paragraph is confusing. In the previous paragraph, the value of 0.003 f/cc is described as having been determined by assuming a one-month exposure duration. The third paragraph begins by mentioning a one-year exposure is more conservative than the approach used at the World Trade Center but does not explain where the one-month duration assumption fits in. It would be best for EPA in Texas to use the same "most stringent standards that can be technically achieved" as is used by EPA in New York.</p>		X		
<p>The project will also analyze some high volume, area air samples by the traditional PCM analysis and compare the results to the OSHA PEL for asbestos workers that is a time-weighted-average of 0.1 fibers/cc. It is not stated whether the comparison of the Fort Worth monitoring will be done on a time-weighted basis. Because the potential release is expected to be episodic, if it occurs at all, the time-weighted averaging should not be used for the criteria for rapid response.</p>		X		
<p>The Cowtown Inn is located in a section of Fort Worth comprised of residential and commercial land uses. During the summer months residents will be out side and will have windows open. If any ACM becomes airborne it could have an impact on the residences.... If the winds change from the predominately south direction to a more easterly or westerly direction, any generated emissions will pass directly over a residential neighborhood. Emissions containing asbestos fibers could leave the demolition site.</p>				X
<p>The Fort Worth Method of wetting demolition debris may not sufficiently mix or penetrate Category I or Category II non-friable ACM. When material such as floor tile, ceiling tile, transite material, window putty, or built-up roof materials break into small pieces there will be a release of asbestos fibers.</p>				X
<p>It will be difficult to determine who may have inhaled any asbestos fibers. Therefore, it is unknown who will be at risk for developing an asbestos related disease.</p>				X
<p>An improvement would be to ensure that asbestos fibers are not leaving the demolition area. This will be done by controlling the RACM that remains in the structure by either removing ACM before demolition begins or adequately wetting ACM during the demolition process.</p>				X

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
<b>Charge Question 4: Are the Phase 2 documents detailed enough to be consistently followed by technical staff, demolition crews, and understood by area residents?</b>				
The authors of the document seem to equate public participation with environmental justice (EJ). I think this does a disservice to the community, and does not permit the local community to play a role in what will happen in their neighborhood.	X			
The project managers... do not seem to have put into place any active community interactions (newsletter is meaningless in this case) to involve neighbors in the upcoming process. Development of public participation plan should be well underway, but it clearly seems to be in the "we tell locals what is happening mode" with no real intent to have community members play any meaningful role.	X			
... the methods described in Doc 2 (QAPP) will cause some confusion for the analysts, demolition crews and residents. The documents are hard to follow because there is inconsistencies in the way the same information is presented in different documents. It would be better if all the information was in one easy to follow manual.		X		X
I recommend that the documents be reviewed by an editor who is not a member of the project team and, therefore, is less familiar with project objectives than the writers of the documents.			X	
No. The documents probably are adequate for technical staff and demolition crews, but not for the area residents.			X	
The discussions of the methods as to which parts will be used in this study appear to be taken from other projects where the situations under consideration are not similar. For instance, on page 45 of Doc 2 it is required that all cleavage fragments be counted. However, ISO Method 10312 does not provide sufficient information for an analyst to differentiate between asbestos fibers and cleavage fragments on an individual fiber basis.		X		
the statement that the anticipated air volumes are expected to be 1,500 liters is inconsistent with Table B-2 that provides information for air volumes of 3,000 liters.		X		
Some minor inconsistencies will plague those that attempt to prepare samples for the project. For instance, on page 45, Doc 2 requires that 4 grids be prepared from 1 quarter of the filter, but page 46 of the same document requires that 3 grids be prepared from different parts of the filter.		X		

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
It will also be nearly impossible to meet the quality control check of filter media (pages 48-49, Doc 2). It states, "... if the mean fiber count for asbestos fibers and bundles longer than or shorter than 5 um is more than 0.1 fiber/mm <sup>2</sup> , the filter lot will be rejected". Assuming a grid opening size of 0.01 mm <sup>2</sup> (as stated in Table B-2) it will be necessary to analyze at least 1,000 grid openings to show that the level of contamination on the unused media is less than the required 0.1 fiber/mm <sup>2</sup> (1 fiber / [1,000 grid openings x 0.01 mm <sup>2</sup> per grid opening] = 0.1 fiber/mm <sup>2</sup> ). Done properly, an analysis of 1,000 grid opening will take over 100 hours.		X		
the cleanup workers are to wear half-face respirators with P-100 cartridges. Although Table 4 in Doc 1 lists that there will be OSHA monitoring of workers, there is no discussion of personal air sampling in the documents. The level of protective equipment should be validated with personal air samples collected on the worker.	See CQ1	X		
<b>Charge Question 5: Currently, the NESHAP standards allow structures which have been determined structurally unsound and in danger of imminent collapse (40 CFR 61.145) to be demolished without prior removal of asbestos containing materials. Based on your knowledge and experience, do you believe that the proposed Fort Worth Method is more or less protective of human health and the environment than allowing abandoned structures to decay to the point of imminent collapse before demolition?</b>	X			
Because there is no information about details of protecting demolition workers, other than we will follow OSHA guidelines, the answer must be NO. No information about the demolition contractor is provided, about baseline health assessment of employees of this firm, and about the specifics of how workers' exposure to asbestos will be prevented. There is plenty of environmental sampling and monitoring, but nothing about assessment of worker risks.				
The scientific and technical data upon which to make the determination of whether the Fort Worth Method is more or less protective of human health is not contained in the three documents provided for review.		X		
I don't know where the information used in Table 4 ["Comparison of NESHAP Method and Fort Worth Method"] of the Phase 2 Demolition manual came from.				X
An improvement should be that 40 CFR Subpart M [the provisions for Imminent Collapse] are the rules that are to be followed. The reason is if other states were to follow The Fort Worth Method they will be unable to follow the NESHAP rules used in the state of Texas.				X

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
<b>Charge Question 6: Are the methods and procedures set forth in the documents adequate to ensure that the project has been designed to prevent visible emissions of asbestos containing materials through increased application of engineering controls and/or stop work activities?</b>				
The subjective nature of the judgment involved in the observation of visible emissions makes it difficult.		X		
The engineering controls proposed appear to be reasonable, however, the most important factor in preventing a problem will be the person on-site with the authority to shut things down if there appears to be a potential problem.		X		
What will happen if there is hard to wet materials such as magnesium block, floor tile, transite material, insulation covered with a metal jacket, pipe chases, pipe wrap above plaster ceilings, built-up roofing, caulking material, mud packed pipe joints. There could be a significant fiber release when these materials are broken into small pieces				X
These material [magnesium block, floor tile, etc.] could cause visual emissions that might not be seen outside the structure.				X
A response action will not occur until after visual emissions are observed coming from the demolition operation. A momentary release to a medium sustained release only requires additional wetting to be done. Only after a large uncontrolled release takes place will air samples be analyzed using the TEM method. Also, visibly impacted areas may be cleaned up with a HEPA vacuum if possible.				X
After a release has occurred there isn't any scientific way to determine the impact on the area surrounding the Cowtown Inn.				X
An improvement will be to conduct a comprehensive AHERA-inspection and remove more RACM materials before demolition begins. The more RACM removed before demolition means that much less likely to be released in the ambient air.				X
<b>Charge Question 7: Do the documents contain adequate procedures and factors to decide whether to modify or stop the demolition work in the event that conditions during the demolition present a threat to public health and the environment?</b>				
... because this has been done only once before and all the situations that might arise cannot be anticipated, the decision making process of the individuals in charge of the project must be well defined and thoroughly understood beforehand.		X		
The document must make it clear (and all agencies must agree) who has the duty and responsibility to issue the "stop work" order.	X	X		

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
If there are visible emissions leaving the demolition site, it may already be too late for corrective action to happen. It will take 24-48 hours to prep and analyze a TEM cassette for asbestos.				X
Also there isn't any monitoring being done at the landfill site. What happens if there are visual emissions caused during the unloading and burying of demolition debris?				X
Will the same air and emissions that pass over the upwind monitors pass over the downwind monitors? This seems unlikely and will not give accurate data.				X
If there is an emission release of asbestos from the demolition site the risk factor of later health effects will be unknown. There won't even be a mechanism available to identify everyone that was exposed to asbestos.				X
<b>Other Comments</b>				
frequent mention of tasks to be done (such as QA/QC), but no details as to who was responsible for doing them	X			
hodge-podge of community history, national statistics on vacant structures, and tornadoes that had no relevance to asbestos hazard or the Fort Worth Method or EPA or the Cowtown Inn site	X			
Phase 1 was inappropriate for comparison with planned Phase 2.... the finding of no measurable fugitive asbestos fibers from phase 1 tells us nothing about the success of plans for Phase 2 on the Cowtown Inn site or any other remediation of vacant structures where the method would be used	X			
If... there are no large episodic releases, the Fort Worth Method will be successful. However, if there is... an episodic dust release, it will be difficult to explain the results to the residents regardless of how small the risk is determined to be.		X		
[Asbestos Remediation Plan: Phase 2 Demolition] Page 1 - second paragraph, first sentence: Confuses exposure limit with emissions, such as "no visible emissions" under the Asbestos NESHAP. Change to - "Currently there are no EPA exposure limits that apply to building demolition operations."			X	
both the Asbestos Remediation Plan: Phase 2 Demolition and the Quality Assurance Project Plan (QAPP) contain inconsistencies and sections where the presentations are confusing.			X	

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
the statistical analysis methods described in the QAPP will not make the best use of the data for testing the performance of the Fort Worth Method or for comparing it to the NESHAP Method.... the current plan overlooks a variety of simple summary statistics that would provide a basic understanding of the performance of the Fort Worth Method. In contrast, the model proposed for statistical analysis, full factorial repeated measures ANOVA, is too complex and too "compact." It embodies assumptions that could lead to erroneous conclusions.			X	
There needs [to] be more scientific information for a complete review.				X
I want to know if all friable or presumed asbestos materials were tested including mastics or any built-up roofing material. If the PCM results were under 10% were the bulk samples point counted? Did they aggressively look for materials that were in hidden cavities or in floors?		X		X
the materials that tested positive for asbestos in the buildings to be demolished were transite, and interior surface texture with joint compound.... The transite material is not easy to wet and should be removed before demolition begins.				X
The biggest concern is that once Phase 2 is completed there will no longer be any monitoring available.				X
It is very unrealistic to use the OSHA PEL of 0.1 fibers/cc, the OSHA clearance level of 0.01 fibers/cc, or a health/risk standard of 0.003 asbestos structures/cc in an outdoor setting. This is because the volume of air, wind direction, wind speed, and emissions passing the monitoring sites are too variable to give reliable data. Because airborne concentrations of asbestos fibers were low is not an absolute indication that fibers did not leave the demolition site.				X
The Fort Worth Method... does not adequately define or describe how RACM would be adequately wetted or remain wetted from the time of demolition to the time of disposal at the landfill.				X
Many Category I and Category II materials will be difficult to sufficiently mix or penetrate with a liquid to prevent the release of particulates.				X
By not using lined trailers or trucks wet materials can leak out on to streets during transport to the landfill and also cause a control problem at the landfill.				X
Another issue at the demolition site will be to control contaminated material from leaving the footprint of the debris pile.				X
What are the true costs of removing all RACM prior to demolition by the NESHAP method versus the Fort Worth Method?... The Phase 2 demolition could be as costly as the Asbestos NESHAP method.				X

Issue	Reviewer			
	Goldsmith	Millette	Price	Weix
During further demolitions there will not be any monitoring. Thus, the demolition contractor may not be meeting the requirements of the Fort Worth Method.				X
The... primary goal of the project is not to protect the public and the environment. The primary goal is to demonstrate that building demolition using the Fort Worth Method causes no more asbestos exposure than building demolition by the Asbestos NESHAP method.			X	
the objective is not to determine if there is a statistically significant difference between upwind and downwind concentrations, but to determine whether or not the downwind concentrations are statistically higher than the upwind concentrations. (The null hypothesis should be: the downwind concentration is the same or lower than the upwind concentration.)			X	
it is true that the determination of 0.003 f/cc has uncertainty associated with it, but not specifically because of the short time period of exposure. The uncertainty is a consequence of linear low-exposure extrapolation and failure to differentiate asbestos fiber types, among other things.			X	
the argument for not sampling during idle times is not satisfactory.... Buildings demolished by the Fort Worth Method do not embody the risks associated with imminent spontaneous collapse. However, these buildings may contain asbestos that would not be present in buildings demolished by the standard NESHAP Method. Sampling during idle times seems necessary to demonstrate that the Fort Worth Method does not lead to greater asbestos exposure than the typical NESHAP Method. Therefore, if idle-time sampling is eliminated from the project, the justification must be something other than "there is no idle-time sampling for demolition of buildings in danger of imminent collapse."			X	
How could there be different analytical sensitivities for different sized structures unless separate air samples are collected and analyzed for each structure type or the filter area inspected for one fiber size is different from the area inspected for the other size?			X	