CTEH THE SCIENCE OF READY™

South 4 Group Fire
Port Neches, TX
Community Assessment Plan

Prepared on Behalf of:

TPC Group

Prepared By:

CTEH, LLC

5120 Northshore Drive

Little Rock, AR 72118

501-801-8500

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	Name/Organization	Signature	Date Signed
Prepared by:	Shawn Wnek, PhD, DABT; CTEH		12/4/2019
Reviewed by:	Angela L. Perez, PhD; CTEH	Angela L Perez	12/4/2019
Approved by:			
Approved by:			
Approved by:			
Approved by:			
Approved by:			
Approved by:			

Introduction

In response to the South 4 Group Fire and at the request of TPC Group with Unified Command, CTEH® has been asked to conduct observational assessments, sampling, and real-time air monitoring at locations (i.e., residential, commercial, and public areas) in the adjacent community in Port Neches, TX. These observational assessments and sampling events requests have been driven by concerns over the presence of asbestos-containing material (ACM) which may have been dislodged or mechanically disturbed during the South 4 Group Fire and subsequently transported to off-site locations. In addition to ACM, volatile organic compounds (VOCs) – including 1,3-butadiene – were involved in the South 4 Group Fire and their presence or absence in ambient air continues to be assessed as an integral part of ongoing response efforts.

To assess these aforementioned analytes (asbestos, VOCs, 1,3-butadiene) at community locations surrounding the South 4 Group Fire, CTEH may conduct a thorough survey of each residence, commercial structure, or public area upon request. This survey will include an initial qualitative assessment for ACM and CTEH may perform both a visual inspection and photo documentation of any debris and/or property damage potentially associated with the incident. If this qualitative assessment indicates the presence of debris material that may contain ACM, the material may be collected using appropriate handling techniques and sent to a certified laboratory for analysis of asbestos. Additionally, at each location surveyed, CTEH may utilized hand-held air monitoring instruments to measure the airborne concentration, if any, of general VOCs[1] and 1,3-butadiene. Because 1,3-butadiene has an odor described as *"mildly aromatic"* which may be observed at airborne concentrations <1 ppm, the presence or absence of incident-associated odors may be documented.

An overview of the observational assessment, real-time air monitoring, and ACM-sampling techniques is provided in detail below. In addition to exterior observational assessments and sampling, interior assessments and sampling events may occur at the request of the property owner.

Initial Home Assessment and Sampling Methodologies

CTEH® personnel may be deployed to various locations throughout the Port Neches, TX community to conduct visual assessments for incident-related property damage and debris fallout. At the outset, CTEH will conduct an external circumferential walk through of the property noting any incident-related property damage (i.e., broken windows, damaged structures) in additional to debris which may potentially be associated with the South 4 Group Fire. If any incident-related debris is identified, a bulk sample will be collected and may be sent to an accredited laboratory for subsequent analysis and archival purposes. The appropriate analysis will be determined based on the qualitative visual assessment. A specialized team will be deployed to the location to remove the debris after a sample is collected, if warranted. Throughout this external assessment, CTEH® will utilize the MultiRAE PID (10.6 eV lamp) and Drager X-PID 8500 to assess for outdoor ambient concentrations of VOCs and 1,3-butadiene, respectively. Additional information about each property (i.e., age of structure) will also be collected, if available at the time of survey.

Commented [RJ1]: If 1,3-butadiene is detected above the risk-based level, confirming the identify of chemical and concentration using a technique such as a tedlar bag would be advised.

If requested by the property owner, the assessment team may conduct additional assessments within the internal structure of the residence or commercial property. In this instance, CTEH will conduct a similar visual assessment and real-time air monitoring within structures.

[1] As assessed using a photoionization detector (PID) with a 10.6 eV lamp.

Surface Wipe Sampling

Surface wipe samples may be collected by CTEH® personnel at various locations throughout the Port Neches community and analyzed by EMSL Analytical, INC. by the analytical method ASTM-D6480 (Wipe Sampling of Surfaces, Indirect Preparation and Analysis for Asbestos Structure Number Concentration by Transmission Electron Microscopy)[ADDIN EN.CITE <EndNote><Cite><Author>ASTM</Author><Year>1999</Year><RecNum>47097</RecNum><DisplayText>(ASTM, 1999)</DisplayText><record><rec-number>47097</rec-number><foreign-keys><key app="EN" db-id="s9xsvfdrzddxf1e2spdpxet6vs9sv0pzsaap" timestamp="1559157276" guid="0ec4d0e5-4d1c-4e7c-9759-ff2c36ec4a70">47097</key><key app="ENWeb" db-id="">0</key></foreign-keys><ref-type name="Report">27</ref-type><contributors><authors><author>ASTM</author></authors></contributors><titles><title>Standard Test Method for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Number Concentration by Transmission Electron Microscopy</title></titles><keywords><keyword>Wipe Sampling</keyword><keyword>Asbestos</keyword></keywords><dates><year>1999</year><pub-dates><date>1999</date></pub-dates></dates><pub-location>West Conshohocken, PA</pub-location><publisher>American Society for Testing and Materials</publisher><isbn>D6480-99</isbn><label>21788</label><urls></urls><research-notes>L:\021501-022000\021788.pdf</research-notes></record></Cite></EndNote>]. As stated by ASTM-D6480, *"This wipe sampling and indirect analysis test method is used for the general testing of surfaces for asbestos. It is used to assist in the evaluation of surfaces in buildings…"*. This test method ultimately provides an estimate of the concentration of asbestos reported as the number of asbestos structures per unit area of sampled area (structures / square cm). As discussed in a subsequent section *"a single direct relationship between asbestos sampled from a surface and potential human exposure does not exist…"*, thus results from these assessments will be utilized as discussed in the section entitled *"Interpretation of Surface Sampling Results"* below.

In accordance with the method, non-porous surfaces will be designated for wipe sampling. At each location to the sampled, the following information will be collected:

- General Site Description
- Property Address
- Sample Location (i.e., exterior or interior, room type or number)
- Surface Type (i.e., floor, wall, top of light fixture, etc.)
- Surface Material (i.e., painted plaster or drywall, wood, stone, metal, etc.)
- Surface Description (i.e., color, texture, dry, greasy, etc….)
- Area of surface wipe (100 cm^2 template to be used, if appropriate)
- Post-Sampling Cleanliness of Surface

CTEH will begin the sampling process by taking a pre-wiped photograph of the surface to be sampled. Subsequently, wipe samples will be collected from these surfaces utilizing pre-saturated isopropyl clean room wipes for asbestos with ASTM 6480, or equivalent, using a standardized template of 100 cm^2 to ensure consistent sample collection. The template will be placed upon the designated sample collection area and the sample will then be collected by first wiping horizontally, then vertically across the entire template area, and finally around the interior of the template to ensure collection in the

template corners. The folded wipe will be placed in an appropriate container for shipment to the laboratory. The exterior of the surface of each sample transport container will be wiped with a wet towel (or similar) prior to shipment to the laboratory. Samples will be shipped separate from other types of samples potentially containing asbestos (e.g., bulk ACM or micro-vacuum samples).

As stated by ADTM D-6480, because one or more large asbestos containing-particles dispersed during sample preparation may results in large asbestos concentration results in microscopy analysis, duplicate independent samples may be collected in the same area. At least one field blank will be provided for each sample group and/or shipment to the laboratory.

Microvacuum Sampling

In addition to surface wipe sampling, micro-vacuum sampling may be conducted by CTEH® personnel at various locations throughout the Port Neches, TX community and analyzed by EMSL Analytical, INC by the analytical method ASTM-D5755 (Microvacuum Sampling and Indirect Analysis of Dust by TEM for Asbestos Structure Number Concentrations). As stated by ASTM – D5755, this "*test method covers a procedure to (a) identify asbestos in dust and (b) provide an estimate of the surface loading of asbestos in the sampled dust reported as the number of asbestos structures per unit area of sampled surface.*" As stated in ASTM – D5755, "*This microvacuum sampling and indirect analysis test method is used for the general testing of non-airborne dust samples for asbestos. It is used to assist in the evaluation of dust that may be found on surfaces in buildings…*". This test method ultimately provides an estimate of the concentration of asbestos reported as the number of asbestos structures per unit area of sampled area (structures /cm^2). As stated by ASTM D5755, *"at present, no relationship has been established between asbestos-containing dust as measured by this test method and potential human exposure to airborne asbestos…",* thus results from these assessments will be utilized as discussed in the section entitled "*Interpretation of Surface Sampling Results*" below.

At the outset, the method recommends that users maintain a log with all pertinent sampling information. As such, CTEH may collect the following information:

- General Site Description
- Property Address
- Sample Location (i.e., exterior or interior, room type or number)
- Surface Type (i.e., floor, wall, top of light fixture, etc.)
- Surface Material (i.e., painted plaster or drywall, wood, stone, metal, etc.)
- Surface Description (i.e., color, texture, dry, greasy, etc....)
- Area of surface microvacuumed (100 cm^2 template to be used, if appropriate)
- Post-Sampling Cleanliness of Surface

The ASTM test method specifies that a minimum of two orthogonal passes occur on each surface with a minimum of two minutes sampling time. Scraping and/or abrading the surface will be avoided. Microvacuum sampling may be conducted in both pre-cleaning and post-cleaning locations in order to identify those areas which may require cleanup or verify the effectiveness of the cleaning process. Microvacuum samples will be collected using and a standardized template to ensure consistent sample collection. After samples are clearly labelled, the exterior surface of cassettes will be wiped with wet wipes (i.e., baby wipes) prior to packaging samples for shipment to the laboratory. Samples will be shipped separately from bulk ACM or wipe samples.

Real-Time Air Monitoring

CTEH may also conduct real-time air monitoring at each residence and/or property for assessment of general VOCs and 1,3-butadiene. In short, during each exterior assessment, CTEH may collect several VOC and 1,3-butadiene readings using the MultiRAE PID and Drager X-PID 8500, respectively. These readings will be recorded electronically and matched to each monitoring address using a pre-assigned assessment tracking identifier (ATRID). Action levels for exterior readings will be utilized as defined in the South 4 Group Fire Air Sampling Plan (Air SAP) for the response.

If requested, CTEH may also collect readings within the interior or residence of a property. It is notable that the presence of VOCs in general is not unusual in homes and may be influenced by the individual properties building materials and the presence of household cleaners and fragrance devices. CTEH will conduct real-time air monitoring for VOCs at a minimum of three locations within each building to include: a main lobby or indoor living space and two additional locations which are designed to be occupied for an extended period of time (e.g., office or bedroom). Action levels for indoor real-time air monitoring and recommended associated actions are provided in **Table 1**, below.

Table 1. Indoor Screening Levels for Real-Time Air Monitoring

Analyte	Action Level	Basis	Action to be Taken
VOCs	1 ppm	General VOC reading for approximately TCEQ 24-hr AMCV for Butadiene	Identify Source of VOC, if possible. Conduct assessment for presence of 1,3-butadiene

1,3-Butadiene	0.430 ppm	TCEQ 24-hr AMCV for 1,3-butadiene	Assess outdoor 1,3-butadiene levels. If 1,3-butadiene levels are non-detect then ventilate home by opening windows and/or doors for a minimum of 4 hours with HVAC running. Close all windows and allow home to equilibrate for 24 hrs. Conduct additional real-time air monitoring at that time.

Interpretation of Surface Sampling Results

The results of surface sampling techniques for asbestos will be used as an investigative tool to evaluate the presence or absence of asbestos and may be used to evaluated pre- and post-cleaning remediation procedures and/or effectiveness. Due to the numerous factors that influence the relationship between fiber concentrations in settled dust and indoor air, including surface porosity, activity patterns, air exchange rates and interior volume, benchmarks for asbestos in settled dust based on projected concentrations in indoor air have not been established (COPC, 2003; USEPA's Contaminants of Potential Concern (COPC) Committee of the World Trade Center Indoor Air Task Force Working Group (COPC, 2003) for indoor settled dust). However, the results of settled dust samples may be used to support risk management decisions. USEPA has previously established a cleanup action level of 5,000 structures/cm^2 in indoor settled dust for a Libby, Montana asbestos site and for the World Trade Center (WTC) cleanup programs [ADDIN EN.CITE ADDIN EN.CITE.DATA]. The USEPA noted that the decision for action level for the WTC cleanup was not risk-based; rather it was set as two-to-three times the background level, while the risk assessment in the Libby cleanup program contained great uncertainty due to the conversion from a surface area concentration to airborne concentration [ADDIN EN.CITE ADDIN EN.CITE.DATA].

Commented [RJ2]: The 5,000 structure /cm2 is used a factor to determine if air sampling should be conducted. Air samples can be compared to defensible risk-based values.

Sample Handling Procedures

Samples will be placed in laboratory supplied sample containers appropriate for the intended analysis, labeled with sample identification number, sampler name, sample date, analysis and methodology requested, and time of sample collection, and immediately placed in sealed containers for laboratory analysis. Samples will be packaged, labeled, retained on ice (if necessary), and documented in an area which is free of impact and provides for secure storage. Bulk ACM, asbestos wipe samples, and asbestos microvacuum samples will be shipped separately from one another as to minimize the potential

for cross-contamination from one media-type to another. Custody seals will be placed on each sample containing cooler, and chain-of-custody procedures will be maintained from the time of sample collection until arrival at the laboratory to protect sample integrity. Transporting of samples to the laboratory will be done within a timeframe such that recommended holding times are met.

Quality Assurance

To provide QA for the proposed sampling event, sampling, analysis, and data validation procedures will be performed. Sampling will be carried out in with quality assurance (QA) in mind with appropriate blanks collected as per their respective ATSM Methodology. The goal of the QA process is to document that samples are collected without the effects of accidental cross- or systematic contamination and refers to the sampling, analysis, and data validation procedures for generating valid and defensible data.

Laboratory quality control procedures will be conducted in a manner consistent with relevant state and federal regulatory guidance. Deliverables will contain the supporting documentation necessary for data validation. Validation of the data generated by the laboratory performing the analyses will include at a minimum sample holding times, accuracy, precision, contamination of field generated and/or laboratory method blank. Precision may be determined by evaluating laboratory and field duplicate samples. Level II data validation may be performed on up to 100% of submitted samples. Level IV data validation may be performed on a subset submitted samples, if requested.

Management of Change

Change from version 1.0 to 1.1

- *In the section titled:*

	Name/Organization	Signature	Date Signed
Prepared by			
Reviewed by			
Approved by			
Approved by			
Approved by			
Approved by			

References

[ADDIN EN.SECTION.REFLIST]