CHEROKEE NATION
Environmental Programs

Asbestos Sampling Report

PARTICIPANT: #11208

PREPARED BY: Nick Clark **DATE:** 11-13-18
NICK CLARK. ENVIRONMENTAL SPECIALIST II

REQUESTED BY: HACN HOUSING REHABILITATION – GEORGE HUBBARD

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I. Site Inspection/Description

Cherokee Nation Environmental Programs (CNEP) has conducted asbestos sampling for the presence of asbestos containing materials (ACM) for the following site:

Address: 408 S. Lee Ave. Tahlequah, OK 74464
Phone 918-360-7766
Lat/Long 35.911561 -94.979364

The sampling was performed to determine the presence of all ACM from within the affected parts of the structure for EPA's National Emissions of Hazardous Air Pollutants (NESHAP) compliance as well as OSHA worker protection.

The inspector responsible for this project was:

Nick Clark ODOL, AHERA Inspector, License No: OK401243

The sampling was conducted on November 13, 2018 at the request of the Cherokee Nation Housing Rehabilitation Department.

The site is a single family home built in 1940. Sampling was limited to areas that would be affected by the project scope of work (Appendix A) provided by the housing rehabilitation department.

ACM was found at this site. See Section IV for locations.

II. BACKGROUND

The Oklahoma Department of Environmental Quality (ODEQ) has adopted EPA's NESHAP regulation under OAC252:100, 41-15 and has been delegated authority in the state of Oklahoma for its enforcement. Section 61.145(a) of Federal EPA regulation states that prior to commencement of the demolition or renovation of a facility a thorough inspection of the affected part or parts of a facility is required to determine the presence of all asbestos including Category I and Category II non-friable, and friable ACM. ACM is defined by EPA and OSHA as any material that contains greater than 1% asbestos.

III. FIELD PROCEDURES AND ANALYTICAL METHODS

During the on-site inspection, we visually assessed the physical characteristics of suspect asbestos-containing materials (SACM) based on homogeneous areas. Homogeneous areas are areas of asbestos similar in color, texture, and construction, date of application, and in general appearance. For purposes of renovation and demolition, homogeneous areas of SACM can be further classified according to NESHAPs rules by whether the material is friable, Category I non-friable, or Category II non-friable.

Friable ACM is defined by NESHAPs rules as any material containing more than 1% asbestos as determined by Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure.

Category I Non-friable ACM is defined by NESHAPs rules as any asbestos-containing packings, gaskets, construction mastics, resilient floor covering (i.e. floor tiles, roll sheet flooring) or asphalt roofing products that contain more than 1% asbestos as determined by PLM.

Category II Non-friable ACM is defined by NESHAPs rules as any material, excluding Category I non-friable ACM, containing more than 1% asbestos as determined by PLM, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Typically, non-friable materials, such as transite (cementious products) and vinyl floor tiles are not regulated by the State of Oklahoma provided they do not become friable. General deterioration, machine grinding, drilling, sanding, and dry-buffing are all ways of causing non-friable materials to become classified as Regulated Asbestos Containing Materials (RACM). All friable materials are classified RACM. Please note that the following materials, even though classified as non-friable are fully regulated by Oklahoma Department of Labor for removal purposes as friable material: ceiling tiles, roll sheet flooring (linoleum), and joint wall compound when deemed friable

In addition to classification of suspect material into friable and non-friable materials, a determination of current condition was conducted as part of the physical assessment. The condition noted is the representative of the material at the time of inspection. Conditions of materials can change very quickly when disturbed. All suspect material was placed in one of the following categories of condition.

Significantly damaged: Material that is damaged, blistered, deteriorated, water stained over at least 10% of its total area.

Damaged: Material that is damaged, blistered, deteriorated, water stained less than 10% of its total area.

Good: Material that has no visible damage or deterioration.

Guidelines used for the number of samples collected per homogeneous area were determined using the Asbestos Hazard Emergency Response Act (AHERA) protocol promulgated in 40 CFR 763, Appendix E as follows:

Surfacing materials – material that is sprayed or troweled on wall, ceilings, or support columns for fireproofing, acoustical, or even decorative purpose.

- Less than 1000 ft2 – Minimum 3 samples
- From 1000-5000 ft2 – Minimum 5 samples
- Greater than 5000 ft2 – Minimum 7 samples

Thermal System Insulation(TSI) materials – thermal system insulation material applied to tanks, boiler, pipes or other structural component for an insulating purpose.

- May omit areas of fibrous glass, foam glass, rubber, and Styrofoam form sampling. Areas that have mastic on seams or outer jacketing will be sampled.
- At least three samples must be collected from each homogeneous area of TSI.
- Plus an additional sample from each patched area of less than 6 linear feet.
- Fittings require a sufficient amount to determine positive or negative nature.
- Inspector will first collect samples from damaged areas, exposed ends, or areas missing jacketing first.

Miscellaneous materials – all other material that are not thermal system insulation or surfacing materials. This includes gaskets, packings, joint wall compound, cementious asbestos materials, ceiling tiles resilient flooring materials, construction mastics, etc..

- May assume and document as such
- A sufficient amount of samples to determine negative or positive nature. A minimum or one per suspect homogeneous area.
- Collect samples from inconspicuous locations.
- Material such as cementious asbestos or vibration dampening cloths should not be sampled and will be assumed ACM unless instructed by client to collect these samples.

Bulk samples of suspect ACM were analyzed by Polarized Light Microscopy (PLM) in accordance with EPA Methods 600R-93/116. All samples were sent to a NVLAP accredited laboratory for analysis. Quantem laboratories (NVLAP # 101959-0) in Oklahoma City, OK analyzed the samples. A copy of the full laboratory report and chain of custody can be found in Appendix B.

IV. SUMMARY OF FINDINGS

A total of 8 samples were analyzed from 4 homogeneous areas due to multi-layers of material within some homogeneous sample areas. Photographs of all ACM can be found in Appendix C. All accessible and observable areas within the renovation area were sampled for ACM. Samples were not taken of suspect materials that may have placed the inspector at risk of injury (i.e. electrical panel boxes). Any suspect ACM that have not been tested and/or found positive for asbestos bust be assumed ACM until they are analyzed. Upon review of laboratory analysis, the following asbestos containing

materials can be found in Table 1. All suspect ACM samples that were analyzed and did not contain asbestos can be found in Table 2.

Table 1. Asbestos Containing Materials

Sample #	Material Description	Locations	Friability (Friable, NF Cat I NF Cat II)	Condition	Sample Results (% Asbestos)
02-01	Cement Siding	Exterior	NF Cat II	Damaged	30

Table 2. Non – Asbestos Containing Materials

Sample #	Material Description	Locations	Condition	Sample Results (% Asbestos)
01-01 01-02 01-03 01-04 01-05	Drywall Texture	Throughout	Good	None Detected
03-01	Shingle	Roof	Good	None Detected
04-01	Felt Paper	Roof	Good	None Detected

V. CONCLUSIONS

Asbestos is not always an immediate hazard. Intact and undisturbed ACM does not pose a health risk. They may, however become a health hazard if they are damaged, disturbed, or deteriorate over time and release fibers into the air. There are no federal, state, or Tribal laws mandating asbestos removal. It is only when the material can no longer be maintained in good condition and/or airborne concentrations of asbestos are measured and found to be above a permissible exposure limit (PEL), or when the building is to be demolished or renovated, that removal may become necessary. Any renovation/demolition work which may impact these positive materials should be conducted in accordance with all applicable Federal, state, and local regulations.

QUANTEM LABORATORIES
2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 301845
Account Number: C162

Client: Cherokee Nation Environmental Programs
Carlton N Clark

Date Received: 11/12/2018
Received By: Taylor Van Syckle
Date Analyzed: 11/13/2018
Analyzed By: Cassie Sanborn
Methodology: EPA/600/R-93/116

Project Location: Tahlequah
Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	01-01	Layered	Gray Texture	Asbestos Not Present	NA	CaCO3 Paint
001a		Layered	White Sheetrock	Asbestos Not Present	Cellulose 10 Glass Fiber 5	Gypsum
002	01-02	Homogeneous	Gray Texture	Asbestos Not Present	NA	CaCO3 Paint
003	01-03	Homogeneous	Gray Texture	Asbestos Not Present	NA	CaCO3 Gypsum Paint
004	01-04	Homogeneous	Gray Texture	Asbestos Not Present	NA	CaCO3 Gypsum Paint
005	01-05	Layered	Gray Texture	Asbestos Not Present	NA	CaCO3 Gypsum Paint

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

QuanTEM is a NVLAP accredited PLM laboratory (Lab Code: 101959-0). This report relates only to the specific items tested. NVLAP accreditation applies only to analysis performed utilizing EPA/600/M4-82-020 and EPA/600/R-93/116 methods. This report may not be used to claim product endorsement by NVLAP or any agency of the US Government. This report may not be reproduced except in full, without the written approval of the laboratory.

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Project Location: Tahlequah
Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
005a		Layered	White Sheetrock	Asbestos Not Present	Cellulose 10 Glass Fiber 5	Gypsum
006	02-01	Homogeneous	Gray Siding	Asbestos Present Chrysotile 30	NA	CaCO3 Paint
007	03-01	Homogeneous	Gray Shingle	Asbestos Not Present	Glass Fiber 25	Tar Sand
008	04-01	Homogeneous	Black Tar Paper	Asbestos Not Present	Cellulose 70	Tar

Cassie Sanborn

Cassie Sanborn, Analyst

11/13/2018
Date of Report

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ASBESTOS CHAIN OF CUSTODY

QuanTEM LABORATORIES
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2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No.	30845
	Accept / Reject

Contact Information			
Company:	Cherokee Nation Environmental Programs	Phone:	(918) 453-5000
Contact:	C. Nicolas Clark	Cell Phone:	(918) 316-7451
Account #:	C162	E-mail:	carlton-clark@cherokee.org
SAMPLED BY:	Name: C. Nicolas Clark	Date:	11/7/18

Project Information	
Project Location:	Tahlequah
Project ID:	
P.O. Number:	225550

Report Results (☑ one box)	
☐	QuanTEM Website
☑	Email carlton-clark@cherokee.org
☐	Other _____

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
C. Nicolas Clark	11-7-18 @ 10am	FedEx Exp.	[signature]	11/12/18 @ 10:00

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

PLM	
☑	Bulk Analysis (EPA 600/R-93/116)
☐	400 Point Count
☐	1000 Point Count
☐	Gravimetric Preparation
☐	Particle ID

PLM	
☐	Vermiculite Attic Insulation (EPA 600/R-04/004)
☐	Other

PCM	
☐	NIOSH 7400

TEM	
☐	Air- AHERA
☐	Air- NIOSH 7402
☐	Air- ISO 10312
☐	Drinking Water- EPA 100.2
☐	Waste Water- EPA 600/4-83-043

TEM	
☐	Bulk- Presence / Absence EPA600/R-93/116
☐	Bulk- Quantitative [weight%]- Chatfield
☐	Dust- Presence / Absence
☐	Dust- Quantitative [fibers/sq.cm]- ASTM D5755
☐	Other

TURNAROUND TIME	
☐	Rush
☐	Same Day
☑	24 - Hour
☐	3 - Day
☐	5 - Day

No.	Sample ID (10 Characters Max)	☑ To Be Analyzed	Color	Description	Volume / Area (as applicable)	Comments / Notes
1	01-01	☑	Grey	Drywall Texture		Throughout
2	01-02	☑	Grey	Drywall Texture		Throughout
3	01-03	☑	Grey	Drywall Texture		Throughout
4	01-04	☑	Grey	Drywall Texture		Throughout
5	01-05	☑	Grey	Drywall Texture		Throughout
6	02-01	☑	Grey	Cement Siding		Exterior
7	03-01	☑	Grey	Shingle		Roof
8	04-01	☑	Black	Felt Paper		Roof
9		☐				
10		☐				

SATURDAY FEDEX SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"
Please Note - UPS and USPS are NOT available for Saturday Delivery