

**ASBESTOS MANAGEMENT AND OPERATING PLAN
FOR
MCCONNELL AIR FORCE BASE**

LAST UPDATE 2003

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GLOSSARY OF TERMS

ABATEMENT: The act of removing, encapsulating, enclosing, or repairing ACM.

AFI: Air Force Instruction.

ASBESTOS: A group of naturally occurring minerals that separates into small thin fibers.

ASBESTOS CONTAINING MATERIAL (ACM): Any material containing greater than one percent asbestos by weight.

CLASS I ASBESTOS WORK: Activities involving the removal of thermal system insulation (TSI) and surfacing ACM and PACM.

CLASS II ASBESTOS WORK: Activities involving the removal of ACM, which is not TSI or surfacing material. Some examples are the removal of asbestos containing wallboard, floor tile, roofing and siding, shingles, and construction mastic.

CLASS III ASBESTOS WORK: Repair and maintenance operations where ACM including TSI and surfacing material is likely to be disturbed.

CLASS IV ASBESTOS WORK: Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.

COMPETENT PERSON: As described in 29 CFR Part 1910.1001 and 1926.1101.

DEMOLITION: The destruction or removal of any load-bearing structural member of a facility together with any related handling operations or the intentional burning of any facility.

DISTURBANCE: Contact which releases fibers from ACM/PACM or debris containing ACM or PACM. Activities that disrupt the matrix of ACM/PACM, render ACM/PACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM/PACM in order to access a building component. The amount of ACM/PACM so disturbed shall not exceed that which can be contained in one glovebag, which shall not exceed 60 inches in width and length.

FRIABLE ASBESTOS MATERIALS: Any material containing more than one percent asbestos, as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

GLOVEBAG: A sealed compartment with attached inner gloves used for the handling of ACM.

NARS: National Asbestos Registry System.

NIOSH: National Institute for Occupational Safety and Health.

NVLAP: National Voluntary Laboratory Accreditation Program.

OSHA: Occupational Safety and Health Administration.

PARTICULATE ASBESTOS MATERIAL: Finely divided particles of asbestos or material containing asbestos.

PLM: Polarized light microscopy, as defined in Appendix A, subpart F, 40 CFR part 763, section 1.

PRESUMED ASBESTOS CONTAINING MATERIAL (PACM): TSI and surfacing material found in buildings constructed no later than 1980. The designation of a material as PACM may be rebutted pursuant to 29 CFR 1926.1101, paragraph (k)(4).

RCRA: Resource Conservation and Recovery Act.

REMOVAL: All operation where ACM is taken out or stripped from structures or substrates and disposed of at an acceptable site, including demolition operations.

RENOVATION: Altering in any way one or more facility components, including the stripping or removal of ACM from a facility component. Operations in which load-supporting structural members are destroyed or removed are excluded.

REPAIR: Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM attached to structures or substrates.

RACM: Regulated ACM. RACM means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP).

TSCA: Toxic Substance Control Act.

SURFACING MATERIAL: Material that is sprayed on, trowled on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing material on structural members, or other materials on surfaces for acoustical, fire proofing, or other purposes.

THERMAL SYSTEM INSULATION (TSI): ACM applied to pipes, fittings, boilers, tanks, ducts, or other structural components to prevent heat loss or gain.

VISIBLE EMISSIONS: Any emissions, which are visually detectable without the aid of instruments coming from RACM or asbestos containing waste material, or from any asbestos milling, manufacturing, or fabricating operation.

LIST OF ACRONYMS

ACM	Asbestos Containing Material
A&E	Architect and Engineering Firm
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AHERA	Asbestos Hazard Emergency Response Act
AOP	Asbestos Operations Plan
APM	Asbestos Program Manager
BCE	Base Civil Engineer
BEE	Bioenvironmental Engineering (SGGB)
CD	Deputy Base Civil Engineer
EAO	Engineering Asbestos Officer
CEC	Engineering Flight
CEH	Housing Management Flight
CEO	Operation Flight
CEOE	Maintenance Engineering
CEOF	Facilities Maintenance Element
CES	Civil Engineering Squadron
CEV	Environmental Flight
CFR	Code of Federal Regulations
DOT	Department of Transportation
EAO	Engineering Asbestos Officer
EPA	Environmental Protection Agency
EPC	Environmental Protection Committee
FAMP	Facility Asbestos Management Plan
HEPA	High Efficiency Particulate Air
IMPAC	International Merchant Purchase Authorization Card
JA	Judge Advocate
KAR	Kansas Administrative Regulations
KDHE	Kansas Department of Health and Environment
MAFB	McConnell Air Force Base
MFH	Military Family Housing
M&M	Monitoring and Maintenance Program
MILCON	Military Construction
MAP	Model Accreditation Plan
NESHAP	National Emission Standards Hazardous Air Pollutants
OSHA	Occupational Safety and Health Administration
O&M	Operations and Maintenance
PACM	Presumed Asbestos Containing Material
PPE	Personal Protective Equipment
RAC	Risk Access Code
RACM	Regulated Asbestos Containing Material

SABER	Simplified Acquisition of Base Engineer Requirements
TSCA	Toxic Substance Control Act
NVLAP	National Voluntary Laboratory Accreditation Program
PCM	Phase Contract Microscopy
PLM	Polarized Light Microscopy
SEG	Ground Safety Office
SGGB	Bioenvironmental Engineering Flight
TSI	Thermal System Insulation
WORB	Work Order Review Board

LIST OF REFERENCES

AIR FORCE:

AFI 32-1052, Facility Asbestos Management

AFI 91-301, Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH)

AFI 48-101, Aerospace Medical Operations

AFOSH Std 48-8, Controlling Exposures To Hazardous Materials

OSHA:

29 CFR 1910.1001, General Industry Standard for Asbestos

29 CFR 1926.1101, Construction Standard for Asbestos

29 CFR 1910.134, Respirator Protection

EPA:

40 CFR Part 61, Sub-Part M-National Emission Standards for Hazardous Air Pollutants (NESHAP)

Part 61. 141, Definitions

Part 61.145, Applications

Part 61.146, Notification Requirements

Part 61.147, Emission Control Requirements

40 CFR 763, Subpart G-Worker Protection

Part 763.83, Definitions

Part 763.83, Informing Building Occupants and Short-Term Workers

Part 763.83, Imminent and Substantial Endangerment to Human Health or the Environment

Part 763.91, Worker Protection

Part 763.22, Training

Part 763.94, Record Keeping

40 CFR 763, Subpart C – Model Accreditation Plan (MAP)

STATE AND LOCAL REGULATIONS:

Kansas Department of Health and Environment, KAR 28-50

Kansas Department of Health and Environment, KAR 28-65

OTHER:

EPA 560-5-85-024, Guidance for Controlling Asbestos-Containing Materials in Buildings

EPA 560/5-85-018, Asbestos in Buildings: Guidance for Service and Maintenance Personnel

EPA 530-SE-85-007, Asbestos Waste Management Guidance

EPA 566-5-84-006, Asbestos in Buildings: A National Survey of Asbestos Containing Friable Material.

1.0 INTRODUCTION

1.1 Purpose

The McConnell Air Force Base (MAFB) Facility Asbestos Management Program (FAMP) is designed to establish management responsibilities and procedures for ensuring compliance with regulated ACM (RACM). The FAMP will provide the foundation for maintaining a permanent record on the current status and condition of asbestos-containing materials (ACM) in buildings and details execution of asbestos related work at MAFB.

The FAMP will address organizational roles and responsibilities, program development, data management, management actions, and training. The FAMP will provide the oversight for the entire asbestos program at MAFB.

1.2 Background

Asbestos is regulated by the Environmental Protection Agency (EPA) Code of Federal Regulations (CFR), 40 CFR Part 61 and Part 763; the Occupational Safety and Health Administration (OSHA), 29 CFR 1910.1001 and 29 CFR 1926.1101; and the Department of Transportation (DOT), 49 CFR 171-177. These regulations govern control of asbestos fiber emissions to protect the environment and public health. Kansas Department of Health and Environment (KDHE) and OSHA will be governing agencies for facilities under jurisdiction of MAFB. A current copy of pertinent regulations shall be maintained in the Environmental Flight (CEV) and Bioenvironmental Engineering Flight (BEE).

1.3 Objectives

The FAMP is designed to provide a comprehensive program for asbestos management at the base by detailing how tasks are to be performed and documenting the base's commitment to protect the health of personnel. It encompasses regulations, guidelines, and procedures located among various documents and memoranda.

1.4 Approach

The approach to management of asbestos at MAFB involves two areas of oversight responsibility. CEV will be responsible for updating the FAMP, maintaining available asbestos files, and ensuring training records, waste disposal records, and notifications submitted by contractors are maintained. CEV also will be responsible for reviewing work orders, Form 332's, work plans, project design specifications, attending meetings, and performing site inspections to identify any NESHAP issues with proposed and planned projects (self help, O&M, MILCON, MFH, and SABER). The Environmental Flight (CEV), the Engineering Flight (CEC), and the Housing Management Flight (CEH) will be responsible for abatement work. All abatement work will be accomplished by contract mechanisms. Contactors will be responsible for their employee monitoring and clearance sampling. Prior to project commencement, BEE will be responsible for reviewing work orders, work plans, project design specifications, and attending or performing site inspections and meetings to determine exposure risk to base personnel. If at any time during abatement work base personnel are exposed, BEE will investigate and evaluate exposures.

2.0 ASBESTOS MANAGEMENT PLAN

2.1 General

The Wing Commander has the responsibility for ensuring that the guidance contained in the FAMP is properly carried out. This authority has been delegated to a team consisting of the BEE and the civil engineer (CE). A core management team shall consist of CEV, CEO, CEC, CEH, and SGGB (BEE). This management team is responsible for implementing and managing the FAMP. Asbestos abatement will be performed by some contract mechanism either through International Merchant Purchase Authorization Card (IMPAC) or included in operations and maintenance (O&M), military construction (MILCON), or Simplified Acquisition of Base Engineering Requirements (SABER).

2.2 Responsibilities

The purpose of this section is to assign specific responsibilities, authorities, and interactions among base organization to ensure all requirements are satisfied.

2.2.1 Commander, 22d Civil Engineer Squadron (22 CES/CC)

2.2.1.1 Responsibilities

The CC is tasked with the primary responsibility for development and management of the MAFB asbestos program. The CC has delegated to the Deputy Base Civil Engineer (CD) responsibility for overall program direction within the civil engineer squadron. CEV, CEO, CEC, and CEH are accountable to the CD for execution of the FAMP.

2.2.2 Chief, Operation Flight (22 CES/CEO)

2.2.2.1 Responsibilities

The CEO is responsible for ensuring the Operations Flight carries out its responsibilities as outlined in the plan. In addition the CEO is responsible for the following:

- Ensures CEO in-house and self-help work request AF Form 332's are reviewed by both BEE and CEV prior to the start of work to determine if ACM is present by referencing the asbestos database, prior knowledge of asbestos presence or

absence, or having confirmation sampling performed prior to project commencement.

- Provide O&M funds to the Asbestos Program Manager (APM) in the Environmental Flight to cover AF Form 332 asbestos sampling cost.

2.2.3 Chief, Engineering Flight (22 CES/CEC)

2.2.3.1 Responsibilities

- Provide the CEV APM with a listing of all upcoming MILCON and O&M (SABER and other contracted projects) projects on a quarterly basis. The listing will include project number, type (SABER, MILCON, etc.), name, location, scope, contact name and phone number, contractor, and expected start date.
- Ensures the architect and engineering firm (A&E), SABER contractor, and all other project contractors, comply with all applicable asbestos regulations through contract language, required contractor submittals, and inspector oversight.
- Ensures that CE inspectors and engineers receive the required asbestos training.
- Authorizes asbestos surveys and sampling for projects.

2.2.3.2 Engineering Project Managers

Engineering project managers are responsible for routing copies of project asbestos submittals to the CEV APM for inclusion into the base records. These submittals may include the following:

- KDHE 10-Day Notification Form
- Contractor Asbestos License
- Asbestos Abatement Plan / Health and Safety Plan
- Employee Training Certificates
- Project Log
- Clearance Sample Results
- Asbestos Surveys
- Waste Manifest
- Land Disposal Tickets
- All Other Asbestos Submittals

2.2.4 Chief, Environmental Flight (22 CES/CEV)

2.2.4.1 Responsibilities

- Responsible for performance of environmental asbestos management program.
- Appoints the Asbestos Program Manager (APM).
- Responsible for periodic review and update of MAFB Asbestos Management and Operations Plan.

2.2.5 Asbestos Program Manager (APM)

At a minimum the APM will receive the asbestos inspectors course and yearly updates.

2.2.5.1 Responsibilities

APM responsibilities will include the following items:

- The APM will review the quarterly project updates (MILCON and O&M) submitted by the CEC to determine if any upcoming projects require a survey and/or additional confirmation sampling. If a survey or additional confirmation sampling is required, the APM will notify the CEC.
- The APM will monitor projects that involve asbestos abatement to ensure all required asbestos submittals are received by CEV (see Section 2.2.3.2). The APM will file and maintain all submittals in the appropriate building files.
- Responsible for keeping the MAFB Asbestos Management and Operating Plan current.
- Maintains access to a current and complete set of EPA and KDHE regulations relating to asbestos and informs appropriate work centers of changes and interpretations that affect their activities.
- Maintains a database on the location of asbestos in base facilities to the extent known.
- Performs annual inspections of buildings with identified friable ACM to document condition. The APM will be responsible for documenting the inspection results in an asbestos building inspection database.

- With approval from the CEV Flight Chief, authorizes emergency repairs or abatement of ACM materials.
- Performs review of AF Form 332s submitted at the weekly WORB meeting to identify projects with potential exposure of base personnel to ACM.
- If required, provide BEE with available asbestos survey data to assist in their exposure assessment determination for self-help, O&M and MILCON projects.
- Perform Asbestos Awareness Training for Class IV asbestos workers.
- Provide available information to facility managers regarding location of ACM in their building(s).
- Maintain AF Form 332 files to track remodeling and abatement projects performed on MAFB facilities.
- Review project design specifications and plans, contractor wrote plans, determines need of sampling, and visits sites.

2.2.6 Chief, Housing Management Flight (22 CES/CEH)

2.2.6.1 Responsibilities

- Ensures any work being accomplished by the housing maintenance contractor is done in compliance with federal, state, and local regulations in regard to asbestos by utilizing contract requirements, CE inspector oversight, submittals, and CEV and BEE review, if needed.
- Ensures all ACM identified/removed in the course of their work is documented and information forwarded to CEV and BEE. The information needed for the database entry is listed in Section 2.4.2 and the data need for the asbestos files are listed in Section 2.4.3 of this plan.
- Provides CEV and BEE APMs with quarterly updates on planned projects to be performed by the military family housing (MFH) maintenance contractor. Listing will include a description of work to be performed, location, and expected start date.

2.2.7 Chief, Bioenvironmental Engineering Flight (22 ADOS/SGGB)

BEE is responsible for monitoring the health and welfare of base personnel regarding asbestos. The Bioenvironmental Engineering Flight APM will have attended the EPA “Inspectors” class and annual training.

2.2.7.1 Responsibilities

- Maintains access to a current and complete set of OSHA asbestos standards and provides technical consultative services for work centers when a health hazard exists.
- Provides emergency bulk and air sampling for crumbling and friable presumed ACM (PACM) that poses an immediate health threat. The BEE engineer will act as consultative agency for interpretation of analytical results received from samples taken.
- Provides support in quantifying exposures to McConnell AFB employees.
- Assigns health risk assessment codes (AFI 91-301).
- Review AF Form 332’s submitted during weekly WORB meetings to determine if any of the proposed projects may involve ACM and to determine if asbestos sampling may be required to determine exposure potential of base personnel.
- Review project design specifications and work plans for asbestos projects to determine if projects may expose base personnel to asbestos. If necessary, visit proposed construction, demolition, and remodeling sites to determine if additional asbestos sampling will be required.
- Review listing of planned projects by housing maintenance contractor to determine potential asbestos exposure to base personnel and their families.
- Forward copies of any asbestos testing and analysis performed or contracted by BEE to CEV for inclusion into the CEV asbestos records.
- Review results of all clearance monitoring results upon completion of each asbestos abatement project, prior to re-occupancy of the abated area, AFOSH STD 48-8, Appendix 9.

2.2.8 Environmental Legal Advisor (22 ARW/JA)

2.2.8.1 Responsibilities

- The Environmental Legal Advisor (JA) is responsible for reviewing all activities involving asbestos to ensure regulatory compliance and to advise on legal conflicts. JA coordinates on the following:
- Proposed base actions for compliance with the 29 and 40 CFR series requirements and Air Force regulations/instructions and local requirements.
- All plans and programs developed to meet environmental protection laws.
- Criteria, performance specifications, standards, and compliance schedules developed to ensure compliance with applicable laws regarding asbestos.
- All requests for monitoring data by federal, state, and local environmental agencies in order to determine whether the data is required by applicable law or regulation.
- All inspections by federal, state, and local regulatory agencies and the results of these inspections.
- Any notice of violation served upon the base for violations of federal, state, or local law.
- All known or suspected hazardous exposure to asbestos.

2.2.9 Chief, Ground Safety Office (22 ARW/SEG)

2.2.9.1 Responsibilities

Review FAMP to remain knowledgeable on asbestos requirements and management procedures on the base and ensure compliance with the 29 CFR series.

2.2.10 Facility Managers

At a minimum, MAFB facility managers will have attended the “Asbestos Awareness Class for Class IV Workers” class offered by the Environmental Flight.

2.2.10.1 Responsibilities

- Awareness of ACM sites at their facility.
- Ensure all maintenance and renovation activities are reviewed prior to activity to determine if it will impact ACM.

- Ensure all known friable asbestos material in their facility is inspected annually. If the material has deteriorated, it is to be reported to the CEV APM.
- Maintain copies of location of asbestos records for their facilities. Records are to be updated annually.

2.2.11 Contracting Officer

Contracting Officers play a key role in the asbestos management plan.

2.2.11.1 Responsibilities

- Ensure that project engineers have clearly identified asbestos hazards to contractors in bid documents.
- In conjunction with the BCE, develop standard contract language to inform contractors of the potential to disturb asbestos. It will be the project designer's responsibility to determine where the hazards may exist and what steps the contractors must take to protect base personnel and families.
- Inform all base contractors that they may encounter asbestos-containing materials while conducting their work and that they must take precautions to protect their workers.
- Work closely with Civil Engineering Construction Management to ensure that contractors adhere to contract specifications to avoid noncompliance with regulatory statutes and AFOSH standards.

2.3 Asbestos Program Development

The primary components of the asbestos program development are surveys, a facility database, and asbestos files. Each of these activities are described below.

2.3.1 Surveys

Managing asbestos on base requires identifying building locations that have ACM, ascertaining its condition, determining whether it presents a health hazard, and defining appropriate treatment. The most effective method for identifying locations that have ACM and determining its condition is through a facility survey. Where complete

building surveys are required, surveys will be performed using protocols established by EPA under the Asbestos Hazard Emergency Response Act (AHERA) and other guidance documents such as the “Simplified Sampling Scheme for Friable Surfacing Materials”, EPA 560/5-85-030a, October 1985, “Guidance for Controlling Asbestos-Containing Materials in Buildings”, EPA 560/5-85/024, and “Guidance for Assessing and Managing Exposure to Asbestos in Buildings”, EPA 1986. Inspection and sampling survey reports shall include the following information:

- The date(s) of the inspection/survey.
- The name and signature of each accredited person conducting the inspection, collecting samples, and making the assessment. The state of accreditation and if applicable, the accreditation number of each inspector is to be provided in the report.
- The location of each homogeneous sampling area from which samples were collected, the location of each homogeneous sampling area where suspect ACM was assumed to be ACM, and the location of PACM. Homogeneous sampling area should likewise be clearly identified on drawings and diagrams for future reference. Real or artificially designated area boundaries should likewise be clearly identified.
- A discussion of the manner used to determine sampling locations. Logic used in choosing sample locations should be presented and defended in writing. Sample locations should be selected for their ability to be representative of selected areas. To enable the samples to be statistically random, a protocol like that provided in the EAP guidance publication “Simplified Sampling Scheme for Friable Surfacing Materials” EPA 560/5-85-030a, October 1985, should be consulted.
- A list of identified homogenous sampling areas and their classification as to type of material. All areas are to be identified by material type as either surfacing material, thermal system insulation, or miscellaneous material.
- Following receipt of the results of laboratory analysis, each sample and each homogeneous sampling should be designated as ACM or non-ACM on the building records.

- The assessment of the ACM and suspected ACM into one of the following categories:
 1. Damaged or significantly damaged thermal system insulation ACM.
 2. Damaged friable surfacing ACM.
 3. Significantly damaged friable surfacing ACM.
 4. Damaged or significantly damaged friable miscellaneous ACM.
 5. ACM with potential for damage.
 6. ACM with potential for significant damage
 7. Any remaining friable ACM or friable suspected ACM.
 8. Survey report should detail the amount of ACM present and estimated abatement cost.

Copies of all building surveys will be forwarded to the CEV and BEE APMs. The CEV APM will evaluate the surveys for environmental issues and BEE will evaluate the surveys for base personnel exposure issues. For projects involving limited confirmation sampling, the following information will be forwarded to the CEV APM for all samples collected for asbestos analysis:

- Building Number
- Room and Floor Number
- Location In Room
- Material Sampled
- Date Sampled
- Photographs (if needed)
- Sample Identification Number
- Description of Material Sampled (TSI, surfacing, miscellaneous, Category I, Category II, Friable, Non-Friable, condition, functional space number, and homogenous number, and potential for disturbance).
- A map showing identification numbers and location for all samples collected during the project. The map should have a north arrow and scale. If a map is not available, a hand sketch will work.
- The name of the person collecting the sample(s), company name, license number, and phone number

- Sample Chain-of-Custody Documentation
- Analytical results. Analytical reports shall include the client sample identification number; laboratory sample identification number; analytical technique used; laboratory quality control procedures; physical description of sample(s); types and estimated percentage of asbestos; types and estimated percentage of non-asbestos fibers, types and percentage of other components, date of analysis, and analyst's signature.

All samples will be shipped under chain-of-custody to a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), for analysis using polarized light microscopy (PLM) for bulk samples and phase contrasting microscopy (PCM) for air samples. Laboratory analytical reports will include the signed chain-of-custody, the name and address of the laboratory, the date of the analysis, the name and signature of the person who performed the analyses, and the results of the analyses.

Copies of analytical results will be forwarded to the CEV APM for inclusion into the base database and reviewed for environmental concerns (NESHAP and TSCA) and to BEE for personnel exposure issues.

2.3.1.1 Existing Surveys

CEV will maintain all existing asbestos survey data and any subsequent surveys and asbestos sampling data in files located at CEV.

2.3.1.2 Project Surveys

Where possible, asbestos surveys shall be included in the engineering design contract. The survey shall be accomplished to identify any ACM that may exist and be disturbed in the scope of the project if an adequate survey does not exist in CEV files. Facilities will be addressed on a case-by-case basis.

2.3.1.3 In-House and Self-Help Project Surveys and Testing

Prior to any in-house or approved self-help work being accomplished, the CEV APM will determine if confirmation sampling for suspect ACM is needed. If necessary, the APM will take appropriate action to get the sampling accomplished.

2.3.1.4 Military Family Housing

Prior to any maintenance and repair work, CEH will have a survey accomplished to identify any suspect ACM that may exist and be disturbed in the scope of the project. CEH will forward copies of any survey or sampling results to the CEV and BEE APMs for review prior to start of the project.

2.3.2 Facility Database

The purpose of the database is to compile a comprehensive listing of information about ACM in MAFB buildings. The database will be readily accessible and updated as the data are provided to the CEV APM. The CEV environmental staff will be the collection agency for information input and will update the database. All civil engineer sections such as planners, schedulers, craftsmen, and engineering designers will coordinate asbestos activities with CEV for input to the database. A listing of survey and sampling information required for inclusion into the database and CEV records are included in Section 3.3.

2.3.3 Asbestos File

CEV will maintain a permanent file of detailed documentation concerning asbestos activities. The file will include the following information:

- Actual survey forms completed during facility inventories and re-inspections.
- Results of all sampling and testing performed, including bulk sampling and air monitoring.
- Certifications/training records of personnel conducting asbestos work.
- Description of all asbestos abatement activities performed, including dates, types of treatment, and quantity of any asbestos removed, disposal method and location, waste manifest, landfill disposal tickets, abatement plan, and results of post-treatment inspection/sampling.
- Copies of notification letters to KDHE.

- Documentation of and correspondence related to disposal (e.g., landfill/disposal receipts).
- Copies of federal, state, and Air Force instructions concerning asbestos.

2.4 Asbestos Management Activities

The primary components of asbestos management activities are budgeting, scheduling and planning, and monitoring/surveillance, notification, training, and record keeping. Each of these activities is described below:

2.4.1 Budgeting

The CEO is responsible for preparing an annual budget for asbestos-related abatement activities in support of in-house craftsmen and approved self-help projects. The program budget should include funds for the following activities:

- Asbestos Survey
- Bulk Sampling
- Training
- Contractor Fees

2.4.2 Scheduling/Planning

Imminent asbestos hazards should be corrected quickly, and other asbestos work should be ranked and corrected as projects and resources become available. Civil engineer organizations (CEO, CEC, and CEV) should check the database and facility folders periodically to determine if stable ACM can be programmed for replacement with asbestos-free materials. Imminent asbestos hazards, especially in residential, medical, and high-use facilities for children, should be corrected immediately.

2.4.3 Monitoring/Surveillance

Before performing in-house construction or repair work, CES maintenance personnel should determine the age of the building, types of materials and condition of materials to be disturbed, before performing the work. If the building was constructed before 1990 and materials to be disturbed contain suspect ACM, the CEV APM should be contacted to request a file review and or confirmation sampling.

2.4.4 Notification Requirement

KDHE regulations require they be notified in advance of any asbestos project and/or removal actions. Contractors are responsible for making their own notification to KDHE and providing copies of the notification to CEV through the contracting officer. The contractor is also responsible for providing a copy of the asbestos abatement plan for the project to the contracting officer for review by CEV and BEE and inclusion in the CEV project records.

2.4.5 MAFB Personnel Training Requirements

A matrix of training requirement for MAFB personnel is provided in Appendix A. Training records for MAFB employees shall be maintained for employees trained in asbestos awareness and/or operations and shall be kept for five years beyond termination of employment.

2.4.6 Records

2.4.6.1 Notification Records

CEV shall be provided with and maintain copies of all KDHE notifications for asbestos work conducted on MAFB property.

2.4.6.2 Training Records

Any contractor performing asbestos work on MAFB property must submit, prior to beginning work, copies of training certificates proving his employees are trained to perform asbestos work. CEV shall be provided with and maintain these records.

2.4.6.3 Sampling Records

Results of all sampling and testing performed, including bulk sampling and air monitoring will be provided by the contractor to the contracting officer who will forward them to CEV to maintain in the asbestos files. A list of the required sampling information is included in Section 2.4.10.

2.4.6.4 Waste Shipment Records

The waste shipment record must be complete and signed. The records will include:

- Name and address of the generator
- The address of the pickup job site and the address of the facility where the asbestos was removed
- The estimated quantity of asbestos waste
- Type of asbestos material and building location
- Types of containers used
- Final destination (disposal site) for the waste
- The disposal site operator, upon acceptance of the material, will sign this document. A copy of the record signed by the disposal site operator will be provided to CEV and maintained in the asbestos file at CEV as evidence of proper disposal of the asbestos.
- The disposal of all asbestos waste must be coordinated with the MAFB hazardous and special waste manager in advance of actual disposal of the waste. Copies of the waste manifest must be provided to the MAFB hazardous and special waste manager for inclusion into the base waste records.

2.4.6.5 Facility Database

All records shall be sent to CEV to be incorporated into the asbestos database and file.

3.0 ASBESTOS OPERATING PLAN (AOP)

3.1 General

The AOP dictates how the base will carry out asbestos related work. The elements of any abatement work are project initiation and procedures, surveys, notifications, personnel training, work practices/control of emissions, disposal, and record keeping. The CEV APM is the central point for all asbestos surveys and work done in support of CEO operations and self-help work. CEC is responsible for all asbestos surveys and abatement work needing to be completed for a project designed by CEC or a SABER project. CEH is the central point of contact for all asbestos work in support of maintenance and repair activities in base housing.

3.2 Project Initiation

Types of projects at MAFB include projects initiated through the Form 332 process, MILCON, and O&M (SABER and other contracted projects). Form 332 projects are reviewed weekly by the Work Order Review Board (WORB) and MILCON and O&M projects are initiated by CE.

3.2.1 Description of AF Form 332 Review Process

The Form 332 is used by the Base Civil Engineer to document work requesting maintenance, repair or construction involving Air Force real property. AF Forms 332 submitted the previous week will be reviewed the following week during the WORB meeting. The AF Form 332 review process will be performed as follows:

- The weekly MAFB WORB meeting is currently held on Monday (or Tuesday if Monday happens to be a holiday). The CEV APM will visit the Customer Service office and review the Forms 332 on the Friday afternoon before the WORB meeting the following Monday.
- If the AF Form 332 review indicates potential exposure to known or assumed ACM materials (based on building age, previous sampling data, etc.), the CEV APM representative will write at the bottom of the AF Form 332 for the work

order “Potential for asbestos exposure, CEV will investigate.” The CEV APM will make copies of the Form 332s that indicate potential for asbestos exposure.

- The CEV APM Form 332 review will consist of noting the age of the building, scale of the work order (work to be performed in the building), review of available CEV files, and history of the building (past remodeling and renovation), and if required, visiting the proposed work site.
- If the CEV APM Form 332 review indicates no potential for exposure, the APM will notify the project proponent via e-mail. A copy of the notification will be attached to the Form 332 and filed. However, if the Form 332 review indicates potential for exposure, the CEV APM will contact the CEO for permission to collect samples of materials likely to be disturbed during the proposed project and submit the samples for laboratory analyses for asbestos.
- If the CEO grants permission to collect samples, the CEV APM will contact a local licensed asbestos consultant to collect the required samples. Before contacting the contractor, the CEV APM will make an estimate as to the required number of samples and require the contractor to submit (fax) a cost estimate to collect the samples. Contractors that can be contracted to perform sampling of suspect ACM include: Precision Environmental Services, Allied Environmental Consultants, Integrated Solutions, Terracon, or other approved KDHE licensed contractors.
- After receiving the cost estimate, the CEV APM will take the estimate to Customer Service and complete an “Abstract Of Proposal” form. Once this form is completed, the CEV APM will notify the selected contractor to proceed with the sampling event.
- Sampling activities will be coordinated with the work order facility manager. Sampling data collected will include all items listed in Section 2.4.10.
- Payment for sampling services will be accomplished using a CE IMPAC card. The CEV APM will provide the contractor the name of the CE contact person to obtain payment for services rendered.
- If the analytical results indicate the presence of ACM within the proposed work area, the CEV APM will notify the BEE APM, CEO, and the project proponent

via e-mail. A copy of the e-mail and analytical results will be attached to the Form 332 and placed in CEV file for the building. Appropriate actions in response to confirmation of presence of ACM at the proposed work site will be determined on a case-by-case basis by CEV, BEE, and CES representatives.

- If analytical results indicate that ACM is not present within the proposed work area, the CEV APM will notify CEO and the project proponent via e-mail that no ACM was found within the proposed work area. A copy of the e-mail and laboratory analytical report will be attached to the Form 332 and placed in CEV file for the building.
- CEV will file sampling data and analytical results and add to the MAFB asbestos database.

3.2.2 Milcon And O&M Projects

CEC will provide the CEV APM with a quarterly listing of new MILCON and O&M projects so as to keep the CEV APM informed about upcoming projects. The CEV APM will review the project design specifications to ensure asbestos issues are adequately addressed in the specifications. The CEV APM will track and monitor MILCON and O&M projects using a database or spreadsheet system to insure all necessary asbestos records are being collected and maintained.

3.3 Surveys

3.3.1 In-House or Self-Help Projects

If it is unknown if asbestos is present in the projected work area, the CE shop or self-help foreman will coordinate with the CEV APM to review the CEV asbestos records. If it is still unknown if asbestos is present in the work area, the CEV APM will obtain CEO approval to have a contractor sample and analyze for suspected asbestos using CEO funds.

If CEO craftsmen encounter asbestos not previously identified, all further work shall cease until appropriate precautions have been taken. It is the responsibility of the job foreman to notify the CEV APM that the presence of asbestos is suspected. The CEV

APM will obtain approval from CEO to arrange for samples to be taken using CEO funds. If the samples confirm the presence of asbestos, CEV will notify BEE.

3.3.2 Contracted Projects

CEC will have CEV perform an asbestos records review to determine if the project may involve disturbing ACM. If a survey has not been completed, one will be accomplished via a CEC contract. The information obtained from the survey will be used to complete the specifications for the project. A copy of the survey will be forwarded to CEV for inclusion into the base asbestos records.

3.3.3 Housing Maintenance and Repair Work

CEH is responsible for overseeing the housing maintenance contractor to ensure asbestos issues are addressed prior to work in any housing unit.

3.3.4 PACM

All TSI and surfacing material constructed no later than 1990 must be assumed to contain asbestos unless tested by approved testing methods that verify an absence of asbestos.

3.4 Notification

KDHE regulations require they be notified 10 working days prior to commencement of any asbestos project and/or removal actions.

3.4.1 In-House Notification Procedures

3.4.1.1 Self-Help Projects

CEO craftsmen will receive asbestos awareness training for Class IV workers so that they can evaluate work orders for potential for asbestos exposure. CEO craftsmen are responsible for reviewing work orders for potential for asbestos exposure by evaluating the work scope (materials likely to be disturbed), age of the building, and site conditions. If CEO personnel suspect ACM may be present within the work area, the CEV APM will be contacted to request a records review, site visit, or confirmation sampling.

CEO craftsmen or personnel working on approved self-help projects who suspect they may have been exposed to asbestos, or through their work may have a need for asbestos abatement, will immediately notify the CEV APM. The CEV APM will make the recommendation on what actions are to be taken regarding the suspected ACM. The CEV APM will determine if emergency notification and abatement is required or if the normal notification period is acceptable given the prevailing circumstances. The APM will ensure the contractor performing abatement submits the appropriate notification and fee to KDHE. Funding for non-emergency projects and sampling will be provided using CEO funding.

3.4.2 Contractor Notification Procedures

For projects completed by contract, compliance with asbestos regulations is the responsibility of the contractor. Contractors are responsible for making their own notification to KDHE and providing copies of notification to CEV through the contracting officer. The contractor is responsible for meeting the conditions listed on their notification including start date, completion date and work schedule. The contractor is responsible for submitting to KDHE any amendments due to changes since the original application. The government's contract monitor will ensure the conditions of the notification are met and will be supplied with a copy of any notification amendment the contractor submits to KDHE.

3.5 Contractor Personnel Training

3.5.1 Abatement, Repair and Maintenance

No work on an asbestos project shall be conducted unless it is performed by persons trained in accordance with standards established by OSHA and the EPA. Training shall be provided prior to an employee's initial participation in Class I through Class IV asbestos operations and at least annually thereafter. All asbestos abatement work must be accomplished with at least two trained personnel. The training program shall be conducted in a manner that the employee understands.

3.5.2 Contractor Requirements

Contract specifications will ensure contractors performing asbestos work and their employee have appropriate level of training. Contractors shall submit copies of current training certifications for all employees performing asbestos work on a MAFB project to the contract manager in CEC, CEH, or AOO. These records shall be forwarded to CEV for filing.

3.5.3 OSHA

OSHA has specified training requirements based on the class of asbestos work being accomplished.

3.5.3.1 Class I Asbestos Work

Activities involving the removal of TSI, surfacing ACM, and PACM require the following training:

- The employee must meet the requirements of the EPA's Model Accreditation Plan (40 CFR 763, Subpart E, Appendix C). This requires supervisors to take a 5-day class and workers to take a 4-day class, both including 14 hours of hands-on training.

3.5.3.2 Class II Asbestos Work

Activities involving the removal of ACM, which is not TSI or surfacing material. This includes, but is not limited to the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding, shingles, and construction mastic and requires the following training:

- Employees engaging in this type of work must meet the requirements of EPA's Model Accreditation Plan (40 CFR 763, Subpart E, Appendix C) unless the employers of Class II work with ACM involves only the removal and/or disturbance of the one generic category of building material, such as roofing materials, flooring materials, siding materials, or transit panels. The employer can provide a course containing required elements included in 29 CFR 1926.1101,

paragraph (k)(8)(vi) and paragraph (g). This course must be hands-on training and shall be at least eight hours.

3.5.3.3 Class III Asbestos Work

Repair and maintenance operations where ACM including TSI and surfacing material is likely to be disturbed will require the following training:

- Employees who engage in this type of work must have a training course equivalent in curriculum and training methods of the 16-hour O&M course developed by EPA (40CFR 763.22(a)(2)).

3.5.3.4 Class IV Asbestos Work

Maintenance and custodial activities during which employees contact ACM and PACM will require the following training:

- Employees who engage in this type of work must have training equivalent in curriculum and training method of the awareness training course developed by EPA for maintenance and custodial work in building containing ACM (40 CFR 763.22 (a)(2)). This course shall take at least 2 hours.

3.5.4 EPA Training Requirements

3.5.4.1 Accredited Asbestos Worker

Must be an accredited asbestos worker to do the following:

- A response action other than small-scale, short-duration maintenance activity.
- A maintenance activity that disturbs friable ACM.
- A response action or a major fiber release episode.

To become accredited, you must attend at least a 4 day training course as outlined in 40 CFR 763, Subpart E-Appendix C and pass a written exam.

3.5.4.2 Accredited Supervisor

Must be an accredited supervisor to supervise any of the follow activities:

- A response action other than a small-scale, short-duration maintenance activity.
- A maintenance activity that disturbs friable asbestos-containing building material.
- A response action for a major fiber-release episode.

To become accredited, you must attend at least a 5 day training course as outlined in 40 CFR 763, Subpart E-Appendix C and pass a written exam.

3.5.4.3 Accredited Inspector

All persons who inspect for asbestos-containing building material in schools or public and/or commercial buildings shall complete at least a 3 day training course as outlined in 40 CFR 763, Subpart E – Appendix C. This includes any person who takes samples to determine if ACM is present.

3.5.4.4 Project Designer

Must be an accredited project designer to design the following activities:

- A response action other than a small-scale, short-duration maintenance activity.
- A maintenance activity that disturbs friable ACM.
- A response action for a major fiber release episode.

To become accredited you must attend at least at a minimum a 3 day course as outlined in 40 CFR 763, Subpart E – Appendix C and pass a written exam.

3.5.4.5 Asbestos Awareness Training

Training for Class IV asbestos workers will be provided by CEV upon initial assignment and at least once yearly thereafter. Shop supervisors will be responsible for notifying CEV of newly hired or assigned personnel requiring training. Training will be equivalent in curriculum to the EPA Awareness training program found in 40 CFR 763.92(a)(1) and will be two hours in length. The asbestos awareness class will consist of the following five topics:

1. Asbestos And Its Various Uses And Forms
2. Health Effects Associated With Asbestos Exposure
3. Asbestos Containing Materials At McConnell AFB
4. Recognition Of Damaged And Deteriorated ACM
5. Measures To Implement To Protect Yourself From ACM

3.6 Work Practices And Emission Control

Abatement methods used at McConnell are repair and removal. Repair involves returning damaged areas and systems insulation to an undamaged condition or to any intact state to prevent fiber release. Repair techniques for limited damage are simple and more cost effective. Repair, when conducted properly, may be the least burdensome method of response and will be performed under contract. Removal is the process of taking out or stripping the ACM in a predetermined way so as to prevent fiber release, protect human health and the environment, and minimize damage to the structure being cleaned.

All asbestos abatement on MAFB property will be accomplished by contract. Asbestos abatement will be performed under contract by a KDHE licensed abatement contractor. Prior to project commencement, the contractor will be required to perform the following actions:

- All contractor personnel working on the abatement project will have the required EPA and OSHA training. The contractor will provide copies of the contractor license and training certificates for all asbestos abatement personnel assigned to the project for review by the CEV APM prior to project commencement.
- Prior to commencement of RACM removal or building demolition activities, the project contractor will notify in writing, the KDHE, at least 10 working days prior to start of the projects that involve removing threshold amounts of ACM that causes the project to be regulated by the EPA under NESHAP. Threshold amounts of ACM include 250 linear feet of ACM on piping, 160 square feet of regulated ACM on surfacing, or 35 cubic feet of facility components where the amount of RACM could be measured before stripping. The written notification to the KDHE will include all the required project information listed in KAR 28-50-8. Copies of the written notification will be provided to the CEV APM for inclusion into the project records.
- For projects requiring asbestos abatement, the contractor is required to prepare and submit a project abatement plan. The abatement plan will be reviewed and

approved by the CEV APM and BEE APM prior to project commencement. In addition, the abatement contractor will be required to provide copies.

The contractor will be responsible for insuring that abatement personnel comply with KDHE, EPA, and OSHA regulations. BEE will be responsible for periodically monitoring abatement projects to make sure base personnel are not exposed to asbestos. BEE will have the authority to shut the project down if BEE determines contractor activities threaten to expose base personnel to asbestos. If base personnel are exposed, BEE will be responsible for determining the extent and level of exposure.

The CEC Project Inspector will insure that the contractor performs asbestos abatement in accordance with the project abatement plan and in accordance with EPA and KDHE regulations. The CEC project Inspector will have the authority to shut the project down if the inspector determines that contractor activities are in violation of EPA, KDHE, or OSHA regulations.

Acceptable work practices for the various types of asbestos abatement projects at MAFB are summarized in the following sections.

3.6.1 Milcon And O&M Projects

3.6.1.1 Work Practices For Asbestos Removal Projects In Areas To Be Reoccupied

Each asbestos removal project that involves the removal of friable ACM from a structural item or equipment that is located in any area that can be expected to subsequently be reoccupied by any person after the project is completed, or in an area that is only directly accessible from an area that is, or subsequently will be, occupied by any person other than persons directly involved in the project, shall be conducted in accordance with the requirements in KAR 28-50-9. Work practices will include the following items:

- Each proposed work area will be isolated from other areas of the building and outside areas by erecting temporary partitions that are rigid and airtight around the work area or by installing airtight seals over doorways, windows, and ventilation system openings, except that doorways between the work area and

decontamination facilities and waste load-out areas shall be closed off with a control curtain. Not less than one temporary partition or seal shall contain a clear viewing area that is 18 inches or more in height and width and installed in a manner that will allow direct visual observation of the work area from a location outside of the work area. Plastic sheeting used for construction of airtight seals shall not be less than four mills thick. Whenever possible, each heating and ventilation system serving the work area shall be shut down and locked out. If these systems cannot be shut down, special provisions shall be made to ensure that airborne contamination from the work area cannot enter the ventilation systems and be carried to other areas of the building. Appropriate warning signs shall be prominently posed at all entryways into the work area. Provisions shall be made to prevent any person other than those persons having responsibilities from entering the work area.

- All movable furnishings, equipment, and fixtures in the proposed work area shall be pre-cleaned with a HEPA filter-equipped vacuuming device or wet cleaning methods. After cleaning, the items shall be removed from the work area and stored in an area that is not subject to contamination with asbestos fibers. The items shall not be returned to the work area until final room cleanup has been completed and approved in accordance with requirements applicable to the project.
- All structural item surfaces, other than those from which asbestos is to be removed, and all non-movable furnishings, equipment, and fixtures remaining in the proposed work area shall be pre-cleaned with a HEPA filter-equipped vacuuming device or wet cleaning methods and covered with not less than four mil thick plastic sheeting, except that floors shall be covered with a minimum of two layers of six mil thick plastic that extends up the walls at least 12 inches. Plastic sheeting on walls shall be affixed to the wall in a manner that will assure that it will remain in position throughout the length of the project and shall overlap the floor sheeting at least 12 inches above the intersection of the walls with the floor. Any tears that are noted in the protective plastic sheeting shall be immediately repaired.

- HEPA filter-equipped ventilation fans shall be installed in a manner that will continually exhaust air from all locations within the work area. The total capacity of the fans will be sufficient to remove the entire volume of air contained in the workroom area within a time period of 15 minutes or less unless a longer time period is specifically approved by the department. The removed air will be discharged through a duct that has been installed through the plastic on the walls in a manner that will provide an airtight seal between the plastic and the outside surface of the duct. The exhausted air shall be discharged outside of the building whenever possible and will not be discharged inside the building unless this discharge is specifically approved by the KDHE in writing. Each ventilation fan will be continuously operated throughout the duration of the project. Each fan shall be operated in a manner that will establish and maintain a flow of air into the work area from all adjacent areas of the building as demonstrated by use of smoke producing tubes or other appropriate means. As a minimum, these determinations shall be made and the results recorded before asbestos removal operations are initiated and at the start of each day's operation.
- A decontamination facility shall be provided between the work area and building areas intended to remain uncontaminated with asbestos fibers generated by the asbestos removal operations. All persons entering or leaving the work area shall pass through and use the decontamination facility. Each decontamination facility shall consist of the following designated areas which are each to be entered through a doorway that is covered by a control curtain.
 1. A clean room that will be maintained free of asbestos-containing debris and must be first entered by any persons entering the work area. The clean room will be constructed in a manner that provides adequate space for removing or putting on street clothing, putting on and fit testing respirators, and putting on protective clothing and other protective equipment required to be worn in the work area. The clean room may also be used as a rest and eating area for employees after they have passed through the decontamination process.

2. A shower room that must be first passed through by any person that moves from the work area into the clean room. Persons shall be required to shower before entering the clean room. Each shower room shall be provided with at least one shower head that is supplied with hot and cold water. Adequate quantities of soap, hair shampoo, and towels shall be provided to accommodate each person who emerges from the work area. Shower enclosures shall be leak proof and constructed of disposable or easily washable material. Shower water may be drained directly into the building plumbing system or collected for subsequent disposal.
 3. An equipment room that must be passed through before the shower room can be entered from the work area. The equipment room will be used for temporary storage of contaminated tools, equipment, and protective clothing used in the work area. The floor and walls of the room shall be lined with not less than six-mil thick plastic sheeting. Tools, equipment, and protective clothing shall be free of gross contamination.
 4. All decontamination facility areas shall be fully enclosed and shall be contiguous to each other and the work area unless connected to one another by enclosed passageways that are effectively isolated from areas intended to remain free of asbestos contamination. Decontamination facilities shall remain in place and in functional condition until removal of airtight seals and partitions is authorized.
- A waste load-out area may be constructed between the work area and the exit through which asbestos containing waste materials are intended to be removed from the work area. If a waste load-out area is provided, it will be totally enclosed on the doorway between the work area and the waste load-out area shall consist of a combination of control curtain and rigid door. The floor of the load-out area shall be covered with not less than six-mil thick plastic sheeting which shall be kept clean and free of visible asbestos-containing debris. Floor covering shall be removed upon completion of the project and properly disposed of. Waste containers will be removed from the waste load-out area from an area that is intended to be maintained free of asbestos-containing debris generated by the

removal operations. The doorway between the work area and load-out area shall be kept secured except when waste materials are being transferred from the work area. The load-out area doorway shall not be used as an entrance or exit by persons who leave or enter the work area.

- All exposed surfaces of friable ACM shall be maintained in a wet condition while the material is being removed or cleaned up from structural or equipment items. Any friable ACM shall be wetted with a water solution containing an effective wetting agent. The wetting solution will be applied with a low pressure spraying system. The effectiveness of the solution in penetrating the ACM shall be determined by applying it to a small representative sample of material before the gross removal operation is initiated. The removed friable ACM shall be maintained in a wet condition until placed in sealed containers for disposal. All accumulations of loose debris shall be removed from floors and other surfaces and placed in sealed bags or containers as quickly as practicable and at least daily.
- After the ACM have been removed from the structural or equipment items, all plastic sheeting, equipment and surfaces in the work area shall be cleaned with a HEPA filter-equipped vacuuming device or by wet cleaning methods and shall be free of all visible debris, except that if more than one layer of plastic sheeting has been used on walls and floors this additional layer of sheeting may be removed and disposed of instead of being cleaned. Sheeting that is removed shall be enclosed in a six-mil thick plastic bag or clean plastic sheeting and disposed of in an appropriate manner. Any liquid or material that has leaked through these additional layers of sheeting shall be removed by wet cleaning methods.
- The surfaces from which the friable ACM have been removed shall be cleaned free of all visible residues and then covered with an effective sealing material before the final layer of plastic sheeting covering the floors, walls, and non-movable items are removed.
- A minimum of 24 hours shall be allowed between application of the sealant and removal of the final layer of plastic wall and floor covering. The removed plastic covering shall be enclosed in a six-mil thick plastic bag or clean plastic sheeting and disposed of in an appropriate manner.

- After the plastic wall and floor coverings have been removed, all surfaces in the work area shall be cleaned with an HEPA filter-equipped vacuuming device or by wet cleaning methods and will be free of all visible debris.
- Not less than 24 hours after completing the cleanup, an air stream from a high speed leaf blower or equivalent device shall be swept across all surfaces within the work area for a period of not less than five minutes for each 1000 square feet of surface area.
- Each temporary partition and airtight seal provided for doors, windows, and duct openings will remain in place for not less than 24 hours and until the cleanup is approved in accordance with any other special requirements applicable to the project.
- Each person engaged in an asbestos removal project or entering an asbestos removal project work area shall be provided with, and shall wear, an appropriate respirator and protective clothing.
- Airborne asbestos exposures of each person engaged in an asbestos removal project will be determined in accordance with applicable OSHA or EPA exposure monitoring requirements. Copies of the results of the analyses of samples collected at a project subject to the requirements of this regulation will be submitted to the KDHE as soon as practicable, after receipt of a written request for the results of analyses from the KDHE.

3.6.1.1.1 Waivers

Individual requirements in KAR 28-50-8 may be waived by the KDHE for asbestos removal projects if the notification submitted to the State identifies the requirement for which the waiver is requested, the reason(s) for the waiver, and any alternate procedure that is proposed. In order to qualify for a waiver, the following conditions must be met:

- The health and safety of the workers and building occupants are adequately protected.
- The work area in which the asbestos is to be removed will be completely isolated from any other areas of the building by the construction or installation of airtight barriers that shall continually remain in place for the duration of the asbestos

removal project until final cleanup is completed and approved in accordance with requirement applicable to the project.

- Appropriate warning signs shall be prominently posted at all entryways into the work area and access to the work area shall be restricted to only those persons that are required to enter it because of responsibilities directly related to the project.
- The surfaces from which the ACM have been removed will be cleaned free of all visible residue and covered with an effective sealant before warning signs are removed and access to the work area of persons other than those directly involved with the project are allowed back into the work area.
- All visible asbestos containing debris shall be removed from the work area before the warning signs are removed or access to the work area of persons other than those directly involved in the project is permitted.
- Asbestos contamination shall be removed from all persons that have been in the work area before they leave the premises or enter any area intended to remain free from asbestos contamination. All equipment used on the project will be cleaned free of visible debris before it is removed from the work area.
- Any waiver granted by the State will be in writing before the project is initiated.

3.6.1.1.1 Waiver To Remove Friable ACM From Pipes

A KDHE waiver for removal of friable ACM from the surface of pipes or other similar conduits may be obtained, provided that the following requirements are met:

- All friable ACM proposed to be removed in the work area shall be removed using six-mil thick or thicker leak proof glove bags in accordance with the manufacturer's instructions. A copy of these instructions will be submitted to the KDHE along with each notification and a copy will be posted for inspection at the work site. Glove bags will not be used to remove ACM from surfaces having a temperature of 150° F or more unless written authorization to do so is provided by the KDHE prior to removal.
- Appropriate warning signs shall be prominently posted at all entryways into the work area. Provisions will be made to prevent any person other than those

persons that have responsibilities directly related to the project from entering the work area.

- Each person using the glove bag shall avoid damaging or otherwise causing the release of asbestos fibers from any other friable ACM that are located within the work area, including any debris that may have accumulated in the area prior to the start of the project. Each section of the pipe or conduit from which damaged or loose hanging friable ACM is to be removed that is not immediately enclosed within a glove bag shall be tightly enclosed in six-mil plastic sheeting until a glove bag is placed over it and the ACM is removed.
- Glove bags will be sealed to pipe or conduit in a manner that provides an airtight seal around the area from which the asbestos is to be removed until the glove bag is removed, unless the manufacturer's instructions require air pressure within the bag to be maintained below the pressure outside the bag. Glove bags will not be moved and used for removal at more than one location except under written authorization provided by the department and in compliance with any special requirement imposed as a condition for granting the waiver.
- All exposed surfaces of friable ACM will be wetted with a water solution containing an effective wetting agent while the material is removed and the removed material shall be maintained in a wet condition while it remains in the glove bag until the bag is sealed for final disposal.
- Surfaces from which ACM have been removed will be cleaned free of all visible residues before the glove bag is removed.
- A sealing material will be applied to all surfaces from which the ACM is removed, and to all friable ACM surfaces that become exposed as a result of this removal before warning signs are removed or access to the work area of persons other than those directly involved in the project.
- The work area shall be free of all visible asbestos containing debris, including accumulations that existed prior to the start of the project, before warning signs are removed or access to the work area of persons other than those directly involved in the project is permitted.

- Project activity in the work area will immediately discontinue if any asbestos contamination of the general work area results from damage or improper use of glove bags or there is damage to any other friable ACM located within the area. Project activities shall not be resumed until all surfaces in the area that are likely to have become contaminated with asbestos fibers have been thoroughly cleaned with a HEPA filter-equipped vacuuming device or by wet cleaning methods. Each person who is likely to be contaminated with asbestos fibers resulting from these sources, including the cleanup operations, will remove, or use a HEPA filter-equipped vacuuming device or wet cleaning method to clean all contaminated outer work clothing before leaving the work area. The KDHE will be notified of the date and nature of such occurrences and the cleanup measures that were used before the work area is approved for occupancy by persons other than those directly involved in the removal project.

3.6.1.1.1.2 Waiver For Removal Of Friable ACM From Structural Items

A waiver from the KDHE may be obtained for asbestos removal projects that involve the removal of friable ACM from structural items or equipment that are installed in, and accessible from, outdoor areas, provided that the following minimum requirements are met:

- Each door, window or other opening into enclosed areas that is adjacent to the work area shall be securely covered with not less than four-mil thick plastic sheeting if the opening is located 100 feet or less from the work area.
- A person other than the persons that have responsibilities directly related to the project will not be allowed to occupy or pass through any unenclosed area that is located 50 feet or less from the work area. This area shall be identified and defined by fences or other effective means. Appropriate warning signs shall be prominently posted at all entryways into the work area.
- All exposed surfaces of friable ACM shall be wetted with a water solution that contains an effective wetting agent while the material is being removed. All removed material, including debris on surfaces below the location from which the

material is removed, shall be maintained in a wet condition until placed in sealed containers for disposal.

- All friable asbestos containing debris, including accumulations that existed prior to the start of the project, will be removed from the work area before the warning signs are removed or access to the area for persons other than those having responsibilities directly related to the project is permitted.
- All surfaces from which ACM are removed will be cleaned free of visible residues and covered with an effective sealant before warning signs are removed or access to the area for persons other than those having responsibilities directly related to the project is permitted.
- Each person who removes ACM or otherwise occupies the restricted area will remove outerwear that is worn in the area before entering any enclosed area that is occupied by any person other than those person engaged in the project.

3.6.1.1.1.3 Waiver For Removal Of Friable ACM From Structural Items To Be Demolished

A waiver from the KDHE for asbestos projects that involve the removal of friable ACM from structural items that are installed in, and accessible from, any structure or portion of a structure that is demolished after the material is removed, provided that the following minimum requirements are met:

- Appropriate warning signs shall be prominently posted at all areas in the work area and persons other than the persons that have responsibilities directly related to the asbestos removal project shall not be allowed to occupy or pass through the work area.
- Each window, door and other direct opening between any area where asbestos is to be removed and any other area of the structure that is not intended to be demolished shall be sealed air tight, with securely fastened plastic sheeting, until the project is completed. The plastic sheeting seals will be not less than four-mils thick.
- All exposed surfaces of friable ACM shall be maintained in a wet condition while the material is being removed. The material shall be wetted with a water solution containing an effective wetting agent. All removed friable ACM, including debris

that falls on surfaces below the location from which the material is removed, will be maintained in a wet condition until placed in sealed containers.

- All friable asbestos containing debris, including accumulations that existed prior to the start of the project, will be removed from the work area before the warning signs are removed or access to the work area for persons other than those having responsibilities directly related to the project is permitted.
- Each person who removes ACM or otherwise occupies the work area before the project is completed shall remove outerwear worn in the area before entering any enclosed area that is occupied by any person other than those persons engaged in the project.
- Structural items from which friable ACM is removed shall not be sold or reused for purpose unless the surfaces from which the material has been removed are free from visible residue and have been covered with an effective sealing material, unless the sealing requirement is waived by the KDHE.

3.6.1.2 Work Practices For Asbestos Encapsulation Projects

Use of encapsulation as a method of controlling asbestos fiber release from friable ACM on structural items or equipment will be performed in accordance with requirements of KAR 28-50-10 as follows:

- Encapsulating materials shall not be applied to fibrous sprayed-on ACM or to cementitious ACM that show signs of poor adhesion to which they have been applied.
- Encapsulating materials will not be applied to friable ACM that are subject to frequent abrasive or other physical damage.
- Penetrating encapsulating agents shall be tested for, and demonstrate, acceptable adhesive and penetrating characteristics for the types of friable material to which they are to be applied. Testing shall consist of applying the encapsulation to the surface of the material in the prescribed manner and then removing a core sample of this material for physical and visual inspection. Representative testing shall be conducted at one or more randomly selected locations within the structure prior to

initiation of the project. Test core holes will be repaired immediately after the visual inspection is complete.

- Encapsulant materials will have acceptable flame retardant characteristics and will not be noxious or toxic to applicators or to persons that occupy the structure after the project is completed.
- Each damaged portion of a surface to which the encapsulant material is to be applied shall be repaired with asbestos free patching materials before it is applied.
- An encapsulation project that involves the encapsulation of friable ACM that are located in any enclosed area which can be expected to subsequently be occupied by any person, or in an area that is only directly accessible from an enclosed area that is, or subsequently will be occupied by any person other than persons directly involved in the project, will be conducted in accordance with the following requirements.
 1. The proposed work area will be isolated from other areas of the building and outside areas by erecting temporary partitions that are rigid and airtight around the work area or by installing airtight seals over doorways, windows, and ventilation system openings, except that doorways between the work area and decontamination facilities will be closed off with a control curtain. Plastic sheeting used for the construction of airtight seals shall be at least four-mils thick. Whenever possible, the heating and ventilation systems serving the work area will be shut down and locked out. If the systems cannot be shut down, special provisions will be made to ensure that air-borne contamination from the work area cannot enter the ventilation system and be carried to other areas of the building. If ventilation fans are used to ventilate the work area while the encapsulation project is being carried out, the exhaust from the fan shall be passed through a HEPA filter and discharged outside the structure. Appropriate warning signs shall be prominently posted at all entryways into the work area. Provisions shall be made to prevent a person other than those persons having responsibilities directly related to the project from entering the area.

2. All movable furnishings, equipment and fixtures in the proposed work area shall be pre-cleaned with a HEPA filter-equipped vacuuming device or wet cleaning methods. The items shall be removed from the work area after cleaning and stored in an area that is not subject to contamination with asbestos fibers. The items will not be returned to the work area until final room cleanup has been completed.
3. All wall and floor surface areas, other than those which are to be encapsulated, and all non-movable furnishings, equipment, and fixtures remaining in the proposed work area, will be pre-cleaned with a HEPA filter-equipped vacuuming device or wet cleaning methods and covered with not less than four-mil thick plastic sheeting, except that floors will be covered with a minimum of two layers of six-mil thick plastic sheeting. Plastic sheeting on the walls will be affixed to the wall in a manner that will ensure that it will remain in position throughout the length of the project and will overlap the floor sheeting at least 12 inches above the intersection of the walls with the floor. Any tears that are noted in the proactive plastic sheeting required by this subsection will be immediately repaired.
4. A decontamination facility will be provided between the work area and building areas intended to remain uncontaminated with asbestos fibers generated by the asbestos encapsulation operations. All persons entering or leaving the work area will pass through and use the decontamination facility. Each decontamination facility will consist of the following designated areas which are each to be entered through a doorway that is covered by a control curtain.
5. The decontamination facility will consist of a clean room that will be maintained free of asbestos containing debris and must be first entered by any persons entering the work area. The clean room will be constructed in a manner that provides adequate space for removing or putting on street clothing, putting on and fit-testing respirators, and put on protective clothing and other protective equipment required to be worn in the work area. This

clean room may also be used as a rest and eating area for employees after they have passed through the decontamination process.

6. The decontamination facility will have a shower room that must be first passed through by any person that moves from the work area into the clean room. These persons will be required to shower before entering the clean room. The shower room will be provided with at least one shower head that is supplied with hot and cold water. Adequate quantities of soap, hair shampoo, and towels must be provided to accommodate each person who emerges from the work area. Shower enclosures shall be leak proof and constructed of disposable or easily washable material. Shower water may be drained directly into the building plumbing system or collected for subsequent disposal.
7. The decontamination facility will have an equipment room that must be passed through before the shower room can be entered from the work area. This room shall be used for temporary storage of contaminated tools, equipment and protective clothing used in the work area. The floor and walls of this room will be lined with not less than six-mil thick plastic sheeting. Tools, equipment, and protective clothing shall be free of gross contamination before they are moved from the work area into the equipment room.
8. All decontamination facility areas will be fully enclosed and will be contiguous to each other and the work area unless connected to one another by enclosed passageways that are effectively isolated from areas intended to remain uncontaminated.
9. The KDHE will be notified of any friable ACM that must be removed in order to prepare surfaces for encapsulation or as a result of damage caused by the encapsulation project, before the material is removed.
10. Encapsulating materials will be applied with an airless or low pressure sprayer at the application rates specified by the manufacturer or project specifications.
11. After the encapsulant has been applied to the entire surface intended to be treated, all plastic sheeting covering walls, ceiling, equipment, and work surfaces in the area will be cleaned free of water-removable residue by wet cleaning methods.

12. All plastic coverings will be removed and the surfaces under them will be cleaned free of visible debris with a HEPA filter-equipped vacuuming device or by wet cleaning methods not less than 24 hours later. The remaining plastic coverings or temporary barriers will not be removed until this final cleaning has been completed and approved in accordance with the requirements applicable to the project.
13. Care will be exercised when fixtures and other items are reinstalled on encapsulated surfaces. Any damage to the encapsulant that occurs shall be immediately repaired and any friable ACM that are released by this damage will be immediately cleaned up with a HEPA filter-equipped vacuuming device or by wet cleaning methods and properly disposed of.
 - Each person engaged in an asbestos encapsulation project or entering an asbestos encapsulation project work area will be provided with, and will wear, an appropriate respirator and protective clothing.

3.6.1.3 Work Practices For Asbestos Related Dismantling Projects

Structural or equipment items that are covered with friable ACM and are intended to be moved without first removing the ACM from the surfaces of them shall be handled in accordance with procedures in KAR 28-50-12 which includes the following:

- The removal of friable ACM from any portion of the surface of a structural or equipment item for the purpose of mechanically disassembling or cutting the item into smaller components will be conducted in accordance with work practices in Section 3.3.1 of this document.
- Structural or equipment items, or component parts of them, that are covered with friable ACM will either be securely wrapped in not less than a double layer of six-mil thick plastic sheeting or will be placed in a disposable fiber or metal container that is equipped with a plastic bag liner and a tight fitting and firmly attached lid before being removed from the work area. All exposed surfaces of the friable ACM covering the item or component shall be wetted with a water solution containing a wetting agent before the item or component is wrapped or placed in a container. The exterior surface of the container or wrapping will be cleaned free of all visible residues by wet cleaning methods before the item or component is

moved and the item or component will be handled in a manner that will prevent damage to the container or wrapping. If damage to a wrapping or container occurs, a new wrapping or container will be immediately provided and all friable asbestos containing debris released from the damaged wrapping container will be immediately cleaned up using wet cleaning methods or a HEPA filter-equipped vacuum cleaner.

- Items or component parts, from which ACM is removed will not be sold or reused for any purpose until the surfaces from which the material has been removed are free of visible residue and have been covered with an effective sealing material, unless the sealing requirement is waived by the KDHE.
- The removal of the friable ACM from indoors shall only be done in an area specifically designated for this purpose and in compliance with the following requirements:
 - 1) Access to the area must be controlled to prevent any person other than those responsible for the removal operations from entering. An appropriate warning sign will be posted at each entryway into the area.
 - 2) The area will not be served by a common heating and ventilation system that serves other enclosed and/or occupied areas on the premises.
 - 3) A local exhaust system that is approved by the department will be provided. Air exhausted from the removal area will be discharged to the outside area after being passed through an air cleaning device that has been approved by the KDHE.
 - 4) Each person working in the area will be provided a convenient area immediately adjacent to the removal area to take showers and change into uncontaminated clothing, unless other arrangements are approved by the KDHE.
 - 5) Each person entering into the area will be provided and wear an appropriate respirator and appropriate protective clothing.
 - 6) The designated asbestos removal area will not be used for any other purpose until the removal operations have been discontinued and the area

has been cleaned of all visible residue and debris with a HEPA filter-equipped vacuuming device or by wet cleaning methods.

- 7) Friable ACM that are removed from any structural or equipment item will be handled in accordance with KDHE and EPA regulations.

3.6.1.4 Work Practices For Asbestos Related Demolition Projects

The following requirement will be met before a structure that contains structural items that are covered with friable ACM is demolished:

- The structural items will be removed from the structure in accordance with the requirement of Section 3.3.3 of this document or
- All friable ACM covering the structural materials will be removed from the materials while they remain in place in accordance with the requirement of Section 3.3.1 of this document.

3.6.2 Sheet Vinyl Floor Covering and Floor Tile Removal

3.6.2.1 Exposure Assessment

Before performing a floor removal project, the contractor must perform a negative exposure assessment. Contractors may rely on the ENVIRON report data to make negative exposure assessments for floor removal operations when: 1) only compliant work practices are used (see Sheet Vinyl Floor Covering Removal and Removal of Floor Tiles and Associated Adhesives); 2) all workers engaged in the removal are trained in accordance with the provisions of 29 CFR 1910.1101 (k)(8); and 3) before removal begins, a competent person assesses the job and determines that the flooring material is “intact” within the meaning of 29 CFR 1910.1101 (b) and is likely to remain “intact” throughout the removal process.

The term “intact” is defined to mean “that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be bound with its matrix.” In accordance with this definition, the incidental breakage of flooring material, including slicing of sheet vinyl floor covering with a sharp edged instrument, during removal

operations conducted in accordance with compliant work practices does not mean that the material is not removed in an “intact” condition.

The contractor “competent person” supervising removal of a vinyl or tile covered floor must have successfully completed a 12-hour training class meeting the criteria of the EPA’s Model Accreditation Plan (40 CFR 763) for supervisors. In order to comply with the requirement of 29 CFR 1910.1101(o)(2) and (3), the competent person must make frequent and regular inspections of the job site, and the requirement of 29 CFR 1910.1101 (o)(3) that for Class II and III jobs, on-site inspections must be made at intervals sufficient to assess whether conditions have changed, and at any reasonable time at employee request, the competent person supervising a flooring removal project shall inspect the site prior to the start of removal operations. The contractor will put the exposure assessment in writing and submit a copy to the CEV APM for inclusion into the project file.

3.6.2.2 Sheet Vinyl Floor Covering Removal

The following work practices will be followed during removal of asbestos containing sheet vinyl floor coverings:

- Before removal begins, the entire floor is vacuumed using a HEPA vacuum with a metal floor attachment. In addition, warning signs must be posted and the work area secured to exclude unauthorized personnel from the work area.
- The material is sliced with a sharp edged instrument, such as a utility knife, into strips approximately 4 to 8 inches wide.
- Each strip is rolled up tightly from end to end.
- As each strip is rolled up, a constant mist of water or amended water is sprayed onto the point where the material separates from the backing.
- After a strip has been removed, it is placed in a heavy-duty, impermeable trash bag or other closed, leak-tight container.
- After three strips of flooring material are removed, any residual felt, after being thoroughly wetted, is removed with a stiff-bladed scraper. The felt scrapings are

placed, while still wet, in an impermeable trash bag or other closed leak-tight container.

- As removal progresses, areas from which the flooring has been removed are vacuumed using a HEPA vacuum with a metal floor attachment.
- After the entire floor has been removed and has dried, it is vacuumed using a HEPA vacuum with a metal floor attachment.

3.6.2.3 Removal Of Floor Tiles And Associated Adhesives

The following procedures will be followed when removing asbestos containing floor tile and/or mastic:

- Before removal begins, the entire floor is vacuumed using a HEPA vacuum with a metal floor attachment. In addition warning signs must be posted and the work area secured to prohibit unauthorized personnel from entering the work area.
- Floor tiles will be wetted using a hand sprayer or other means before removing. Each floor tile is pried up individually using a stiff bladed scraper. If a tile does not release from the adhesive when the scraper is forced under the tile by hand, the scraper may be struck with a hammer to cause the tile to release and/or the tile may be heated (e.g. using a hot air gun) to soften the adhesive and facilitate removal.
- Alternatively, without first prying up floor tiles using a scraper, heat is applied to the floor tile from a heat source (e.g. infrared heat machine) and the tiles are removed by hand or by using a scraper. Wetting the tiles is not required if heat is applied to remove the tiles.
- After the tile is removed, it is placed in a heavy-duty impermeable trash bag or other closed leak-tight container without further breakage of the tile.
- As small areas of floor are cleared of tile, residual adhesive is removed, to the extent necessary to prepare the surface for installation of new flooring material, by being wetted and scraped using a stiff bladed floor scraper.
- Alternatively, after the tile is removed, residual adhesive is removed by using a low speed floor machine and wetted sand or a removal solution.

- Adhesive residues are placed while still wet in a heavy-duty impermeable trash bag or other closed leak-tight container.
- The area from which the adhesive has been removed is vacuumed using a HEPA vacuum with a metal floor attachment.

After floor tile has been removed and the floor dried, it is vacuumed using a HEPA vacuum with a metal floor attachment.

3.6.3 Other Work Practices

Personnel removing asbestos must be trained and follow the engineering controls and work practices specified in the citations listed below.

3.6.3.1 Class 1

29 CFR 1926.1101, paragraph g (1) through g (5)

3.6.3.2 Class 2

29 CFR 1926.1101

3.6.3.3 Siding and Shingles

29 CFR 1926.1101, paragraph g (1),(2),(3),(7) and g(8)(iii)

3.6.3.4 Gaskets

29 CFR 1926.1101, paragraph g (1), (2), (3), (7) and g (8)(iv)

3.6.3.5 Other Class II Not Listed

29 CFR 1926.1101, paragraph g(1),(2),(3),(7) and g(8)(v)

3.6.3.6 Class III

29 CFR 1926.1101, paragraph g (1), (2), (3), and (9)

3.6.3.7 Class IV

29 CFR 1926.1101, paragraph g (1), (2), (3) and (10)

3.6.3.8 Contractor Responsibilities

Contractors are responsible for the occupational health protection of their employees. This includes complete control and monitoring of asbestos fibers released during removal and employee exposures. KDHE, OSHA, and EPA inspectors may periodically check

contractor compliance. BEE, SEG, or CEV APMs will be the point of contact for any asbestos regulatory inspections at MAFB.

3.7 Waste Disposal

All solid waste materials containing friable asbestos that results from an asbestos removal project, an asbestos encapsulation project, an asbestos related demolition project, will be handled in the following manner:

- All friable asbestos containing waste shall be placed in tightly sealed containers in a wet condition before it is removed from the work area. Waste containers will be double bagged in not less than six-mil thick, liquid-tight, clear plastic bags unless the waste contains rigid or heavy objects that are likely to tear the bags. If bag damage is likely to occur, the waste will be placed in fiber or metal containers that are equipped with a plastic bag liner and a tight fitting lid which can be firmly fastened in position. Large sections of structural items, such as pipe or duct work that have been removed with friable ACM left in place, may be tightly wrapped in not less than a double layer of six-mil thick clear plastic sheeting for disposal purposes if they cannot be placed in containers. All exposed surfaces of the friable ACM shall be in a wet condition when an item is wrapped.
- The exterior surface of each container or individually wrapped object will be cleaned free of all visible debris and an asbestos caution label will be securely attached before the container or wrapped object is removed from the work area to another area for storage or transport.
- Before each container or wrapped object of friable ACM is removed from the work area to another area for storage or transport purposes, the waste generator will place on the exterior of each container or wrapped object specific information which will identify the asbestos removal project, asbestos encapsulation project, asbestos related dismantling project, or asbestos related demolition project at which the waste was generated. The identifying information must be legible and printed with indelible ink. The waste generator will mark each container or wrapped object by:

- 1) Printing or attaching to each container or wrapped object a label that contains the name of the licensed business entity or approved public agency that carried out the project and the project location where the waste was generated or
- 2) Printing on the exterior surface of each container or wrapped object the identifying number provided by the KDHE for each project upon receipt of a project notification submitted in compliance with KDHE asbestos regulations or
- 3) Attaching to each container or wrapped object a label which meets the requirements of applicable federal EPA or OSHA regulations pertaining to the identification of container or wrapped objects used for the disposal of ACM.
- 4) Each waste container will be carefully handled and transported in order to prevent breaking or opening. Whenever a container breaks or otherwise becomes unable to completely contain the waste, the waste will be immediately transferred into another sealed container that complies with the KDHE regulations. Any friable asbestos containing solid waste materials that come out of the original container will be immediately cleaned up after being saturated with water and placed in a replacement container. The original container will be disposed of as ACM waste.
- 5) Friable asbestos containing solid waste will not be transported from a work site or disposed of unless the waste generator has received prior approval from the KDHE for its disposal at an approved disposal site. Application for disposal approval will be made in writing before the project starts and contain the following information:
 - A. The type of waste intended to be disposed of and the name of the premises at which it was generated.
 - B. The amount of waste designated for disposal, expressed either as cubic yards of containerized materials or linear feet of individually wrapped materials.
 - C. The disposal site to which the waste is to be transported.

- D. The time period over which the waste is expected to be transported to the disposal site.
 - E. The name of the waste generator and the person responsible for transporting the waste to the disposal site.
- Waste will be transported in vehicles that have completely enclosed cargo areas, or a four-sided cargo area which will be completely covered with six-mil thick plastic sheeting or other equivalent covering while the waste is being transported. All visible debris remaining in the vehicle cargo area after the waste has been deposited at the disposal area will be immediately removed by wet cleaning methods and disposed of in accordance with KDHE regulations.
 - The waste generator will remain responsible for storage, transport, and disposal of the waste in accordance with KDHE regulations, until the time that the waste is delivered to, and accepted by, the operator of an approved waste disposal site. The waste generator will be released from further responsibility for handling of the waste when the disposal site operator acknowledges, in writing, that the delivered waste has been properly identified as friable ACM and has been delivered in a manner and condition that is acceptable to the disposal site operator.
 - Wastewater and other liquid waste that contains friable ACM that result from an asbestos removal project an asbestos encapsulation project, or an asbestos related maintenance, dismantling, or demolition operation, may be disposed of by mixing them with solid waste materials and disposing of the mixture in accordance with KDHE regulations. Wastewater that cannot be handled in this manner will be disposed of by one of the following methods:
 - 1) Wastewater from decontamination showers and final cleanup of waste containers and equipment may be disposed of in public sewer systems either by discharge into the plumbing system where the waste is generated, or by storing the waste and discharging it directly into the sewer system at a location designated by the operator of the system. The wastewater will be free of any material that is likely to cause stoppage in the plumbing or sewer system.

- 2) Discharge of any other asbestos contaminated wastewater or liquid waste or the use of any other method for the disposal of contaminated liquid waste will be at a location and in a manner specifically approved by the KDHE in writing.

The abatement contractor will coordinate disposal of asbestos waste through the CEV Hazardous and Special Waste Manager. The contractor will provide copies of all asbestos waste manifests, landfill disposal tickets, and a copy of the letter from the landfill granting permission to dispose of asbestos waste. The CEV Hazardous and Special Waste Manager will reconcile the manifest and landfill disposal tickets to insure all asbestos wastes were disposed of in accordance with KDHE regulations. The CEV Hazardous and Special Waste Manager will provide copies of the project waste disposal documentation to the CEV APM for inclusion into the project files.

3.8 Transportation Requirements

Transportation is defined as all activities involving asbestos waste from the time it leaves the work site until it has been unloaded at the disposal site. The vehicles used for transportation of containerized asbestos waste will employ a carrying compartment to prevent damage to containers and prevent visible fiber release. Large quantities of asbestos waste are commonly transported in 20 cubic yard roll-off boxes, which shall also be covered. A copy of the waste shipment manifest including generator and disposal site signatures must be provided to CEV.

3.9 Record Keeping

An asbestos project will not be considered complete until all records required in accordance with this plan have been submitted to the contracting officer, contract inspector, and the CEV APM. This shall include the results of final clearance air monitoring accomplished in accordance with 40 CFR 763.90(i), which shall be reviewed by BEE per AFOSH STD 48-8, Appendix 9.

APPENDICES

APPENDIX A
ASBESTOS TRAINING REQUIREMENTS

APPENDIX B
ASBESTOS IMPAC SERVICES

APPENDIX C
DISPOSAL OF SAFES/FILE CABINETS

APPENDIX D

DISPOSAL OF ACM BRAKES AND OTHER ACM PARTS

APPENDIX E
AFI DOCUMENTS

APPENDIX F
KDHE ASBESTOS REGULATIONS

APPENDIX G
EPA REGULATIONS

APPENDIX H
OSHA REGULATIONS