HEALTH AND SAFETY PLAN FORM
OTIE Health and Safety Program

This document is for the exclusive use of OTIE its subcontractors, and EPA.

OTIE
Site Name: Pineville Textile Mill

PROJECT NAME: Pineville Textile Mill
PROJECT#: TBD
LOCATION: 436 Cone Avenue
Pineville, Mecklenburg County, North Carolina

DATE: 9/18/2014

CLIENT: USEPA
EPA CONTACT/PHONE #: Brian Englert - 404-263-8775
LOCAL/SITE CONTACT PHONE #: NA

INCIDENT DESCRIPTION:
Abandoned drums and suspected asbestos containing materials (ACM)

SOURCE OF PRELIMINARY INFORMATION: USEPA

ANTICIPATED TASKS:
(e.g. collect surface soil samples):
Sample an estimated 50 bulk storage containers and perform hazard categorization screening. Sample debris piles and pipe insulation containing suspected ACMs.

TYPE: *Check as many as applicable*

Active	( )	Landfill	( )	Spill	( )
Inactive	(X)	Uncontrolled	( )	Fire	( )
Secure	(X)	Industrial	(X)	Military	( )
Unsecure	( )	Recovery	( )	Unknown	( )
Enclosed space	( )	Well Field	( )	Other (specify)	( )

DESCRIPTION AND FEATURES: *Include principal operations and unusual features (containers, buildings, dikes, power lines, hillslopes, rivers, etc.)*
The facility is an abandoned textile mill containing numerous bulk storage containers and an underground sump of unknown volume. The 28.3 acre parcel contains 8 buildings constructed between 1900 and 1974 that total approximately 260,835 square feet. The site is bordered by a Norfolk Southern railway followed by Jack D. Hughes Community Park to northwest; an office building followed by a residential property, a vacant lot and a Town of Pineville municipal office building to the northeast; Dover Street and Cone Avenue followed by residential properties to the east; Cone Avenue followed by residential properties to the south; Fisher Street and Hill Street followed by residential properties and a Masonic lodge to the4 southwest; and a Norfolk Southern railway followed by a wooded parcel to the west.

SURROUNDING POPULATION: (X) Residential ( ) Industrial (X) Commercial ( ) Rural (X) Urban ( ) Other:

HISTORY: *Summarize conditions that relate to hazard. Include citizen complaints, spills, previous investigations or agency actions, known injuries, etc.*
Unknown at this time.

WASTE TYPES: (X) Liquid (X) Solid (X) Sludge ( ) Gas ( ) Unknown ( ) Other: _____

WASTE CHARACTERISTICS: *Check as many as applicable.*

(X) Corrosive (X) Flammable ( ) Radioactive
(X) Toxic (X) Volatile ( ) Reactive
( ) Inert Gas (X) Unknown ( ) Other, Specify: _____

WORK ZONES: *Describe the Exclusion, Contamination Reduction, and Support Zones in terms on-site personnel will recognize*

Final work zones will be established once the teams are onsite. Since, essentially, the entire site is a sampling site (the work zone), the preliminary setup will be use the main entrance as the support zone and rally point in case of emergencies.

HAZARDS OF CONCERN:

(X) Heat Stress *attach guidelines* ( ) Noise
( ) Cold Stress *attach guidelines* (X) Inorganic Chemicals
(X) Explosive/Flammable (X) Organic Chemicals
( ) Oxygen Deficient ( ) Motorized Traffic
( ) Radiological ( ) Heavy Machinery
( ) Biological (X) Slips, Trips, & Falls
( ) Other, Specify: _____

FACILITY'S PAST AND PRESENT DISPOSAL METHODS AND PRACTICES:

Unknown at this time

HEALTH AND SAFETY PLAN FORM **OTIE Health and Safety Program**		*This document is for the exclusive use of OTIE its subcontractors, and EPA.*		**OTIE** **Site Name: Pineville Textile Mill**	
HAZARDOUS MATERIAL SUMMARY:		*Circle waste type and estimate amounts by category.*			
CHEMICALS: *Amount/Units:*	**SOLIDS:** *Amount/Units:*	**SLUDGES:** *Amount/Units:*	**SOLVENTS:** *Amount/Units:*	**OILS:** *Amount/Units:*	**OTHER:** *Amount/Units:*
PCBs		Unknown		Unknown	
Asbestos	Unknown				
Petroleum		Unknown		Unknown	
OVERALL HAZARD EVALUATION: **JUSTIFICATION:**		( )High (X)Medium	( )Low ( )Unknown		
FIRE/EXPLOSION POTENTIAL:		( )High (X)Medium	( )Low ( )Unknown		
INFORMATION COMPLETE:		( )Complete	( )Incomplete	(X)Best Available at Current Time	

KNOWN CONTAMINANTS	NIOSH REL (ST if Available) *ppm or mg/m3 (specify)*	OSHA PEL (ST if Available) *ppm or mg/m3 (specify)*	IDLH *ppm or mg/m3 (specify)*	SYMPTOMS & EFFECTS OF ACUTE EXPOSURE	PHOTO IONIZATION POTENTIAL
PCB	NA	1 mg/m3, 8-hr TWA-skin	5 mg/m3	Exposure Routes: Inhalation, Absorptions, ingestion, contact Symptoms: irritation of the eyes, chloracne, liver damage, reproduction effects Target Organs: skin, eyes, liver, reproduction system,	U
Asbestos	NA	0.1 fiber/cm^3	NE	Exposure Routes: Inhalation, Ingestion Contact Symptoms: Asbestosis (chronic exposure): difficulty breathing, interstitial fibrosis, restricted pulmonary function, finger clubbing irritation to eyes	U

NA = Not Available **NE = None Established** **U = Unknown** Attach, to this plan, an MSDS for each chemical you will use at the site.

S = Soil SW = Surface Water T = Tailings W = Waste SD = Sediment
A = Air GW = Ground Water SL = Sludge D = Drums OFF = Off-Site

HEALTH AND SAFETY PLAN FORM *This document is for the exclusive use of OTIE* **OTIE**

OTIE Health and Safety Program *its subcontractors, and EPA.* **Site Name: Pineville Textile Mill**

Task Description / PPE / Personnel & Responsibilities (attach additional sheets as necessary)

Task 1	Sampling Drums					**Type** Non-Intrusive	**Hazard Schedule** Medium
Primary Level C	Respiratory:	APR w P100 VOA or Combo Cart	**Contingency** B	Respiratory:	SCBA		
	Eyewear:			Eyewear:			
	Boots:	steel toe w/ latex bootie		Boots:	steel toe w/ latex bootie		
	Gloves:	inner: nitrile, outer: nitrile		Gloves:	inner: nitrile outer:nitrile		
PPE:	Clothing:	poly-coated tyvek	**PPE:**	Clothing:	Saranex coverall		
Task 2	Sampling Debris					**Type** Non-Intrusive	**Hazard Schedule** Medium
Primary Level C	Respiratory:	APR w P100 VOA or Combo Cart	**Contingency** B	Respiratory:	SCBA		
	Eyewear:			Eyewear:			
	Boots:	steel toe w/ latex bootie		Boots:	steel toe w/ latex bootie		
	Gloves:	inner: nitrile, outer: nitrile		Gloves:	inner: nitrile outer:nitrile		
PPE:	Clothing:	poly-coated tyvek	**PPE:**	Clothing:	Saranex coverall		
Task 3 Description	Site walk/recon					**Type** Non-Intrusive	**Hazard Schedule** Low
Primary Level D	Respiratory:		**Contingency Level** Exit area	Respiratory:			
	Eyewear:			Eyewear:			
	Boots:	Steel toe		Boots:			
	Gloves:			Gloves:			
PPE:	Clothing:		**PPE:**	Clothing:			
Task 4 Description						**Type**	**Hazard Schedule**
Primary Level	Respiratory:		**Contingency Level**	Respiratory:			
	Eyewear:			Eyewear:			
	Boots:			Boots:			
	Gloves:			Gloves:			
PPE:	Clothing:		**PPE:**	Clothing:			

PERSONNEL AND RESPONSIBILITIES

Name	**Company/Agency**	**Training**	**Responsibilities**
Ryan Stubbs	OTIE	40 Hour HAZWOPER	All
Eric Morris	OTIE	40 Hour HAZWOPER	All

Monitoring Equipment: Specify by task. Indicate type as necessary. Attach additional sheets if needed.

Tasks:	Instrument:	Level:	Action Guidelines:	Comments:
1	Photoionization	0-5ppm	Level C - Continue work	
2	detector	5-50ppm	Level C - Continue work, monitor readings closely	
		>50ppm	Level B	

Tasks:	Instrument:	Level:	Action Guidelines:	Comments:
1	Flame ionization	0-5ppm	Level C - Continue work	
2	detector	5-50ppm	Level C - Continue work, monitor readings closely	
		>50ppm	Level B	

Tasks:	Instrument:	Level:	Action Guidelines:	Comments:
3	Radiation Survey Meter	0-3x Bkg	Continue work	
		>3x Bkg	Exit area	

Tasks:	Instrument:	Level:	Action Guidelines:	Comments:

Tasks:	Instrument:	Level:	Action Guidelines:	Comments:

Tasks:	Instrument:	Level:	Action Guidelines:	Comments:

EMERGENCY CONTACTS

Site Telephone	
EPA Release Report #	
OTIE 24-Hr Emergency #	678-255-5524
Facility Management	
Other (specify)	
CHEMTREC Emergency #:	1-800-424-9300

CONTINGENCY PLANS: *Summarize below*

Exit area and move to safe location. Contact Program Manager Greg Kowalski (678-255-5524), the Business Unit Health & Safety Leader Ryan Stubbs (678-255-5544), or the Corporate Health and Saftey Officer, Carolann Wolfgang (805-585-6394).

HEALTH AND SAFETY PLAN APPROVALS

Prepared by	Eric Morris	Date	9/18/2014
DHSC Signature		Date	
HSM Signature		Date	9/18/2014

EMERGENCY CONTACTS	**NAME**	**PHONE**
Health and Safety Manager	Greg Kowalski	678-255-5524
Project Manager	Ryan Stubbs	678-255-5544
Site Safety Coordinator	Ryan Stubbs	678-255-5544
Client Contact (EPA)	Brian Englert	404-263-8775
Other_____		
State Agency		
State Spill Number		
Fire Department		911
Police Department		911
State Police		911
Health Department		
Poison Control Center		800-848-6946
Occupational Physician	Dr. Jerry Berke, Health Resources	800-350-4511

MEDICAL EMERGENCY		**PHONE**
Hospital Name:	Charlotte Medical Clinic - Pinevill	704-667-3960
Hospital Address	10650 Park Road, Charlotte, NC	
Name of Contact at Hospital:		
Name of 24-Hour Ambulance:		
Route to Hospital:	(see attached sheet)	

Distance to Hospital: 1.8 miles

HEALTH AND SAFETY PLAN SIGNATURE FORM

OTIE Health and Safety Program

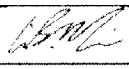
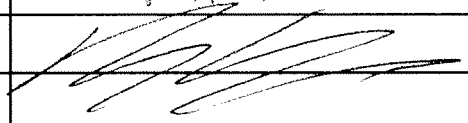
All site personnel must sign this form indicating receipt of the H&SP. Keep this original on site. It becomes part of the permanent project files. Send a copy to the Health and Safety Manager (HSM).

SITE NAME/NUMBER: Pineville Textile Mill / TBD

DIVISION/LOCATION: OTIE-START, Marietta, Georgia

DATE: September 18, 2014

I understand, and agree to comply with, the provisions of the above referenced H&SP for work activities on this project. I agree to report any injuries, illnesses or exposure incidents to the site Health and Safety Coordinator (SHSC). I agree to inform the SHSC about any drugs (legal and illegal) that I take within three days of site work.

PRINTED NAME	SIGNATURE	DATE
Eric Morris		9/18/2014
Ryan Stubbs		9/18/2014
Brian England		9/22/2014

DECONTAMINATION PROCEDURES

ATTACH SITE MAP INDICATING EXCLUSION, DECONTAMINATION, AND SUPPORT ZONES

Maximum Measures for Level A Decontamination

Station 1	Segregated Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination. During hot weather operations, cool down stations may be set up in this area.	Station 17	Inner Clothing Removal	17. Remove inner clothing. Place in container with plastic liner. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully-encapsulated suit.
Station 2	Boot Cover / Glove Wash	2. Scrub outer boot covers and gloves with decon solution or detergent and water.	Station 18	Field Wash	18. Shower if highly toxic, skin corrosive or skin absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
Station 3	Boot Cover / Glove Rinse	3. Rinse off decon solution from station 2 using copious amounts of water.			
Station 4	Tape Removal	4. Remove tape around boots and gloves and deposit in container with plastic liner.	Station 19	Redress	19. Put on clean clothes.
Station 5	Boot Cover Removal	5. Remove boot covers and deposit in container with plastic liner.			
Station 6	Outer Glove Removal	6. Remove outer gloves and deposit in container with plastic liner.			
Station 7	Suit and Boot Wash	7. Wash encapsulating suit and boots using scrub brush and decon solution and detergent/water. Repeat as many times as necessary.			
Station 8	Suit and Boot	8. Rinse off decon solution using copious amounts of water. Repeat as many times as necessary.			
Station 9	Tank Change	9. If an air tank change is desired, this is the last step of the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers donned and joints taped. Worker returns to duty.			
Station 10	Safety Boot Removal	10. Remove safety boots and deposit in container with plastic liner.			
Station 11	Fully Encapsulating Suit and Hard Hat Removal	11. Fully encapsulated suit is removed with assistance of a helper and laid out on a drop cloth or hung up. Hard hat is removed. Hot weather rest station may be set up within this area for personnel returning to the site.			
Station 12	SCBA Backpack Removal	12. While still wearing facepiece, remove backpack and place on table. Disconnect hose from regulator valve and proceed to next station.			
Station 13	Inner Glove Wash	13. Wash with decon solution that will not harm the skin. Repeat as many times as necessary.			
Station 14	Inner Glove Rinse	14. Rinse inner gloves with water. Repeat as many times as necessary.			
Station 15	Face Piece Removal	15. Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.			
Station 16	Inner Glove Removal	16. Remove inner gloves and deposit in container with plastic liner.			

Minimum Measures for Level A Decontamination

Station 1	Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination. During hot weather operations, cool down stations may be set up in this area.
Station 2	OG, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and fully-encapsulating suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3	OB and Glove Removal	3. Removal outer boots and gloves. Deposit in container with plastic liner.
Station 4	Tank Change	4. If worker leaves exclusion zone to change air tank, this is the last step of the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers donned and joints taped. Worker returns to duty.
Station 5	Boot, Gloves, and OG Removal	5. Boots, chemical-resistant splash suit, inner gloves removed and deposited in container with plastic liner.
Station 6	SCBA Removal	6. SCBA backpack and face piece is removed. Avoid touching face with fingers. SCBA is deposited on plastic sheets.
Station 7	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

OG = Outer Garment OB = Outer Boot

Maximum Measures for Level B Decontamination

Station 1	Segregated Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination. During hot weather operations, cool down stations may be set up in this area.
Station 2	Boot Cover / Glove Wash	2. Scrub outer boot covers and gloves with decon solution or detergent and water.
Station 3	Boot Cover / Glove Rinse	3. Rinse off decon solution from station 2 using copious amounts of water.
Station 4	Tape Removal	4. Remove tape around boots and gloves and deposit in container with plastic liner.
Station 5	Boot Cover Removal	5. Remove boot covers and deposit in container with plastic liner.
Station 6	Outer Glove Removal	6. Remove outer gloves and deposit in container with plastic liner.
Station 7	Suit and Safety Boot Wash	7. Wash chemical resistant splash suit, SCBA, gloves and safety boots. Scrub with long handle scrub brush and decon solution. Wrap SCBA regulator (if belt mounted type) with plastic to keep out of water. Wash back pack assembly with sponges or cloth.
Station 8	Suit, SCBA, Boot and Glove Rinse	8. Rinse off decon solution using copious amounts of water.
Station 9	Tank Change	9. If worker leaves exclusion zone to change air tank, this is the last step of the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers donned and joints taped. Worker returns to duty.
Station 10	Safety Boot Removal	10. Remove safety boots and deposit in container with plastic liner.
Station 11	SCBA Backpack Removal	11. While still wearing face piece, remove backpack and place on table. Disconnect hose from regulator valve.
Station 12	Splash Suit Removal	12. With assistance of helper, remove splash suit. Deposit in container with plastic liner.
Station 13	Inner Glove Wash	13. Wash inner gloves with decon solution.
Station 14	Inner Glove Rinse	14. Rinse inner gloves with water.
Station 15	Face Piece Removal	15. Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
Station 16	Inner Glove Removal	16. Remove inner gloves and deposit in container with plastic liner.
Station 17	Inner Clothing Removal	17. Remove inner clothing. Place in container with plastic liner. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully-encapsulated suit.
Station 18	Field Wash	18. Shower if highly toxic, skin corrosive or skin absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
Station 19	Redress	19. Put on clean clothes.

Minimum Measures for Level B Decontamination

Station 1	Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination. During hot weather operations, cool down stations may be set up in this area.
Station 2	OG, Boots, Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and chemical resistant splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3	Outer Boot and Glove Removal	3. Removal outer boots and gloves. Deposit in container with plastic liner.
Station 4	Tank Change	4. If worker leaves exclusion zone to change air tank, this is the last step of the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers donned and joints taped. Worker returns to duty.
Station 5	Boot, Gloves and OG Removal	5. Boots, chemical-resistant splash suit, inner gloves removed and deposited in container with plastic liner.
Station 6	SCBA Removal	6. SCBA backpack and face piece is removed. Avoid touching face with fingers. SCBA is deposited on plastic sheets.
Station 7	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

OG = Outer Garment

Maximum Measures for Level C Decontamination		
Station 1	Segregated Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination. During hot weather operations, cool down stations may be set up in this area.
Station 2	Boot Cover / Glove Wash	2. Scrub outer boot covers and gloves with decon solution or detergent and water.
Station 3	Boot Cover / Glove Rinse	3. Rinse off decon solution from station 2 using copious amounts of water.
Station 4	Tape Removal	4. Remove tape around boots and gloves and deposit in container with plastic liner.
Station 5	Boot Cover Removal	5. Remove boot covers and deposit in container with plastic liner.
Station 6	Outer Glove Removal	6. Remove outer gloves and deposit in container with plastic liner.
Station 7	Suit and Boot Wash	7. Wash splash suit, gloves and safety boots. Scrub with long handle scrub brush and decon solution.
Station 8	Suit, Boot and Glove Rinse	8. Rinse off decon solution using copious amounts of water.
Station 9	Canister or Mask Change	9. If worker leaves exclusion zone to change canister (or mask), this is the last step of the decontamination procedure. Worker's canister (or mask) is exchanged, new outer gloves and boot covers donned and joints taped. Worker returns to duty.
Station 10	Safety Boot Removal	10. Remove safety boots and deposit in container with plastic liner.
Station 11	Splash Suit Removal	11. With assistance of helper, remove splash suit. Deposit in container with plastic liner.
Station 12	Inner Glove Wash	12. Wash inner gloves with decon solution.
Station 13	Inner Glove Rinse	13. Rinse inner gloves with water.
Station 14	Face Piece Removal	14. Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
Station 15	Inner Glove Removal	15. Remove inner gloves and deposit in container with plastic liner.
Station 16	Inner Clothing Removal	16. Remove inner clothing soaked with perspiration and place in container with plastic liner. Do not wear inner clothing off-site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully-encapsulated suit.
Station 17	Field Wash	17. Shower if highly toxic, skin corrosive or skin absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
Station 18	Redress	18. Put on clean clothes.

Minimum Measures for Level C Decontamination		
Station 1	Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination. During hot weather operations, cool down stations may be set up in this area.
Station 2	OG, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and chemical resistant splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3	OB and Glove Removal	3. Removal outer boots and gloves. Deposit in container with plastic liner.
Station 4	Canister or Mask Change	4. If worker leaves exclusion zone to change canister (or mask), this is the last step of the decontamination procedure. Worker's canister (or mask) is exchanged, new outer gloves and boot covers donned and joints taped. Worker returns to duty.
Station 5	Boot, Gloves and OG	5. Boots, chemical-resistant splash suit, inner gloves removed and deposited in container with plastic liner.
Station 6	Face Piece Removal	6. Face piece is removed. Avoid touching face with fingers. Face piece is deposited on plastic sheet.
Station 7	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

OG = Outer Garment OB = Outer Boot

Minimum Measures for Level D Decontamination		
Station 1	Equipment Drop	1. Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination. During hot weather operations, cool down stations may be set up in this area.
Station 2	OG, Boots, Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and chemical resistant splash suit with decon solution or detergent water. Rinse off using copious amounts of water.
Station 3	OB and Glove Removal	3. Removal outer boots and gloves. Deposit in container with plastic liner.
Station 4	Boot, Gloves, OG Removal	5. Boots, chemical-resistant splash suit, inner gloves removed and deposited in container with plastic liner.
Station 5	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

OG = Outer Garment OB = Outer Boot

Sampling Equipment Decontamination

All equipment will be cleaned prior to entering the Site.
Equipment will be tripled rinse consisting of non-phosphate detergent and tap water solution, rinse with potable water, and rinse with de-ionized water. If soap and water alone cannot remove contamination, additional procedures may be used such as steam cleaning.

Heavy Equipment Decontamination

All equipment will be cleaned prior to entering the Site.
All vehicles and heavy equipment used in the EZ will be decontaminated in the CRZ and inspected prior to leaving the site. A Certification of Decontamination form will be included in the daily safety log. All vehicles and equipment will be decontaminated according to the procedures described below:
Vehicles and heavy equipment contaminated with Contaminates of Concern (COCs) from the site excavation activities will be placed on a decontamination pad and sprayed down with a pressure washer. This pad will be constructed as a bermed liner and equipped with a pump and suitable container for waste water generated from the equipment decontamination process. Soils and fines that cannot be pumped will be shoveled from the liner following spraying down of vehicles and equipment and transported to appropriate soil stockpiles on-site.
Personnel engaged in decontamination will be in a rain suit, hardhat equipped with a face shield, with shin guards to protect from the blast and overspray of the pressure washer used for heavy equipment decontamination.

Containment and Disposal Method

The decontamination rinsate will be collected, packaged in drums and temporarily stored at the site. After analytical results are available, the waste will be profiled and transported under appropriate documentation for disposal in accordance with applicable law and regulations. The PPE will be collected and bagged for disposal as a solid waste. If spills should occur, prompt cleanup with dedicated equipment from onsite spill response inventory will be used.

Medical Emergency Decontamination Procedures

The following procedures are to be used for providing emergency medical treatment to personnel sustaining injury while working in the exclusion area of the site. The procedures are to be used by site/safety personnel, emergency medical staff/ambulance crewmembers, and hospital emergency room staff ONLY when the nature of the medical emergency supersedes SOPs for chemical decontamination when exiting the exclusion area. Although specific contaminants, by nature, must be dealt with on a case-by-case basis, the following procedures generally will be followed.

Injury Involving Potential for Contact with Contaminated Clothing and Skin

An initial assessment of the injured person will be performed first, to determine if the employee has suffered a spinal/head injury. Potential spinal/head injuries may require some PPE to be left on the injured employee. However, emergency decontamination procedures must be used to remove as much potential contamination as possible. If the initial assessment does not provide evidence of a spinal/head injury, all protective clothing (hard hat, outer boots, and gloves) will be removed by personnel at the site before the injured person is transferred to an ambulance. This can be performed anywhere on the site although when at all possible, it should be performed in the CRZ. Contaminated protective clothing must be cut off to prevent cross contamination. Emergency clothing removal and decontamination of potentially contaminated skin expedites decontamination of the injured person in the CRZ and prevents contamination of emergency vehicles, emergency staff, and emergency room facilities. Pre-surgery preparation for the injured person would consist of normal soap and water rinsing and is conducted by EMS personnel

MATERIAL SAFETY DATA SHEET PACKET

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

SRM Number: 1866b
SRM Name: Common Commercial Asbestos

Date of Issue: 09 January 2007

MSDS Coordinator: Mario Cellarosi
Telephone: 301-975-6776
FAX: 301-926-4751
E-mail: SRMMSDS@nist.gov

Emergency Telephone Chem Trec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

Description: Standard Reference Material (SRM) 1866b is comprised of three commercial-grade asbestos materials that were, or are, commonly used in commerce. These asbestos materials are typical of the asbestos found in bulk samples during routine asbestos inspections of building materials. The optical properties serve as a primary calibration standard in the identification of asbestos with polarized light microscopy (PLM). A unit of SRM 1866b consists of a set of three bottles: one bottle containing chrysotile, one bottle containing asbestiform grunerite (amosite), and one bottle containing asbestiform riebeckite (crocidolite). Each bottle contains between 1 gram and 3 grams of material.

Chrysotile

Asbestiform Grunerite (Amosite)

Asbestiform Riebeckite (Crocidolite)

An MSDS is provided for each of the three asbestos materials listed above, which contain hazardous components 1 % or greater and/or carcinogens 0.1 % or greater, in compliance with OSHA 29 CFR 1910.1200.

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

SRM Number: 1866b
MSDS Number: 1866b
SRM Name: Common Commercial Asbestos

Date of Issue: 09 January 2007

MSDS Coordinator: Mario Cellarosi
Telephone: 301-975-6776
FAX: 301-926-4751
E-mail: SRMMSDS@nist.gov

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

Description: Standard Reference Material (SRM) 1866b is a set of three individual commercial-grade asbestos materials: **chrysotile**, asbestiform grunerite (amosite), and asbestiform riebeckite (crocidolite). A unit of SRM 1866b consists of three bottles, each containing between 1 gram and 3 grams of individual material.

Substance: **Chrysotile**

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS[(a)]

Component:	**Chrysotile**
Other Designations:	**Chrysotile** (metaxite; serpentine chrysotile; asbestos; chrysotile asbestos)
CAS Number:	12001-29-5
EC Number (EINECS):	Not assigned.
SRM Nominal Concentration (% by weight or volume):	> 90
Component:	**Magnetite (as an impurity)**
Other Designation:	**Magnetite** (magnetic iron oxide; black iron oxide; magnetic iron ore; lodestone; black ferric oxide)
CAS Number:	1309-38-2
EC Number (EINECS):	215-169-8
SRM NominalConcentration (% by weight):	< 5
EC Classification:	T Carcinogen Category 1
EC Risk (R No.):	23, 45, 48
EC Safety (S No.):	45, 53

[(a)] Hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed in compliance with OSHA 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 0 Reactivity = 0

Major Health Hazards: Cancer hazard (in humans)

Potential Health Effects

Inhalation: Inhalation of chrysolite asbestos dust may be irritating. Symptoms include a cough and chest pain. Chronic exposure may cause asbestosis, interstitial fibrosis of the lung tissue, which may develop within 4 years to 9 years, but onset may be typically delayed 20 years to 40 years after first exposure. Death from asbestosis may be due to respiratory or cardiac failure. Secondary lung infections may also occur. Chronic exposure of asbestos to workers may also cause pleural effusion as early as 3 years to 4 years after initial exposure. Chronic exposure of asbestos to workers also increases the chance of pleural and peritoneal mesotheliomas, bronchogenic carcinoma, lung cancer, and cancers of the gastrointestinal tract and larynx. The latent period for mesothelioma is 3 years to 40 years; for lung cancer, 15 years to 30 years.

Skin Contact: Direct contact may cause irritation. Asbestos fibers may penetrate the skin and result in "asbestos corns", due to thickening of the skin around the implanted fiber. These corns usually occur on the hands and forearms, and they disappear on removal of the fibers.

Eye Contact: Direct contact may cause irritation with redness due to mechanical action.

Ingestion: Acute exposure by cause gastrointestinal irritation. Chronic exposure of asbestos fibers may be involved in cancers of the buccal cavity and pharynx, esophagus, stomach, colon, and rectum.

Listed as a Carcinogen/ Potential Carcinogen:

Yes	No	
X		In the National Toxicology Program (NTP) Report on Carcinogens.
X		In the International Agency for Research on Cancer (IARC) Monographs.
X		By the Occupational Safety and Health Administration (OSHA).

4. First Aid Measures

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Get immediate medical attention.

Skin Contact: Rinse affected area with copious amounts of water followed by washing with soap and water for at least 15 minutes while removing contaminated clothing. Get immediate medical attention.

Eye Contact: Flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: If a large amount is swallowed, get immediate medical attention.

5. Fire Fighting Measures

Fire and Explosion Hazards: Chrysotile is a negligible fire hazard.

Extinguishing Media: Regular dry chemical. Carbon dioxide. Water. Regular foam.

Fire Fighting: If material is involved in a fire, extinguish fire with a medium appropriate for the surrounding fire. Material itself does NOT burn or burns with difficulty. Keep run-off water out of sewers and water sources. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Component: **Chrysotile**
Flash Point: Not applicable.
Method Used: Not applicable.

Autoignition Temp.: Not applicable.

Flammability Limits in Air
UPPER (Volume %): Not applicable.
LOWER (Volume %): Not applicable.

6. Accidental Release Measures

Occupational Release: Do NOT touch or walk through spilled material. Avoid inhalation of asbestos dust (see Section 8, "Exposure Controls and Personal Protection"). Collect small dry spills with a shovel and place material into an appropriate container for disposal. Prevent entry into waterways and sewers. Clean up residue with a HEPA filter vacuum.

Disposal: Refer to Section 13, "Disposal Considerations".

7. Handling and Storage

Storage: Store and handle in accordance with all current regulations and standards.

Safe Handling Precautions: See Section 8, "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: **Chrysotile**
OSHA (PEL): 0.1 fibers/cc TWA
ACGIH (TLV): 0.1 fibers/cc TWA
NIOSH: 0.1 fibers/cc recommended TWA (10 h)

Ventilation: Provide local exhaust ventilation system equipped with a HEPA-filter dust collection system.

Respirator: If workplace conditions warrant a respirator's use, a NIOSH/MSHA approved respirator should be used under an implemented respiratory protection program in accordance with OSHA Standard 29 CFR 1910.134 (General Industry, Use of Respirators) and 29 CFR 1910.1001 for occupational exposure to asbestos.

Eye Protection: Wear safety goggles. An eye wash station should be readily available near areas of use.

Personal Protection: Wear appropriate protective clothing and gloves to prevent skin exposure. Refer to OSHA Regulated Substances: OSHA 29 CFR 1910.1001.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: **Chrysotile**
Appearance: Fibrous solid to dust-like powder. White to grey-brown. Odorless.
Relative Molecular Mass: Not applicable.
Molecular Formula: $Mg_3(Si_2O_5)(OH)_4$
Water Solubility: Insoluble.
Solvent Solubility: Insoluble in organic solvents.

10. STABILITY AND REACTIVITY

Stability: X Stable ____ Unstable

Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid generating dust. Keep out of water supplies and sewers.

Incompatible Materials: May be attacked by strong acids.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Completely decomposes at temperatures of 1 000 °C.

Hazardous Polymerization: ____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation X Skin X Ingestion

Toxicity Data: **Chrysotile**
Human, Inhalation TCL_O: 2.8 fibers/cc (5 years)
Rat, Inhalation-Intermittent TCL_O: 8 210 $\mu g/m^3$ (6 h to 20 d)
Rat, Oral-Continuous TDL_O: 10 867 mg/kg (78 weeks)

Tumorigenic, Reproductive, Mutagenic Data: Chrysotile has been investigated as a tumorigenic and mutagenic effector.

Health Effects (Acute and Chronic): See Section 3: "Hazards Identification" for potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: Not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Asbestos; UN2212; Hazard Class 9
NOTE: This material, as packaged for SRM 1866b, is not subject to the regulations per DOT Special Provision 156 and IATA special Provision A61.

15. REGULATORY INFORMATION

U.S. Regulations: CERCLA Sections 102a/103 (40 CFR 302.4): Asbestos: 1 lbs RQ

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Asbestos.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE:	No.
CHRONIC:	Yes.
FIRE:	No.
REACTIVE:	No.
SUDDEN RELEASE:	No.

State Regulations: California Proposition 65: Asbestos is known to the state of California to cause cancer (Feb. 17, 1987).

CANADIAN Regulations
WHMIS Classification: Not determined for this material.

EUROPEAN Regulations

EC Classification (assigned):	T	Toxic. Carcinogen Category 1.
EC Risk Phrases:	R45	May cause cancer.
	R23/48	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
EC Safety Phrases:	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
	S53	Avoid exposure.

National Inventory Status

U.S. Inventory (TSCA):	Asbestos:	Not listed on inventory.
TSCA 12(b) Export Notification:	Asbestos:	CAS No.: 1332-21-4 Section 6

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Chrysotile*, 15 June 2006.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

SRM Number: 1866b
MSDS Number: 1866b
SRM Name: Common Commercial Asbestos

Date of Issue: 09 January 2007

MSDS Coordinator: Mario Cellarosi
Telephone: 301-975-6776
FAX: 301-926-4751
E-mail: SRMMSDS@nist.gov

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

Description: Standard Reference Material (SRM) 1866b is a set of three individual commercial-grade asbestos materials: chrysotile, **asbestiform grunerite (amosite)**, and asbestiform riebeckite (crocidolite). A unit of SRM 1866b consists of three bottles, each containing between 1 gram and 3 grams of individual material.

Substance: **Asbestiform Grunerite**

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS[(a)]

Component:	**Asbestiform Grunerite**
Other Designations:	**Asbestiform Grunerite** (grunerite; amosite; brown asbestos; amosite asbestos)
CAS Number:	12172-73-5
EC Number (EINECS):	Not assigned.
SRM Nominal Concentration (% by weight or volume):	> 90
Component:	**Magnetite (as an impurity)**
Other Designation:	**Magnetite** (magnetic iron oxide; black iron oxide; magnetic iron ore; lodestone; black ferric oxide)
CAS Number:	1309-38-2
EC Number (EINECS):	215-169-8
SRM NominalConcentration (% by weight):	< 5
Component:	**Quartz**
Other Designation:	Quartz (alpha quartz; silicon dioxide; silica; silicic anhydride; agate)
CAS Number:	14808-60-7
EC Number (EINESC):	238-878-4
SRM NominalConcentration (% by weight):	< 5
EC Classification:	T Carcinogen Category 1
EC Risk (R No.):	23, 45, 48
EC Safety (S No.):	45, 53

[(a)] Hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed in compliance with OSHA 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 0 Reactivity = 0

Major Health Hazards: Cancer hazard (in humans)

Potential Health Effects

Inhalation: Inhalation of grunerite asbestos dust may be irritating. Symptoms include a cough and chest pain. Chronic exposure may cause asbestosis, interstitial fibrosis of the lung tissue, which may develop within 4 years to 9 years, but onset may be typically delayed 20 years to 40 years after first exposure. Death from asbestosis may be due to respiratory or cardiac failure. Secondary lung infections may also occur. Chronic exposure of asbestos to workers may also cause pleural effusion as early as 3 years to 4 years after initial exposure. Chronic exposure of asbestos to workers also increases the chance of pleural and peritoneal mesotheliomas, bronchogenic carcinoma, lung cancer, and cancers of the gastrointestinal tract and larynx. The latent period for mesothelioma is 3 years to 40 years; for lung cancer, 15 years to 30 years.

Skin Contact: Direct contact may cause irritation. Asbestos fibers may penetrate the skin and result in "asbestos corns", due to thickening of the skin around the implanted fiber. These corns usually occur on the hands and forearms, and they disappear on removal of the fibers.

Eye Contact: Direct contact may cause irritation with redness due to mechanical action.

Ingestion: Acute exposure by cause gastrointestinal irritation. Chronic exposure of asbestos fibers may be involved in cancers of the buccal cavity and pharynx, esophagus, stomach, colon, and rectum.

Listed as a Carcinogen/ Potential Carcinogen:

Yes	No	
X		In the National Toxicology Program (NTP) Report on Carcinogens.
X		In the International Agency for Research on Cancer (IARC) Monographs.
X		By the Occupational Safety and Health Administration (OSHA).

4. FIRST AID MEASURES

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Get immediate medical attention.

Skin Contact: Rinse affected area with copious amounts of water followed by washing with soap and water for at least 15 minutes while removing contaminated clothing. Get medical attention, if needed.

Eye Contact: Flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: If a large amount is swallowed, get immediate medical attention.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Asbestiform grunerite is a negligible fire hazard.

Extinguishing Media: Regular dry chemical. Carbon dioxide. Water. Regular foam.

Fire Fighting: If material is involved in a fire, extinguish fire with a medium appropriate for the surrounding fire. Material itself does NOT burn or burns with difficulty. Keep run-off water out of sewers and water sources. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Component: **Asbestiform Grunerite**
Flash Point: Not applicable.
Method Used: Not applicable.

Autoignition Temp.: Not applicable.

Flammability Limits in Air
UPPER (Volume %): Not applicable.
LOWER (Volume %): Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Do NOT touch or walk through spilled material. Avoid inhalation of asbestos dust (see Section 8, "Exposure Controls and Personal Protection"). Collect small dry spills with a shovel and place material into an appropriate container for disposal. Prevent entry into waterways and sewers. Clean up residue with a HEPA filter vacuum.

Disposal: Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards.

Safe Handling Precautions: See Section 8, "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Abestiform Grunerite
OSHA (PEL): 0.1 fibers/cc TWA
ACGIH (TLV): 0.1 fibers/cc TWA
NIOSH: 0.1 fibers/cc recommended TWA (10 h)

Quartz
OSHA (PEL): 0.3 mg/m^3 TWA (total dust) 30 mg/m^3/% SiO^2 + 2, based on size/aerodynamic characteristics)
OSHA (PEL): 0.1 mg/m^3 TWA (respirable dust) 10 mg/m^3/% SiO^2 + 2, based on size/aerodynamic characteristics)
ACGIH (TLV): 0.025 mg m^3 TWA (respirable dust)
NIOSH: 0.05 mg/m^3 recommended TWA (10 h) (respirable dust)

UK WEL: 0.3 mg/m^3 TWA (respirable particulate) (Chemical Hazard Alert Notice issued).

Ventilation: Provide local exhaust ventilation system equipped with a HEPA-filter dust collection system.

Respirator: If workplace conditions warrant a respirator's use, a NIOSH/MSHA approved respirator should be used under an implemented respiratory protection program in accordance with OSHA Standard 29 CFR 1910.134 (General Industry, Use of Respirators) and 29 CFR 1910.1001 for occupational exposure to asbestos.

Eye Protection: Wear safety goggles. An eye wash station should be readily available near areas of use.

Personal Protection: Wear appropriate protective clothing and gloves to prevent skin exposure. Refer to OSHA Regulated Substances: OSHA 29 CFR 1910.1001.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: **Asbestiform Grunerite**
Appearance: Fibrous solid to dust-like powder. Grey-brown to light brown. Odorless.
Relative Molecular Mass: Not applicable.
Molecular Formula: $Fe^{2+}_7(Si_8O_{22})(OH)_2$
Water Solubility: Insoluble

10. STABILITY AND REACTIVITY

Stability: X Stable _____ Unstable

Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid generating dust. Keep out of water supplies and sewers.

Incompatible Materials: May be attacked by strong acids.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Completely decomposes at temperatures of 1 000 °C.

Hazardous Polymerization: ____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation X Skin X Ingestion

Toxicity Data: **Asbestiform Grunerite**
Rat, Intrapleural TD_{LO}: 150 mg/kg

Tumorigenic, Reproductive, Mutagenic Data: Asbestiform grunerite has been investigated as a tumorigenic and mutagenic effector.

Health Effects (Acute and Chronic): See Section 3: "Hazards Identification" for potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: Not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: **U.S. DOT and IATA:** Asbestos; UN2212; Hazard Class 9
NOTE: This material, as packaged for SRM 1866b, is not subject to the regulations per DOT Special Provision 156 and IATA special Provision A61.

15. REGULATORY INFORMATION

U.S. Regulations: CERCLA Sections 102a/103 (40 CFR 302.4): Asbestos: 1 lbs RQ.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Asbestos.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE:	No.
CHRONIC:	Yes.
FIRE:	No.
REACTIVE:	No.
SUDDEN RELEASE:	No.

State Regulations: California Proposition 65: Asbestos is known to the state of California to cause cancer (Feb. 27, 1987).

CANADIAN Regulations
WHMIS Classification: Not determined for this material.

EUROPEAN Regulations

EC Classification (assigned):	T	Toxic. Carcinogen Category 1
EC Risk Phrases:	R45	May cause cancer.
	R23/48	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
EC Safety Phrases:	S45	In case of accident of if you feel unwell, seek medical advice immediately (show the label where possible).
	S53	Avoid exposure.

National Inventory Status

U.S. Inventory (TSCA):	Asbestos:	Not listed on inventory.
TSCA 12(b) Export Notification:	Asbestos:	CAS No.: 1332-21-4 Section 6

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Amosite*, 16 June 2005.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

SRM Number: 1866b
MSDS Number: 1866b
SRM Name: Common Commercial Asbestos

Date of Issue: 09 January 2007

MSDS Coordinator: Mario Cellarosi
Telephone: 301-975-6776
FAX: 301-926-4751
E-mail: SRMMSDS@nist.gov

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

Description: Standard Reference Material (SRM) 1866b is a set of three individual commercial-grade asbestos materials: chrysotile, asbestiform grunerite (amosite), and **asbestiform riebeckite (crocidolite)**. A unit of SRM 1866b consists of three bottles, each containing between 1 gram and 3 grams of individual material.

Substance: **Asbestiform Riebeckite**

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS[(a)]

Component:	**Asbestiform Riebeckite**
Other Designations:	**Asbestiform Riebeckite** (blue asbestos; crocidolite; asbestos; crocidolite asbestos)
CAS Number:	12001-28-4
EC Number (EINECS):	Not assigned.
SRM Nominal Concentration (% by weight or volume):	> 90
Component:	**Magnetite (as an impurity)**
Other Designation:	**Magnetite** (magnetic iron oxide; black iron oxide; magnetic iron ore; lodestone; black ferric oxide)
CAS Number:	1309-38-2
EC Number (EINECS):	215-169-8
SRM NominalConcentration (% by weight):	< 5
EC Classification:	T Carcinogen Category 1
EC Risk (R No.):	23, 45, 48
EC Safety (S No.):	45, 53

[(a)] Hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed in compliance with OSHA 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 0 Reactivity = 0

Major Health Hazards: Cancer hazard (in humans)

Potential Health Effects
Inhalation: Inhalation of riebeckite asbestos dust may be irritating. Symptoms include a cough and chest pain. Chronic exposure may cause asbestosis, interstitial fibrosis of the lung tissue, which may develop within 4 years to 9 years, but onset may be typically delayed 20 years to 40 years after first exposure. Death from asbestosis may be due to respiratory or cardiac failure. Secondary lung infections may also occur. Chronic exposure of asbestos to workers may also cause pleural effusion as early as 3 years to 4 years after initial exposure. Chronic exposure of asbestos to workers also increases the chance of pleural and peritoneal mesotheliomas, bronchogenic carcinoma, lung cancer, and cancers of the gastrointestinal tract and larynx. The latent period for mesothelioma is 3 years to 40 years; for lung cancer, 15 years to 30 years.

Skin Contact: Direct contact may cause irritation. Asbestos fibers may penetrate the skin and result in "asbestos corns", due to thickening of the skin around the implanted fiber. These corns usually occur on the hands and forearms, and they disappear on removal of the fibers.

Eye Contact: Direct contact may cause irritation with redness due to mechanical action.

Ingestion: Acute exposure by cause gastrointestinal irritation. Chronic exposure of asbestos fibers may be involved in cancers of the buccal cavity and pharynx, esophagus, stomach, colon, and rectum.

Listed as a Carcinogen/ Potential Carcinogen:

Yes	No	
X		In the National Toxicology Program (NTP) Report on Carcinogens.
X		In the International Agency for Research on Cancer (IARC) Monographs.
X		By the Occupational Safety and Health Administration (OSHA).

4. First Aid Measures

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Get immediate medical attention.

Skin Contact: Rinse affected area with copious amounts of water followed by washing with soap and water for at least 15 minutes while removing contaminated clothing. Get medical attention, if needed.

Eye Contact: Flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: Get immediate medical attention. If vomiting occurs, keep head lower than hips to prevent aspiration. Give artificial respiration, if not breathing, by qualified personnel.

5. Fire Fighting Measures

Fire and Explosion Hazards: Asbestiform Riebeckite

Extinguishing Media: Regular dry chemical. Carbon dioxide. Water. Regular foam.

Fire Fighting: If material is involved in a fire, extinguish fire with a medium appropriate for the surrounding fire. Material itself does NOT burn or burns with difficulty. Keep run-off water out of sewers and water sources. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Component: **Asbestiform Riebeckite**
Flash Point: Not applicable.
Method Used: Not applicable.

Autoignition Temp.: Not applicable.

Flammability Limits in Air
UPPER (Volume %): Not applicable.
LOWER (Volume %): Not applicable.

6. Accidental Release Measures

Occupational Release: Do NOT touch or walk through spilled material. Avoid inhalation of asbestos dust (see Section 8, "Exposure Controls and Personal Protection"). Collect small dry spills with a shovel and place material into an appropriate container for disposal. Prevent entry into waterways and sewers. Clean up residue with a HEPA filter vacuum.

Disposal: Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards. Store in a cool, dry place.

Safe Handling Precautions: See Section 8, "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: **Asbestiform Riebeckite**
OSHA (PEL): 0.1 fibers/cc TWA
ACGIH (TLV): 0.1 fibers/cc TWA
NIOSH: 0.1 fibers/cc recommended TWA (10 h)

Ventilation: Provide local exhaust ventilation system equipped with HEPA-filter dust collection system.

Respirator: If workplace conditions warrant a respirator's use, a NIOSH/MSHA approved respirator should be used under an implemented respiratory protection program in accordance with OSHA Standard 29 CFR 1910.134 (General Industry, Use of Respirators) and 29 CFR 1910.1001 for occupational exposure to asbestos.

Eye Protection: Wear safety goggles. An eye wash station should be readily available near areas of use.

Personal Protection: Wear appropriate protective clothing and gloves to prevent skin exposure. Refer to OSHA Regulated Substances: OSHA 29 CFR 1910.1001.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: **Asbestiform Riebeckite**
Appearance: Fibrous solid to dust-like powder. Blue to purple color. Odorless.
Molecular Formula: $Na_2(Fe^{2+}{}_3Fe^{3+}{}_2)(Si_8O_{22})(OH)_2$
Water Solubility: Insoluble.

10. STABILITY AND REACTIVITY

Stability: _X_ Stable _____ Unstable

Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid generating dust. Keep out of water supplies and sewers.

Incompatible Materials: May be attacked by strong acids.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Completely decomposes at temperatures of 1 000 °C.

Hazardous Polymerization: _____ Will Occur _X_ Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: _X_ Inhalation _X_ Skin _X_ Ingestion

Toxicity Data: **Asbestiform Riebeckite**
Rat, Intraperitoneal LD_{LO}: 300 mg/kg
Rat, Inhalation-Intermittent TC_{LO}: 7 200 μg/m^3 (6 h – 20 days)
Rat, Inhalation-Intermittent TC_{LO}: 13 600 μg/m^3 (6 h – 5 days)

Tumorigenic, Reproductive, Mutagenic Data: Riebeckite asbestos has been investigated as a tumorigenic and mutagenic effector.

Health Effects (Acute and Chronic): See Section 3: "Hazards Identification" for potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: Not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: **U.S. DOT and IATA:** Asbestos; UN2212; Hazard Class 9
NOTE: This material, as packaged for SRM 1866b, is not subject to the regulations per DOT Special Provision 156 and IATA special Provision A61.

15. REGULATORY INFORMATION

U.S. Regulations: CERCLA Sections 102a/103 (40 CFR 302.4): Asbestos: 1 lbs RQ.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Asbestos.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE:	No.
CHRONIC:	Yes.
FIRE:	No.
REACTIVE:	No.
SUDDEN RELEASE:	No.

State Regulations: California Proposition 65: Asbestos is known to the state of California to cause cancer (Feb. 27, 1987)

CANADIAN Regulations
WHMIS Classification: Not determined.

EUROPEAN Regulations

EC Classification (assigned):	T	Toxicity. Carcinogen Category 1.
EC Risk Phrases:	R45	May cause cancer.
	R23/48	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
EC Safety Phrases:	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
	S53	Avoid exposure.

National Inventory Status

U.S. Inventory (TSCA):	Asbestos:	Not listed on inventory.

TSCA 12(b)

Export Notification:	Asbestos:	CAS No. 1332-21-4 Section 6

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Crocidolite*, 14 September 2006.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.

MATERIAL SAFETY DATA SHEET

(POLYCHLORINATED BIPHENYLS)

COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients Name: polychlorinated biphenyls (PCBs)

HAZARD IDENTIFICATION

Reports of Carcinogenicity: YES

HEALTH HAZARDS ACUTE AND CHRONIC

- **Eyes**: Moderately irritating to eye tissues.
- **Skin**: Can be absorbed through intact skin, may cause de-fatting, potential for chloracne.
- **Inhalation**: Possible liver injury.
- **Ingestion**: Slightly toxic; reasonably anticipated to be carcinogenic.

EFFECTS OF OVER-EXPOSURE

Can cause dermatological symptoms; however, these are reversible upon removal of exposure source.

FIRST AID MEASURES

- **Eyes**: Irrigate immediately with copious quantities of running water for at least 15 minutes if liquid or solid PCBs get into them.
- **Skin:** Contaminated clothing should be removed and the skin washed thoroughly with soap and water. Hot PCBs may cause thermal burns.
- **Inhalation**: Remove to fresh air; if skin rash or respiratory irritation persists, consult a physician (if electrical equipment arcs over, PCBs may decompose to produce hydrochloric acid).
- **Ingestion**: Consult a physician. Do not induce vomiting or give any oily laxatives. (If large amounts are ingested, gastric lavage is suggested).

FIRE FIGHTING MEASURES: Flash Point: >141 ^{o}C (285.8 ^{o}F)

EXTINGUISHING MEDIA: PCBs are fire-resistant compounds.

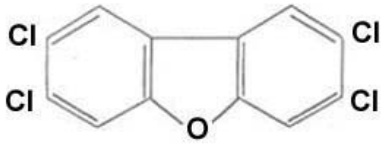
FIRE-FIGHTING PROCEDURES

Standard fire-fighting wearing apparel and self-contained breathing apparatus should be worn when fighting fires that involve possible exposure to chemical combustion products. Fire fighting equipment should be thoroughly cleaned and decontaminated after use.

UNUSUAL FIRE/EXPLOSION HAZARD

If a PCB transformer is involved in a fire-related incident, the owner of the transformer is required to report the incident. Consult and follow appropriate federal, provincial and local regulations.

***Note**: When askarel liquid becomes involved in a fire, toxic by-products of combustion are typically produced including polychlorinated dibenzofurans and polychlorinated dibenzodioxins, both known carcinogens. The structures of these chemical species are as follows:*

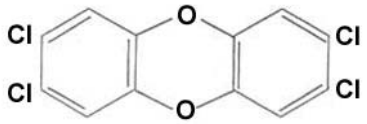


TCDF

$C_{12}H_{8-n}Cl_nO$

$n = 4 - 8$

2,3,7,8-tetrachlorodibenzofuran



TCDD

$C_{12}H_{8-n}Cl_nO_2$

$n = 4 - 8$

2,3,7,8-tetrachloro-dibenzo-p-dioxin

***Note**: 2,3,7,8-tetrachloro-dibenzo-p-dioxin is one of the most potent teratogenic, mutagenic and carcinogenic agents known to man.*

SPILL RELEASE PROCEDURES

Cleanup & disposal of liquid PCBs are strictly regulated by the federal government. Ventilate area. Contain spill/leak. Remove spill by means of absorptive material. Spill clean-up personnel should use proper protective clothing. All wastes and residues containing PCBs should be collected, containerized, marked and disposed of in the manner prescribed by applicable federal, provincial and local laws.

HANDLING AND STORAGE PRECAUTIONS

Care should be taken to prevent entry into the environment through spills, leakage, use, vaporization, or disposal of liquid. Avoid prolonged breathing of vapours or mists. Avoid contact with eyes or prolonged contact with skin. Comply with all federal, provincial and local regulations.

OTHER PRECAUTIONS

Federal regulations require PCBs, PCB items, storage areas, transformer vaults, and transport vehicles to be appropriately labelled.

RESPIRATORY PROTECTION

Use OHSA approved equipment when airborne exposure limits are exceeded. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical splash goggles. The respirator use limitations specified by the manufacturer must be observed.

VENTILATION

Provide natural or mechanical ventilation to control exposure levels below airborne exposure levels.

PROTECTIVE GLOVES: Wear appropriate chemical resistant gloves to prevent skin contact.

EYE PROTECTION: Wear chemical splash goggles and have eye baths available.

OTHER PROTECTIVE EQUIPMENT

Wear appropriate protective clothing. Provide a safety shower at any location where skin contact can occur.

WORK HYGIENIC PRACTICES

Wash thoroughly after handling. Supplemental safety and health : none

PHYSICAL/CHEMICAL PROPERTIES

- **Vapour pressure:** (mm Hg @100 ^{o}F) 0.005 - 0.00006
- **Viscosity:** (CENTISTOKES) 3.6 - 540
- **Stability indicator/materials to avoid:** Yes
- **Stability Condition to Avoid:** PCBs are very stable, fire-resistant compounds.

HAZARDOUS DECOMPOSITION PRODUCTS

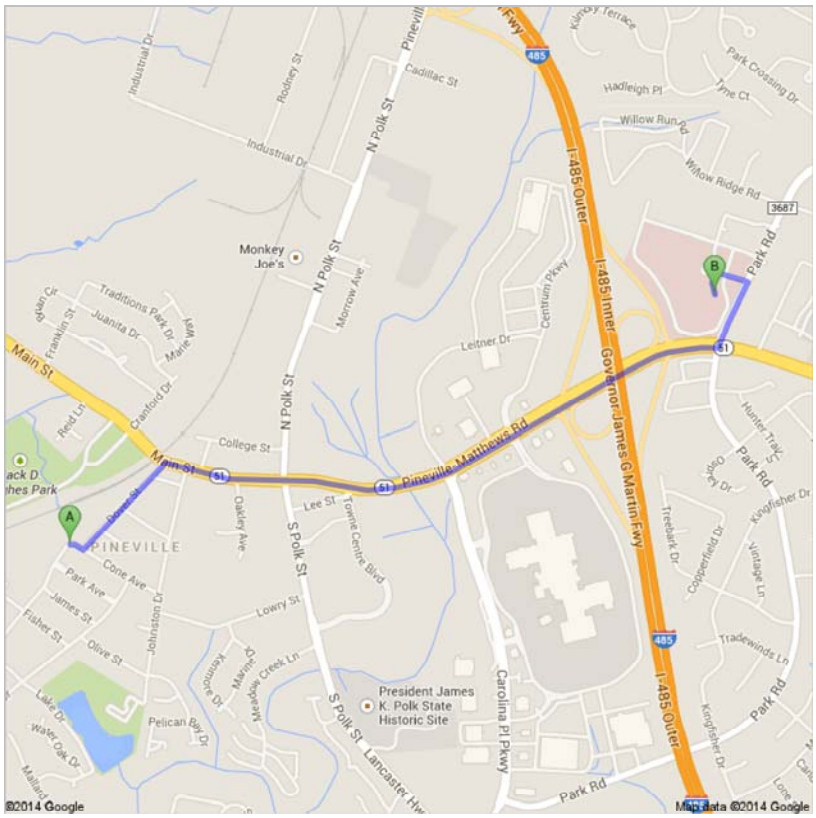
Carbon monoxide, carbon dioxide, hydrogen chloride, phenolics, aldehydes, furans, dioxins

WASTE DISPOSAL METHODS

Consult the applicable PCB regulations prior to any disposal of PCBs or PCB-contaminated items.

Google

Directions to 10650 Park Rd, Charlotte, NC 28210
1.8 mi – about **7 mins**



436 Cone Ave, Pineville, NC 28134

1.	Head **east** on **Cone Ave** toward **Dover St**	go 161 ft total 161 ft
2.	Take the 1st left onto **Dover St** About 53 secs	go 0.3 mi total 0.3 mi
3.	Turn right onto **Main St** About 1 min	go 0.3 mi total 0.5 mi
4.	Continue onto **Pineville-Matthews Rd** About 2 mins	go 1.0 mi total 1.5 mi
5.	Turn left onto **Park Rd**	go 0.2 mi total 1.7 mi
6.	Turn left About 47 secs	go 377 ft total 1.7 mi
7.	Turn left Destination will be on the right	go 259 ft total 1.8 mi

10650 Park Rd, Charlotte, NC 28210