



January 5, 2018

Mr. Brian Kelly
On-Scene Coordinator
U.S. Environmental Protection Agency Region 5
9311 Groh Road
Gross Ile, MI 48138-1697

Subject: C&H Mineral Building Roof Overview (Revision 3)
C&H Mineral Building - RS Site
EPA Contract No.: EP-S5-13-01
Technical Direction Document No.:
S05-0001-1711-007 Document Tracking No.: 2224C

Dear Mr. Kelly:

Under the Superfund Technical Assessment and Response Team (START) Contract No. EP-S5-13-01, the U.S. Environmental Protection Agency (EPA) Region 5 tasked Tetra Tech, Inc. (Tetra Tech) to prepare a letter report that provides asbestos sample results, documentation of prior asbestos containing building material (ACBM) recovery efforts, and photographic documentation of current conditions at the Calumet & Hecla (C&H) Mineral Building – RS Site in Hubbell, Houghton County, Michigan. Project activities included review and compilation of existing information and verification sampling of ACBM.

The following sections discuss the Site location, history, and project activities, including ACBM assessment and recovery and photodocumentation of current site conditions. **Attachment A** provides figures for this letter report. **Attachment B** includes a table summarizing bulk asbestos analytical results for samples collected by the Michigan Department of Environmental Quality Remediation and Redevelopment Division (DEQ RRD), DEQ Air Quality Division (DEQ AQD), and START. **Attachment C** provides photodocumentation of current Site conditions as they relate to ACBM after DEQ RRD recovery efforts.

SITE LOCATION AND HISTORY

The Site, a vacant mining era industrial property owned by Silver Shores Enterprises, is located at 52986 Highway M-26 in Houghton County, Hubbell, Michigan (**Figure 1**). Two structures are present at the Site. Construction of the approximately 290 by 80 foot, nearly four story tall Mineral Building was completed in 1929, and it had a reinforced concrete foundation and compartment walls for mineral storage, including 10 main compartments for 15,000 tons of material and a 7.5 ton overhead electric crane carrying a clam shell bucket for handling the mineral (MTU 2014). The second structure is an approximately 30 by 40 foot single story building of sandstone construction.



The surface of the 9.28 acre Site property is mainly barren (except for an approximately 170 foot wide vegetated strip along Torch Lake) including 2.9 acres covered with 35 waste piles. Eighteen waste piles totaling an estimated 4,758 tons appear to be mining era waste and debris. The other 17 remaining waste piles totaling an estimated 3,486 tons consist of construction and demolition, roadwork, and/or woody debris and generally do not appear to have originated during the mining era. In addition to the waste piles, an estimated 2,810 cubic yards of mining era stack debris is present on the Site property. A chain link fence has been established along the southwest and northwest Site property boundaries.

The Site is bordered to the northeast by a contiguous vacant mining era industrial property (coal dock), to the southwest by Koppers' Hubbell Plant, a contiguous mining era industrial property (smelter) currently used as a performance chemical manufacturing facility, to the northwest by the Michigan Department of Transportation (MDOT) Highway M-26 right of way (ROW) that includes a wide paved shoulder used heavily by local residents (beyond which there are single-family residences), and to the southeast by Torch Lake (**Figure 2**).

The Site property, a portion of which is part of the Torch Lake Superfund Site, was previously (until circa late 1960s) a part of the C&H Mining Company beneficiation and reclamation industrial complex that includes the Mineral Building and a portion of the ruins of the C&H smelter facility. Located adjacent to the northeast and southwest of the Site were the related C&H coal dock and smelter, respectively. Further to the northeast in the Village of Lake Linden, the C&H industrial complex included regrinding, leaching, flotation plant, stamping, and power generation operations. The Mineral Building received the processed copper ore from the C&H stamp mills. The copper ore was sorted and stored in the Mineral Building prior to transfer to the C&H smelter for additional processing. The Site layout and proximal historic C&H mining era buildings and structures are depicted on **Figure 2**.

Beyond capping a strip of the Site property surface bordering Torch Lake, no EPA remedial actions have been implemented at the Site. Tamarack City Torch Lake EPA Superfund Site as-built drawings (USDA NRCS 2001) indicate that the vegetated cap along Torch Lake located on the Site property (and the adjacent former smelter property) were placed as part of the Torch Lake Superfund Site Hubbell/Tamarack remedial action. The Torch Lake Superfund Site Five-Year Review Report (EPA 2013) indicated that construction was completed in 2000 and that the Hubbell/Tamarack City parcel was deleted from the National Priorities List in 2004. The capped areas are subject to an on-going DEQ operation and maintenance plan. The balance of the Site property and former smelter property and adjacent coal dock were not addressed as part of the Torch Lake Superfund Site remedial action.

ACBM ASSESSMENT

DEQ RRD has undertaken site investigation (SI) activities from 2014 through 2017 that identified ACBM, specifically roofing material that had fallen and/or been blown off the roof of the Mineral Building – RS Site
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Building, was present on the ground surface, including outside of the fenced Site property in the MDOT ROW.

During July 2017, the DEQ AQD asbestos inspector assessed conditions in the MDOT ROW bordering the Site property. The DEQ AQD inspector noted the presence of roofing material (later confirmed by the laboratory to be ACBM) and sampled the material at 10 locations within the MDOT ROW.

On December 7, 2017, START conducted sampling that verified prior ACBM analytical results. **Attachment B** includes a table that summarizes the bulk asbestos analytical data collected by DEQ RRD and DEQ AQD prior to and after RRD's ACBM recovery efforts, and recent START verification sampling. The analytical results indicate the majority of samples collected contained asbestos. **Figure 3** depicts the locations and provides a summary of the tabulated analytical data for ACBM not recovered.

DEQ ACBM RECOVERY EFFORTS

DEQ RRD's initial ACBM recovery effort was conducted during June and July 2016 and included the removal and disposal of 11.81 tons of actual or suspected visible ACBM from the Site property and bordering properties, including the MDOT ROW. During September and October 2016, DEQ RRD conducted a second ACBM recovery event that included removal and disposal of an additional 1.77 tons of actual or suspected visible ACBM from the Site property. The interim response (IR) construction summary reports listed in the **References** section (MSG 2017a and MSG 2017b) document the two ACBM recovery events conducted by DEQ RRD.

Actual or suspect ACBM roofing materials have been and will continue to fall and blow off of the Mineral Building roof onto the Site property, bordering properties, and the adjacent MDOT Highway M-26 ROW. There are multiple lines of evidence of the continued deterioration of the Mineral Building roof. Of note, between the two DEQ RRD recovery efforts in 2016, an additional 1.77 tons of ACBM, a portion of which was Mineral Building roofing material, re-accumulated on the ground surface in the area previously subjected to recovery efforts. Since 2016, DEQ RRD staff and START personnel have noted additional ACBM on the Site and bordering properties during implementation of SI and IR activities. Evidence of this is provided by two of the photographs in **Attachment C** that show the same segment of access roadway in August 2017 (after roofing was again removed to allow truck traffic) and November 2017 (roofing again present). In addition, the DEQ AQD asbestos inspector observed and sampled Mineral Building roofing materials in July 2017 that had further re-accumulated in the MDOT ROW following the 2016 IRs that had removed all visible roofing materials from the ROW.



PHOTODOCUMENTATION OF CURRENT SITE CONDITIONS

Attachment C provides photographs of freshly fallen ACBM around the Mineral Building on November 28, 2017, a reference photograph from August 28, 2017, and photographs taken of the DEQ AQD samples collected on July 12, 2017. **Attachment C** also contains a series of October 2017 DEQ RRD aerial photographs of the Mineral Building roof indicating its deteriorated condition.

REFERENCES

U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS). Detailed Remedial Plans for Tamarack City Torch Lake EPA Superfund Site As-Built Drawings. May 2001.

U.S. Environmental Protection Agency (EPA). Five-Year Review Report for Torch Lake Superfund Site Houghton County, Michigan. March 2013.

Michigan Technological University (MTU). PHASE 1: From North end of Torch Lake to Hubbell Beach C&H Lake Linden Operations Area of the Abandoned Mining Wastes – Torch lake non-Super Fund Project, TASK 3: Historical Archive Research & Mapping. July 2014.

The Mannik Smith Group (MSG) 2017a. Interim Response Construction Summary Report for Asbestos Containing Building Materials Abatement, Abandoned Mining Wastes – Torch Lake Non-Superfund Site, CHLL Hubbell Processing Area, Houghton County, Michigan, Site ID#31000098. April 2017.

The Mannik Smith Group (MSG) 2017b. Interim Response Construction Summary Report for Asbestos Containing Building Material and Residual Process Material Removal, Abandoned Mining Wastes – Torch Lake Non-Superfund Site, CHLL Hubbell Processing Area, Houghton County, Michigan, Site ID#31000098. April 2017.

If you have any questions on this report or require additional information, please contact me at 906-281-3404.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeffrey S. Binkley'.

Jeffrey S. Binkley
The Mannik & Smith Group (Subcontractor of Tetra Tech) Project Manager

Attachments:

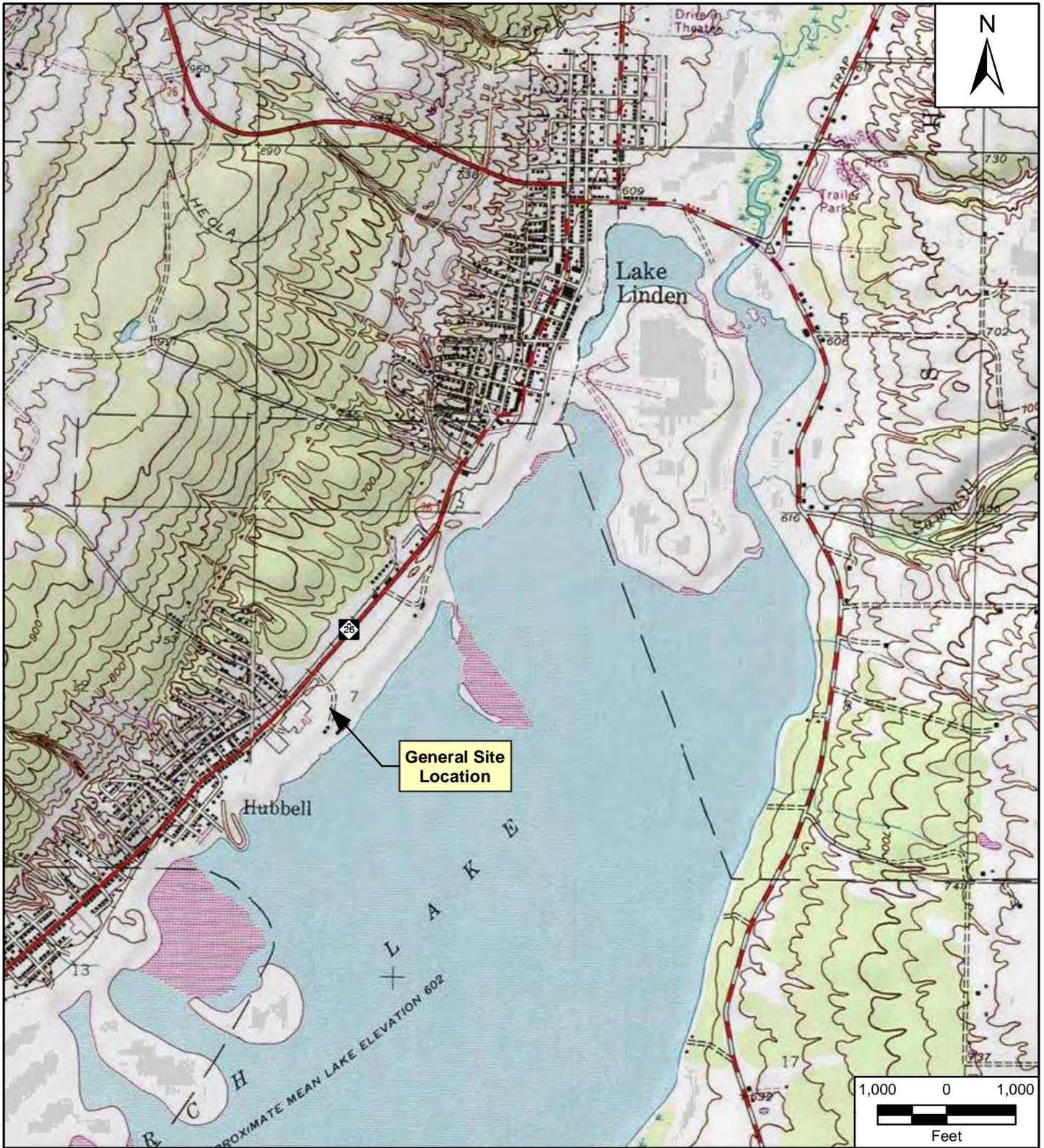
A – Figures

B – Sample Analytical Summary – Bulk Asbestos Table

C – Photographic Documentation



ATTACHMENT A
Figures



File Path: H:\GIS_Projects\T1130082_CH\MinBlog\mxs\DR\FT\Fig01_Site_Location_v20171222.mxd



Base Map Source: ESRI USA Topo Maps map service

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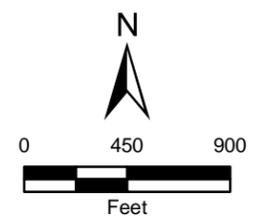
C&H Mineral Building - RS Site
Hubbell, Michigan

Figure 1
Site Location

 TETRA TECH	
Prepared For: USEPA	Prepared By: KRB - MSG



Legend
 [Grey Box] Mining Era Buildings and Structures



C&H Mineral Building - RS Site
 Hubbell, Michigan

Figure 2
Site Layout

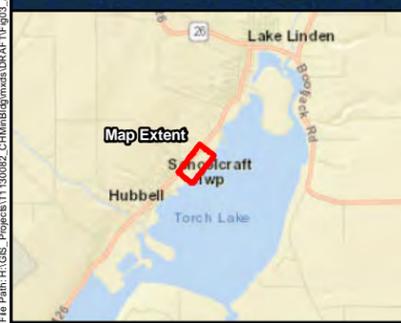


Source of Aerial Photograph: MIS - Public Imagery and ESRI World Imagery (NAIP 2014)
 EPA Contract No.: EP-S5-13-01
 TDD No.: 0001/S05-0001-1711-007



C & H Mineral Building Site Property

- 9.28-acre property, including approximately 47 waste piles and stack debris covering approximately 2.9 acres and totaling an estimated 8,305 cubic yards. Waste piles include mining era waste and demolition debris, roadwork related materials, and woody debris.
- 13.58 tons of actual or suspect asbestos containing building materials (ACBM) were removed and properly disposed of in 2016 by the DEQ. Removed were roofing material, transite, gaskets, insulating material, and any other known or suspected ACBM from the surface of the ground and debris piles. Actual or suspect ACBM remain in the waste and stack debris piles and roofing materials continue to fall and blow off the Mineral Building onto the ground surface on the property, the adjacent Michigan Department of Transportation (MDOT) right of way (ROW), and the waste piles.
- Nine out of ten DEQ Air Quality Division (AQD) July 2017 samples in MDOT ROW were positive for asbestos.



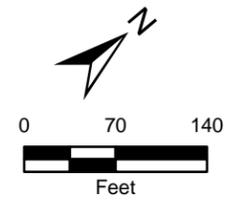
Bulk Asbestos Sample Locations

- ◆ Detected Greater than 1%
- ◇ Detected Less than 1%
- ◇ Not Detected

MDEQ AQD Sample Location Area
 Waste Pile Boundary
 Removed Waste Pile
 Fence
 Property Boundary

Notes:

- Sample location that have been remediated/removed in 2016 are not shown.
- Asbestos Containing Material (ACM) are materials containing greater than 1% asbestos, as defined and regulated by the EPA per 40 CFR Part 61, Subpart M and MIOSHA/OHSA 29 CFR 1926.1101



C&H Mineral Building - RS Site
Hubbell, Michigan

Figure 3
Asbestos Analytical Results Map

Prepared For: USEPA
Prepared By: KRB - MSG
Coordinate System: NAD_1983_StatePlane_Michigan_North_FIPS_2111_Feet_Int



ATTACHMENT B
Table

TABLE 1
SUMMARY OF BULK ASBESTOS ANALYTICAL RESULTS
C&H MINERAL BUILDING - RS SITE
HUBBELL, HOUGHTON COUNTY, MICHIGAN

Sample Location	Field Sample ID	Sample Date	Asbestos	Note	Sample Description
CHLL-ASBBLK01	CHLL-ASBBLK01-073114	7/31/2014	ND		Black asphaltic roofing material from the Mineral Building
CHLL-ASBBLK02	CHLL-ASBBLK02-073114	7/31/2014	ND		Green asphaltic roofing material from sandstone building
CHLL-ASBBLK03	CHLL-ASBBLK03-073114	7/31/2014	ND		Black corrugated asphaltic roofing material from sandstone building
CHLL-ASBBLK04	CHLL-ASBBLK04-073114	7/31/2014	ND		White cementitious material (possible pipe insulation) in debris pile
CHLL-ASBBLK05	CHLL-ASBBLK05-073114	7/31/2014	15 %	CHRYSOTILE	Whitish grey, transite fragment in debris pile
CHLL-ASBBLK06	CHLL-ASBBLK06-073114	7/31/2014	70 %	CHRYSOTILE	Black, weathered roofing material, tar paper
CHLL-ASBBLK25	CHLL-ASBBLK25A-101414	10/14/2014	ND		Tan/Brown, Corrugated paper, Found in multiple debris piles, Damaged.
	CHLL-ASBBLK25B-101414	10/14/2014	ND		Tan/Brown, Corrugated paper, Found in multiple debris piles, Damaged.
	CHLL-ASBBLK25C-101414	10/14/2014	ND		Tan/Brown, Corrugated paper, Found in multiple debris piles, Damaged.
CHLL-ASBBLK26	CHLL-ASBBLK26A-101514	10/15/2014	20 %	CHRYSOTILE	Grayish white, Transite, Found in multiple debris piles, Damaged
	CHLL-ASBBLK26B-101514	10/15/2014	20 %	CHRYSOTILE	Grayish white, Transite, Found in multiple debris piles, Damaged
	CHLL-ASBBLK26C-101514	10/15/2014	20 %	CHRYSOTILE	Grayish white, Transite, Found in multiple debris piles, Damaged
CHLL-ASBBLK27	CHLL-ASBBLK27A-101514	10/15/2014	ND		Grayish brown, Fibrous, Insulating material, Damaged
CHLL-ASBBLK28	CHLL-ASBBLK28A-101514	10/15/2014	ND		White, Some blue-green staining, Fire brick, Labeled "A.P. Green 5 X 6 Key"
	CHLL-ASBBLK28B-101514	10/15/2014	ND		White, Some blue-green staining, Fire brick, Labeled "A.P. Green 5 X 6 Key"
	CHLL-ASBBLK28C-101514	10/15/2014	ND		White, Some blue-green staining, Fire brick, Labeled "A.P. Green 5 X 6 Key"
CHLL-ASBBLK29	CHLL-ASBBLK29A-101514	10/15/2014	ND		Orange with black specks, Fire brick, Labeled "Webster"
	CHLL-ASBBLK29B-101514	10/15/2014	ND		Orange with black specks, Fire brick, Labeled "Webster"
	CHLL-ASBBLK29C-101514	10/15/2014	ND		Orange with black specks, Fire brick, Labeled "Webster"
CHLL-ASBBLK30	CHLL-ASBBLK30A-101514	10/15/2014	ND		Grayish brown, Brick mortar, Damaged
	CHLL-ASBBLK30B-101514	10/15/2014	ND		Grayish brown, Brick mortar, Damaged
	CHLL-ASBBLK30C-101514	10/15/2014	ND		Grayish brown, Brick mortar, Damaged
CHLL-ASBBLK31	CHLL-ASBBLK31A-101514	10/15/2014	15 %	CHRYSOTILE	Black, Tar-like coating on concrete stack components, Damaged
	CHLL-ASBBLK31B-101514	10/15/2014	15 %	CHRYSOTILE	Black, Tar-like coating on concrete stack components, Damaged
	CHLL-ASBBLK31C-101514	10/15/2014	15 %	CHRYSOTILE	Black, Tar-like coating on concrete stack components, Damaged
CHLL-ASBBLK32	CHLL-ASBBLK32A-101514	10/15/2014	60 %	CHRYSOTILE	Black, Asphaltic roofing material, Damaged
	CHLL-ASBBLK32B-101514	10/15/2014	ND		Black, Asphaltic roofing material, Damaged
	CHLL-ASBBLK32C-101514	10/15/2014	ND		Black, Asphaltic roofing material, Damaged
CHLL-ASBBLK33	CHLL-ASBBLK33A-101514	10/15/2014	ND		Whitish gray, Cementitious plaster material, Damaged
	CHLL-ASBBLK33B-101514	10/15/2014	ND		Whitish gray, Cementitious plaster material, Damaged
	CHLL-ASBBLK33C-101514	10/15/2014	ND		Whitish gray, Cementitious plaster material, Damaged
CHLL-ASBBLK34	CHLL-ASBBLK34A-101514	10/15/2014	ND		Yellowish orange, Molded block material, Labeled "Duro 8759-15" Cone, rectangular, and cylinder shaped, Damaged
	CHLL-ASBBLK34B-101514	10/15/2014	ND		Yellowish orange, Molded block material, Labeled "Duro 8759-15" Cone, rectangular, and cylinder shaped, Damaged
CHLL-ASBBLK65	CHLL-ASBBLK65A-102317	10/23/2017	ND		Black mastic
	CHLL-ASBBLK65B-102317	10/23/2017	ND		Black mastic
CHLL-ASBBLK66	CHLL-ASBBLK66A-102317	10/23/2017	2 %	CHRYSOTILE	Black felt mastic
	CHLL-ASBBLK66B-102317	10/23/2017	2 %	CHRYSOTILE	Black felt mastic
CHLL-ASBBLK67	CHLL-ASBBLK67A-102317	10/23/2017	50 %	CHRYSOTILE	Gray TSI, appears cardboard-like underneath
	CHLL-ASBBLK67B-102317	10/23/2017	50 %	CHRYSOTILE	Gray TSI, appears cardboard-like underneath
	CHLL-ASBBLK67C-102317	10/23/2017	50 %	CHRYSOTILE	Gray TSI, appears cardboard-like underneath

TABLE 1
SUMMARY OF BULK ASBESTOS ANALYTICAL RESULTS
C&H MINERAL BUILDING - RS SITE
HUBBELL, HOUGHTON COUNTY, MICHIGAN

Sample Location	Field Sample ID	Sample Date	Asbestos	Note	Sample Description
CHLL-ASBBLK68	CHLL-ASBBLK68A-102317	10/23/2017	3 %	AMOSITE	Gray/blue/white TSI
	CHLL-ASBBLK68A-102317	10/23/2017	30 %	CHRYSOTILE	Gray/blue/white TSI
	CHLL-ASBBLK68B-102317	10/23/2017	2 %	AMOSITE	Gray/blue/white TSI
	CHLL-ASBBLK68B-102317	10/23/2017	20 %	CHRYSOTILE	Gray/blue/white TSI
	CHLL-ASBBLK68C-102317	10/23/2017	3 %	AMOSITE	Gray/blue/white TSI
	CHLL-ASBBLK68C-102317	10/23/2017	30 %	CHRYSOTILE	Gray/blue/white TSI
CHLL-ASBBLK69	CHLL-ASBBLK69A-102317	10/23/2017	2 %	AMOSITE	White TSI
	CHLL-ASBBLK69A-102317	10/23/2017	15 %	CHRYSOTILE	White TSI
	CHLL-ASBBLK69B-102317	10/23/2017	5 %	AMOSITE	White TSI
	CHLL-ASBBLK69B-102317	10/23/2017	35 %	CHRYSOTILE	White TSI
	CHLL-ASBBLK69C-102317	10/23/2017	5 %	AMOSITE	White TSI
	CHLL-ASBBLK69C-102317	10/23/2017	35 %	CHRYSOTILE	White TSI
CHLL-ASBBLK70	CHLL-ASBBLK70A-102317	10/23/2017	7 %	AMOSITE	White paper gasket
	CHLL-ASBBLK70A-102317	10/23/2017	35 %	CHRYSOTILE	White paper gasket
	CHLL-ASBBLK70B-102317	10/23/2017	7 %	AMOSITE	White paper gasket
	CHLL-ASBBLK70B-102317	10/23/2017	35 %	CHRYSOTILE	White paper gasket
	CHLL-ASBBLK70C-102317	10/23/2017	7 %	AMOSITE	White paper gasket
	CHLL-ASBBLK70C-102317	10/23/2017	35 %	CHRYSOTILE	White paper gasket
CHLL-ASBBLK71	CHLL-ASBBLK71A-102317	10/23/2017	ND		Gray/white fibers
	CHLL-ASBBLK71B-102317	10/23/2017	ND		Gray/white fibers
	CHLL-ASBBLK71C-102317	10/23/2017	ND		Gray/white fibers
CHLL-ASBBLK72	CHLL-ASBBLK72A-102317	10/23/2017	50 %	CHRYSOTILE	Felt roofing
	CHLL-ASBBLK72B-102317	10/23/2017	50 %	CHRYSOTILE	Felt roofing
CHLL-ASBBLK73	CHLL-ASBBLK73A-102317	10/23/2017	40 %	CHRYSOTILE	White w/ green fibrous material
	CHLL-ASBBLK73B-102317	10/23/2017	30 %	CHRYSOTILE	White w/ green fibrous material
	CHLL-ASBBLK73C-102317	10/23/2017	40 %	CHRYSOTILE	White w/ green fibrous material
CHLL-ASBBLK74	CHLL-ASBBLK74A-102317	10/23/2017	5 %	ANTHOPHYLLITE	White fibrous drywall
	CHLL-ASBBLK74A-102317	10/23/2017	50 %	CHRYSOTILE	White fibrous drywall
	CHLL-ASBBLK74B-102317	10/23/2017	5 %	ANTHOPHYLLITE	White fibrous drywall
	CHLL-ASBBLK74B-102317	10/23/2017	50 %	CHRYSOTILE	White fibrous drywall
	CHLL-ASBBLK74C-102317	10/23/2017	5 %	ANTHOPHYLLITE	White fibrous drywall
	CHLL-ASBBLK74C-102317	10/23/2017	50 %	CHRYSOTILE	White fibrous drywall
CHLL-ASBBLK75	CHLL-ASBBLK75A-102317	10/23/2017	60 %	CHRYSOTILE	Brown TSI
	CHLL-ASBBLK75B-102317	10/23/2017	60 %	CHRYSOTILE	Brown TSI
	CHLL-ASBBLK75C-102317	10/23/2017	60 %	CHRYSOTILE	Brown TSI
CHLL-ASBBLK76	CHLL-ASBBLK76A-102317	10/23/2017	65 %	CHRYSOTILE	Gray rope gasket
	CHLL-ASBBLK76B-102317	10/23/2017	65 %	CHRYSOTILE	Gray rope gasket
CHLL-ASBBLK77	CHLL-ASBBLK77A-102317	10/23/2017	ND		Brown fibrous cardboard material
	CHLL-ASBBLK77B-102317	10/23/2017	ND		Brown fibrous cardboard material

TABLE 1
SUMMARY OF BULK ASBESTOS ANALYTICAL RESULTS
C&H MINERAL BUILDING - RS SITE
HUBBELL, HOUGHTON COUNTY, MICHIGAN

Sample Location	Field Sample ID	Sample Date	Asbestos	Note	Sample Description
Michigan Department of Transportation M-26 Right-of-Way adjacent to the Mineral Building	K330273	7/12/2017	ND		Roofing material / Tar Mastic
	K330273	7/12/2017	20 %	CHRYSOTILE	Roofing material / Other
	K330274	7/12/2017	ND		Roofing material / Tar Mastic
	K330274	7/12/2017	15 %	CHRYSOTILE	Roofing material / Other
	K330275	7/12/2017	ND		Roofing material / String
	K330275	7/12/2017	ND		Roofing material / Tar Mastic
	K330275	7/12/2017	20 %	CHRYSOTILE	Roofing material / Other
	K330276	7/12/2017	2 %	CHRYSOTILE	Roofing material / Mastic 1
	K330276	7/12/2017	8 %	CHRYSOTILE	Roofing material / Mastic 2
	K330276	7/12/2017	ND		Roofing material / Other
	K330277	7/12/2017	ND		Roofing material / Mastic
	K330277	7/12/2017	25 %	CHRYSOTILE	Roofing material / Other
	K330278	7/12/2017	ND		Roofing material / Mastic
	K330278	7/12/2017	25 %	CHRYSOTILE	Roofing material / Other
	K330279	7/12/2017	ND		Roofing material / Top
	K330279	7/12/2017	ND		Roofing material / Mastic
	K330279	7/12/2017	ND		Roofing material / Other
	K330280	7/12/2017	ND		Roofing material / Top Mastic
	K330280	7/12/2017	ND		Roofing material / Bottom Mastic
	K330280	7/12/2017	15 %	CHRYSOTILE	Roofing material / Middle
	K330281	7/12/2017	30 %	CHRYSOTILE	Roofing material / Bottom White
	K330281	7/12/2017	15 %	CHRYSOTILE	Roofing material / Middle
	K330281	7/12/2017	ND		Roofing material / Top Black
	K330282	7/12/2017	25 %	CHRYSOTILE	Roofing material / White
	K330282	7/12/2017	ND		Roofing material / Mastic Tar
K330282	7/12/2017	ND		Roofing material / Other	
CHLL-ASBBLK66	CHS-ACBM-01-120717	12/7/2017	0.6 %	CHRYSOTILE	Black felt mastic
CHLL-ASBBLK75, CHLL-WP23	CHS-ACBM-02-120717	12/7/2017	60-70 %	CHRYSOTILE	White/brown TSI
CHLL-ASBBLK67, CHLL-WP28	CHS-ACBM-03-120717	12/7/2017	50-60 %	CHRYSOTILE	Gray TSI w/ cardboard underneath
CHLL-ASBBLK76, CHLL-WP27	CHS-ACBM-04-120717	12/7/2017	60-70 %	CHRYSOTILE	White/gray woven gasket material

ND = Not detected

TSI = Thermal System Insulation

Results greater than the National Emissions Standard for Hazardous Air Pollutants (NESHAP) and MDEQ Particulate Soil Inhalation Criteria of 1% are bolded and shaded.

Indicates sampled item/material has been removed from the site.

Evaluation based on MDEQ Criteria at time of Project completion.



ATTACHMENT C
Photographic Documentation



Photo 1: View looking southwest to fallen roofing material on the lake side of the Mineral Building. Photo taken: November 28, 2017.



Photo 2: View looking southeast to fallen roofing material near the ramp on northeast end of the Mineral Building. Photo taken: November 28, 2017.



Photo 3: View of fallen roofing material near the northeast corner of the Mineral Building on the lake side. Photo taken: November 28, 2017.



Photo 4: View looking northwest to fallen roofing material near the ramp of the Mineral Building. Photo taken: November 28, 2017.



Photo 5: View looking north to fallen roofing material near the ramp of the Mineral Building. Photo taken: November 28, 2017.



Photo 6: View of same location as Photo 4 showing no roofing in the access roadway three months prior to Photo 4. Photo taken: August 28, 2017.



Photo 7: View of fallen roofing material in MDOT ROW outside of fencing on west side of the Mineral Building. Photo taken: November 28, 2017.



Photo 8: View looking southwest to roofing material in the MDOT ROW on the west side of M-26, across the highway from the Mineral Building. Photo taken: November 28, 2017.



Photo 9: View looking northeast to roofing material in the MDOT ROW on the west side of M-26, across the highway from the Mineral Building. Photo taken: November 28, 2017.

DEQ AQD samples collected on July 12, 2017.





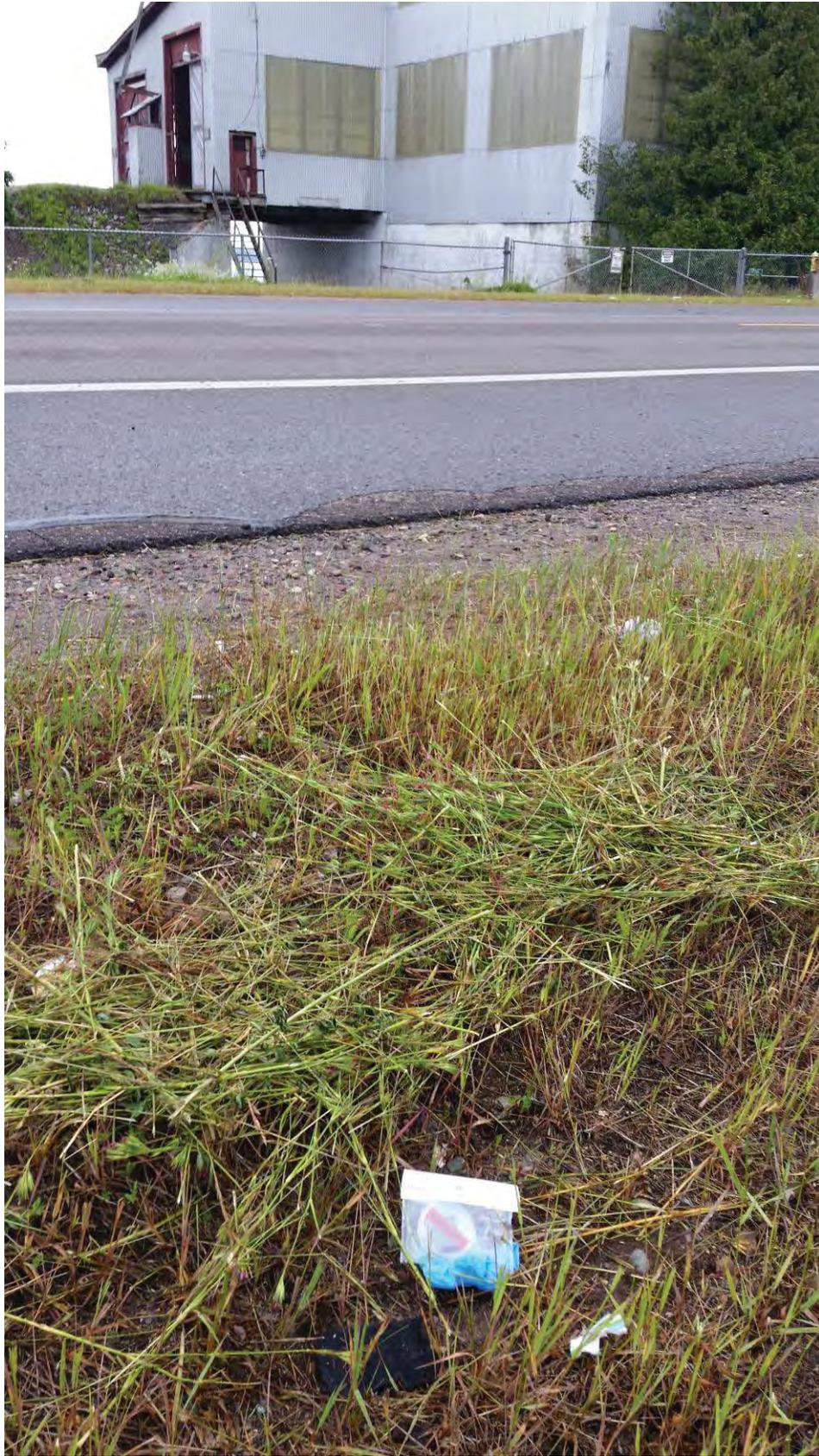
















October 2017 DEQ RRD aerial photographs of the Mineral Building
roof indicating its deteriorated condition.



















