



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
UPPER PENINSULA DISTRICT OFFICE



C. HEIDI GREETHER
DIRECTOR

November 9, 2017

VIA E-MAIL

Mr. Brian Kelly
U.S. Environmental Protection Agency
Region V - Emergency Response Branch
9311 Groh Road
Grosse Ile, Michigan 48138

Dear Mr. Kelly:

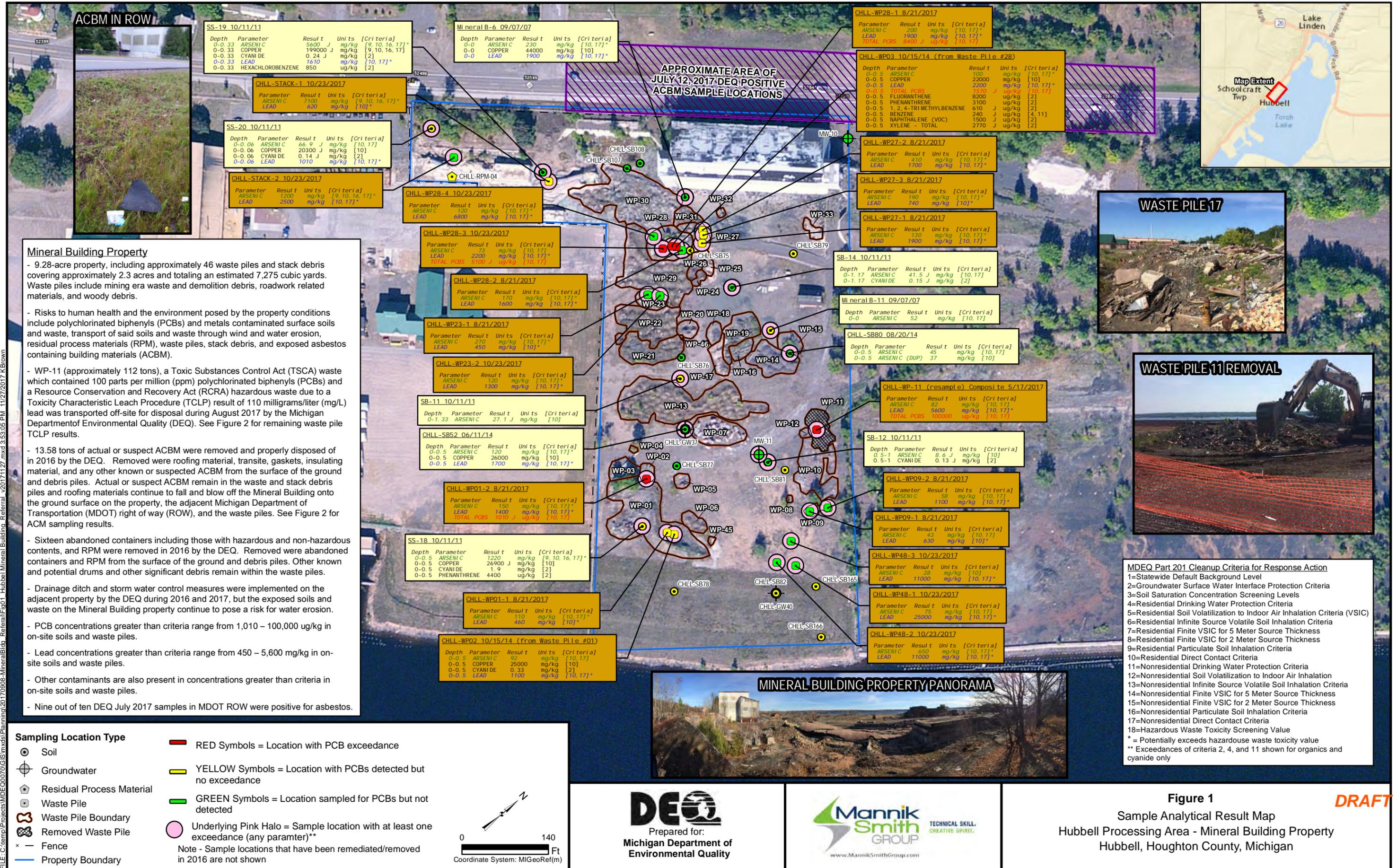
SUBJECT: Calumet & Hecla (C&H) Mineral Building
Request for Assistance
Hubbell, Houghton County, Michigan
DEQ Site ID 31000081

The Department of Environmental Quality (DEQ) Remediation and Redevelopment Division (RRD) is seeking the U.S. Environmental Protection Agency (EPA) Emergency Response Branch's (ERB) assistance to address waste piles and the uncontrolled dispersion of asbestos containing building materials (ACBM) at the C&H Mineral Building portion of RRD's Abandoned Mining Wastes (AMW) project.

This portion of the AMW project area is adjacent to Torch Lake and is comprised of the former mineral building associated with the Calumet & Hecla Mining Company and the surrounding land. Numerous waste piles are present on the property, many containing residual processing material (RPM), mining era demolition debris, and more modern wastes. The roof of the mineral building is extremely deteriorated, and ACBM has blown off onto the C&H Mineral Building property and the adjacent Highway M-26 right-of-way (ROW). RRD repaired fencing around the property in 2016, however, it is still subject to trespass.

RRD's 2017 investigation results indicate most of the waste piles contain polychlorinated biphenyls (PCBs) and/or lead, arsenic, other metals and semi-volatile organic compounds (SVOCs). We have recently compiled the available data and the attached figures highlight the locations and concentrations of contaminants and asbestos present at the property. Also attached is an inventory and photographic log detailing each of the waste piles. We continue to supplement the data set with results from samples collected on October 23, 2017 (additional PCB, arsenic, lead and asbestos sample results are still pending). Of this recent data, seven of the twelve additional waste pile samples were characterized as hazardous waste for lead by the Resource Conservation and Recovery Act (RCRA) toxicity characteristic leaching procedure (TCLP).

In July 2017, the DEQ Air Quality Division asbestos inspector collected samples of ACBM which originated from the C&H Mineral Building and came to be located on the Highway M-26 ROW. These results are also attached. The Highway M-26 ROW is used as an exercise path for parents with strollers, walkers and runners, including the area's high school track and field athletes.

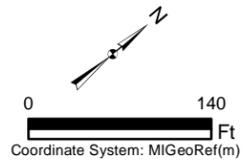


Mineral Building Property

- 9.28-acre property, including approximately 46 waste piles and stack debris covering approximately 2.3 acres and totaling an estimated 7,275 cubic yards. Waste piles include mining era waste and demolition debris, roadwork related materials, and woody debris.
- Risks to human health and the environment posed by the property conditions include polychlorinated biphenyls (PCBs) and metals contaminated surface soils and waste, transport of said soils and waste through wind and water erosion, residual process materials (RPM), waste piles, stack debris, and exposed asbestos containing building materials (ACBM).
- WP-11 (approximately 112 tons), a Toxic Substances Control Act (TSCA) waste which contained 100 parts per million (ppm) polychlorinated biphenyls (PCBs) and a Resource Conservation and Recovery Act (RCRA) hazardous waste due to a Toxicity Characteristic Leach Procedure (TCLP) result of 110 milligrams/liter (mg/L) lead was transported off-site for disposal during August 2017 by the Michigan Department of Environmental Quality (DEQ). See Figure 2 for remaining waste pile TCLP results.
- 13.58 tons of actual or suspect 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. See Figure 2 for ACM sampling results.
- Sixteen abandoned containers including those with hazardous and non-hazardous contents, and RPM were removed in 2016 by the DEQ. Removed were abandoned containers and RPM from the surface of the ground and debris piles. Other known and potential drums and other significant debris remain within the waste piles.
- Drainage ditch and storm water control measures were implemented on the adjacent property by the DEQ during 2016 and 2017, but the exposed soils and waste on the Mineral Building property continue to pose a risk for water erosion.
- PCB concentrations greater than criteria range from 1,010 – 100,000 ug/kg in on-site soils and waste piles.
- Lead concentrations greater than criteria range from 450 – 5,600 mg/kg in on-site soils and waste piles.
- Other contaminants are also present in concentrations greater than criteria in on-site soils and waste piles.
- Nine out of ten DEQ July 2017 samples in MDOT ROW were positive for asbestos.

Sampling Location Type

- Soil
 - Groundwater
 - Residual Process Material
 - Waste Pile
 - Waste Pile Boundary
 - Removed Waste Pile
 - Fence
 - Property Boundary
- RED Symbols = Location with PCB exceedance
● YELLOW Symbols = Location with PCBs detected but no exceedance
● GREEN Symbols = Location sampled for PCBs but not detected
○ Underlying Pink Halo = Sample location with at least one exceedance (any parameter)**
 Note - Sample locations that have been remediated/removed in 2016 are not shown



- MDEQ Part 201 Cleanup Criteria for Response Action**
- 1=Statewide Default Background Level
 - 2=Groundwater Surface Water Interface Protection Criteria
 - 3=Soil Saturation Concentration Screening Levels
 - 4=Residential Drinking Water Protection Criteria
 - 5=Residential Soil Volatilization to Indoor Air Inhalation Criteria (VSIC)
 - 6=Residential Infinite Source Volatile Soil Inhalation Criteria
 - 7=Residential Finite VSIC for 5 Meter Source Thickness
 - 8=Residential Finite VSIC for 2 Meter Source Thickness
 - 9=Residential Particulate Soil Inhalation Criteria
 - 10=Residential Direct Contact Criteria
 - 11=Nonresidential Drinking Water Protection Criteria
 - 12=Nonresidential Soil Volatilization to Indoor Air Inhalation
 - 13=Nonresidential Infinite Source Volatile Soil Inhalation Criteria
 - 14=Nonresidential Finite VSIC for 5 Meter Source Thickness
 - 15=Nonresidential Finite VSIC for 2 Meter Source Thickness
 - 16=Nonresidential Particulate Soil Inhalation Criteria
 - 17=Nonresidential Direct Contact Criteria
 - 18=Hazardous Waste Toxicity Screening Value
- * = Potentially exceeds hazardous waste toxicity value
 ** Exceedances of criteria 2, 4, and 11 shown for organics and cyanide only

Figure 1
 Sample Analytical Result Map
 Hubbell Processing Area - Mineral Building Property
 Hubbell, Houghton County, Michigan

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FILE: C:\temp\Projects\WDE00070\GIS\mxd\MineralBldg - Referat\Fig02 - Hubbell Mineral Building - Referat - TCLP - ASBBLK v20171127.mxd 12:05:43 PM 11/27/2017 KBrown

TCLP Sample Locations

- Results Greater than Hazardous Waste Toxicity Screening Value
- Results Less than Hazardous Waste Toxicity Screening Value

Bulk Asbestos Sample Locations

- ◆ Detected Greater than 1%
- ◆ Not Detected

- Waste Pile Boundary
- ⊗ Removed Waste Pile
- × Fence
- Property Boundary

Notes:
 - Sample locations that have been remediated/removed in 2016 are not shown
 - Sample location for CHLL-WP01-2 is approximate
 - The boundary of Waste Pile WP-48 has not been defined

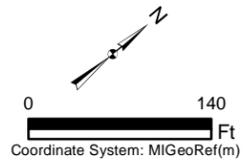


Figure 2
 Sample Analytical Result Map - TCLP and Asbestos
 Hubbell Processing Area - Mineral Building Property
 Hubbell, Houghton County, Michigan

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WASTE AND DEBRIS PILE SUMMARY

**Table 1
WASTE AND DEBRIS PILE SUMMARY
Mineral Building Property
Hubbell, Houghton County, Michigan**

Waste Pile Identification	Pile Description	General Category				Approximate Area (square feet)	Estimated Volume (cubic yards)
		Mining Era Waste and Debris	Construction and Demolition	Road Work	Woody		
Mineral Building Property							
WP-01	Soil, slag, concrete, wastes, and building materials. Appears "industrial".	X	X			10,466	1,102
WP-02	Fire brick, metal, wood, concrete, and older appearing debris mixed with soil	X	X			636	36
WP-03	Concrete slabs		X			1,018	15
WP-04	Refractory	X				95	1
WP-05	Soil, rusted metal, wood, and corrugated paper	X	X			535	25
WP-06	Soil and clay pipe pieces		X			1,063	58
WP-07	Large concrete pieces (footers and base supports)		X			2,823	61
WP-08	Wood, steel, and circuit board debris	X	X			147	1
WP-09	Soil, rusted metal, fiberglass cloth, and charred wood	X	X			736	14
WP-10	Fire brick, much of which has a partial black coating, along with concrete, metal, and wood pieces	X	X			3,417	32
WP-11	Soil, slag, brick, concrete, metal, and wood timbers - REMOVED BY DEQ 2017	X	X			1,917	94
WP-12	Asphalt and concrete			X		309	11
WP-13	Gravel, asphalt, and concrete			X		11,497	822
WP-14	Milled asphalt			X		2,991	206
WP-15	Burnt wood, metal, and miscellaneous surface debris		X		X	1,323	5
WP-16	Logs and wood timbers				X	637	15
WP-17	Concrete pieces, wood, bricks, slag, and metal mixed with soil	X	X			1,512	97
WP-18	Mostly slag with some soil and gravel	X				609	12
WP-19	Wood, stumps, and soil				X	1,933	40
WP-20	Slag and gravel	X				841	62
WP-21	Primarily asphalt with at least one area of gravel, soil, and concrete			X		3,634	132
WP-22	Mostly soil and stamp sand with concrete pieces and some steel	X	X			4,522	319
WP-23	Soil, concrete, roofing, metal, and other industrial debris	X	X			1,306	109
WP-24	Slag, gravel, wood, concrete, clay pipe pieces, cable, and wire	X	X			331	15
WP-25	Concrete slabs		X			389	10
WP-26	Asphalt pieces			X		844	21
WP-27	Fire brick, slag, steel, and concrete pieces	X	X			1,820	75
WP-28	Concrete, wood, metal, soil, fire brick, and transite pieces	X	X			2,989	236
WP-29	Soil, stamp sand, concrete bases, and steel pieces		X			7,066	309
WP-30	Gravel, soil, concrete, and asphalt pieces		X			11,880	569
WP-31	Soil with metal and wood pieces		X			500	40
WP-32	Primarily coal, slag, and concrete refractory	X	X			155	5
WP-33	Limestone					519	7
WP-45	Refractory	X	X			123	1
WP-46	Concrete pieces		X			50	3
Stack Debris	Concrete, brick, refractory, some with black coating	X	X			19,700	2,810

**Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building
Hubbell, Michigan**



Photograph 1: Waste Pile 45 (WP-45) in the foreground (a small pile of refractory) with WP-01, containing soil, slag, and concrete in the background. The material appears to be “industrial” in nature. Photograph by J. Chrestensen, July 20, 2016.



Photograph 2: WP-02 containing fire brick, metal, wood, concrete, and old appearing debris mixed with soil. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 3: WP-03 containing concrete slabs. Photograph by J. Chrestensen, July 20, 2016.



Photograph 4: WP-04 containing refractory. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 5: WP-05 containing soil, rusted metal, wood, and corrugated paper. The material appears to be “industrial” in nature. Photograph by J. Chrestensen, July 20, 2016.



Photograph 6: WP-06 containing soil and clay pipe pieces. Photograph by MDEQ-GSU, July 22, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 7: WP-07 containing large concrete pieces (footers and base supports). Photograph by MDEQ-GSU, July 22, 2016.



Photograph 8: WP-08 containing primarily wood, steel, and circuit board debris. Photograph by MDEQ-GSU, July 22, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 9: WP-09 containing soil, rusty metal, fiberglass cloth, and charred wood. The material appears to be “industrial” in nature. Photograph by J. Chrestensen, July 20, 2016.



Photograph 10: WP-10 containing fire brick, much of which has a partial black coating, along with concrete, metal, and wood pieces. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 11: WP-11 containing soil, slag, brick, concrete, metal, and wood timbers. Photograph by J. Chrestensen, July 20, 2016.



Photograph 12: WP-12 containing asphalt and concrete. Photograph by MDEQ-GSU, July 22, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 13: Looking south across WP-13 which contains gravel and some minor amounts of asphalt and concrete. The material appears to be from road work. Photograph by J. Chrestensen, July 20, 2016.



Photograph 14: WP-14 containing milled asphalt. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 15: WP-15 containing burnt wood, metal, and miscellaneous surface debris. Photograph by J. Chrestensen, July 20, 2016.



Photograph 16: WP-16 containing logs and timbers. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 17: WP-17 containing concrete pieces, wood, bricks, slag, and metal mixed with soil. The material appears older in nature. Photograph by J. Chrestensen, July 20, 2016.



Photograph 18: WP-18 containing mostly slag with some soil and gravel. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 19: WP-19 containing wood, stumps, and soil. Photograph by J. Chrestensen, July 20, 2016.



Photograph 20: WP-20 containing slag and gravel. Photograph by MDEQ-GSU, July 22, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 21: WP-21 containing primarily asphalt with an area of gravel, soil, and concrete. Photograph by MDEQ-GSU, July 22, 2016.



Photograph 22: WP-22 containing mostly soil and stamp sand with concrete pieces and some steel. Photograph by MDEQ-GSU, July 22, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 23: WP-23 containing soil, concrete, roofing, metal, and other industrial appearing debris.
Photograph by J. Chrestensen, July 20, 2016.



Photograph 24: WP-24 containing slag, gravel, wood, concrete, clay pipe pieces, cable, and wire. The asphalt in the background is WP-26. Photograph by MDEQ-GSU, July 22, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 25: WP-25 containing concrete slabs. Photograph by J. Chrestensen, July 20, 2016.



Photograph 26: WP-26 containing asphalt pieces. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 27: WP-27 containing fire brick, slag, steel, and concrete pieces. The material appears older in nature. Photograph by J. Chrestensen, July 20, 2016.



Photograph 28: WP-28 containing concrete, wood, metal, soil, fire brick, and transite pieces. The material appears older in nature. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 29: WP-29 containing soil, stamp sand, concrete bases, and steel pieces. Photograph by J. Chrestensen, July 20, 2016.



Photograph 30: WP-30 containing gravel, soil, concrete, and asphalt pieces. Photograph by J. Chrestensen, July 20, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 31: WP-31 containing soil with metal and wood pieces. Photograph by J. Chrestensen, July 20, 2016.



Photograph 32: WP-32 containing primarily coal, slag, and concrete refractory. Photograph by MDEQ-GSU, July 22, 2016.

Waste Pile Photograph Log
Hubbell Processing Area – Mineral Building



Photograph 33: WP-33 containing limestone. Photograph by MDEQ-GSU, July 22, 2016.



Photograph 34: WP-46 containing concrete pieces. Photograph by J. Chrestensen, August 25, 2016.

In 2017, the RRD disposed of 112 tons of smelter debris from a pile at the C&H Mineral Building, which we have referred to as Waste Pile 11 (WP-11). WP-11 contained PCBs (100 ppm), making it a Toxic Substances Control Act (TSCA) waste. Samples from WP-11 also leached lead via the TCLP at 110 mg/L, exceeding RCRA hazardous waste criteria. Due to the significant concentrations of contaminants present in WP-11 and its criteria as both TSCA and RCRA hazardous waste, the waste was disposed of at Chemical Waste Management's landfill in Arlington, Oregon. Based on additional RRD sampling conducted in August and October 2017, it is likely that similar waste still exists in other piles at the C&H Mineral Building. The RRD has also collected and disposed of nearly 13 tons of ACBM through three abatement efforts. Recent aerial photographs indicate that the roof still has up to 3 layers of roofing material which continues to shed.

A Baseline Environmental Assessment for the 9.28 acre C&H Mineral Building property was submitted in 2000 by the current property owner, Silver Shores Enterprises Inc. Based on review of a sequence of aerial photographs for this property we have determined that demolition of significant mining era structures, including the former C&H Smelter and associated smokestacks, took place largely between 1976 and 1997. Since that time, waste piles of various composition and sources have appeared including smelter debris, smelter stack debris, mining era structure demolition debris, asphalt, concrete, stumps and burned wastes.

The DEQ RRD does not have the resources necessary to address the remaining waste piles and ACBM at the C&H Mineral Building. Due to the significant concentrations of PCBs and lead in waste piles adjacent to Torch Lake and the continued dispersal of ABCM from the mineral building onto areas frequented by pedestrians, DEQ is requesting the EPA ERB's assistance. Please let us know if the EPA ERB can be of help. If you have any questions, please contact Ms. Amy Keranen, Project Manager, at the DEQ RRD, 55195 U.S. 41, Calumet, Michigan 49913, at keranena@michigan.gov, or 906-337-0389.

Sincerely,



Clifton Clark, District Supervisor
Remediation and Redevelopment Division
Upper Peninsula District Office
906-228-4516

Attachments

cc: Ms. Kathleen Shirey, DEQ
Mr. David O'Donnell, DEQ
Ms. Amy Keranen, DEQ