



MEMORANDUM OF DECISION

200 BLUE STAR HIGHWAY REDEVELOPMENT
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN 49406

USEPA BROWNFIELD CLEANUP GRANT
COOPERATIVE AGREEMENT BF 00E03211

Date: June 17, 2024

To: Karla Auker
United States Environmental Protection Agency, Region 5
Brownfield Project Manager

From: The City of the Village of Douglas
86 W. Center Street
Douglas, Michigan 48406

Subject: Approval of Preferred Cleanup Alternatives
200 Blue Star Highway Redevelopment
200 Blue Star Highway, Douglas, Michigan

Approved by: _____


Lisa Nocerini, City Manager

Attachments

Attachment 1: Site Vicinity Map
Attachment 2: Generalized Diagram of the Site and Surrounding Area
Attachment 3: ABCA Public Notice
Attachment 4: Conceptual Site Plan and Renderings
Attachment 5: Public Comment



1.0 PURPOSE

The purpose of this Memorandum of Decision is to document the City of the Village of Douglas' ("the City") selection of the preferred cleanup alternative for the Former Haworth Manufacturing site (the site) located at 200 Blue Star Highway. The site consists of one parcel totaling 7.18 acres located north of the Blue Star Highway and Ferry Street/Chase Road intersection within the City of the Village of Douglas, Michigan (Figure 1).

The City purchased the property in 2019 and in order to promote redevelopment of the property, the City subsequently demolished the vacant buildings located on the property in 2022. The City was awarded an EPA Brownfield Cleanup Grant in 2022 to assist with polychlorinated biphenyls (PCBs) cleanup activities on the site, thus allowing the City to position the property for redevelopment. Cleanup activities will reduce threats posed by the PCB contaminated soil present onsite. Although the site is also impacted by contamination from volatile organic compounds (VOCs), the scope of this EPA Brownfield Cleanup Grant will only address PCB contamination on the site. Cleanup and mitigation of the impacts from the VOC contamination will be addressed using additional brownfield redevelopment incentives at the state and local levels.

This document was prepared by PM Environmental, a Pinchin Company, (PM) a qualified consultant, who is providing project management and grant administration services on behalf of the City.

Under the EPA Brownfield Cleanup Grant, an Analysis of Brownfield Cleanup Alternatives ("ABCA") has been prepared for the project site. The ABCA is an evaluation to document brownfield cleanup planning related to prospective site redevelopment of the 200 Blue Star Redevelopment project ("project") pursuant to the requirements specified in the City's cooperative Agreement with the U.S. Environmental Protection Agency (EPA) (BF-00E03211).

2.0 LOCAL AND STATE REGULATORY ROLE

2.1 Owner

The City is the owner of the site and is facilitating cleanup activities. PM performed a Phase I ESA for the site dated March 28, 2019, in conformance with the scope and limitations of ASTM Practice E 1527-13 (i.e., the 'ASTM Standard'). Based on laboratory analytical results from previous assessments, the property meets the definition of a "facility" as defined in Part 201 of the Natural Resources and Environmental Protection Act (NREPA) Public Act 451, as amended, and the rules promulgated thereunder. A Baseline Environmental Assessment was prepared in accordance with Public Act 351 and submitted to the Michigan Department of Great Lakes, Environment, and Energy (EGLE) on March 28, 2019.

2.2 City of the Village of Douglas

The City is the recipient and administrator of the EPA Brownfield Cleanup Grant. As required under the City's cooperative agreement with EPA, the City prepared a Community Relations Plan (CRP) and conducted community involvement as outlined in the CRP. In addition to the grant funded community involvement activities, the City retained a planning consultant to develop three conceptual site development plans for the site to determine the site's highest and best use. The City held a public meeting and a survey to obtain public feedback and comment, which was used to select the preferred concept. Furthermore, the City has also established a public administrative record for the project.

The ABCA was prepared and made available for public comment via the City's website for a period of at least 30 days from April 11, 2024 through May 18, 2024. An announcement posting



of the ABCA was placed in the on the City's website and sent via mass email. Refer to Attachment 3 for a copy of the notice.

2.3 State of Michigan

The City will ensure EGLE involvement in brownfield response actions funded through the EPA Brownfield Cleanup Grant. Detailed descriptions of the risk analyses and proposed cleanup criteria; proposed response actions; specific tasks and costs; and proposed environmental sampling, analyses, and quality assurance/quality control (QA/QC) plans and protocols will be made available to EGLE prior to initiation of response actions. This information was provided to EGLE on April 9, 2024 for review and approval.

In addition, all environmental work plans and reports will be submitted to EGLE. Further, copies of all technical documents (e.g., ABCA, Memorandum of Decision, etc.) as part of this project will be made available to EGLE upon request.

3.0 SITE CONDITIONS AND BACKGROUND

3.1 Site Location and Description

The site consists of one parcel totaling 7.18 acres located the west side of Blue Star Highway and the east side of Ferry Street (Chase Road), north of the Blue Star Highway and Ferry Street intersection in the City of Douglas, Michigan (Attachment 1). The site consists of a vacant lot that includes a 146,761-square foot concrete slab/foundation associated with the former nonresidential building in the central portion, with grass along the property perimeters and in the rights-of-way, and asphalt and concrete pavement throughout the remainder of the property. The concrete slab/foundation is surrounded by a 6-foot tall chain link security fence to prevent access to the area by unauthorized persons, and is equipped with signage bearing the Large polychlorinated biphenyls (PSB) Mark (M_L) in accordance with 40 CFR 761.40, indicating that the area contains PCBs. The site is currently vacant with no current operations.

Site Location/Address	200 Blue Star Highway, Douglas, Michigan
Number of Parcels and Acreage	One parcel containing 7.18 acres
Number of Building(s)	None
Current Property Use	Industrial
Current Zoning	C-2: General Commercial

The site location is depicted on Attachment 1, Site Location Map. A diagram of the site and adjoining properties is included as Attachment 2, Generalized Diagram of the Site and Surrounding Area.

3.2 Site History and Previous Use(s)

The site is located at 200 Blue Star Highway and consists of a single parcel of approximately 7.18 acres. By 1938, it was initially developed as a fallow orchard with two small structures. By the 1940s, the property was redeveloped to include two utility buildings and a 150,300 square foot, single-story industrial building with approximately 15 truck bays facing Blue Star Highway. From the 1940's through the mid-1970's the property's extensive history included plating, buffing, zinc die casting, metal forming, stamping, phosphatizing, and painting metal parts. Between the years



of 1976 and 2014, the property was owned and occupied by Haworth Inc. (formerly Haworth Manufacturing) who used the facility to manufacture furniture. In 2019, the City acquired the site and demolished the buildings in 2022.

3.3 Previous Assessment Findings

The following is a list of previous environmental investigations performed on the property;

Name of Report	Date of Report	Prepared by
Phase I ESA	8/2015	Environmental Resources Management Michigan, Inc. (ERM)
Phase II ESA	10/9/2015	ERM
Baseline Environmental Assessment (BEA)	5/2/2018	PM Environmental (PM)
Remedial Alternatives Evaluation (RAE)	5/11/2018	GHD Services Inc. (GHD)
Polychlorinated Biphenyl (PCB) Cleanup Plan and Application for Risk-Based Cleanup and Disposal Approval (Cleanup Plan)	8/3/2018	GHD
Groundwater Sampling Results and Summary	3/13/2019	GHD
Phase I ESA	3/18/2019	PM Environmental (PM)
Baseline Environmental Assessment (BEA)	3/28/2019	PM
Phase II ESA	10/2022	Tetra Tech, Inc. (Tetra Tech)

2015 Phase II ESA (ERM)

A Phase II Environmental Site Assessment (ESA) was completed for the site by ERM dated October 9, 2015. The Phase II ESA was conducted to assess the following Recognized Environmental Conditions (RECs) that were identified in a prior Phase I ESA completed by ERM in August 2015:

- Volatile Organic Compounds contamination documented beneath the subject building and subsequent Michigan Department of Environment Great Lakes and Energy (EGLE) sub-slab and indoor air sampling, which identified concentrations VOCs above the [then] current EGLE Nonresidential Recommended Interim Action Screening Levels (RIASLs) for vapor intrusion;
- Three 6,000-gallon underground storage tanks (USTs) located southwest of the building, two 500-gallon USTs located east and west of the building, three concrete waste treatment tanks beneath the concrete slab in the eastern portion of the building, and a 17,500-gallon fuel oil UST that was once located on leased land across Ferry Street, to the west of the site, which were all reported to have been removed, but no soil sampling documentation was available;
- The structural integrity of floor drains and trench drains in the site building;
- Former die casting operations conducted between the 1950s and 1971.

Subsurface investigation activities were conducted in the former die cast pit area (east room) of the site building, which is not currently used for warehousing. No other former operational areas of the site building, or exterior locations were included in the Phase II ESA other than a former vent pipe area located east of the site building's east exterior wall. Investigation activities included



the advancement of 10 soil borings and the collection of soil samples for analysis of PCBs. Groundwater was not encountered in any of the soil borings advanced during ERM's August 2015 site investigation.

Soil analytical results identified concentrations of PCBs above 1.0 part per million (ppm) at three of the boring locations, however, the horizontal and vertical extent of PCB impacts were not defined within the Toxic Substances Control Act (TSCA) Subpart D Cleanup Standards for unrestricted land use.

In addition, ERM collected six 24-hour indoor air samples at representative locations in the building for laboratory analysis of VOCs. No concentrations of VOCs were identified in any of the indoor air samples collected from the site building above laboratory method detection limits (MDLs).

ERM also traced a vent pipe along the eastern wall of the site building, which was suspected of being associated with a former fuel oil UST. No USTs were identified, and no sampling was completed. The other UST basins identified as RECs were not assessed.

2018 Remedial Alternative Evaluation (GHD)

A Remedial Alternatives Evaluation (RAE) for the site was completed by GHD dated May 11, 2018. GHD reviewed previous reports that documented the nature and extent of trichloroethene (TCE) and PCB impacts at the site to evaluate remedial alternatives for the risks associated with the VOC groundwater plume and PCBs in soil for the vapor intrusion and direct contact pathways, respectively.

The RAE documented that ERM completed additional site investigations in December 2015, August, November, and December 2016, and January 2017 to attempt to delineate the horizontal and vertical extent of PCB impacts at the site. The soil analytical results identified concentrations of PCBs above 100.0 ppm at several locations ranging from 1 to 15.5 ft below ground surface (bgs). The horizontal extent of impacts was delineated within the TSCA Subpart D cleanup standard for Low-Occupancy areas of 100 ppm.

ERM also collected concrete samples from the surface and lower layers of the concrete slab in the east room (warehouse). Concentrations of PCBs greater than 1.0 ppm were identified in all of the deeper intervals at concentrations ranging from 3.4 parts per million (ppm) to 5,600 ppm. The locations of the highest concentrations of PCBs were identified around the north and east pits, where concentrations exceeded 100 ppm. In addition, 10 surface concrete samples from the west room in the northwestern portion of the building were collected, none of which contained PCB concentrations exceeding 10 ppm, which is appropriate for high-occupancy use under the TSCA Subpart D cleanup standards.

2018 PCB Cleanup and Application for Risk-Based Cleanup and Disposal Approval (GHD)

In June 2018, GHD conducted an additional site investigation to vertically delineate the extent of PCB impacts greater than 1 ppm and 100 ppm, respectively, and/or confirm soil boring refusal depths encountered by ERM during previous site investigations in the central portion of the east room between 12.0 and 15.0 feet bgs to evaluate 27 identified data gaps. GHD concluded that the drilling work confirmed refusal at 21 of the 27 data gaps between 12.0 and 15.0 feet below ground surface (bgs). At the remaining six soil boring locations, soil samples were collected at depths to 19.0 to 20.0 feet bgs, none of which identified concentrations of PCBs above laboratory method detection limits (MDLs). Based on these results, GHD assumed vertical delineation in the east room at approximately 18.0 to 20.0 feet bgs. Additional vertical delineation would be required



to fully define the vertical extent of PCB impacts to within the TSCA Subpart D Cleanup Standards below refusal depths.

The results of GHD's investigation are included in a PCB Cleanup Plan (Cleanup Plan), dated August 3, 2018. GHD's Cleanup Plan contains a Draft PCB Cleanup Plan that was completed by ERM in 2017. Included within the plan is documentation of additional sampling that was conducted by ERM to evaluate PCBs impacts to groundwater and soil gas. Sampling included the installation of four temporary monitoring wells to a depth of approximately 40 feet bgs downgradient to the north of the east room for collection of groundwater samples. No concentrations of PCBs were identified above laboratory MDLs. Three soil gas samples collected in the east room identified no concentrations of PCBs above laboratory MDLs.

Concrete floor sampling was also conducted in the east and west rooms. PCB concentrations in concrete above 100 ppm were not identified in the west room. In the north central portion of the east room, PCB concentrations exceeding 100 ppm were detected and fully delineated. Along the east and north walls, PCB concentrations were greater than 1 ppm but less than 5 ppm. All other delineation samples collected from the east room were below 1 ppm or below laboratory detection limits.

Based on these results, GHD presented the following recommended approach in the Cleanup Plan, which envisioned Low-Occupancy uses of the site, as defined under TSCA:

- PCBs \leq 100 ppm – leave in place and cap with an epoxy seal;
- PCBs > 100 ppm from 0.0 to 5.0 feet bgs – excavate to 5.0 feet bgs and dispose of offsite;
- PCBs > 100 ppm greater than 5.0 feet bgs – leave in place and cap with an epoxy seal; and
- PCBs > 1 ppm – cap with an epoxy seal all areas that exceed 1 ppm.

Additional recommended activities included:

- Collection of confirmation soil samples in the planned PCB excavation area following TSCA verification of soil remediation guidance.
- No PCB removal activities of soil or concrete to be completed in the west room; and
- Recording deed restrictions for the site consistent TSCA requirements.

2019 Groundwater Sampling Results and Summary (GHD)

Groundwater monitoring results dated 2019 document similar concentrations as previously identified. Sampling results indicate that the chlorinated VOCs present in groundwater have not mobilized the PCBs present in the impacted soils to groundwater.

2022 Phase II ESA (Tetra Tech)

A Phase II ESA was completed for the site by Tetra Tech in October 2022 under EPA's Targeted Brownfields Assessment (TBA) program. The Phase II ESA was conducted to further delineate the extent of polychlorinated biphenyl (PCB) contamination in concrete and shallow soil in the areas where the former East and West Rooms were located (northern portion of the building slab area). Based on prior assessments, these areas have greater impact from PCBs compared to the rest of the site. In addition, waste characterization samples were collected from the concrete and shallow soils to determine the appropriate disposal categories.



A total of 30 concrete core borings were advanced in the former East and West Room areas of the site to a maximum depth of 3 feet. Within the former East Room area, PCB Aroclor-1254 was detected in 19 samples above the TSCA regulated criteria of 1.0 mg/kg but below the criteria of 50.0 mg/kg, and in 7 samples where the concentrations were above the TSCA waste criteria of 50 mg/kg. No PCB concentrations were detected in the concrete sample collected within former West Room area.

Soil samples were analyzed for PCBs, TCLP VOCs, TCLP SVOCs, and TCLP metals. The soil samples were analyzed for PCBs to determine the required disposal method of the soil. In addition, some samples were analyzed for TCLP parameters to determine if they exceeded hazardous waste criteria in 40 CFR 261.24. Within the former East Room area, PCB Aroclor-1254 was detected in five (5) samples above the TSCA regulated criteria of 1.0 mg/kg but below the criteria of 50.0 mg/kg, and in one sample where the concentrations were above the TSCA waste criteria of 50 mg/kg. No PCB concentrations were detected in the concrete sample collected within former West Room area.

4.0 CLEANUP OBJECTIVES AND STANDARDS

4.1 Cleanup Objectives

The City's intent is to better position the property for redevelopment by addressing the PCB contamination known to exist at the site. The City will retain ownership of the property and oversee the cleanup activities until the property can be sold to a developer and redeveloped.

The City intends to engage in PCB cleanup activities to achieve Risk-Based Low-Occupancy TSCA Cleanup Standards. The magnitude of these costs along with additional costs necessary to implement due care response activities exceeds the capabilities of available brownfield tax increment financing, as well as other state cleanup programs. Cleanup of PCB contamination to the Risk-Based Low-Occupancy TSCA Standard will eliminate a significant cleanup cost, which would make state brownfield tax increment financing feasible to implement the necessary due care response activities available for redeveloping property.

In the fall of 2023, the City retained a planning consultant to develop three conceptual site development plans for the site to determine the site's highest and best use with respect to the goals and objectives of the City's Master Plan as well as other planning and visioning documents that were developed for the Blue Star Highway corridor. Once these conceptual development plans were developed, the City held a public meeting and a survey to obtain public feedback and comment, which was used to select the preferred concept.

The preferred conceptual site development plan that was selected includes the redevelopment of the property into mixed-uses that include the following:

- A linear park and gathering area for passive recreational activities and outdoor movies
- Two mixed use, two-story buildings that feature ground floor commercial uses and residential units above
- Four two-story live-work residential spaces that could be used for senior housing and/or affordable housing
- Reforested greenspace and vegetative buffers
- A new public road with on street parking in the location where the former East and West Rooms were located
- Courtyards and sidewalks



The preferred conceptual site plan and renderings are included as Attachment 4.

The project goals for this ABCA are to identify, evaluate, and select an appropriate cleanup plan to address the soil, groundwater, and soil gas impacts identified at the site. Based on the preliminary redevelopment concept, the goal of the ABCA also relate to activities likely required to achieve compliance with the Risk-Based Low-Occupancy TSCA Cleanup Standards with the implementation of cleanup activities, as it pertains to documented soil, groundwater, and soil gas impacts at the site.

4.2 Applicable Regulations and Cleanup Standards

Laws and regulations that are applicable to this cleanup include the Federal Toxic Substances Control Act (15 U.S.C. chapter 53, subchapter 1, sections 2601-2629) and Brownfields Revitalization Act (Pub. L. 107-118, 115 stat. 2356), the Federal Davis-Bacon Act (Ch. 411, 46 Stat. 1494) and Michigan Parts 111, 115, and 201. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed. As described herein, all cleanup will be in accordance with the State of Michigan regulations and Federal TSCA regulations. All applicable permits and documentation (i.e. One-Call, Project Notification Forms, etc.) will be obtained prior to the work commencing, and all work will be conducted in accordance with the conditions for approval. Pertinent laws and regulations applicable to the contaminant of concern for this ABCA are detailed in the following subsections.

Documented soil, groundwater, and soil gas impacts were identified at the site and compared to TSCA Subpart D cleanup standards. These standards are described as follows:

Standard	No Action	Appropriate Cap w/Deed Restriction	Removal Required
High-Occupancy Area (≥335 hours/year)	≤1 ppm	>1 to ≤10 ppm	>10 ppm
Low-Occupancy Area (<335 hours/year)	≤25 ppm w/ deed restriction	>25 to ≤100 ppm	>100 ppm

ppm = parts per million

Cleanup activities will be undertaken in a manner compliant with TSCA Subpart D Cleanup Standards, federal Occupational Safety and Health Administration (OSHA), and/or Michigan Occupational Safety and Health Administration (MIOSHA), as applicable.

The regulations also require work practice standards designed to eliminate or minimize the release of contaminated soil during the cleanup process. The objective of the contamination cleanup or mitigation is to reduce or eliminate the potential risk of exposure to site occupants and to workers and the public during remediation at the site. In order to be considered effective, the remedial alternative selected for the site needs to minimize the potential for human exposure to contaminated soil.

4.3 Cleanup Oversight Responsibility

An environmental professional will oversee cleanup remediation activities which will include reporting to EPA upon completion.



5.0 POTENTIAL CLEANUP ALTERNATIVES

The sections below provide an outline of the conceptual alternatives to achieve TSCA Subpart D compliance in relation to identified contamination on the site.

Multiple potential alternatives have been selected for further evaluation and comparison:

- Alternative #1: No Action
 - No action
- Alternative #2:
 - Comprehensive Cleanup to Achieve Compliance with Michigan's Part 201 Cleanup Criteria, and federal Self-Implementing High-Occupancy TSCA (no surface cap). Specifically, the Michigan Part 201 Residential Generic Cleanup Criteria and federal TSCA Self-Implementing High-Occupancy Standards will be utilized.
- Alternative #3:
 - Cleanup of Former East and West Room Areas to Achieve Compliance with TSCA Risk-Based Low-Occupancy Standards.

Each alternative was evaluated for applicability to the site and its feasibility and are further discussed in the following sections.

5.1 Alternative #1: “No Action”

The “no action” cleanup alternative is included in the evaluation as a standard to compare other remedial action in order to compare and contrast any significant reduction in site risk, as necessary. For the “no action” alternative, no action to remediate the issues identified at the site would take place and the contaminants would remain in place. This alternative does not include a means to mitigate or eliminate potential exposure both during and following redevelopment and does not meet the objectives of the project.

5.1.1 Effectiveness

This alternative is not effective in controlling the release of contaminants or achieving project goals. Contamination will remain in the ground and potentially cause issues related to the development activities including soil management.

5.1.2 Implementability

The ‘No Action’ alternative is simple to implement since no activities will be conducted.

5.1.3 Cost

No direct costs associated with this alternative; however, potential environmental and financial liabilities would not be addressed and may result in additional management costs during development.

5.2 Alternatives to “No Action”

The following tables document Alternatives 2 and 3 for an easier comparison of effectiveness, implementability, and cost.



Alternatives to “No Action” CONCEPTUAL CLEANUP OPTIONS

Alternative #2: Comprehensive Cleanup to Achieve Compliance with Michigan’s Part 201 Cleanup Criteria, and Federal Self-Implementing High-Occupancy TSCA					
	Advantages/Disadvantages	Conceptual Budgetary Costs	Effectiveness Feasibility	Anticipated Cleanup Standard	Timeframe
<p>Comprehensive Cleanup of PCB/VOCs, and Metals above Part 201 Residential Cleanup Criteria and, Volatilization to Indoor Air Pathway (VIAP) Screening Levels, and TSCA High-Occupancy Criteria.</p> <p>Removal of Contaminated Materials</p>	<p>Advantages</p> <ul style="list-style-type: none"> Removal of all contamination from the site that represents a potential unacceptable exposure risk to occupants. Facilitates unrestricted use of the property. Potential exposure risks via the groundwater ingestion pathway controlled using a Restrictive Covenant <p>Disadvantages</p> <ul style="list-style-type: none"> A groundwater contaminant plume originating from the site already extends greater than 1,600 feet offsite to the north/northwest such that cleanup of all contamination on the site will not address the offsite plume area. Not cost feasible when compared to other alternatives. Additional evaluation and delineation studies needed to completely delineate the vertical and horizontal extent of contamination relative to current EGLE VIAP Screening Levels or Volatilization to Indoor Air Criteria (VIAC) issued by EGLE Additional feasibility and pilot testing required to implement cleanup. The contaminant types onsite require different cleanup technologies such that a combination of extensive excavation coupled with remediation system operation, possible in-situ groundwater treatment, and long-term groundwater monitoring would be required Cleanup activities would require years to achieve. 	<p>Greater than \$1,000,000</p>	<p>Effectively removes occupant exposure conditions</p>	<p>Part 201: Drinking Water, Ground-Water Surface Water Interface, Direct Contact, and Volatilization to Indoor Air Inhalation Cleanup Criteria</p> <p>TSCA Subpart D Cleanup Standards (Risk-Based High-Occupancy)</p>	<p>5 -10 years (or greater)</p>



Alternative #3: Cleanup of Contaminated Areas to Achieve Compliance with TSCA Risk-Based Low-Occupancy Standards					
	Advantages/Disadvantages	Conceptual Budgetary Costs	Effectiveness Feasibility	Anticipated Cleanup Standard	Timeframe
	<p>Advantages</p> <ul style="list-style-type: none"> • Cost feasible • Risk Based Approach allows source removal while implementing targeted engineering and institutional controls to facilitate reuse and redevelopment consistent with a low-occupancy land use as defined under TSCA. • Allows EPA input to Risk-Based TSCA Cleanup Workplan/Approach that is submitted to EPA prior to implementation; • Allows leveraging of state brownfield TIF programs for non-PCB impacts; • Reduces waste generation compared to Alternative 2 or a more conservative Self-Implementing standard under TSCA. • Moderate property disruption relative to other options. • Timeframe for cleanup activities significantly reduced compared to Alternative 2. • Maximizes redevelopment/reuse potential relative to PCB impacts including those consistent with Low-Occupancy uses and mixed Residential/Commercial land uses; • Redevelopment features, like building pads, parking lots and driveways can be adopted or implemented to meet risk-based cleanup requirements and/or controls. <p>Disadvantages</p> <ul style="list-style-type: none"> • Only addresses TSCA Subpart D cleanup standards. Additional institutional controls likely needed. • Surface barriers, vapor intrusion controls, or institutional controls may still be needed, which will require operation and maintenance. • Annual inspections and documentation may be required to demonstrate compliance with Due Care obligations and the institutional and engineering controls required for Risk-Based TSCA Closure; 	<p>±\$500,000 to \$600,000</p> <p>PCBs are Removed to Meet Risk-Based Low-Occupancy Standards, and Engineering/Institutional Controls Implemented</p>	<p>Effective, achieves compliance with Risk-Based TSCA Subpart D Low-Occupancy cleanup standards.</p>	<p>TSCA Subpart D Cleanup Standards (Risk-Based Low-Occupancy)</p>	<p>6 -12 months</p>
<p>Cleanup of PCBs to Achieve Risk-Based TSCA Low-Occupancy Subpart D Cleanup Standards</p> <p>Utilization of Traditional Brownfield TIF to address Due Care Compliance (i.e. vapor mitigation, institutional controls, etc.)</p>					



6.0 RECOMMENDED CLEANUP ALTERNATIVE

Given the cost feasibility involving cleanup of the PCB contamination on the property, the recommended cleanup option is Alternative 3: Cleanup of PCB Contaminated Areas to Achieve Compliance with Risk-Based Low-Occupancy TSCA Subpart D Cleanup Standards.

While still a viable option for remediation, the costs associated with Alternative 2 is not economical as the total remediation costs are estimated to be greater than the property’s value. In addition, a comprehensive cleanup of the property would not address the existing offsite groundwater contaminant plume which has migrated greater than 1,600-feet to the north/northwest. Cleanup of the PCB contaminations to TSCA Risk-Based Low-Occupancy Standards would effectively utilize EPA Brownfield Cleanup funding to address a portion of remedial activities needed, which would allow the leveraging of state brownfield TIF incentives to redevelop the site. Neither program would provide enough funding to fully address the cleanup of the PCB contamination and address due care response activities on their own.

Following the implementation of cleanup activities, The City will submit a Risk-Based TSCA Closure Report to EPA documenting compliance with TSCA Subpart D. It is understood that the Closure Report will need to include requirements for post-closure actions including inspections and operation and maintenance activities, as applicable.

7.0 DECISION TO PROCEED

A public notice was published, and a public comment period was held between April 11, 2024 and May 18, 2024 to inform the public and provide an opportunity for public input on site cleanup and plans for redevelopment. One comments was received during this period (Figure 5).

After consideration of all factors presented in this Memorandum of Decision, the City has elected to proceed with the options described in Section 6.0. This Memorandum also documents that the proposed cleanup action was selected and developed consistent with EPA programmatic requirements. These decisions were based upon the rationale presented herein. The approved EPA Brownfield Cleanup Grant amount is \$500,000. Cleanup costs exceeding \$500,000 will be the responsibility of the City.

8.0 REFERENCES

The following previous site investigations, some of which are available from public sources.

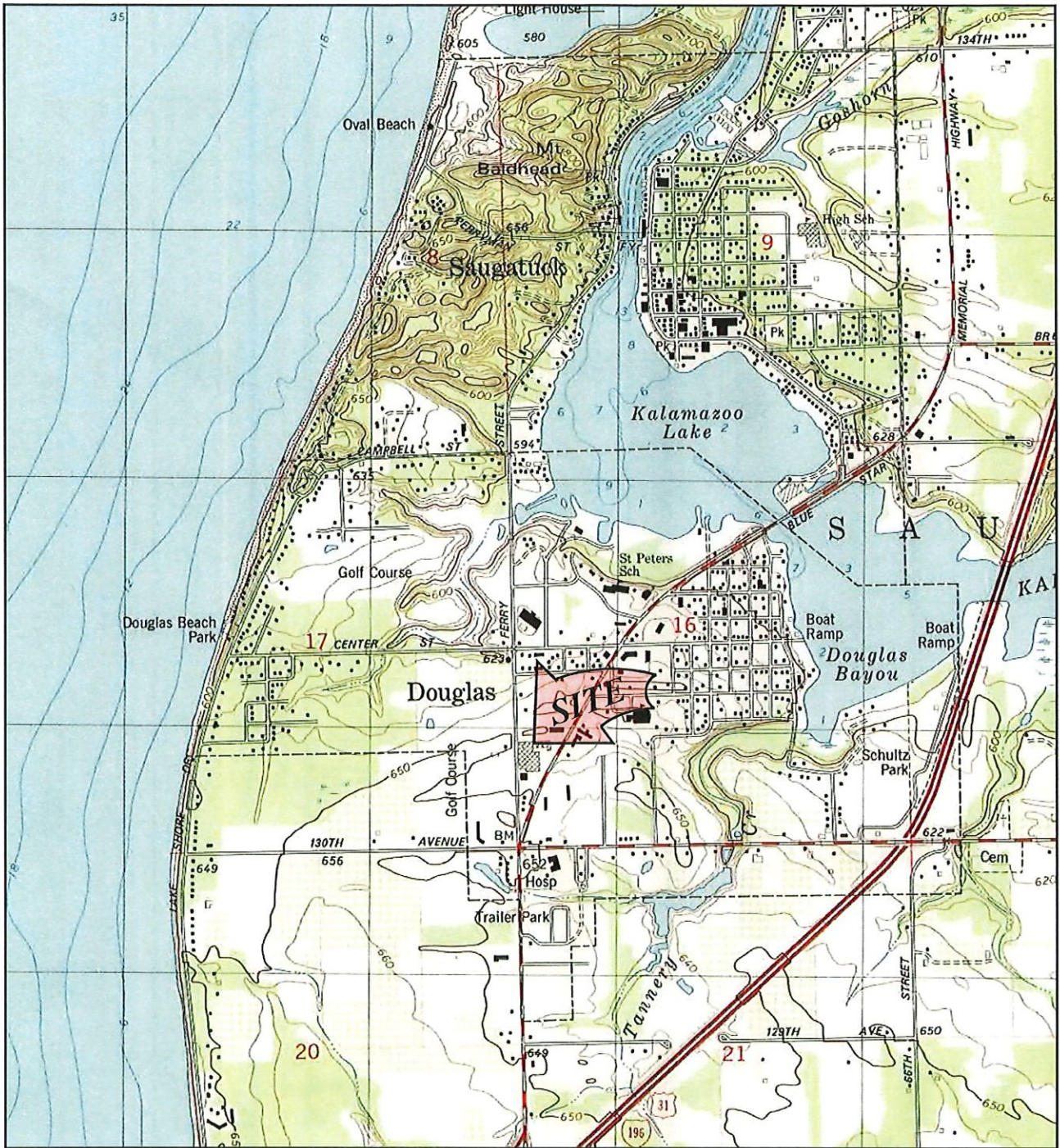
Name of Report	Date of Report	Prepared by
Phase II ESA	10/9/2015	Environmental Resources Management Michigan, Inc. (ERM)
Remedial Alternatives Evaluation (RAE)	5/11/2018	GHD Services Inc. (GHD)
PCB Cleanup Plan and Application for Risk-Based Cleanup and Disposal Approval (Cleanup Plan)	8/3/2018	GHD
Groundwater Sampling Results and Summary	3/13/2019	GHD
Phase II ESA	10/2022	Tetra Tech, Inc.



In addition, the following published sources were utilized during completion of this ABCA:

- TSCA Part 761 “Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions”, Subpart D “Storage and Disposal”;
- “Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels,” Revised December 2013 and in accordance with Section 20120a(1);
- EGLE Operational Memorandum No. 4 “Site Characterization and Remediation Verification – Attachment 10, Peer Review Draft Groundwater Not in an Aquifer,” February 2007;
- EGLE Operational Memorandum No. 2 “Sampling and Analysis,” October 22, 2004, Revised July 5, 2007;
- EGLE Guidance Document for the Vapor Intrusion Pathway, May 2013;
- Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM, ASTM Designation E 1527-13, Published November 2013.

Attachment 1: Site Vicinity Map



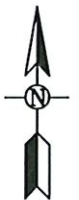
COUNTY LOCATION

ALLEGAN COUNTY

FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES
 SAUGATUCK, MI QUADRANGLE, 1951. PHOTO REVISED 1975.

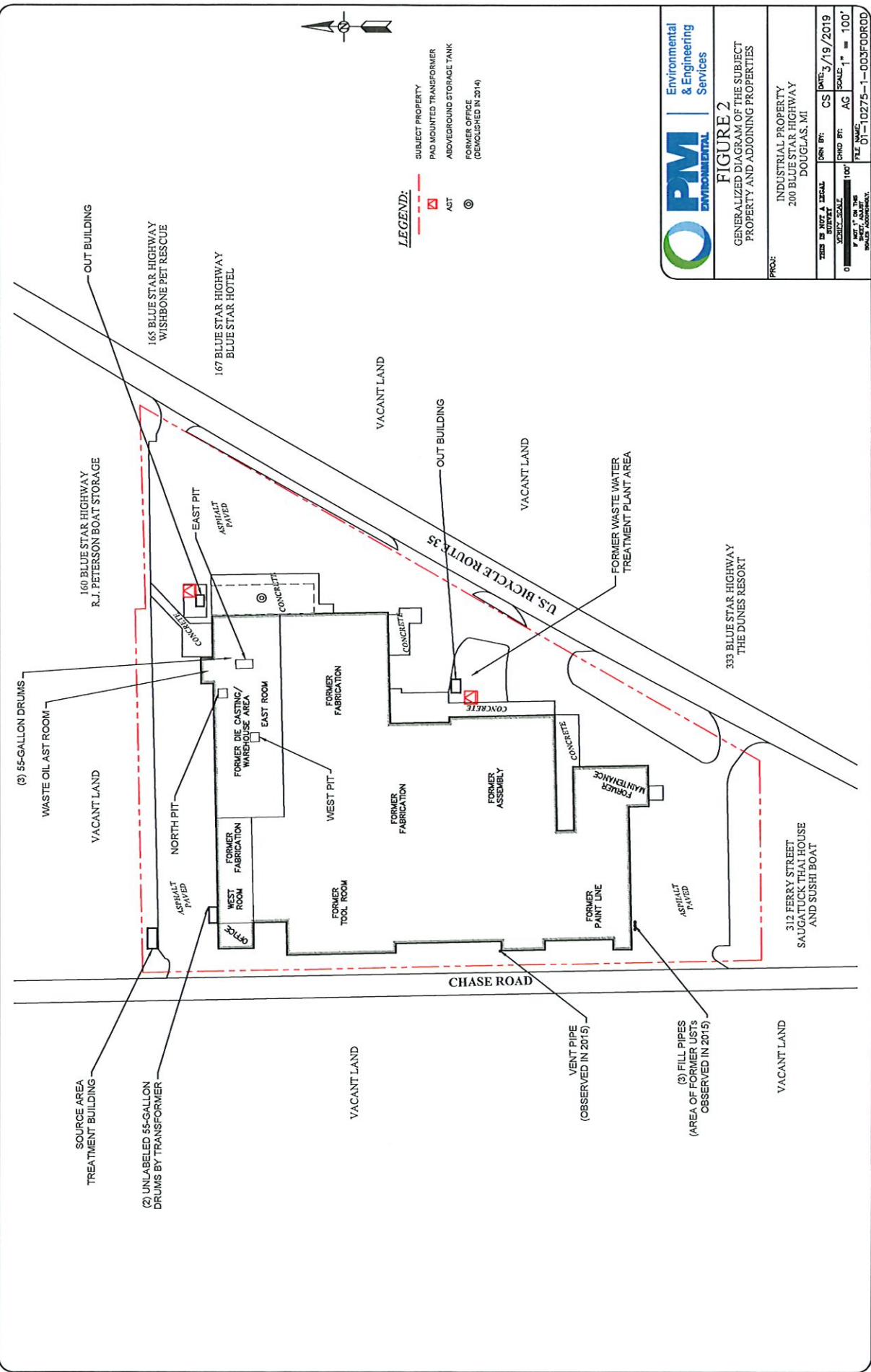


PROJ:
 INDUSTRIAL PROPERTY
 200 BLUE STAR HIGHWAY
 DOUGLAS, MI

THIS IS NOT A LEGAL SURVEY
 VERIFY SCALE
 0 2,000'
 IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY:	CS	DATE:	3/19/2019
CHKD BY:	AG	SCALE:	1" = 2,000'
FILE NAME:	01-10275-1-003F00R00		

Attachment 2: Generalized Diagram of the Site and Surrounding Area



LEGEND:

- SUBJECT PROPERTY
- ⊠ PAD MOUNTED TRANSFORMER
- ⊠ ABOVEGROUND STORAGE TANK
- ⊙ FORMER OFFICE (DEMOLISHED IN 2014)

FIGURE 2

GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES

PROJECT: INDUSTRIAL PROPERTY 200 BLUE STAR HIGHWAY DOUGLAS, MI	
THIS IS NOT A SCALE DRAWING	DATE: 3/19/2019
SCALE: 1" = 100'	DRN BY: CS
FILE NAME: 01-10275-1-003F00R00	CHNG BY: AC

Attachment 3: ABCA Public Notice





1.0 PURPOSE

The purpose of this Memorandum of Decision is to document the City of the Village of Douglas' ("the City") selection of the preferred cleanup alternative for the Former Haworth Manufacturing site (the site) located at 200 Blue Star Highway. The site consists of one parcel totaling 7.18 acres located north of the Blue Star Highway and Ferry Street/Chase Road intersection within the City of the Village of Douglas, Michigan (Figure 1).

The City purchased the property in 2019 and in order to promote redevelopment of the property, the City subsequently demolished the vacant buildings located on the property in 2022. The City was awarded an EPA Brownfield Cleanup Grant in 2022 to assist with polychlorinated biphenyls (PCBs) cleanup activities on the site, thus allowing the City to position the property for redevelopment. Cleanup activities will reduce threats posed by the PCB contaminated soil present onsite. Although the site is also impacted by contamination from volatile organic compounds (VOCs), the scope of this EPA Brownfield Cleanup Grant will only address PCB contamination on the site. Cleanup and mitigation of the impacts from the VOC contamination will be addressed using additional brownfield redevelopment incentives at the state and local levels.

This document was prepared by PM Environmental, a Pinchin Company, (PM) a qualified consultant, who is providing project management and grant administration services on behalf of the City.

Under the EPA Brownfield Cleanup Grant, an Analysis of Brownfield Cleanup Alternatives ("ABCA") has been prepared for the project site. The ABCA is an evaluation to document brownfield cleanup planning related to prospective site redevelopment of the 200 Blue Star Redevelopment project ("project") pursuant to the requirements specified in the City's cooperative Agreement with the U.S. Environmental Protection Agency (EPA) (BF-00E03211).

2.0 LOCAL AND STATE REGULATORY ROLE

2.1 Owner

The City is the owner of the site and is facilitating cleanup activities. PM performed a Phase I ESA for the site dated March 28, 2019, in conformance with the scope and limitations of ASTM Practice E 1527-13 (i.e., the 'ASTM Standard'). Based on laboratory analytical results from previous assessments, the property meets the definition of a "facility" as defined in Part 201 of the Natural Resources and Environmental Protection Act (NREPA) Public Act 451, as amended, and the rules promulgated thereunder. A Baseline Environmental Assessment was prepared in accordance with Public Act 351 and submitted to the Michigan Department of Great Lakes, Environment, and Energy (EGLE) on March 28, 2019.

2.2 City of the Village of Douglas

The City is the recipient and administrator of the EPA Brownfield Cleanup Grant. As required under the City's cooperative agreement with EPA, the City prepared a Community Relations Plan (CRP) and conducted community involvement as outlined in the CRP. In addition to the grant funded community involvement activities, the City retained a planning consultant to develop three conceptual site development plans for the site to determine the site's highest and best use. The City held a public meeting and a survey to obtain public feedback and comment, which was used to select the preferred concept. Furthermore, the City has also established a public administrative record for the project.

The ABCA was prepared and made available for public comment via the City's website for a period of at least 30 days from April 11, 2024 through May 18, 2024. An announcement posting



of the ABCA was placed in the on the City's website and sent via mass email. Refer to Attachment 3 for a copy of the notice.

2.3 State of Michigan

The City will ensure EGLE involvement in brownfield response actions funded through the EPA Brownfield Cleanup Grant. Detailed descriptions of the risk analyses and proposed cleanup criteria; proposed response actions; specific tasks and costs; and proposed environmental sampling, analyses, and quality assurance/quality control (QA/QC) plans and protocols will be made available to EGLE prior to initiation of response actions. This information was provided to EGLE on April 9, 2024 for review and approval.

In addition, all environmental work plans and reports will be submitted to EGLE. Further, copies of all technical documents (e.g., ABCA, Memorandum of Decision, etc.) as part of this project will be made available to EGLE upon request.

3.0 SITE CONDITIONS AND BACKGROUND

3.1 Site Location and Description

The site consists of one parcel totaling 7.18 acres located the west side of Blue Star Highway and the east side of Ferry Street (Chase Road), north of the Blue Star Highway and Ferry Street intersection in the City of Douglas, Michigan (Attachment 1). The site consists of a vacant lot that includes a 146,761-square foot concrete slab/foundation associated with the former nonresidential building in the central portion, with grass along the property perimeters and in the rights-of-way, and asphalt and concrete pavement throughout the remainder of the property. The concrete slab/foundation is surrounded by a 6-foot tall chain link security fence to prevent access to the area by unauthorized persons, and is equipped with signage bearing the Large polychlorinated biphenyls (PSB) Mark (M_L) in accordance with 40 CFR 761.40, indicating that the area contains PCBs. The site is currently vacant with no current operations.

Site Location/Address	200 Blue Star Highway, Douglas, Michigan
Number of Parcels and Acreage	One parcel containing 7.18 acres
Number of Building(s)	None
Current Property Use	Industrial
Current Zoning	C-2: General Commercial

The site location is depicted on Attachment 1, Site Location Map. A diagram of the site and adjoining properties is included as Attachment 2, Generalized Diagram of the Site and Surrounding Area.

3.2 Site History and Previous Use(s)

The site is located at 200 Blue Star Highway and consists of a single parcel of approximately 7.18 acres. By 1938, it was initially developed as a fallow orchard with two small structures. By the 1940s, the property was redeveloped to include two utility buildings and a 150,300 square foot, single-story industrial building with approximately 15 truck bays facing Blue Star Highway. From the 1940's through the mid-1970's the property's extensive history included plating, buffing, zinc die casting, metal forming, stamping, phosphatizing, and painting metal parts. Between the years



of 1976 and 2014, the property was owned and occupied by Haworth Inc. (formerly Haworth Manufacturing) who used the facility to manufacture furniture. In 2019, the City acquired the site and demolished the buildings in 2022.

3.3 Previous Assessment Findings

The following is a list of previous environmental investigations performed on the property;

Name of Report	Date of Report	Prepared by
Phase I ESA	8/2015	Environmental Resources Management Michigan, Inc. (ERM)
Phase II ESA	10/9/2015	ERM
Baseline Environmental Assessment (BEA)	5/2/2018	PM Environmental (PM)
Remedial Alternatives Evaluation (RAE)	5/11/2018	GHD Services Inc. (GHD)
Polychlorinated Biphenyl (PCB) Cleanup Plan and Application for Risk-Based Cleanup and Disposal Approval (Cleanup Plan)	8/3/2018	GHD
Groundwater Sampling Results and Summary	3/13/2019	GHD
Phase I ESA	3/18/2019	PM Environmental (PM)
Baseline Environmental Assessment (BEA)	3/28/2019	PM
Phase II ESA	10/2022	Tetra Tech, Inc. (Tetra Tech)

2015 Phase II ESA (ERM)

A Phase II Environmental Site Assessment (ESA) was completed for the site by ERM dated October 9, 2015. The Phase II ESA was conducted to assess the following Recognized Environmental Conditions (RECs) that were identified in a prior Phase I ESA completed by ERM in August 2015:

- Volatile Organic Compounds contamination documented beneath the subject building and subsequent Michigan Department of Environment Great Lakes and Energy (EGLE) sub-slab and indoor air sampling, which identified concentrations VOCs above the [then] current EGLE Nonresidential Recommended Interim Action Screening Levels (RIASLs) for vapor intrusion;
- Three 6,000-gallon underground storage tanks (USTs) located southwest of the building, two 500-gallon USTs located east and west of the building, three concrete waste treatment tanks beneath the concrete slab in the eastern portion of the building, and a 17,500-gallon fuel oil UST that was once located on leased land across Ferry Street, to the west of the site, which were all reported to have been removed, but no soil sampling documentation was available;
- The structural integrity of floor drains and trench drains in the site building;
- Former die casting operations conducted between the 1950s and 1971.

Subsurface investigation activities were conducted in the former die cast pit area (east room) of the site building, which is not currently used for warehousing. No other former operational areas of the site building, or exterior locations were included in the Phase II ESA other than a former vent pipe area located east of the site building's east exterior wall. Investigation activities included



the advancement of 10 soil borings and the collection of soil samples for analysis of PCBs. Groundwater was not encountered in any of the soil borings advanced during ERM's August 2015 site investigation.

Soil analytical results identified concentrations of PCBs above 1.0 part per million (ppm) at three of the boring locations, however, the horizontal and vertical extent of PCB impacts were not defined within the Toxic Substances Control Act (TSCA) Subpart D Cleanup Standards for unrestricted land use.

In addition, ERM collected six 24-hour indoor air samples at representative locations in the building for laboratory analysis of VOCs. No concentrations of VOCs were identified in any of the indoor air samples collected from the site building above laboratory method detection limits (MDLs).

ERM also traced a vent pipe along the eastern wall of the site building, which was suspected of being associated with a former fuel oil UST. No USTs were identified, and no sampling was completed. The other UST basins identified as RECs were not assessed.

2018 Remedial Alternative Evaluation (GHD)

A Remedial Alternatives Evaluation (RAE) for the site was completed by GHD dated May 11, 2018. GHD reviewed previous reports that documented the nature and extent of trichloroethene (TCE) and PCB impacts at the site to evaluate remedial alternatives for the risks associated with the VOC groundwater plume and PCBs in soil for the vapor intrusion and direct contact pathways, respectively.

The RAE documented that ERM completed additional site investigations in December 2015, August, November, and December 2016, and January 2017 to attempt to delineate the horizontal and vertical extent of PCB impacts at the site. The soil analytical results identified concentrations of PCBs above 100.0 ppm at several locations ranging from 1 to 15.5 ft below ground surface (bgs). The horizontal extent of impacts was delineated within the TSCA Subpart D cleanup standard for Low-Occupancy areas of 100 ppm.

ERM also collected concrete samples from the surface and lower layers of the concrete slab in the east room (warehouse). Concentrations of PCBs greater than 1.0 ppm were identified in all of the deeper intervals at concentrations ranging from 3.4 parts per million (ppm) to 5,600 ppm. The locations of the highest concentrations of PCBs were identified around the north and east pits, where concentrations exceeded 100 ppm. In addition, 10 surface concrete samples from the west room in the northwestern portion of the building were collected, none of which contained PCB concentrations exceeding 10 ppm, which is appropriate for high-occupancy use under the TSCA Subpart D cleanup standards.

2018 PCB Cleanup and Application for Risk-Based Cleanup and Disposal Approval (GHD)

In June 2018, GHD conducted an additional site investigation to vertically delineate the extent of PCB impacts greater than 1 ppm and 100 ppm, respectively, and/or confirm soil boring refusal depths encountered by ERM during previous site investigations in the central portion of the east room between 12.0 and 15.0 feet bgs to evaluate 27 identified data gaps. GHD concluded that the drilling work confirmed refusal at 21 of the 27 data gaps between 12.0 and 15.0 feet below ground surface (bgs). At the remaining six soil boring locations, soil samples were collected at depths to 19.0 to 20.0 feet bgs, none of which identified concentrations of PCBs above laboratory method detection limits (MDLs). Based on these results, GHD assumed vertical delineation in the east room at approximately 18.0 to 20.0 feet bgs. Additional vertical delineation would be required



to fully define the vertical extent of PCB impacts to within the TSCA Subpart D Cleanup Standards below refusal depths.

The results of GHD's investigation are included in a PCB Cleanup Plan (Cleanup Plan), dated August 3, 2018. GHD's Cleanup Plan contains a Draft PCB Cleanup Plan that was completed by ERM in 2017. Included within the plan is documentation of additional sampling that was conducted by ERM to evaluate PCBs impacts to groundwater and soil gas. Sampling included the installation of four temporary monitoring wells to a depth of approximately 40 feet bgs downgradient to the north of the east room for collection of groundwater samples. No concentrations of PCBs were identified above laboratory MDLs. Three soil gas samples collected in the east room identified no concentrations of PCBs above laboratory MDLs.

Concrete floor sampling was also conducted in the east and west rooms. PCB concentrations in concrete above 100 ppm were not identified in the west room. In the north central portion of the east room, PCB concentrations exceeding 100 ppm were detected and fully delineated. Along the east and north walls, PCB concentrations were greater than 1 ppm but less than 5 ppm. All other delineation samples collected from the east room were below 1 ppm or below laboratory detection limits.

Based on these results, GHD presented the following recommended approach in the Cleanup Plan, which envisioned Low-Occupancy uses of the site, as defined under TSCA:

- PCBs \leq 100 ppm – leave in place and cap with an epoxy seal;
- PCBs > 100 ppm from 0.0 to 5.0 feet bgs – excavate to 5.0 feet bgs and dispose of offsite;
- PCBs > 100 ppm greater than 5.0 feet bgs – leave in place and cap with an epoxy seal; and
- PCBs > 1 ppm – cap with an epoxy seal all areas that exceed 1 ppm.

Additional recommended activities included:

- Collection of confirmation soil samples in the planned PCB excavation area following TSCA verification of soil remediation guidance.
- No PCB removal activities of soil or concrete to be completed in the west room; and
- Recording deed restrictions for the site consistent TSCA requirements.

2019 Groundwater Sampling Results and Summary (GHD)

Groundwater monitoring results dated 2019 document similar concentrations as previously identified. Sampling results indicate that the chlorinated VOCs present in groundwater have not mobilized the PCBs present in the impacted soils to groundwater.

2022 Phase II ESA (Tetra Tech)

A Phase II ESA was completed for the site by Tetra Tech in October 2022 under EPA's Targeted Brownfields Assessment (TBA) program. The Phase II ESA was conducted to further delineate the extent of polychlorinated biphenyl (PCB) contamination in concrete and shallow soil in the areas where the former East and West Rooms were located (northern portion of the building slab area). Based on prior assessments, these areas have greater impact from PCBs compared to the rest of the site. In addition, waste characterization samples were collected from the concrete and shallow soils to determine the appropriate disposal categories.



A total of 30 concrete core borings were advanced in the former East and West Room areas of the site to a maximum depth of 3 feet. Within the former East Room area, PCB Aroclor-1254 was detected in 19 samples above the TSCA regulated criteria of 1.0 mg/kg but below the criteria of 50.0 mg/kg, and in 7 samples where the concentrations were above the TSCA waste criteria of 50 mg/kg. No PCB concentrations were detected in the concrete sample collected within former West Room area.

Soil samples were analyzed for PCBs, TCLP VOCs, TCLP SVOCs, and TCLP metals. The soil samples were analyzed for PCBs to determine the required disposal method of the soil. In addition, some samples were analyzed for TCLP parameters to determine if they exceeded hazardous waste criteria in 40 CFR 261.24. Within the former East Room area, PCB Aroclor-1254 was detected in five (5) samples above the TSCA regulated criteria of 1.0 mg/kg but below the criteria of 50.0 mg/kg, and in one sample where the concentrations were above the TSCA waste criteria of 50 mg/kg. No PCB concentrations were detected in the concrete sample collected within former West Room area.

4.0 CLEANUP OBJECTIVES AND STANDARDS

4.1 Cleanup Objectives

The City's intent is to better position the property for redevelopment by addressing the PCB contamination known to exist at the site. The City will retain ownership of the property and oversee the cleanup activities until the property can be sold to a developer and redeveloped.

The City intends to engage in PCB cleanup activities to achieve Risk-Based Low-Occupancy TSCA Cleanup Standards. The magnitude of these costs along with additional costs necessary to implement due care response activities exceeds the capabilities of available brownfield tax increment financing, as well as other state cleanup programs. Cleanup of PCB contamination to the Risk-Based Low-Occupancy TSCA Standard will eliminate a significant cleanup cost, which would make state brownfield tax increment financing feasible to implement the necessary due care response activities available for redeveloping property.

In the fall of 2023, the City retained a planning consultant to develop three conceptual site development plans for the site to determine the site's highest and best use with respect to the goals and objectives of the City's Master Plan as well as other planning and visioning documents that were developed for the Blue Star Highway corridor. Once these conceptual development plans were developed, the City held a public meeting and a survey to obtain public feedback and comment, which was used to select the preferred concept.

The preferred conceptual site development plan that was selected includes the redevelopment of the property into mixed-uses that include the following:

- A linear park and gathering area for passive recreational activities and outdoor movies
- Two mixed use, two-story buildings that feature ground floor commercial uses and residential units above
- Four two-story live-work residential spaces that could be used for senior housing and/or affordable housing
- Reforested greenspace and vegetative buffers
- A new public road with on street parking in the location where the former East and West Rooms were located
- Courtyards and sidewalks



The preferred conceptual site plan and renderings are included as Attachment 4.

The project goals for this ABCA are to identify, evaluate, and select an appropriate cleanup plan to address the soil, groundwater, and soil gas impacts identified at the site. Based on the preliminary redevelopment concept, the goal of the ABCA also relate to activities likely required to achieve compliance with the Risk-Based Low-Occupancy TSCA Cleanup Standards with the implementation of cleanup activities, as it pertains to documented soil, groundwater, and soil gas impacts at the site.

4.2 Applicable Regulations and Cleanup Standards

Laws and regulations that are applicable to this cleanup include the Federal Toxic Substances Control Act (15 U.S.C. chapter 53, subchapter 1, sections 2601-2629) and Brownfields Revitalization Act (Pub. L. 107-118, 115 stat. 2356), the Federal Davis-Bacon Act (Ch. 411, 46 Stat. 1494) and Michigan Parts 111, 115, and 201. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed. As described herein, all cleanup will be in accordance with the State of Michigan regulations and Federal TSCA regulations. All applicable permits and documentation (i.e. One-Call, Project Notification Forms, etc.) will be obtained prior to the work commencing, and all work will be conducted in accordance with the conditions for approval. Pertinent laws and regulations applicable to the contaminant of concern for this ABCA are detailed in the following subsections.

Documented soil, groundwater, and soil gas impacts were identified at the site and compared to TSCA Subpart D cleanup standards. These standards are described as follows:

Standard	No Action	Appropriate Cap w/Deed Restriction	Removal Required
High-Occupancy Area (≥335 hours/year)	≤1 ppm	>1 to ≤10 ppm	>10 ppm
Low-Occupancy Area (<335 hours/year)	≤25 ppm w/ deed restriction	>25 to ≤100 ppm	>100 ppm

ppm = parts per million

Cleanup activities will be undertaken in a manner compliant with TSCA Subpart D Cleanup Standards, federal Occupational Safety and Health Administration (OSHA), and/or Michigan Occupational Safety and Health Administration (MIOSHA), as applicable.

The regulations also require work practice standards designed to eliminate or minimize the release of contaminated soil during the cleanup process. The objective of the contamination cleanup or mitigation is to reduce or eliminate the potential risk of exposure to site occupants and to workers and the public during remediation at the site. In order to be considered effective, the remedial alternative selected for the site needs to minimize the potential for human exposure to contaminated soil.

4.3 Cleanup Oversight Responsibility

An environmental professional will oversee cleanup remediation activities which will include reporting to EPA upon completion.



5.0 POTENTIAL CLEANUP ALTERNATIVES

The sections below provide an outline of the conceptual alternatives to achieve TSCA Subpart D compliance in relation to identified contamination on the site.

Multiple potential alternatives have been selected for further evaluation and comparison:

- Alternative #1: No Action
 - No action
- Alternative #2:
 - Comprehensive Cleanup to Achieve Compliance with Michigan's Part 201 Cleanup Criteria, and federal Self-Implementing High-Occupancy TSCA (no surface cap). Specifically, the Michigan Part 201 Residential Generic Cleanup Criteria and federal TSCA Self-Implementing High-Occupancy Standards will be utilized.
- Alternative #3:
 - Cleanup of Former East and West Room Areas to Achieve Compliance with TSCA Risk-Based Low-Occupancy Standards.

Each alternative was evaluated for applicability to the site and its feasibility and are further discussed in the following sections.

5.1 Alternative #1: "No Action"

The "no action" cleanup alternative is included in the evaluation as a standard to compare other remedial action in order to compare and contrast any significant reduction in site risk, as necessary. For the "no action" alternative, no action to remediate the issues identified at the site would take place and the contaminants would remain in place. This alternative does not include a means to mitigate or eliminate potential exposure both during and following redevelopment and does not meet the objectives of the project.

5.1.1 Effectiveness

This alternative is not effective in controlling the release of contaminants or achieving project goals. Contamination will remain in the ground and potentially cause issues related to the development activities including soil management.

5.1.2 Implementability

The 'No Action' alternative is simple to implement since no activities will be conducted.

5.1.3 Cost

No direct costs associated with this alternative; however, potential environmental and financial liabilities would not be addressed and may result in additional management costs during development.

5.2 Alternatives to "No Action"

The following tables document Alternatives 2 and 3 for an easier comparison of effectiveness, implementability, and cost.



Alternatives to "No Action" CONCEPTUAL CLEANUP OPTIONS

Alternative #2: Comprehensive Cleanup to Achieve Compliance with Michigan's Part 201 Cleanup Criteria, and Federal Self-Implementing High-Occupancy TSCA				
Advantages/Disadvantages	Conceptual Budgetary Costs	Effectiveness Feasibility	Anticipated Cleanup Standard	Timeframe
<p>Comprehensive Cleanup of PCB/VOCs, and Metals above Part 201 Residential and Nonresidential Cleanup Criteria and, Volatilization to Indoor Air Pathway (VIAP) Screening Levels, and TSCA High-Occupancy Criteria.</p> <p>Removal of Contaminated Materials</p>	<p>Advantages</p> <ul style="list-style-type: none"> Removal of all contamination from the site that represents a potential unacceptable exposure risk to occupants. Facilitates unrestricted use of the property. Potential exposure risks via the groundwater ingestion pathway controlled using a Restrictive Covenant <p>Disadvantages</p> <ul style="list-style-type: none"> A groundwater contaminant plume originating from the site already extends greater than 1,600 feet offsite to the north/northwest such that cleanup of all contamination on the site will not address the offsite plume area. Not cost feasible when compared to other alternatives. Additional evaluation and delineation studies needed to completely delineate the vertical and horizontal extent of contamination relative to current EGLE VIAP Screening Levels or Volatilization to Indoor Air Criteria (VIAC) issued by EGLE Additional feasibility and pilot testing required to implement cleanup. The contaminant types onsite require different cleanup technologies such that a combination of extensive excavation coupled with remediation system operation, possible in-situ groundwater treatment, and long-term groundwater monitoring would be required Cleanup activities would require years to achieve. 	<p>Effectively removes occupant contaminant exposure conditions</p>	<p>Part 201: Drinking Water, Ground-Water Surface Water Interface, Direct Contact, and Volatilization to Indoor Air Inhalation Cleanup Criteria</p> <p>TSCA Subpart D Cleanup Standards (Risk-Based High-Occupancy)</p>	<p>5 -10 years (or greater)</p>



Alternative #3: Cleanup of Contaminated Areas to Achieve Compliance with TSCA Risk-Based Low-Occupancy Standards					
	Advantages/Disadvantages	Conceptual Budgetary Costs	Effectiveness Feasibility	Anticipated Cleanup Standard	Timeframe
<p>Cleanup of PCBs to Achieve Risk-Based TSCA Low-Occupancy Subpart D Cleanup Standards</p> <p>Utilization of Traditional Brownfield TIF to address Due Care Compliance (i.e. vapor mitigation, institutional controls, etc.)</p>	<p>Advantages</p> <ul style="list-style-type: none"> • Cost feasible • Risk Based Approach allows source removal while implementing targeted engineering and institutional controls to facilitate reuse and redevelopment consistent with a low-occupancy land use as defined under TSCA. • Allows EPA input to Risk-Based TSCA Cleanup Workplan/Approach that is submitted to EPA prior to implementation; • Allows leveraging of state brownfield TIF programs for non-PCB impacts; • Reduces waste generation compared to Alternative 2 or a more conservative Self-Implementing standard under TSCA. • Moderate property disruption relative to other options. • Timeframe for cleanup activities significantly reduced compared to Alternative 2. • Maximizes redevelopment/reuse potential relative to PCB impacts including those consistent with Low-Occupancy uses and mixed Residential/Commercial land uses; • Redevelopment features, like building pads, parking lots and driveways can be adopted or implemented to meet risk-based cleanup requirements and/or controls. <p>Disadvantages</p> <ul style="list-style-type: none"> • Only addresses TSCA Subpart D cleanup standards. Additional institutional controls likely needed. • Surface barriers, vapor intrusion controls, or institutional controls may still be needed, which will require operation and maintenance. • Annual inspections and documentation may be required to demonstrate compliance with Due Care obligations and the institutional and engineering controls required for Risk-Based TSCA Closure; 	<p>±\$500,000 to \$600,000</p> <p>PCBs are Removed to Meet Risk-Based Low-Occupancy Standards, and Engineering/Institutional Controls Implemented</p>	<p>Effective, achieves compliance with Risk-Based TSCA Subpart D Low-Occupancy cleanup standards.</p>	<p>TSCA Subpart D Cleanup Standards (Risk-Based Low-Occupancy)</p>	<p>6 -12 months</p>



6.0 RECOMMENDED CLEANUP ALTERNATIVE

Given the cost feasibility involving cleanup of the PCB contamination on the property, the recommended cleanup option is Alternative 3: Cleanup of PCB Contaminated Areas to Achieve Compliance with Risk-Based Low-Occupancy TSCA Subpart D Cleanup Standards.

While still a viable option for remediation, the costs associated with Alternative 2 is not economical as the total remediation costs are estimated to be greater than the property’s value. In addition, a comprehensive cleanup of the property would not address the existing offsite groundwater contaminant plume which has migrated greater than 1,600-feet to the north/northwest. Cleanup of the PCB contaminations to TSCA Risk-Based Low-Occupancy Standards would effectively utilize EPA Brownfield Cleanup funding to address a portion of remedial activities needed, which would allow the leveraging of state brownfield TIF incentives to redevelop the site. Neither program would provide enough funding to fully address the cleanup of the PCB contamination and address due care response activities on their own.

Following the implementation of cleanup activities, The City will submit a Risk-Based TSCA Closure Report to EPA documenting compliance with TSCA Subpart D. It is understood that the Closure Report will need to include requirements for post-closure actions including inspections and operation and maintenance activities, as applicable.

7.0 DECISION TO PROCEED

A public notice was published, and a public comment period was held between April 11, 2024 and May 18, 2024 to inform the public and provide an opportunity for public input on site cleanup and plans for redevelopment. One comments was received during this period (Figure 5).

After consideration of all factors presented in this Memorandum of Decision, the City has elected to proceed with the options described in Section 6.0. This Memorandum also documents that the proposed cleanup action was selected and developed consistent with EPA programmatic requirements. These decisions were based upon the rationale presented herein. The approved EPA Brownfield Cleanup Grant amount is \$500,000. Cleanup costs exceeding \$500,000 will be the responsibility of the City.

8.0 REFERENCES

The following previous site investigations, some of which are available from public sources.

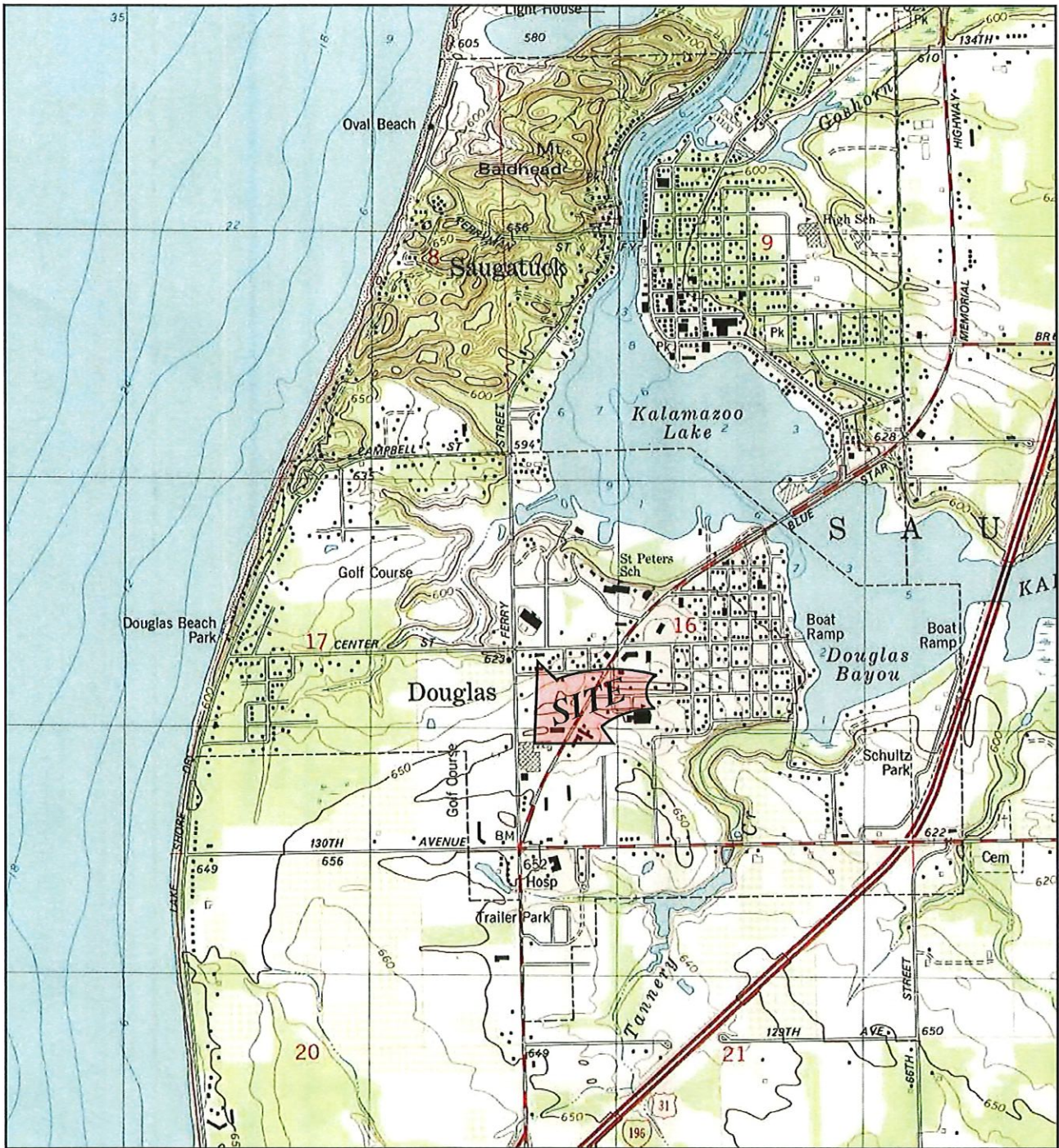
Name of Report	Date of Report	Prepared by
Phase II ESA	10/9/2015	Environmental Resources Management Michigan, Inc. (ERM)
Remedial Alternatives Evaluation (RAE)	5/11/2018	GHD Services Inc. (GHD)
PCB Cleanup Plan and Application for Risk-Based Cleanup and Disposal Approval (Cleanup Plan)	8/3/2018	GHD
Groundwater Sampling Results and Summary	3/13/2019	GHD
Phase II ESA	10/2022	Tetra Tech, Inc.



In addition, the following published sources were utilized during completion of this ABCA:

- TSCA Part 761 "Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions", Subpart D "Storage and Disposal";
- "Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels," Revised December 2013 and in accordance with Section 20120a(1);
- EGLE Operational Memorandum No. 4 "Site Characterization and Remediation Verification – Attachment 10, Peer Review Draft Groundwater Not in an Aquifer," February 2007;
- EGLE Operational Memorandum No. 2 "Sampling and Analysis," October 22, 2004, Revised July 5, 2007;
- EGLE Guidance Document for the Vapor Intrusion Pathway, May 2013;
- Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM, ASTM Designation E 1527-13, Published November 2013.

Attachment 1: Site Vicinity Map



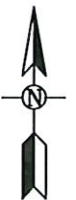
COUNTY LOCATION

ALLEGAN COUNTY

FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES
 SAUGATUCK, MI QUADRANGLE, 1951. PHOTO REVISED 1975.



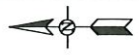
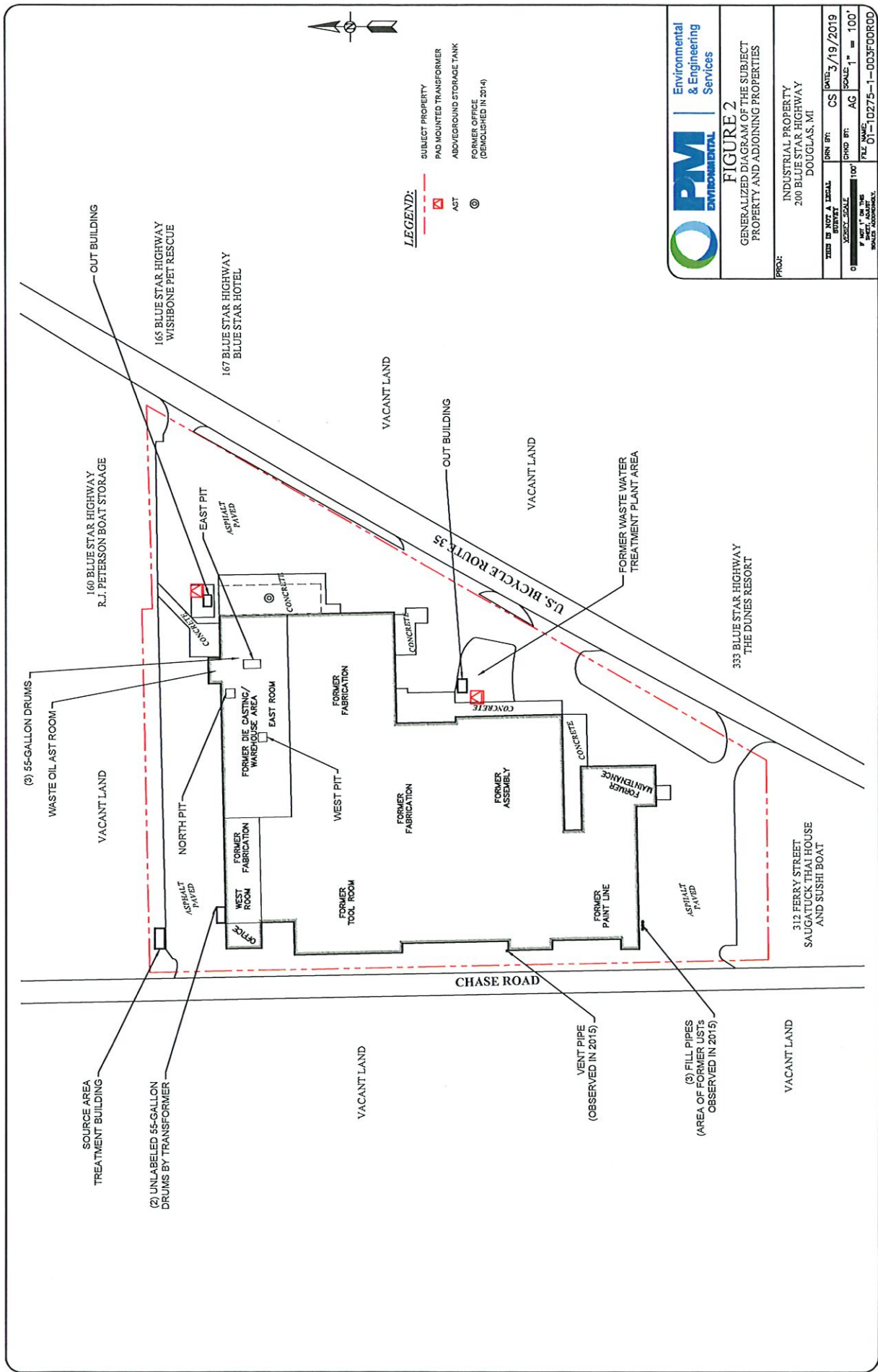
PROJ: INDUSTRIAL PROPERTY
 200 BLUE STAR HIGHWAY
 DOUGLAS, MI

THIS IS NOT A LEGAL SURVEY
 VERIFY SCALE
 0 2,000'
 IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: CS DATE: 3/19/2019
 CHKD BY: AG SCALE: 1" = 2,000'
 FILE NAME: 01-10275-1-003F00R00

Attachment 2: Generalized Diagram of the Site and Surrounding Area





LEGEND:

- SUBJECT PROPERTY
- ☒ PAD MOUNTED TRANSFORMER
- ☒ ABOVEGROUND STORAGE TANK
- ⊙ FORMER OFFICE
- ⊙ FORMER OFFICE (RELINQUISHED IN 2014)

Environmental & Engineering Services

FIGURE 2
GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES


PROJECT: INDUSTRIAL PROPERTY
200 BLUE STAR HIGHWAY
DOUGLAS, MI

DATE: 3/19/2019	DRN BY: CS
SCALE: 1" = 100'	CHKD BY: AG
FILE NAME: 01-10275-1-003F00R00	

Attachment 3: ABCA Public Notice

Carolyn Davidson

From: City of Douglas <info@douglasmi.gov>
Sent: Thursday, April 11, 2024 1:42 PM
To: Jennifer Pearson
Subject: 200 Blue Star Highway - Analysis of Brownfield Cleanup Alternatives (ABCA)



200 Blue Star Highway Analysis of Brownfield Cleanup Alternatives (ABCA)	GENERAL INFO
<p>The City of the Village of Douglas has prepared an Analysis of Brownfield Cleanup Alternatives (ABCA) for the proposed cleanup activities at 200 Blue Star Highway. The purpose of the ABCA is to document cleanup planning alternatives for the site and identify a preferred alternative. A copy of the ABCA can be found here or by downloading it from the City's website at www.douglasmi.gov.</p> <p>Comments and questions can be sent to citymanager@douglas.gov until May 18, 2024. At that time, the City will prepare a memorandum of decision which will address the comments and questions received, as well as summarize any changes that have been made to the ABCA.</p>	<p>86 W Center St. Douglas MI 49406-0757 Phone 269-857-1438 Fax 269-857-4751 https://douglasmi.gov/</p>

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ANNOUNCEMENTS

- 200 Blue Star Highway Visioning – Community Engagement Report**
- 200 Blue Star Highway – Analysis of Brownfield Cleanup Alternatives (ABCA)**
 - 2024 Spring Clean Up Collection Days**
 - 2022 Water Quality Report**
- Deer-Resistant Plants for Homeowners**
 - Douglas Urban Deer**
- How to Access FEMA's Flood Map Service Center**
- Environmental Protection Agency Cleanup Grant Application**
 - Analysis of Brownfields Cleanup Alternatives**

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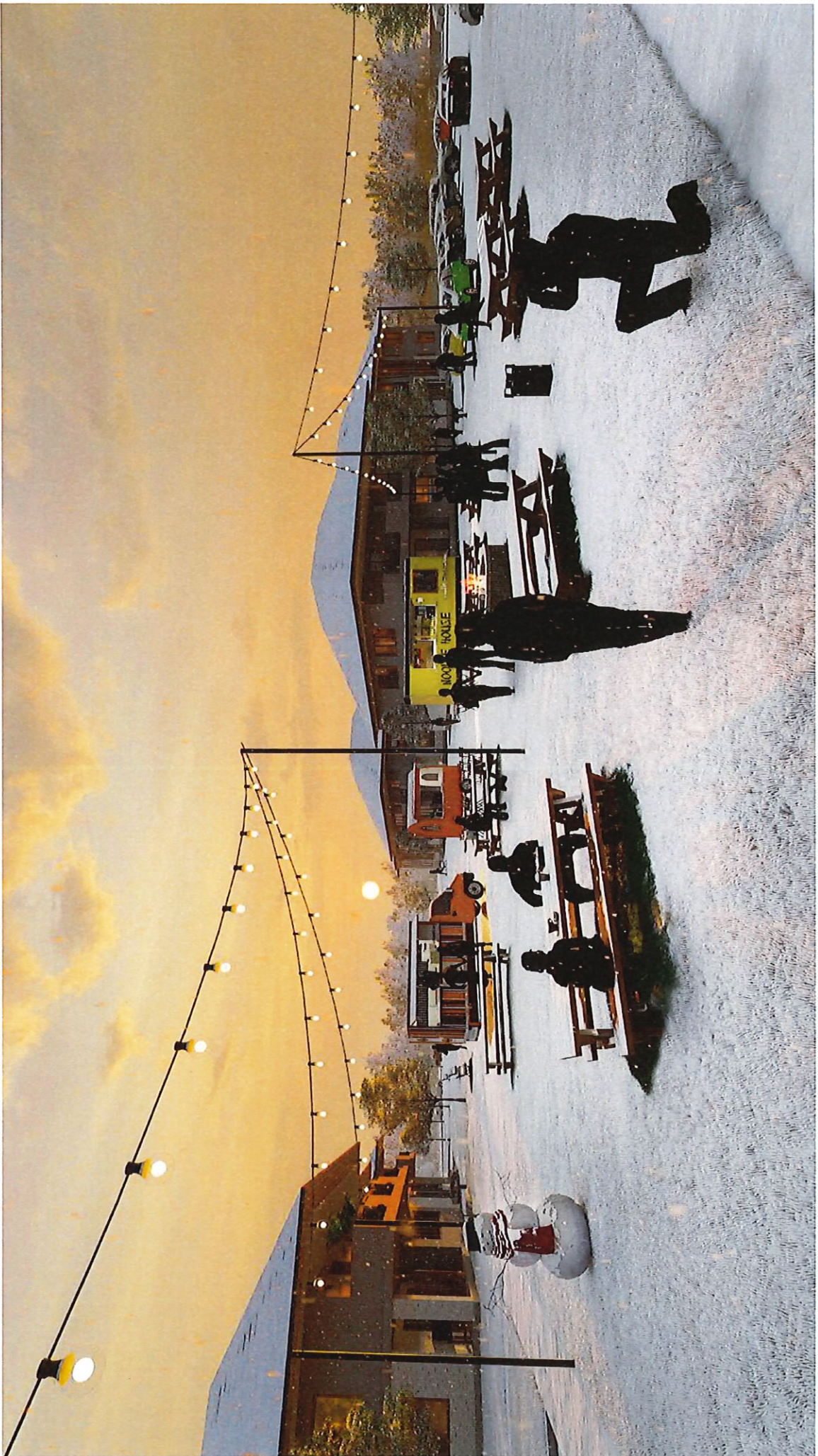
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TITLE VI PLAN

Attachment 4: Conceptual Site Plan and Renderings









Attachment 5: Public Comment



Carolyn Davidson

From: City Manager <citymanager@DouglasMI.gov>
Sent: Friday, April 12, 2024 8:25 AM
To: Ryan Higuchi
Subject: FW: ABCA

Follow Up Flag: Follow up
Flag Status: Flagged

This Email is from an **EXTERNAL** source. Ensure you trust this sender before clicking on any links or attachments.

Hi Ryan,
Just sharing input from the brownfield chair with you. I think having you come or zoom in for the May brownfield authority meeting is a good thing if you are still game? Thanks.

Lisa

From: Matt Balmer <mbalmer@DouglasMI.gov>
Sent: Friday, April 12, 2024 7:44 AM
To: City Manager <citymanager@DouglasMI.gov>
Subject: ABCA

Good morning, Lisa. I have reviewed PM Environmental's ABCA and concur with their recommendation for the city to implement option number 3. It is the next logical step considering the exorbitant cost, etc of option number 2, and option number 1 is simply not an option in my opinion.

Thank you,

Matt

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