UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION 5

Statement of Basis

for

Revitalizing Auto Communities Environmental Response Trust
Former Delphi Harrison Thermal Systems Moraine Plant
Former General Motors Powertrain Group, Moraine Engine Plant
Former General Motors Truck Group, Moraine Assembly Plant

Moraine, Ohio

EPA IDs: OHD000817577, OHD041063074, OHD041063074

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ATTACHMENTS

Attachment 1: Figures

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ACRONYMS

AOC	Area of Concern
AOC	Administrative Order on Consent
AOI	Area of Interest
AST	Above Ground Storage Tank
BGS	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
BUSTR	Bureau of Underground Storage Tank Regulations
CAO	Corrective Action Objective
CMS	Corrective Measures Study
ESL	Ecological Screening Level
EPA	U.S. Environmental Protection Agency
HHRA	Human Health Risk Assessment
HI	Hazard Index
IC	Institutional Control
LNAPL	Light Non-aqueous Phase Liquid
MCL	Maximum Contaminant Level (Drinking Water)
PA/VSI	Preliminary Assessment/Visual Site Inspection
PCB	Polychlorinated biphenyl
PRG	Preliminary Remediation Goal
RCRA	Resource Conservation and Recovery Act
RSL	Regional Screening Level
RFI	RCRA Facility Investigation Report
SB	Statement of Basis
SVOCs	Semi-volatile Organic Compounds
SWMU	Solid Waste Management Unit
TSCA	Toxic Substances Control Act
U.S.C.	United States Code
UST	Underground Storage Tank
VISLs	Vapor Intrusion Screening Levels
VOCs	Volatile Organic Compounds
WQS	Water Quality Standards

SECTION I: INTRODUCTION AND PURPOSE OF THE STATEMENT OF BASIS

The primary purpose of this Statement of Basis ("SB") document is to invite comments from the public on the approach being proposed by the U.S. Environmental Protection Agency (EPA) to remediate and manage contaminated environmental media at the Former Delphi Harrison Thermal Systems Moraine Plant, the Former General Motors Powertrain Group - Moraine Engine Plant, and the Former General Motors Truck Group - Moraine Assembly Plant, which are located in Moraine, Ohio and managed as one RACER Trust Cleanup Site ("Facility" or "Site") (see Figure 1). Groundwater at the site has been contaminated by historical industrial processes. The primary contaminants at the Site are volatile organic compounds (VOCs), chemicals known to be harmful to human health and the environment above certain concentrations. This proposed

remedy was selected to protect people currently using the Site, future industrial or commercial workers at the Site, and off-site receptors including residents. The details of the proposed remedy are provided in this document.

EPA invites written and electronic comments from the public on the proposed remedy. Additionally, if requested by a member of the public, EPA will host a public meeting to answer questions and receive additional comments. Public comments will be used to inform EPA's final decision regarding the remedy selection for the Site. After the close of the comment period, EPA will publish a Final Decision and Response to Comments (FD/RC) document conveying EPA's decision on how the Site will be remediated. Public comments will be reviewed and addressed in the FD/RC document. See Section VII for instructions on how to provide comments to EPA on the SB.

This document summarizes information that can be found in greater detail in the Corrective Measures Proposal (Arcadis, December 2012), Corrective Measures Proposal Addendum (Arcadis, February 2020), and other documents contained in the Administrative Record for this Site.

Corrective Action Order on Consent – 3008(h)

On September 29, 2011, EPA and the Revitalizing Auto Communities Environmental Response Trust (RACER) entered into an Administrative Order on Consent ("AOC" or "Order") for the Moraine Site requiring RACER to investigate and clean up contamination released at its property and establishing EPA oversight of the remedial process. The AOC was issued under Section 3008(h) of RCRA, as amended, 42 U.S. C. Section 6928(h), U.S. EPA Docket No: RCRA-05-2011-0016.

The work ordered by EPA was designed and implemented to protect human health and the environment. The RCRA program oversees the cleanup of the Site under the Corrective Action program. The Corrective Action program is responsible for ensuring that facilities investigate and clean up releases of hazardous waste and hazardous constituents at their properties and any releases that have spread beyond the property boundaries, and which pose a risk to human health or the environment. The selected remedies, or clean-up actions, were chosen based upon the current and future anticipated use of the property.

Remedy Summary

After reviewing the results of soil and groundwater sampling, past environmental practices, historical investigations and interim remedial activities, EPA is proposing an on-site source treatment remedy, an off-site groundwater treatment remedy, hydraulic containment of the off-site groundwater plume, continued on-site engineering and institutional controls for vapor intrusion mitigation, and institutional controls to limit future land use. For a full explanation of the proposed remedies, see Section VI: Proposed Final Remedy and Evaluation of Alternatives.

Proposed Remedies

On-site Groundwater treatment – Upper and Lower Aquifer: Enhanced Reductive Dechlorination (ERD) at the source area (Former Process Sump Area) with periodic injections of a carbon source to sustain an in-situ reactive zone; monitored natural attenuation (MNA) following source area remediation.

Off-site Groundwater treatment – Upper Aquifer: Remediation of source area described above; MNA following source area remediation; dynamic groundwater recirculation (DGR); vapor monitoring and operation and maintenance (O&M) of existing vapor intrusion mitigation systems until groundwater no longer serves as a source of contamination to soil vapor.

Off-site Groundwater treatment – Lower Aquifer: Remediation of source area described above; MNA following source area remediation; hydraulic containment through operation of existing pumping well DN-13; well abandonment at one off-site property.

Institutional and Engineering Controls: To limit exposure to any remaining contaminants, EPA will require RACER and all new owners of property on the Site to establish an enforceable institutional control, an environmental covenant, to restrict the land use to industrial or commercial use now and in the future. This will include restricting the use of groundwater from the upper and lower aquifer and conducting vapor intrusion evaluations for occupied buildings and enclosed structures. If determined necessary by those evaluations, the installation of vapor intrusion mitigation measures will also be required.

Long Term Stewardship/Five Year Remedy Review: EPA will require RACER to establish a long term stewardship (LTS) plan, including monitoring and reporting, for the duration of time contamination remains on-site and off-site above unrestricted use levels. As part of this plan, every five years from the date of the EPA's final remedy decision, RACER will review the efficacy of the final remedy.

Interim Measures

Interim Measures (IMs) are clean-ups (remedial measures) completed or planned to be completed by the company/responsible party in advance of EPA's final remedy selection. Several IMs have been implemented at the Site. These are described in more detail in the Corrective Measures Proposal (Arcadis, December 2012) and Corrective Measures Proposal Addendum (Arcadis, February 2020).

On-Site

- Underground Storage Tank (UST) Closures. Several regulated USTs went through closure under State regulatory oversight. The tanks contained oily waste fluid, wash water, or spent detergent solution. These included USTs in the following areas: West

Tank Farm, South Tank Farm, Northwest Tank Farm, Wind Tunnel, Former Moraine Engine, and Former Moraine Assembly.

- North and South Settling Lagoons. Both lagoons went through RCRA Closure through the Ohio EPA. Former GM Corporation followed the Ohio EPA approved Closure Plan, dated June 2000. Closure activities included site preparation, waste solidification, backfilling, and cover installation.
- Capture Zone Interim Measure.
    - Hydraulic controls were selected as an interim measure to address VOCs in groundwater at the property boundary following a review in 1994.
    - The capture zone IM for the upper aquifer consisted of groundwater extraction at the property boundary, treatment through an air stripper tower, and discharge through former GM Corporation's NPDES permitted outfall to the Great Miami River. Groundwater recovery from TW-2 began on January 31, 1996 and was discontinued on July 31, 2012.
    - The capture zone IM for the lower aquifer consists of using well DN-13, initially through a Montgomery County Pump-to-Waste program and then through an NPDES permit. Groundwater recovery from DN-13 began in March 1990 and continues today.
- In Situ Reactive Zones. Chemical oxidation was selected as a groundwater treatment IM at the Former Oil House Area. This technology resulted in a limited radius of influence and this treatment was not pursued further. Enhanced reductive chlorination (ERD) has been implemented as an IM to treat VOCs since 1999 in the Former Oil House Area.
- Waste Pile Staging Area. Removal of impacted soil identified for excavation was implemented as an interim measure at the Waste Pile Staging Area to reduce source material for the protection of groundwater. These activities were completed in 2005.
- Former Hazardous Waste Storage Pad. The Former Hazardous Waste Storage Pad was clean closed in accordance with an Ohio EPA in 1993.

Off-Site

- Vapor Intrusion Mitigation Activities. Vapor intrusion mitigation measures were implemented in the Riverview Plat neighborhood following detections of PCE, TCE, and 1, 1,-DCA greater than EPA's Action Levels in 2011. Vapor Intrusion mitigation systems were, and continue to be, installed in properties where concentrations were detected above Action Levels and access has been provided. The vapor intrusion mitigation systems installed to date have effectively reduced site-specific VOCs in indoor air to concentrations that are below the Action Levels. Vapor intrusion mitigation system installation activities and community outreach efforts are on-going.
- Groundwater Treatment. To address contaminated groundwater contributing to VI concerns in the off-site Riverview Plat neighborhood, Phase I of the dynamic

groundwater recirculation (DGR) treatment system has been operating as an IM since 2019.

SECTION II: SITE BACKGROUND

Location and Setting

The Site has been used for industrial purposes since the mid-1920's. The former Moraine Engine and Moraine Assembly facilities occupy approximately 239 acres, while the adjacent former Delphi Thermal Moraine facility occupies approximately 124 acres. The facilities are located in the City of Moraine in Montgomery County in southwestern Ohio. A small portion of the Moraine Assembly facility is located in the City of Kettering. Figure 1 shows the location of each facility, property boundaries, and Site features.

Ownership History

Frigidaire (a former division of former GM Corporation) produced appliances at the Site from the late 1920's until GM Corporation announced the shutdown of all Frigidaire operations in January 1979. During 1980 and 1981, the majority of the former Frigidaire Plant 2 was converted to the Moraine Engine facility, and the former Frigidaire Plant 3 and the northeast corner of former Frigidaire Plant 2 were converted to the Moraine Assembly facility. Since 1981, Moraine Engine operations have included the machining, painting (this operation was discontinued in September 1995), and assembly of diesel truck engines. Operations at the former Moraine Engine facility ceased in the fall of 2000. The plant building was decommissioned and demolished, and the majority of the property has been covered with a parking surface. GM Corporation operated a regional haulaway at the location of the former Moraine Engine Plant, which was referred to as the Vehicle Distribution Center until December 2008 when operations ceased.

Since 1981, Moraine Assembly operations included the manufacture, assembly, and painting of small trucks and later sport utility vehicles. Operations at the former Moraine Assembly ceased in December 2008.

Delphi Thermal Moraine's major operations, which began in 1941, included the machining and assembly of automotive air conditioning compressors, accumulator dehydrators, and miscellaneous air conditioning valves. Operations at the Delphi Thermal Moraine Building 14 ceased in September 2003 and the building was decommissioned. Demolition of Building 14 was completed in 2005.

On June 1, 2009, GM Corporation and certain subsidiaries filed voluntary petitions for relief under Chapter 11 of the Bankruptcy Code. An order was entered approving the sale of substantially all former GM Corporation's assets to a new and independent company (now known as General Motors Company, LLC) under Section 363 of the Bankruptcy Code on June 5,

2009. The sale closed on July 10, 2009. At that time, GM Corporation changed its name to Motors Liquidation Company (MLC). RACER was established on March 31, 2011 by a federal bankruptcy court to own, manage, remediate, and revitalize the properties from the 2009 former GM Corporation bankruptcy. On that date, all assets and cleanup funding that had been the responsibility of MLC were transferred to RACER. RACER is responsible for completing the Corrective Action activities at this Site in accordance with the Cost Estimate and Settlement Agreement that are the basis for the Trust.

Prior to the formation of RACER, the northern portion of the Moraine Assembly Plant property located at 3100 Dryden Road and referred to as the DMAX Engine Plant (DMAX) (City Lot #5416/Tax Parcel Number J44 04103 0006) was transferred to General Motors Company, LLC. On March 4, 2010, BOW Environmental Solutions, Inc. provided EPA a letter "RE: Motors Liquidation Company - Moraine, Ohio Former West Haulaway/Current DMAX Facility Documentation" providing documentation of the former West Haulaway underground storage tank (UST) investigations and closure reports. No Further Action designations have been approved for all Ohio Bureau of Underground Storage Tank Regulations (BUSTR) incident numbers associated with DMAX, and no further action has been approved for RCRA Corrective Action by the U.S. EPA. As outlined in the 2011 Corrective Action Administrative Order on Consent (AOC), the DMAX property is not a respondent to the current AOC

On June 30, 2011, RACER sold the former Delphi Thermal Moraine property, former Moraine Engine Plant, and former Moraine Assembly Plant to IRG Moraine, LLC. As part of the property transfer, RACER retained environmental liability for these properties. The closed South Settling Lagoon was not included in this property transaction. The closed South Settling Lagoon was retained by RACER Properties LLC.

A map of the Site showing all the parcels and their current ownership is shown on Figure 4.

Geology

The Site and surrounding areas lay over the Great Miami River buried valley aquifer, which consists of fluvio-glacial sand and gravel outwash deposits separated by discontinuous deposits of fine-grained sand, silt, and clay-rich till. The glacial deposits are from the most recent Wisconsinan-age glaciation with older Illinoian-age deposits in the deeper parts of the valley. The till units formed by the glaciation were deposited as layers, blocks, and lenses. The till units are thin layers that cover the upland areas and also occur thicker and intermittent within the buried valley; however, the extent of some till layers can occur laterally over long distances across the buried valleys. The till in some areas was buried by the sand and gravel outwash deposits and eroded or were completely removed by the fluvio-glacial melt water deposition.

Ordovician shales and limestones of the Richmond Group comprise the dominant bedrock units forming the valleys in the Dayton area. The Richmond Group is overlain by the Silurian Brassfield Formation in upland areas. Prior to the Illinoian and Wisconsinan glacial stages, the

bedrock valleys were as much as 190 to 225 feet deep. The top of bedrock beneath the region is approximated to be 200 to 250 feet below land surface.

Regional Hydrogeology

Beneath the Site and surrounding areas, the bedrock units are not considered important sources of groundwater because they have significantly lower transmissivity values relative to the buried glacial valley aquifers.

The clay-rich till units have low permeability with vertical hydraulic conductivity as low as 1 x 10^{-2} feet per day (ft/day). Groundwater flow is restricted in and by these units. Where the tills are laterally continuous across the valley separating the sand and gravel rich glacial deposits; several confined to semi-confined aquifers may be present. The Site consists of two primary upper and lower aquifers separated by a laterally continuous till unit.

The sand and gravel outwash deposits range in thickness from 120 to 250 feet. These coarse valley deposits provide a vast groundwater supply to the region. Transmissivity of the deposits was reported to range from 3,000 ft^2/day to 70,000 ft^2/day. Single wells in this prolific aquifer system have been reported to yield as much as 4.3 million gallons per day (MGD). The estimated total porosity was reported to range from 15% to 25%.

Precipitation provides the primary means of recharge to the groundwater system in the region which is estimated at 15 inches per year in the vicinity of the Site. The primary natural discharge of the groundwater system is to surface water streams and heavy anthropogenic discharge by regional pumping. In some cases when area pumping is significant, recharge also occurs through losing surface water bodies to the groundwater system.

Localized Groundwater Flow Direction

Under natural conditions, the groundwater flow direction in the Great Miami River Valley is generally toward the major streams and further down valley flow is south/southwest. Current groundwater flow follows this trend at the Site with both upper and lower aquifer systems flowing to the south/southwest.

Surface Water

Moraine and the surrounding region are in the Great Miami River drainage basin. The Great Miami River generally flows north to south in the vicinity of the Site and is closest to the Site on the southern end. No major tributaries to the Great Miami River pass through the Site. The Flood Insurance Rate Map for Moraine shows that the area affected by the 100-year flood does not include the Site.

Water Supplies and Groundwater Use

Public Water Supply. Regionally, the lower portions of the groundwater system have historically been and are currently used for public water supply. This Greater Moraine Water System was maintained by the Montgomery County Sanitary Engineering Department and consisted of four

well fields (Lamme Road, Dryden North, Dryden South, and Miami Shores) that formerly supplied the cities of Moraine, Kettering, and Centerville. These well fields were used until 1986, when all systems were switched to the City of Dayton well field in conjunction with county storage facilities and pump stations to supply potable water to the region, including the Site. However, the Dryden South well field was used in the summer of 1987 and Miami Shores was used in the summers of 1987 and 1988 to supplement high demand. Currently, the Lamme Road well field is abandoned, Miami Shores is inactive, Dryden South is inactive, and Dryden North is inactive except for DN-13 which is used by RACER as part of the lower aquifer IM capture well that began operation in 1990. The closest active well field is approximately two miles to the south, consisting of three wells that supply the City of West Carrollton.

Industrial Water Supply – Lower aquifer. The lower aquifer portions in the region are currently also used as an industrial water supply. Historically, on-site production wells were used for industrial water supply.

In March 1990, Montgomery County with former GM Corporation cooperation, initiated a Pump-to-Waste program using DN-13 in the Dryden North well field. The estimated flow rate for DN-13 is 800 gpm. Along with this on-going IM for lower aquifer plume capture, historic pumping in the lower aquifer fluctuated with facility operations and finally stopped with the shut-down of operations at the former Delphi Thermal Moraine (2005), former Moraine Engine (2000), and former Moraine Assembly (2008). Site-wide lower aquifer groundwater flow since 1990 has been and is generally to the southwest.

Industrial Water Supply – Upper aquifer. The upper portions of the groundwater system in the vicinity of the Site have been used historically for shallow private well use but are no longer used for potable uses. Future development of the upper aquifer as an industrial or potable water source is not expected due to the low sustainability and storage compared to the lower aquifer of the groundwater system. Furthermore, the development of public water systems using groundwater as a source is governed by Ohio statute (Chapter 6109 of the Ohio Revised Code), and Ohio EPA regulations and guidelines adopted there under (OAC Chapters 3745-82, Ohio EPA, 1991). Likewise, the installation of private water wells is governed statewide by Ohio Department of Health regulations (OAC Chapter 3701-28).

SECTION III: SUMMARY OF ENVIRONMENTAL INVESTIGATION

The purpose of a Corrective Action Remedial Facility Investigation ("RFI") is to determine whether hazardous waste or hazardous constituents were released into the environment at a facility, and if so, to evaluate the significance of the releases in terms of risk to human health and the environment. The investigation is governed by a conceptual site model ("CSM") which illustrates Site physical characteristics, sources of contaminants, their fate and transport, affected

environmental media, and potentially exposed people. Each RFI varies depending on site-specific details.

During the investigation phases, environmental media such as soil and groundwater are sampled and analyzed for contamination. Where contaminated media are found, subsequent sampling is usually completed to refine the CSM and define the extent of contamination (how far it may have traveled and how deeply), and to collect enough information for analysis of exposure effects in risk assessments. After each sampling event or investigation phase, EPA evaluates the CSM to determine the adequacy of the data to support decision-making. If found to be inadequate, additional data collection is necessary.

Site Investigation Summary of Results

The RFI/Supplemental RFI activities included the characterization of soils, groundwater, and ditch sediments at specific SWMUs and AOIs at the Site. The RFI for Delphi Thermal Moraine was completed between 1992 and 1994. A supplemental RFI for the former Moraine Engine and Moraine Assembly facilities was completed between 1997 and 1998. Several additional investigations have been completed following the RFI and Supplemental RFI to ensure the nature and extent of contamination is understood. The scope of these investigations is listed below.

The Delphi Moraine RFI included investigation/evaluation of the following SWMUs and areas (see Figure 3):

- Landfills L1, L2, and L3
- Underground storage tanks (T4, T5/T6, T11, and T12)
- Waste Pile Staging Area
- Liquid Waste Burner
- Fill Area
- North and South Settling Lagoons
- Groundwater
- Background soil investigation

The former Moraine Engine and Moraine Assembly Supplemental RFI included investigation of the following areas (see Figure 4):

- AOI 7 – Former Oil House Area
- AOI 13 – Buildings 4, 6, and 13
- AOI 17 – Building 15
- AOI 34 – Excavation Area 1
- AOI 35 – Excavation Area 2
- AOI 36 – Former Southwest ASTs

- Groundwater

Additional investigation areas:

- Box Sewer
- Waste Pile Staging Area (pre-2012 CMP and post-2012 CMP)
- Former Building 14
- Groundwater (pre-2012 CMP)
- Off-site Vapor Intrusion assessment
- Landfill L1
- Pre-design investigation
- Upgradient Northern Perimeter Groundwater
- Secondary Source Areas
- Process Sump Area (pre-2012 CMP and post-2012 CMP)
- Annual Groundwater Monitoring
- 1,4-Dioxane Investigation
- Poly-and Perfluorinated Alkyl Substances (PFAS) Groundwater Investigations
- Off-site Groundwater investigation
- Vapor Intrusion (on-site)
- Vapor Intrusion (off-site)

RFI Summary

Landfills

Three landfills (Landfills L1, L2, and L3) on the former Delphi Thermal Moraine facility were investigated during the RFI. Surficial soil samples were collected for waste characterization and groundwater samples were collected from monitoring wells in the vicinity of the landfills to characterize groundwater quality.

Surface Impoundments

Two surface impoundment SWMUs, the North and South Settling Lagoon systems, were evaluated during the RFI. Sludge and subsoil samples collected in support of RCRA closure were used for the RFI evaluation. Groundwater samples were collected from monitoring wells in the vicinity of the lagoons to characterize groundwater quality.

Underground Storage Tanks

In 1991, EPA issued a RCRA Administrative Order, which required Delphi Thermal Moraine to implement RCRA Corrective Action at the Moraine facility. The 1991 Administrative Order listed 19 USTs to be investigated under the RFI; 15 of the 19 USTs were removed before the RFI. Three of the four remaining USTs (T1 [10,000-gallon tank], T4 [10,000 gallon tank], and T12 [50,000-gallon tank]) were removed during the RFI. RFI investigative activities were performed at the West Tank Farm, at the South Tank Farm, and at USTs T4, T5/T6, T11, and T12. Soil samples were collected for release determination and characterization at T4, T5, and T6 and groundwater

samples were collected for characterization purposes at the West Tank Farm, South Tank Farm, T11, and T12.

Waste Pile Staging Area
The WPSA is located just north of Landfill L1 and east of Building 21. Soil samples were collected for release determination and characterization and groundwater samples were collected for characterization purposes at the WPSA.

Liquid Waste Burner
Surface and subsurface soil samples were collected from the LWB for release determination and characterization.

Fill Area
Before the south parking lot was constructed, fill material was used to bring the area up to grade level. Soil samples were collected for waste delineation, release determination and characterization and groundwater samples were collected for characterization purposes at the Fill Area.

Additional Areas of Investigation
Soil samples were collected from 12 borings during Phase I in the background area (an area of the Delphi Thermal facility where no waste management activities were known to have occurred) to obtain data concerning background concentrations of metals in soils. Two additional borings were drilled during Phase II of the RFI to collect soil samples for analysis of acetone, which had been detected in the background soil samples collected during Phase I. Surface water/sediment samples were collected to support the risk assessment, to evaluate background conditions for surface water and sediment, and to determine if further sampling was required. The area south of Landfill L1 was investigated to further define the extent of groundwater contamination in that area by collecting groundwater samples from an existing upper aquifer monitoring well, WSU-24, and from a lower aquifer monitoring well, GM-20D, that were installed during Phase II of the RFI. Soil samples were collected during the installation of well GM-20D to determine whether the soil contained hazardous constituents.

Supplemental RFI Summary
AOI 7 - Former Oil House Area
AOI 7, located by the Former Oil House Building 7, was further investigated in the supplemental RFI as a potentially significant source for soil and groundwater contamination. Soil samples were collected for release determination and characterization and groundwater samples were collected for characterization purposes.

AOI 13 – Former Buildings 4, 6, and 13
AOI 13, located south of the vehicle distribution center at Former Buildings 4, 6, and 13, was further investigated in the supplemental RFI as a potentially significant source for soil and

groundwater contamination. Soil samples were collected for release determination and characterization purposes.

AOI 17 – Former Building 15
There was potential for AOI 17, which is south of AOI 13 at Former Building 15, to have served as a historical source of CVOCs detected in monitoring well GM-21, and further investigation was warranted under the Supplemental RFI. Soil samples were collected for release determination and characterization purposes.

AOI 34 – Excavation Area 1
AOI 34, which is northwest of the Former Oil House Building 7, was an excavation area approximately 300 feet long by 40 feet wide, with the southern end containing a depression that was possibly filled with liquid. A limited investigation to assess the potential presence of contamination was conducted under the Supplemental RFI. Soil samples were collected for release determination and characterization purposes.

AOI 35 – Excavation Area 2
AOI 35, which is west of the Moraine Assembly Addition, was an excavation area approximately 200 feet long by 150 feet wide. A limited investigation to assess the potential presence of contamination was conducted under the Supplemental RFI. Soil samples were collected for release determination and characterization purposes.

AOI 36 – Former Southwest Above Ground Storage Tanks
Given the probable use of AOI 36 for storage of liquid materials, a limited investigation to determine if a release had occurred was conducted under the Supplemental RFI. AOI 36 is located west of AOI 17. Soil samples were collected for release determination and characterization purposes.

Additional Investigations Summary
Box Sewer
Sediment in the Box Sewer was assessed as part of the site decommissioning activities in December 2000 and February 2001, and the Box Sewer was inspected in August 2001 following sediment removal. Several areas were identified as potential locations where historic releases from the Box Sewer may have occurred. Soil samples were collected for release determination and characterization purposes.

Waste Pile Staging Area
Additional soil and groundwater investigation was conducted in the WPSA in 2001, 2002, and 2003. This supported a limited soil removal at the WPSA in 2005. In 2015, 11 soil and 11 groundwater samples were collected in the vicinity of GM-35 and analyzed for 1,4-dioxane and VOCs. In 2017, a supplemental soil investigation was completed in the WPSA to evaluate if concentrations of VOCs in vadose zone soil have the potential to leach into groundwater.

Former Building 14
A supplemental soil and groundwater investigation was conducted at Former Building 14 in August 2004 as part of the Building 14 demolition.

Supplemental Groundwater
Based on results of the site-wide groundwater monitoring program, additional groundwater monitoring wells were installed on and off-site between 2005 and 2008. As part of this supplemental investigation, a detailed water level study was completed for pumping well DN-13 in 2007.

Landfill L1
Landfill L1 was investigated in 2011 and 2012 to determine the VOC concentrations of soil-gas along the western, eastern, and southern boundaries and within the landfill, to determine if the landfill is a contributing source for VOCs in the soil-gas beneath the Riverview Plat neighborhood, to characterize the waste within the landfill, and determine the relative contribution of waste containing VOCs to groundwater.

Pre-Design Investigation
A series of focused pre-design soil and groundwater investigations were conducted in 2012 to prepare for implementation of final remedies proposed in the 2012 Corrective Measures Proposal. The work was completed in the Secondary Source Areas (Box Sewer, Historic Fill Area, West Tank Farm, and former Building 21 Area), upgradient Northern Perimeter, and the Process Sump Area.

Annual Groundwater Monitoring
A site-wide groundwater monitoring program is in place at the Site. The monitoring well network was reduced in 2017 to prevent duplication of data collected within a relatively short time due to sampling associated with pilot testing activities, groundwater remediation design and implementation, monitoring of interim measures, and compliance monitoring for the Site.

1,4-Dioxane Investigation
Groundwater and soil samples were collected throughout the Site from 2014 through 2016 to evaluate 1,4-dioxane. Five groundwater sampling events were completed in the upper and lower aquifer and soil samples were collected in three sampling events.

Poly-and Perfluorinated Alkyl Substances (PFAS) Groundwater Investigations
Thirty groundwater samples were collected at twenty-two locations in the upper aquifer during two sampling events in 2018 to determine the presence of PFAS.

Off-site Groundwater investigation
Three monitoring wells were installed in 2017 between the Miami Shores neighborhood and the west bank of the Great Miami River to evaluate off-site shallow upper aquifer groundwater concentrations at the water table. In 2017 and 2018 groundwater samples were collected and

screened against the applicable VISLs. Groundwater from the Miami Shores well network will be monitored as part of the annual groundwater monitoring program.

Vapor Intrusion (on-site)
Sub-slab soil gas and indoor air evaluations have been completed at several on-site buildings, including the former PSA, the existing Fuyao building, and the former Paint Building.

Vapor Intrusion (off-site)
Vapor intrusion assessment activities were conducted southwest of the Site in the Riverview Plat neighborhood to determine the presence of VOC containing soil gas. These vapor intrusion assessment activities were completed between February 2010 and December 2012. This included sub-slab and indoor air sampling activities at properties within the Riverview Plat neighborhood where access has been provided. Sub-slab and indoor air sampling activities and community outreach efforts are on-going.

For additional Facility investigation details, see the RFI Report (Arcadis, April 2020). Corrective Measures Proposal (Arcadis, December 2012), Corrective Measures Proposal Addendum (Arcadis, February 2020), and other documents in the Administrative Record.

SECTION IV: SUMMARY OF RISK EVALUATION

Human Health Risk Evaluation

The information and data collected in the RFI and supplemental investigations were used to determine whether the contamination presents an unacceptable risk to human health. This is done in a human health risk assessment. EPA has developed a cancer risk range that it deems acceptable to protect the public. Cancer risk is often expressed as the maximum number of new cases of cancer projected to occur in a population due to exposure to the cancer-causing substance over a 70-year lifetime. For example, a cancer risk of one in one million means that in a population of one million people, not more than one additional person would be expected to develop cancer as a result of the exposure to the substance causing that risk. EPA utilizes the acceptable exposure level, or "risk goal" defined within the National Contingency Plan (NCP), 40 C.F.R. Part 300 et al., for site enforcement and cleanup decisions. The NCP defines the acceptable excess upper lifetime cancer risk as generally a range between $1x10^{-6}$ – $1x10^{-4}$ for determining remediation goals.

If the contaminants are noncancerous but could cause other health problems, then a hazard index quotient is used. To be acceptable to the EPA, the hazard index (HI) quotient for all contaminants must be less than one. The hazard index is the ratio of the concentration of a contaminant to its human health screening value.

The risk assessment completed as part of this investigation evaluated the potential significance of exposures to affected environmental media under current and reasonably expected future land use. The risk assessment evaluated the risk by parcel (identified by lot Number) throughout the Site and for potential off-site receptors. As a RACER site actively seeking to redevelop parcels on the property, the approach to organize by Parcel will assist in the preparation of environmental covenants and support communication with stakeholders throughout the redevelopment process.

Based on the current and historical evaluation of air, soil gas, soil, and groundwater data available at the Site and in off-site areas associated with the Site, the following exposure pathways were found to be unacceptable: direct contact to groundwater and vapor intrusion. Corrective measures are required to address the potential exposures and risks to human health at the Site. Table 1 provides a summary of the evaluation and the potential exposure pathways for each medium. Table 2 provides a summary of the evaluation and the potential exposure pathways for each parcel at the Site.

Table 1: Risk Evaluation Summary

Medium	Target Areas	Risk from Potential Exposure Pathway*	Corrective Actions	IM	Clean up goals	Points of compliance
Soil	On-site	None	ICs	N	NA - ICs	NA
	Off-site	None	NA	N	NA	NA
Upper Aquifer GW	On-site	GW: Unacceptable risk VI: Unacceptable risk	Source Area Remediation (ERD and MNA), VI evaluation of enclosed structures, and ICs	Y	Industrial VISLs for Indoor Air Residential VISLs for GW Industrial VISLs for GW	On-site Indoor Air Property Boundary On-site Plume
	Off-site	GW: Unacceptable risk VI: Unacceptable risk	Remediation (ERD, DGR, VI mitigation systems, and MNA), and ICs	Y	Residential VISLs for Indoor Air Residential VISLs for GW MCLs	Off-site Indoor Air Property Boundary Property Boundary
Lower Aquifer GW	On-site	DW: Unacceptable risk	Source area treatment, ICs	Y	Source area reduction; MCLs	Property Boundary

	Off-site	DW: Unacceptable risk	Source area treatment; MNA; hydraulic containment (DN-13); abandonment of drinking water wells	Y	MCLs	Off-site plume
Soil Gas	*On-site*	VI: Unacceptable risk	Indoor air investigation within existing buildings, mitigation system if needed, land use restrictions; Indoor air investigation within existing buildings, mitigation system if needed, ICs	Y	Industrial VISLs for Soil Gas	Indoor air, soil gas
	Off-site	VI: Unacceptable risk	SSDS, continue follow-up with new owners; Screening analysis and corrective action if necessary	Y	Residential VISLs for Soil Gas	Indoor air, soil gas
Lagoons	*North Settling Lagoon*	None	Routine GW monitoring, VI evaluation of enclosed structures and ICs; Post Closure Obligations	Y	Post closure Obligations	SWMU Boundary
		VI: Unacceptable risk	Routine GW monitoring, VI evaluation of enclosed	Y	Post closure Obligations	SWMU Boundary

	South Settling Lagoon		structures and ICs; Post Closure Obligations			

* Unacceptable risk refers to exceedance of cleanup criteria and provides the basis for addressing the source of contamination and future exposure risk. Under current conditions, the exposure risk is controlled through ICs and ECs

IM- Interim Measure, GW - Ground Water, VI- Vapor Intrusion, IC- Institutional Control, EC - Engineering Control, SSDS- sub-slab Depressurization system

Table 2: Risk Evaluation Summary by Parcel

Parcel Number	Owner	Areas of Interest	Current Use	Potential Exposure Pathways	Corrective Actions	IM	Clean up goals	Points of compliance
5439	ICP Moraine LLC	Former Moraine Assembly - Former Process Sump area	Building occupied by Fuyao; covered storage area	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas
5438	Fuyao Asset Management A LLC	AOI 35 - Excavation Area 2	Fuyao building and 4	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	

			other structures	GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas
5433	Copart of Connecticut Inc.	AOI 13 Former Buildings 4,6,13; AOI 17 - Former Building 15; AOI 36 - Former Aboveground Storage Tanks; Box Sewer	Copart Building; asphalt parking lot	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas

5435	ICP Moraine LLC	Waste Pile Staging Area (WPSA), Former South Tank Farm, Former Fill Area, Former Liquid Waste Burner, Landfill L1, UST T11, Former Building 21	Vacant area covered by pavement and grass	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas
5436	Inland Property Management Inc. (RJ Trucking)	Former West Tank Farm; T4, T5, and T6; Former Building 14	One structure	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Unacceptable risk	VI: VI evaluation of enclosed		VI: Industrial VISLs	Indoor Air; Soil Gas

					structures and ICs			
5458	IRG Moraine LLC	Former Delphi Thermal Moraine - Former Building 14, T12	Vacant lot	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Potentially unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas
5523	ICP Moraine LLC	AOI 7 Former Oil House Area; AOI 34 - Excavation Area 1	Two vacant industrial buildings; asphalt parking lot	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Potentially	VI: VI evaluation of		VI: Industrial VISLs	Indoor Air; Soil Gas

				unacceptable risk	enclosed structures and ICs			
5416	DMAX Engine Plant	Not part of RCRA CA						
5418	ICP Moraine LLC	No SWMUs, Former Paint building	Vacant building; parking lot	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas
5459	Wright Warehouse Inc.	Former Building 14	Office building; mulch storage on the lot	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property	Property Boundary

							boundary); MCLs	
				VI: Unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas
5437	ICP Moraine LLC	Closed North setting lagoon, Landfills L2 and L3	Vacant building; paved surface; wooded area	Soil: No unacceptable risk	Soil: ICs	N	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Potentially unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas
5524	Norfolk Southern Railway FKY Consolidated Rail Corporation	No SWMUs, No AOIs	Rail spurs; equipment storage	Soil: No unacceptable risk	Soil: ICs	N	Soil: NA	
				GW: No unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential	Property Boundary

							VISLs (property boundary); MCLs	
				VI: Potentially unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas
5460	State of Ohio	Former Building 14	Ohio Department of Transportation - 2 buildings and salt storage	Soil: No unacceptable risk	Soil: ICs	Y	Soil: NA	
				GW: Unacceptable risk	GW: Remediation, routine GW monitoring, and ICs		GW: Industrial VISLs (throughout site) and Residential VISLs (property boundary); MCLs	Property Boundary
				VI: Unacceptable risk	VI: VI evaluation of enclosed structures and ICs		VI: Industrial VISLs	Indoor Air; Soil Gas

* Unacceptable risk refers to exceedance of cleanup criteria and provides the basis for addressing the source of contamination and future exposure risk. Under current conditions, the exposure risk is controlled through ICs and ECs

SECTION V: CORRECTIVE ACTION OBJECTIVES

The proposed final remedy and associated remedial goals are designed to protect human health and the environment by mitigating risk to current and potential future receptors. EPA's long-term goals for the remedy being proposed for final remedy selection are the following:

- Protecting human health and the environment;
- Attaining the applicable media (e.g., soil, water, air) cleanup standards;
- Controlling the sources of the releases to the extent practicable; and
- Managing all remediation waste in compliance with applicable standards.

Aside from the one comment that I have below, these align with what was in the CMP Addendum.

Presented in Table 3 below are the cleanup objectives, or Corrective Action Objectives (CAOs), for the affected media on and off-site. The objectives are presented in short term (1 year), intermediate (2-5 years), and long term (greater than 5 years) time frames.

Table 3: Corrective Action Objectives

On-Site Soil	
Short Term	- Demonstrate vadose zone soil concentrations are not contributing to an unacceptable risk to direct contact and groundwater leaching pathways - Prevent Exposure to waste from the closed North and South Settling Lagoons
Intermediate & Long Term	- Prevent Exposure to waste from the closed North and South Settling Lagoons
Off-Site Soil	
none	
On-Site Upper Aquifer Groundwater	
Short Term	- Establish and maintain the Groundwater Environmental Indicator - Prevent Exposure to concentrations of site-specific VOCs in on-site groundwater exceeding MCLs - Initiate source area treatment in the former Process Sump Area
Intermediate	- Maintain Groundwater Environmental Indicator - Prevent Exposure to concentrations of site-specific VOCs in on-site groundwater exceeding MCLs - Continue source area treatment in the former Process Sump Area
Long Term	- Reduce source area concentrations of site-specific VOCs in the former Process Sump Area in order to attain groundwater concentrations below residential VISLs for groundwater at property boundary

industrial

	- Prevent Exposure to concentrations of site-specific VOCs in on-site groundwater exceeding MCLs - Prevent unacceptable VI exposure until concentrations of site-specific VOCs in groundwater are below VISL throughout site
Off-site Upper Aquifer Groundwater	
Short Term	- Prevent Exposure to concentrations of site-specific VOCs in off-site groundwater exceeding MCLs/residential VISLs - Demonstrate the site-specific VOC plume is delineated and stable and achieves the groundwater Environmental Indicator
Intermediate	- Prevent Exposure to concentrations of site-specific VOCs in off-site groundwater exceeding MCLs/residential VISLs - Attain concentrations of site-specific VOCs in groundwater below MCLs/residential VISLs throughout off-site groundwater plume
Long Term	- Prevent Exposure to concentrations of site-specific VOCs in off-site groundwater exceeding MCLs/residential VISLs - Attain concentrations of site-specific VOCs in groundwater below MCLs/residential VISLs throughout off-site groundwater plume
On-Site Lower Aquifer Groundwater	
Short Term	- Prevent drinking water and process water exposure to concentrations of site-specific VOCs exceeding MCLs
Intermediate	- Prevent drinking water and process water exposure to concentrations of site-specific VOCs exceeding MCLs
Long Term	- Demonstrate concentration reduction in site-specific VOCs beneath the source area - Prevent drinking water and process water exposure to concentrations of site-specific VOCs exceeding MCLs - Meet and maintain MCLs for site-specific VOCs at the property boundary
Off-Site Lower Aquifer Groundwater	
Short Term	- Prevent off-site drinking water exposure to concentrations of site-specific VOCs exceeding MCLs
Intermediate	- Prevent off-site drinking water exposure to concentrations of site-specific VOCs exceeding MCLs - Demonstrate the site-specific VOC groundwater plume is delineated and outside of drinking water wellfields

Long Term	- Demonstrate the site-specific VOC groundwater plume is delineated and stable and achieves the Groundwater Environmental Indicator - Attain concentrations of site-specific VOCs in groundwater below MCLs throughout off-site groundwater plume
On-Site Indoor Air	
Short Term & Intermediate	- Prevent exposure to site-specific VOCs exceeding industrial indoor air criteria - Attain concentrations of site-specific VOCs in indoor air below the industrial indoor air criteria
Long Term	- Verify concentrations of site-specific VOCs in sub-slab soil gas are below VISLs
Off-Site Indoor Air	
Short Term & Intermediate	- Prevent exposure to site-specific VOCs exceeding residential indoor air criteria
Long Term	- Verify concentrations of site-specific VOCs in sub-slab soil gas are below VISLs

SECTION VI: PROPOSED FINAL REMEDY AND EVALUATION OF ALTERNATIVES

This aligns with what was proposed in the CMP Addendum

The process of developing a proposed final remedy often starts with a broad range of options that are evaluated and either retained for further consideration or eliminated based on disqualifying evidence. A summary of the technologies evaluated for the site are listed below, with the proposed remedies shaded grey. Detailed information about the proposed remedies follow. More information about these remedial options can be found in the Corrective Measures Proposal (Arcadis, December 2012), Corrective Measures Proposal Addendum (Arcadis, February 2020).

Source Area Remediation – Former PSA

The following technologies were evaluated for source area remediation:

- In-Situ Stabilization and Treatment
- Enhanced Reductive Dechlorination (ERD)
- Air Sparging with Soil Vapor Extraction (AS/SVE)
- In-Situ Thermal Treatment with Hot Air/Steam Injection with Soil-Vapor Extraction
- In-Situ Chemical Oxidation (ISCO)
- Groundwater and Land Use Restrictions

Off-Site Lower Aquifer.

The following technologies were evaluated for off-site lower aquifer remediation:

- Monitored Natural Attenuation (MNA)
- ERD
- AS/SVE
- ISCO
- In-Well Air Stripping
- Permeable Reactive Barrier
- Groundwater Extraction
- Groundwater Use Restrictions

The process of selecting a proposed remedy involves screening them against certain criteria and comparing them to each other. EPA has defined threshold and balancing criteria to compare remedial technologies at all sites in a consistent manner. All remedies must meet the threshold criteria and the balancing criteria can be used to further refine the best possible technology based on site-specific factors. The remedies presented above were all compared to these criteria and the proposed remedies presented in this document represent the best possible options.

The three remedial Threshold Criteria are the following:

1) Protect human health and the environment based on reasonably anticipated land use(s), both now and in the future
2) Achieve media cleanup objectives appropriate to the assumptions regarding current and reasonably anticipated land use(s), and current and potential beneficial uses of water resources
3) Control the sources of releases to achieve elimination or reduction of any further releases of hazardous wastes or hazardous constituents that may threaten human health and the environment

The seven remedial Balancing Criteria are the following:

1) Long-term reliability and effectiveness (long-term effectiveness should consider reasonably anticipated future land uses)
2) Reduction of toxicity, mobility, and volume of waste
3) Short-term effectiveness
4) Implementability (technical feasibility and availability of services and materials)
5) Cost
6) Community acceptance of remedy
7) State/support agency acceptance

Proposed Final Remedy

The proposed final remedy and associated CAOs are designed to protect human health and the environment by mitigating risk to current and potential receptors. The proposed remedy is described below. Table 4 presents the threshold and balancing criteria as they pertain to the

proposed remedies. Prior to implementing a final remedy, RACER will be required to submit to EPA a Corrective Measures Implementation Plan.

Source Area Remediation – Former PSA
Treating the contaminated VOCs in the upper aquifer in the source area will limit the future migration of VOCs to downgradient portions of the upper aquifer into the lower aquifer. Following an evaluation of potential remedies, Enhanced Reductive Dechlorination (ERD) is proposed to remediate the VOCs to achieve the CMOs. Operation of an ERD system for source zone remediation is expected to dechlorinate chlorinated VOCs to non-toxic end products with no long-term accumulation of daughter products such as vinyl chloride and to create a clean waterfront which would migrate downgradient and reduce plume concentrations. An ERD pilot test was completed following the 2012 CMP and demonstrated the effectiveness of this technology.

On-Site Upper and Lower Aquifers
The proposed remediation of the source area will reduce the VOC impacts on the upper and lower aquifers and prevent the migration of VOCs at concentrations exceeding the MCLs. Monitored natural attenuation (MNA) following source area treatment is proposed to achieve long term CMOs. Institutional controls (deed restrictions) are also proposed to restrict groundwater use.

Off-Site Upper Aquifer
The proposed remediation of the source area will reduce the VOC impacts on the upper aquifer. MNA following source area treatment is proposed to achieve long term CMOs. Additionally, groundwater treatment in the off-site upper aquifer is proposed. The proposed remedy is the dynamic groundwater recirculation (DGR) treatment system, which has been operating as an interim measure since 2019 to address the vapor intrusion concerns in the Riverview Plat neighborhood. To prevent downgradient plume migration to the east of the DGR treatment system, periodic molasses injections in IRZs along the southern boundary is proposed. Vapor monitoring and operation and maintenance of the existing vapor intrusion mitigations systems until groundwater no longer serves as a source of contamination to soil vapors is proposed.

Off-Site Lower Aquifer
The proposed remediation of the source area will reduce the VOC impacts on the lower aquifer. MNA following source area treatment is proposed to achieve long term CMOs. Additionally, hydraulic containment is proposed to prevent the plume from reaching downgradient receptors. At the point MNA alone is sufficient, the hydraulic containment remedy may be terminated. The existing DN-13 well, which pumps approximately 600 gallons per minute and maintains capture in the lower aquifer downgradient of the Site, is proposed to achieve the hydraulic containment.

Abandonment of two remaining off-site wells adjacent to the Site will continue to be pursued as part of the final remedy.

Institutional Controls

To prevent potential exposure to VOCs in groundwater and soil gas across the Site, the use of the upper and lower aquifer for any purpose would be prohibited. Buildings or other enclosed structures that will be occupied will require a vapor intrusion evaluation and, if necessary, the installation of appropriate vapor intrusion mitigation measures. The land use of the Site would prohibit residential redevelopment. Environmental restrictive covenants for each of the lots (as identified by parcel numbers – See Figure 2 and Table 2) at the Site will be required. These will be maintained by the current owner of each parcel.

Table 4: Proposed Remedy Threshold and Balancing Criteria Summary

Threshold Criteria	**Evaluation**
1) **Protect human health and the environment**	EPA's proposed remedy for the Site protects human health and the environment by eliminating, reducing, or controlling potential unacceptable risk from exposure to contaminated groundwater and vapor intrusion.
2) **Achieve media cleanup objectives**	EPA's proposed remedy meets the media cleanup objectives based on assumptions regarding current and reasonably anticipated land and water resource use(s). The remedy proposed in this SB is based on the current and future anticipated land use at the Site as commercial or industrial.
3) **Remediating the sources of releases**	In the ERD and DGR proposed remedy, EPA seeks to eliminate or reduce further releases of hazardous wastes and hazardous constituents that may pose a threat to human health and the environment. In addition, several interim measures have already been completed, and the proposed remedy will further treat remaining source contamination.

Balancing Criteria	**Evaluation**
1) **Long-term effectiveness**	The long-term effectiveness of the proposed remedy is expected. The Corrective Action

	Objectives for the Site were established to ensure short term, intermediate, and long term protection to human health and the environment. The proposed remedy is expected to achieve those objectives. Pilot testing and completed interim measures have demonstrated the effectiveness of the proposed remedies.
2) **Reduction of toxicity, mobility, or volume of the Hazardous Constituents**	The remediation of the source area will result in a reduction of contamination and the implementation of the DGR system will reduce the contamination and eliminate the vapor intrusion risks in the Riverview Plat neighborhood. MNA will ensure the continued reduction of contaminants throughout the property.
3) **Short-term effectiveness**	The short-term effectiveness of EPA's proposed remedy is expected. The Corrective Action Objectives for the Site were established to ensure short term, intermediate, and long term protection to human health and the environment. The proposed remedy is expected to achieve those objectives.
4) **Implementability**	EPA's proposed remedy is readily implementable. Once the final remedy is selected, RACER will be able to immediately plan for the implementation of the work.
5) **Cost**	EPA's proposed remedy is cost effective. The estimated total cost of the proposed remedy is $16,496,088. This includes the source area treatment, with an estimated cost of $2,848,800 and the off-site upper aquifer treatment, with an estimated cost of $8,486,288.
6) **Community Acceptance**	EPA will evaluate community acceptance of the proposed remedy during the public comment period, and it will l the Final Decision and Respo Comments.
7) **State/Support agency acceptance**	It is anticipated that the State and local stakeholders will find this remedy acceptable.

We have staff that recently drafted one of these for USEPA Region 5.

Long Term Care

RACER must ensure all controls and long term remedies are maintained and operate as intended. RACER will submit a Long Term Stewardship (LTS) plan to EPA. Components of the LTS plan include: an Institutional Control Implementation and Assurance Plan (ICIAP), five-year remedy

review procedures, and operation, maintenance, and monitoring details. An annual certification that all controls are in place and remain effective should be included in this plan. Long term remedies will be reviewed and inspected on a five-year basis to ensure the remedy is functioning as intended, the exposure assumptions, toxicity data, cleanup levels, and CAOs are still valid, and any information that comes to light that could call into question the protectiveness of the remedy is considered.

If any five-year review indicates that changes to the selected remedy are appropriate, EPA would determine whether the proposed changes are non-significant, significant, or fundamental changes to the remedy. EPA may approve non-significant changes without public comment. EPA would inform the public about any significant or fundamental changes to the remedy.

SECTION VII. PUBLIC PARTICIPATION AND INFORMATION REPOSITORY

EPA requests feedback from the community on this proposal to remediate the RACER Moraine Site. The public comment period will last thirty calendar days from the date of the public notification in the local newspaper, from [start date] to [end date]. We encourage community members to submit any comments regarding the proposed remedy in writing by [end date]. If members of the public need more time to review and comment on the proposed remedy, an extension can be requested and the Agency may grant an additional period of time for receipt of public comments. If requested during the public comment period, EPA will also host a public meeting to receive feedback directly. Due to restrictions related to the COVID-19 pandemic, a public meeting may be virtual. The public should send comments to EPA in writing at the EPA address listed below.

Following the thirty day public comment period, EPA will prepare a Final Decision and Response to Comments document that will identify the selected remedy for the Site. The Response to Comments document will address all significant written comments and any significant oral comments generated at a public meeting, if a meeting is held. EPA will make the Final Decision and Response to Comments document available to the public. If such comments or other relevant information would cause EPA to propose significant changes to the currently proposed remedy, EPA will seek additional public comments on any proposed revised remedy.

To send written comments or obtain further information, contact the EPA Corrective Action project manager for the Site:

Molly Finn (LR-16J)
77 W. Jackson Blvd
Chicago, IL 60604
(312) 886-6173
finn.molly@epa.gov

This link doesn't work for me

The Administrative Record contains all information considered when making this proposal. The Administrative Record (documents about the Site) may be reviewed at these locations (please call for hours):

Electronic Document Repository	EPA Region 5 Office
https://www.epa.gov/hwcorrectiveactionsites/hazardous-waste-cleanup-racer-moraine-facility-moraine-oh	EPA Records Center 77 W. Jackson Blvd., 7th Floor Chicago, IL (312) 886-4253

Next Steps

Following issuance of the Final Decision and Response to Comments document, RACER will prepare a Corrective Measures Work Plan. The Work Plan will identify any additional data collection needed to implement the corrective measures, along with the specifications for completing the selected corrective measures. The Work Plan will provide a detailed construction schedule.

Do we want to wait until after the public comment period to start this or start now?

ATTACHMENT 1: FIGURES

Figure 1: Site Layout

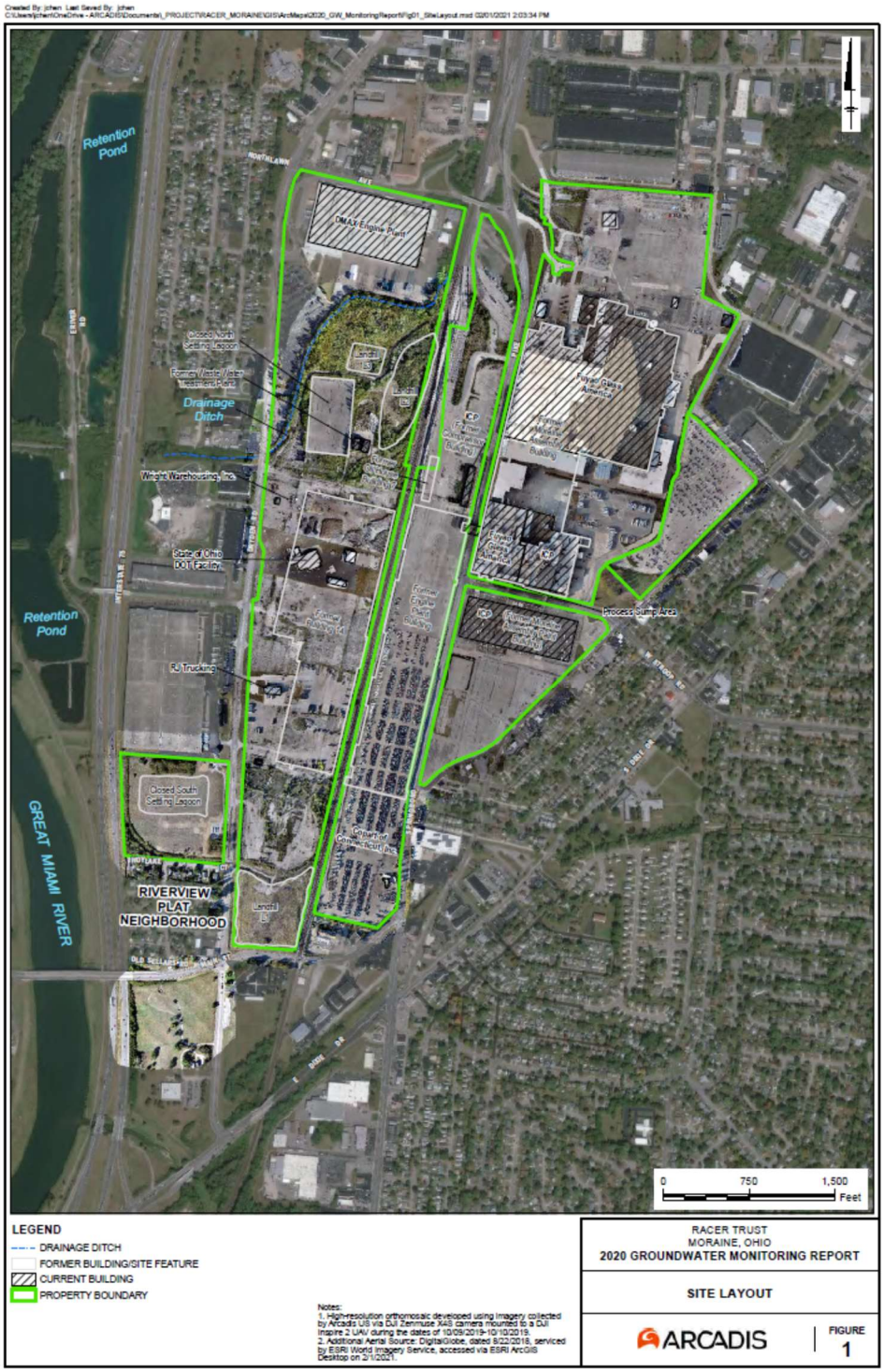


Figure 2: Site Parcel Map

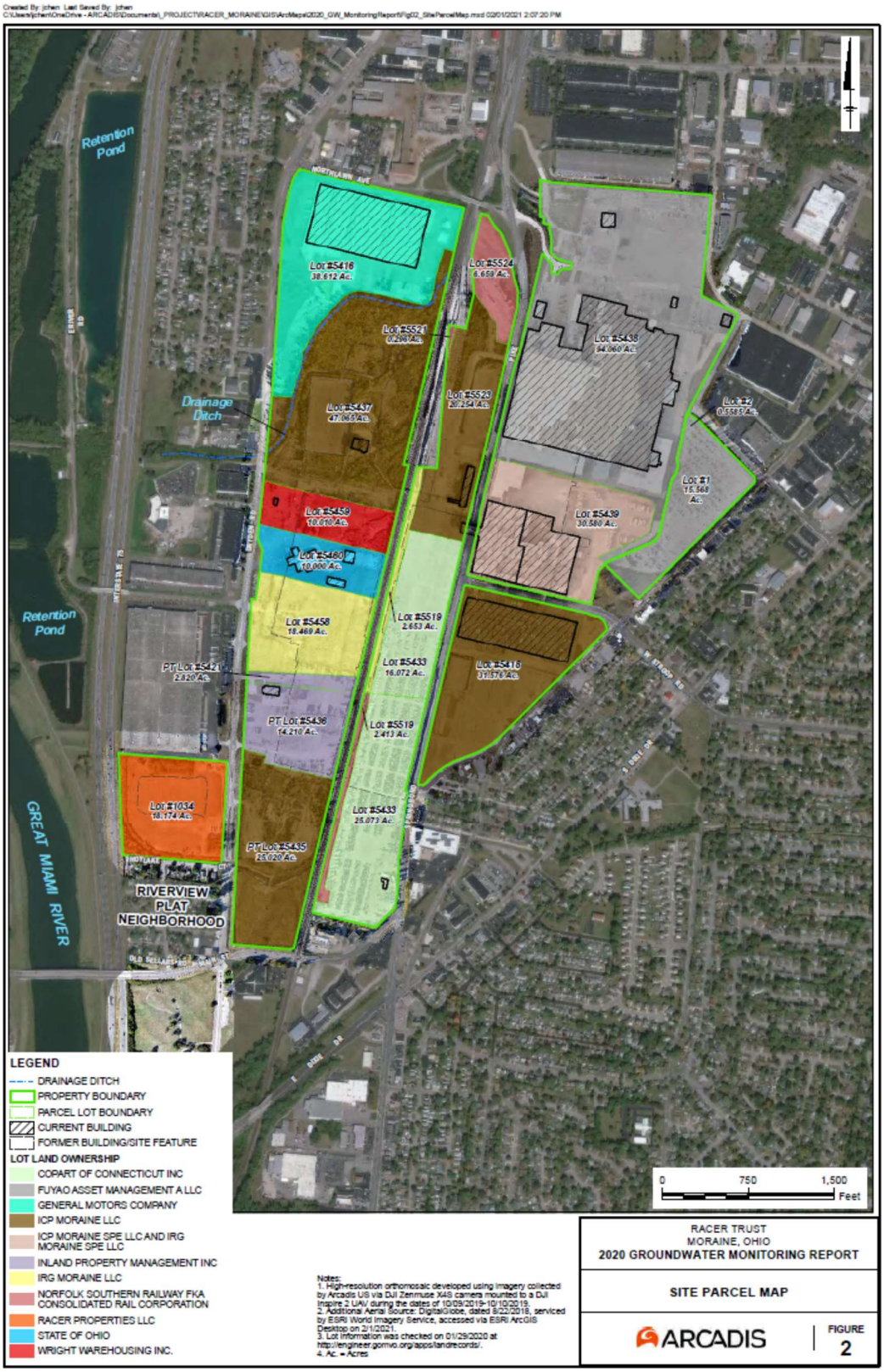


Figure 3: Delphi Moraine RFI SWMUs and Areas of Investigation

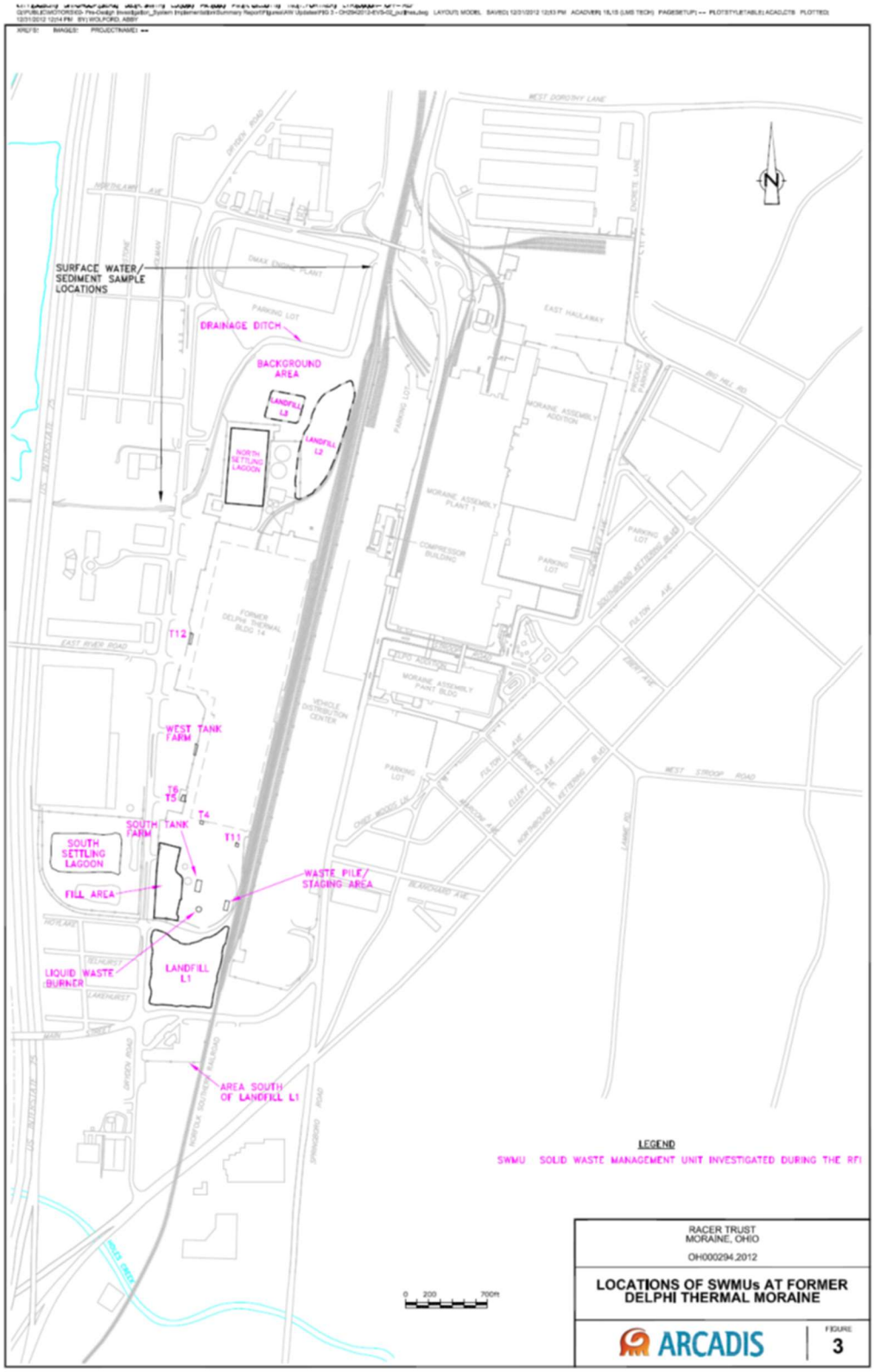
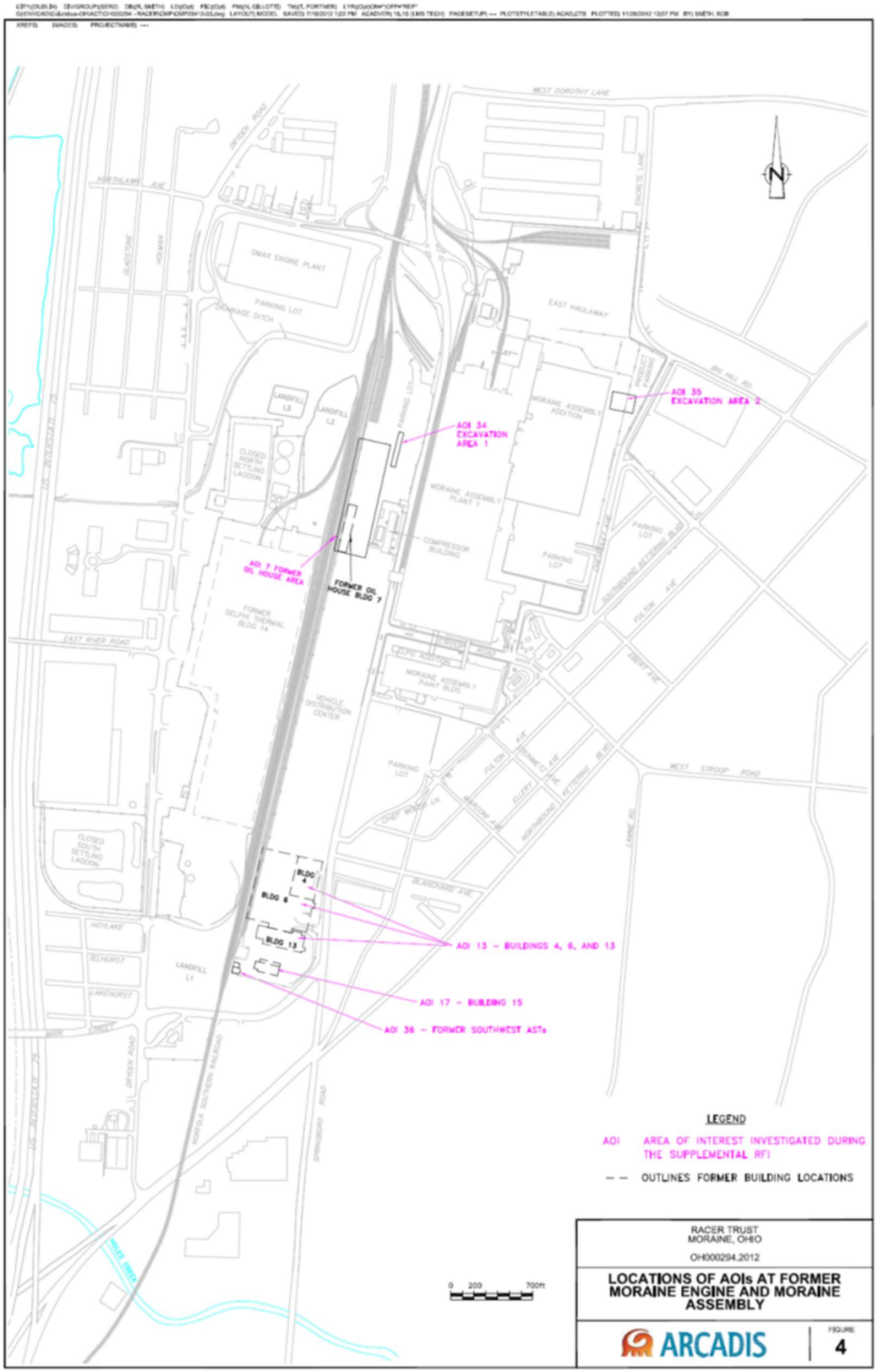


Figure 4: Supplemental RFI at Moraine Engine and Moraine Assembly



ATTACHMENT 2: ADMINISTRATIVE RECORD INDEX

U.S. ENVIRONMENTAL PROTECTION AGENCY
ADMINISTRATIVE RECORD
FOR

Revitalizing Auto Communities Environmental Response Trust
Former Delphi Harrison Thermal Systems Moraine Plant
Former General Motors Powertrain Group, Moraine Engine Plant
Former General Motors Truck Group, Moraine Assembly Plant

Moraine, Ohio
EPA IDs: OHD000817577, OHD041063074, OHD041063074

STATEMENT OF BASIS
DECEMBER 9, 2021

NO.	DOC ID	DATE	AUTHOR	TITLE	PAGES
1	2003845	01/01/1991	GERAGHTY & MILLER INC	GERAGHTY & MILLER - DESCRIPTION OF CURRENT CONDITIONS - RFI HARRISON - RADIATOR DIVISION	425
2	2003870	08/23/1991	PRC ENGINEERING	PRC - PRELIMINARY ASSESSMENT VISUAL SITE INSPECTION GENERAL MOTORS CORPORATION TRUCK & BUS GROUP ASSEMBLY PLANT	46
3	2003846	02/13/1992	PRC ENGINEERING	PRC - PRELIMINARY ASSESSMENT - VISUAL SITE INSPECTION - ENGINE PLANT - FINAL REPORT	46
4	2003871	03/12/1993	GERAGHTY & MILLER INC	GERAGHTY & MILLER - SOIL BACKGROUND ANALYTICAL RESULTS HARRISON DIVISION	522
5	2003847	07/09/1993	GERAGHTY & MILLER INC	GERAGHTY & MILLER - INTERIM RFI REPORT HARRISON DIVISION	221
6	2003848	04/17/2000	ARCADIS	RFI - FACILITY INVESTIGATION FINAL REPORT VOLUME I (METHODOLOGIES AND RESULTS)	743
7	2003873	04/17/2000	ARCADIS GERAGHTY & MILLER INC	ARCADIS GERAGTHY & MILLER - SUPPLEMENTAL REMEDIAL FIELD INVESTIGATION REPORT - VOLUME I - METHODOLOGIES AND REFERENCES	745
8	2003874	04/17/2000	ENVIRON CORP	ENVIRON - SUPPLEMENTAL RCRA FACILITY INVESTIGATION REPORT - VOLUME II - SUPPLEMENTAL BASELINE RISK ASSESSMENT	141
9	2003875	03/02/2001	ARCADIS GERAGHTY & MILLER INC	ARCADIS GERAGHTY & MILLER - INTERIM MEASURES / CORRECTIVE MEASURES REPORT - VOLUME I	339

NO.	DOC ID	DATE	AUTHOR	TITLE	PAGES
10	2003876	03/02/2001	ARCADIS GERAGHTY & MILLER INC	ARCADIS GERAGHTY & MILLER - INTERIM MEASURES/CORRECTIVE MEASURES REPORT - VOLUME 2	633
11	2003877	08/10/2001	CONESTOGA ROVERS & ASSOCIATES LTD	CRA - CLOSURE CERTIFICATION REPORT - HARRISON RADIATOR DIVISION FACILITY	299
12	2003878	05/03/2002	ARCADIS	ARCADIS - BOX SEWER INVESTIGATION SUMMARY REPORT	72
13	2003879	07/09/2004	ARCADIS	ARCADIS - WASTE PILE STAGING AREA INVESTIGATION SUMMARY REPORT	526
14	2003880	03/23/2005	ARCADIS	ARCADIS - FORMER BUILDING 14 INVESTIGATION SUMMARY REPORT	102
15	2003881	06/01/2005	GENERAL MOTORS CORP	GENERAL MOTORS - DRAFT SITE SUMMARY	52
16	2003882	06/30/2005	GENERAL MOTORS CORP	GENERAL MOTORS - REVISED DRAFT CORRECTIVE MEASURES PROPOSAL ADDENDUM	7
17	2003883	03/26/2006	ARCADIS	ARCADIS - WASTE PILE STAGING AREA INTERIM MEASURES REPORT	122
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19	2003885	08/25/2008	ARCADIS	ARCADIS - DRAFT CORRECTIVE MEASURES PROPOSAL 2008 W/APPENDICES [REDACTED]	1831
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