Tyco Fire Products LP

Materials Management Plan

Fire Technology Center
2700 Industrial Parkway South
Marinette, Wisconsin
BRRTS# 02-38-580694 (PFAS), 03-38-001345 (VOCs)

March 2024

Materials Management Plan

Tyco Fire Technology Center – Marinette, Wisconsin
BRRTS No. 02-38-580694

March 5, 2024

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Acronyms and Abbreviations

AFFF	Aqueous film-forming foam
Arcadis	Arcadis U.S., Inc.
CFR	Code of Federal Regulations
DC RCL	Direct Contact Residual Contaminant Level
FTC	Fire Technology Center
GETS	Groundwater Extraction and Treatment System
MTBE	methyl tert-butyl ether
MMP	Materials Management Plan
NR	Wisconsin Administrative Code Department of Natural Resources
OTA	Outdoor Testing/Training Area
PFAS	per- and poly-fluoroalkyl substances
Property	Tyco Fire Products LP property located at 2700 Industrial Parkway South, Marinette, Wisconsin
R&D	Research and development
TCE	trichloroethene
Tyco	Tyco Fire Products LP
USDOT	U.S. Department of Transportation
VOC	volatile organic compounds
WDNR	Wisconsin Department of Natural Resources

1 Introduction

On behalf of Tyco Fire Products LP (Tyco), Arcadis U.S., Inc. (Arcadis) has prepared this Materials Management Plan (MMP) for the Fire Technology Center (FTC) located at 2700 Industrial Parkway South in Marinette, Wisconsin (the Property; **Figure 1**).

The MMP provides procedures to properly manage soil excavations for future activities in accordance with Wisconsin Administrative Code Department of Natural Resources (NR) 718. Additionally, the procedures to manage other wastes including drilling muds, liquids, and soils related to on-property construction activities. The MMP was prepared based on review of available information, and an evaluation of possible future Site activities.

2 Background

The FTC is a fire suppressant training, testing, and research and development (R&D) facility, occupying approximately 380 acres in southern Marinette (**Figure 1**). The Property lies approximately 1 mile west of the Green Bay shoreline and 1.6 miles south of the Menominee River. The developed area of the Property is contained within an approximately 60-acre central campus comprising 10 buildings and a 9-acre plot referred to as the Outdoor Testing/Training Area (OTA). **Figure 2** shows the Property layout. The OTA includes a Firefighting School area (where firefighting scenarios are simulated) and the R&D area (where product testing occurs). The OTA is an open gravel lot containing concrete and clay pads and steel pans, some with props where a contained fire is started and extinguished to test the performance of the fire suppression products. The Property buildings support training, R&D, quality testing activities, and warehousing. The area of the Property outside the central campus comprises more than 300 acres of undeveloped forest and wetlands.

The FTC was constructed on previously undeveloped land in the early 1960s for testing, demonstrations, and training of a range of fire suppressants. Historical aerial photographs indicate that the Property was undeveloped and sparsely forested in 1954, but that the land had been cleared in the location of the OTA in 1958. The first significant building at the FTC was the Engineering Laboratory (Building 102), constructed in approximately 1962 on the western side of the OTA (**Figure 2**). Buildings were added to the campus over time. Much of the current campus was constructed by the mid-1970s, although additional renovations and new construction have continued to the present day.

Aqueous film-forming foam (AFFF) was historically used as part of outdoor R&D, quality testing, and firefighting training activities at the OTA, until outdoor AFFF use was discontinued in 2017. Current outdoor R&D, quality testing, and firefighting training activities use dry chemical fire suppressants that do not contain per- and poly-fluoroalkyl substances (PFAS).

2.1 Contaminants of Concern

The following contaminant types are known to be present at the Property and potentially could have concentrations above applicable soil standards:

- Per and polyfluoroalkyl substances (PFAS)

- Volatile Organic Compounds (VOCs): benzene, chloroform, 1,2-dichloroethane, methyl tert-butyl ether (MTBE), trichloroethene (TCE), and vinyl chloride in areas with historical exceedances.

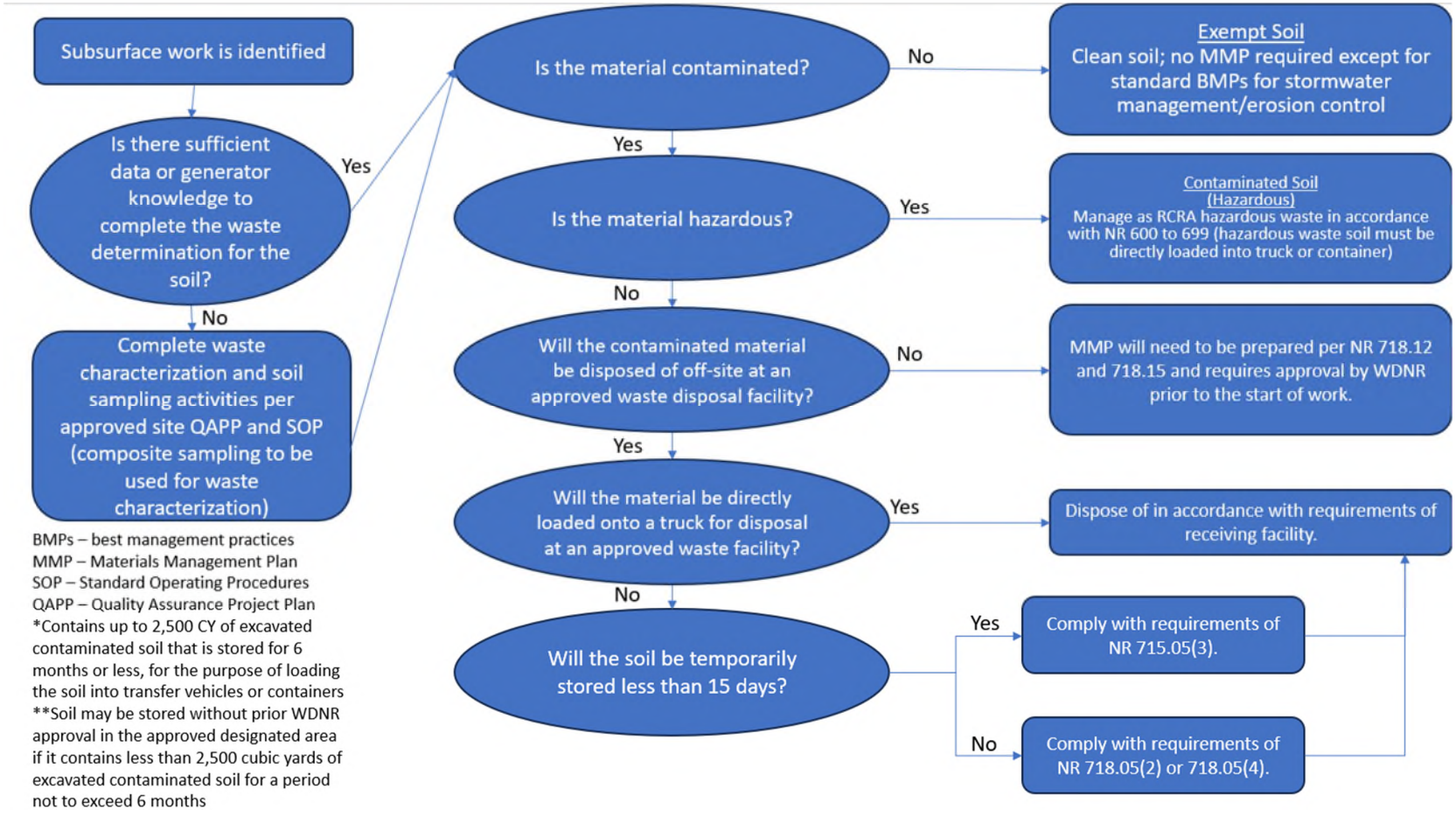
3 Planning and Notifications

The following planning and notification protocols must be followed during the planning stages of subsurface activities at the Property.

3.1 Approval Process and Notifications

The general procedure for planning and notification processes is shown in **Inset A**, below. Per **Inset A**, a Materials Management Plan is not required for either direct loading of material into a container, or if less than 2,500 cubic yards of non-hazardous material will be stored within the pre-approved staging area for a period of up to six months. If Tyco requires additional capacity or time to temporarily store materials prior to off-site disposal at an approved waste facility, Tyco may request concurrence from the DNR's Waste and Materials Management Program by sharing the volume, timeline and plan for disposal, and how the storage complies with NR 718.05(2). A Materials Management Plan with associated WDNR approval is required PRIOR to beginning work in the following instances NR 718.12 and NR718.15:

- Soil piles greater than 2,500 cubic yards of excavated contaminated soil
- Storage of a 2,500 (or less) cubic yard soil pile for longer than 6 months
- Temporary storage in a location that does not meet the location requirements discussed in Section 4.3.2 NR 718.05(2)(a).
- Permanent management or reuse of soils or materials in an area other than where it was either excavated or outside of a WDNR pre-approved management area (Section 4.3.2).



Inset A 1. Subsurface Work Flow Chart

3.2 Project Contact Information

Project Contact Information	
1. Key Property Contact Information	
Site	Tyco Fire Products LP – Fire Technology Center
Address	2700 Industrial Parkway South, Marinette, WI
Lat./Long.	45.079421 º N, -87.643329 º W
Tyco Property Contact	Scott Wahl
Email	Scott.Wahl@jci.com
Phone	414-214-4100 ext. 54784861
Backup Contact	Denice Nelson
Email	Denice.Karen.Nelson@jci.com
Phone	651-280-7259
2. Consultant Information	
Consultant Name	Arcadis U.S., Inc.
Contact	Matt Coleman
Email	Matthew.Coleman@arcadis.com
Phone	315-671-9641
3. Regulatory Information	
WDNR BRRTS No.	02-38-580694 (PFAS), 03-38-001345 (VOCs)
WDNR Contact	Alyssa Sellwood

4 Soils Management

This section provides general guidelines based on current regulatory requirements for handling soil, sediment, and buried wastes (e.g., debris) that may be encountered during earthmoving activities. Following classification, onsite management, disposal, or reuse options can be determined. The guidelines outlined in this section are minimum requirements and are not intended to serve as activity-specific waste characterization or management plans.

Labeling, storage, transportation, and disposal of contaminated wastes must be performed in accordance with applicable federal, state, and local laws and regulations.

4.1 Waste Determination

Prior to handling contaminated material, an evaluation should be completed to determine if the materials to be drilled/excavated are considered contaminated soil, solid waste and/or hazardous waste to ensure that they are managed in a manner that is protective of human health, safety, welfare, and the environment. Waste management is dependent upon classification as hazardous or nonhazardous waste. A waste determination will be performed in accordance with the procedure in NR 661. Sufficient information must be available at the point of generation to determine if wastes are hazardous (as defined in NR 661 Subchapter C) prior to any mixing. Tyco has determined there are no known listed hazardous wastes (as defined in NR 661 Subchapter D) on the Property.

If historical data and knowledge are not sufficient for determining if the waste exhibits a characteristic of hazardous waste (as defined in NR 661 Subchapter C), representative samples are required to determine management and disposal options. The exact number of samples to be collected and the analyses are activity-specific and will depend on regulatory requirements, disposal facility requirements, the suspected constituents (if any), and the volume of material generated. If reuse of soil is planned, additional planning and reviews by the WDNR may be required. If samples are needed, details on the soil sampling procedures are in Section 4.2.

Soil and groundwater have been characterized from past activities through Property knowledge and laboratory analytical results, and Tyco currently has approved waste profiles for disposal of both soil and groundwater. Prior site work where contaminated soil was generated was profiled as a nonhazardous waste through Waste Management, Inc. Groundwater will typically be treated by the onsite treatment system, and if from an excavation the groundwater must be pre-filtered to allow for low total suspended solids before treatment. As needed, waste may be managed at other disposal facilities or providers. If wastes are generated that do not meet current approved profiles, the wastes will be sampled, analyzed, and profiled accordingly.

The following sections provide a summary of information needed to manage soils, groundwater, and other wastes that may be generated during work activities.

4.2 Soil Sampling Procedures

The methods for sampling surface soils at grade or from excavations are included in the Quality Assurance Project Plan Addendum (QAPP) (Arcadis, 2023). Soil samples are collected over an area distribution to characterize the soil in the area for waste characterization purposes or to verify that the area of concern is free of contamination. Samples should be, at minimum, collected for VOCs and PFAS (contaminants of concern) unless otherwise required. Additional analyses may be required by the waste disposal facility.

Suggested sampling protocol for offsite disposal may vary per waste disposal facility requirements. Standard requirements are:

- One composite for first 600 cubic yards (made up of samples of initial 100 cubic yard increments).
- One composited per 900 cubic yards (composite of 300 cubic yard increments) thereafter.

For NR 718 Waste Determination, standard requirements are:

- One per 100 cubic yards of soil for first 600 cubic yards of soil, with a minimum of two samples being collected.
- For greater than 600 cubic yards, one sample per each additional 300 cubic yards.

4.3 Management in Stockpiles

If it is determined that contaminated soils are present (based on determination procedures described in Section 4.1), then the subsurface soils in the work area will be considered contaminated unless additional screening and/or sampling by a trained person indicates otherwise. Regardless of whether stockpiles contain contaminated or uncontaminated material they are typically subject to the regulations for stormwater management. Requirements for waste management and regulated air emissions may also apply depending on the specific work and circumstances. This section does not provide a full assessment of all regulations that may apply.

Materials known to be uncontaminated may be stockpiled and NR 718 requirements do not apply.

Materials may not be stockpiled that are determined to be:

- Hazardous waste, NR 718.02(1).
- Containing petroleum or chemical staining 718.09(1).
- Containing a petroleum chemical odor, or
- Containing free liquid of any kind NR 718.07(8)(d)3.

Contaminated materials that are nonhazardous may be stockpiled in accordance with applicable regulations. The following practices are recommended and are potentially required for uncontaminated and contaminated soil stockpiles when used:

- Materials generated from the onsite Property, and any off-property work related to private well installation should not be stockpiled on offsite areas.
- As practicable, the weather forecast shall be used to schedule Property activities to minimize the potential for significant storm water accumulation.
- To prevent tracking of soil on and off the Property, clear access areas will be made for loading trucks/containers and trucks/containers and equipment will be cleaned of soil prior to leaving the area.
- Stockpiles must be placed on an impervious base material, such as a plastic liner or concrete, a description of the intended containment area can be found in section 4.3.3. A minimum 10-mil thickness is recommended for plastic liners, when used.
- All stockpiles should be securely covered (e.g., tarps or similar coverings) to prevent materials from becoming airborne or contacting precipitation.
- Berms or other appropriate erosion control should be placed around the stockpiles to prevent rain from washing materials outside of the stockpile areas.
- Access to stockpiles areas should be restricted to authorized personnel only. Appropriate controls to limit access to these areas should be taken before stockpiling.

- After disposal or removal of the material in the stockpile, the stockpile area should be restored to near-original condition to prevent erosion.

The following sections include specific stockpiling details for contaminated soil for temporary and general stockpile storage requirements.

4.3.1 Contaminated Soil Temporary Stockpiles

Pursuant to NR 718.05 (3), when a temporary stockpile contains up to 2,500 cubic yards of excavated contaminated soil that is stored for 15 days or less, for the purpose of loading the soil into transfer vehicles or treatment units, the stockpile is exempt from regulation under ch. 289, Stats., and NR 500 to 538., and is not subject to the general storage requirements in NR 718.05 (2). The temporary stockpile must meet all of the following requirements:

- The entire soil pile shall be located within 500 feet of the excavation from which the contaminated soil was removed, or within 1,000 feet of the excavation from which the contaminated soil was removed if the soil is stored on the same property from which it was excavated.
- The contaminated soil may not be stored for more than 15 days.
- All contaminated soil shall be placed on base material impervious to contaminants in the soil and to water, such as concrete, asphalt, plastic sheeting, or impervious construction fabrics.
- Surface water contact with the contaminated soil shall be prevented, including the construction of berms, if necessary, to control surface water movement.
- The contaminated soil shall be covered when it is not being moved, with a cover material sufficient to prevent infiltration of precipitation and to inhibit volatilization of soil contaminants.

4.3.2 Contaminated Soil General Stockpile Storage Requirements

Pursuant to NR 718.05 (1), when a stockpile contains less than 2,500 cubic yards of excavated contaminated soil and is stored for 6 months or less, the stockpile is exempt from regulation under ch. 289, Stats., and NR 500 to 538. A pre-approved location that meets all regulatory requirements has been selected for general stockpile activities, when needed. The approximate area to be used for stockpile storage is indicated on **Figure 3**, between Building 106 and 110. The stockpile must meet all of the following requirements (NR 718.05(2)):

- Location standards – Pursuant to NR 718.05 (2), contaminated soil MAY NOT BE stored at the Property (without WDNR approval) in areas that are:
  - Within a floodplain.
  - Within 100 feet of any wetland or critical habitat area.
  - Within 300 feet of any navigable river, stream, lake, pond, or flowage.
  - Within 100 feet of any water supply well for on−site storage or within 300 feet of any water supply well for off−site storage.
- Impervious base – The contractor shall place contaminated soil on base material impervious to the contaminant and to water, such as concrete, asphalt, plastic sheeting, or an impervious construction fabric.

- Cover and anchoring – The contractor shall ensure that all contaminated soil in a storage area is sloped and graded to eliminate depressions in the surface and is covered. The cover shall be in place at all times when the soil is not being transferred. The cover shall be constructed and maintained in accordance with all of the following requirements:
    - The cover shall be constructed of an impervious material, such as plastic sheeting, impervious construction fabric, or another flexible impervious material. The cover shall be formulated to resist degradation by ultraviolet light.
    - The cover material shall be anchored in place, by means such as weights, ropes, cables, cords, chains, or stakes to prevent the contaminated soil from being exposed.
- Surface water control – The contractor shall construct a storage area to prevent surface water contact with the soil, including the construction of berms if necessary. Any water which has been in contact with contaminated soil shall be contained and may be replaced in the storage pile or shall be collected and sent offsite for disposal at an approved waste facility or treated as leachate as indicated in NR 500 to 538
- Signs – The contractor shall post signs as required by NR 714.07 (4).
- Inspections – The contractor shall ensure that contaminated soil storage piles are inspected at least once every 30 days, and shall immediately repair or replace any base, cover, anchoring and berm materials that do not meet the requirements of this subsection. The contractor shall also ensure that a written log is maintained which includes the inspection dates, name of the inspector, the condition of the storage pile at the time of the inspection and any repairs that were made.
- Notification that soil is being transported to another property – Tyco does not anticipate transporting contaminated soil to another property. Notifications must be made to WDNR per NR 718.05 (2) (h) if this changes.
- Notification of storage for 90 days or more – Tyco shall notify WDNR in writing if contaminated soil is stored for 90 days or more either on−site or off−site, within 3 business days after the ninetieth day. Notification shall include all of the following:
    - The name, address, and telephone number of responsible parties.
    - The volume of soil being stored.
    - The hazardous substances or environmental pollution present in the soil.
    - The containment measures utilized to attain compliance with pars. (c), (d) and (e). The address and location by quarter–quarter section, township, range and county, geographic position determined in accordance with the requirements of NR 716.15 (5) (d), and the latitude and longitude of the property where the soil is stored.
    - A brief proposal for treatment and final placement of the soil.

4.3.3 Drilling Mud Stockpile Area

Work at or associated with the Property may involve drilling of horizontal and vertical wells and various horizontal directional drilling projects for utilities. The drilling mud resulting from these activities tends to be saturated which requires some dewatering prior to being disposed of offsite at an approved waste facility. At the time of this plan,

several wells (160 wells) are planned for construction starting in 2023. The quantity of soil to be generated from drilling activities is estimated to be approximately 11 cubic yards per well.

In the approximate area indicated on **Figure 3**, between Building 106 and 110, Tyco will construct a semi-permanent concrete containment pad with dimensions of 42' x 90'. The constructed location will be within the same containment area previously approved by WDNR. The containment area will consist of 8-inches of reinforced concrete overlying 6-inches of compacted stone. A containment curb will be included along the perimeter to the pad, and a containment area with five-foot tall jersey barrier type walls that are sealed with an expandable foam. This containment area will be used for managing drill cutting soils during the well installation activities beginning in 2023. After the drilling program has been completed, the pad may be converted to a building to house non-hazardous remediation waste. During construction of the semi-permanent concrete containment pad, and following conversion of the pad to a building, drill cutting soils will be managed using containers such as dewatering boxes and roll-off boxes.

Any associated water related to drill cutting management will be placed in frac tanks, as needed. Water will be either treated using the on-site Groundwater Extraction and Treatment System (GETS), or water will be disposed off-site at an approved waste facility. Frac tanks will be staged within the same area previously approved by WDNR (**Figure 3**).

4.4 Storage in Containers and Buildings

The term container as used in this document means any portable device that meets the definition of container in NR 660.10. Examples include buckets, drums, roll-off boxes, portable boxes, super sacks, and portable tanks. Any hazardous waste containers, which are not anticipated at this site, must be managed in accordance with the requirements of NR 662.017. Waste management regulations require that containers be in good condition, compatible with the waste being generated, and free of any leaks. The type of container selected typically will depend on the quantity being generated and the requirements of the disposal facility. Some containers may require secondary containment; all containers holding groundwater require secondary containment. Additionally, prior to shipment, all waste must be packaged, marked, and labeled in accordance with USDOT requirements. Therefore, the use of containers that meet the requirements of both waste management and USDOT regulations is recommended.

Containers used to store and accumulate contaminated soil or liquids must be labeled according to their contents. The entity performing the work should include the specific label information in their activity-specific plan. Containers will typically be labeled as Analysis Pending, Nonhazardous Waste, or Hazardous Waste; however, labeling requirements may vary.

Sites where up to 2,500 cubic yards of excavated contaminated soil is stored for 6 months or less in containers or in buildings are exempt from regulation under ch. 289, Stats., and NR 500 to 538, and are not subject to the general storage requirements in NR 718.05 (2) (also summarized in Section 4.5.2), if the material is stored in accordance with all of the following requirements:

a. Containers and buildings shall be designed, constructed, and maintained to prevent leakage, infiltration of precipitation, and volatilization of soil contaminants to the ambient atmosphere.

b. Containers shall be labeled, and buildings shall have a sign posted in accordance with the requirements of NR 714.07 (4).

c. Contaminated soil may not be stored in containers or buildings for more than 6 months, without the prior written approval of WDNR.

4.5 Liquids

Liquids include contaminated groundwater that enters an excavation, decontamination water that has contacted buried waste or contaminated soil, and groundwater or stormwater that has come into contact with buried waste or contaminated soil.

If liquids must be removed from excavations as a result of earthmoving activities, liquid will be either treated using the on-site GETS adhering to Wisconsin Pollution Discharge Elimination Systems (WPDES) permit requirements, or water will be disposed off-site at an approved waste facility. Frac tanks will be staged at the containment area shown in **Figure 3.**

Any liquids generated must be disposed of offsite at an approved waste facility or treated at the onsite groundwater treatment system (note, groundwater must be filtered to allow for low total suspended solids before treatment) adhering to WPDES permit requirements. A waste determination may be required using a combination of available process knowledge and sampling, as described in Section 4.1.

4.6 Pavement and Miscellaneous Materials

As part of the subsurface work, sections of asphalt could be removed. All asphalt removed from the Property will be taken offsite for recycling at an asphalt plant or will be disposed of at an appropriate landfill. Asphalt plants must have, and be in compliance with, a current air operating permit NR 718(5)(a).

Soil or fill beneath the existing asphalt will be handled as contaminated soil. If landfilling is the chosen option, the contractor will assure that any asphalt removed from the Property and transported for offsite disposal must be cleaned to the degree practicable before being removed from the Property. The asphalt may be recycled after cleaning to the extent practical or disposed at a regulated offsite facility including asphalt plants which is authorized by WDNR to accept such materials for disposal.

Miscellaneous materials may be found within the excavated soil or fill material. Examples of such regulated materials would be demolition debris, railroad ties, wood, metal, glass, or concrete. In general, these miscellaneous materials should be loaded and transported for offsite disposal at an approved waste facility.

4.7 Storage Area Inspections

Unless otherwise directed by WDNR, contaminated soil stockpiles and containers are to be inspected at least once every 30 days. If deficiencies are noted, repair or replace immediately (such as any base, cover, anchoring, and berm materials). A written log shall be maintained which includes the inspection dates, name of the inspector, the condition of the stockpile or container at the time of the inspection, and any repairs that were made.

Areas used to stage waste that is awaiting classification while sample results are pending must be inspected weekly. Inspections will note and immediately correct any leaking or deteriorating containers and any condition that may cause waste to be spilled or released.

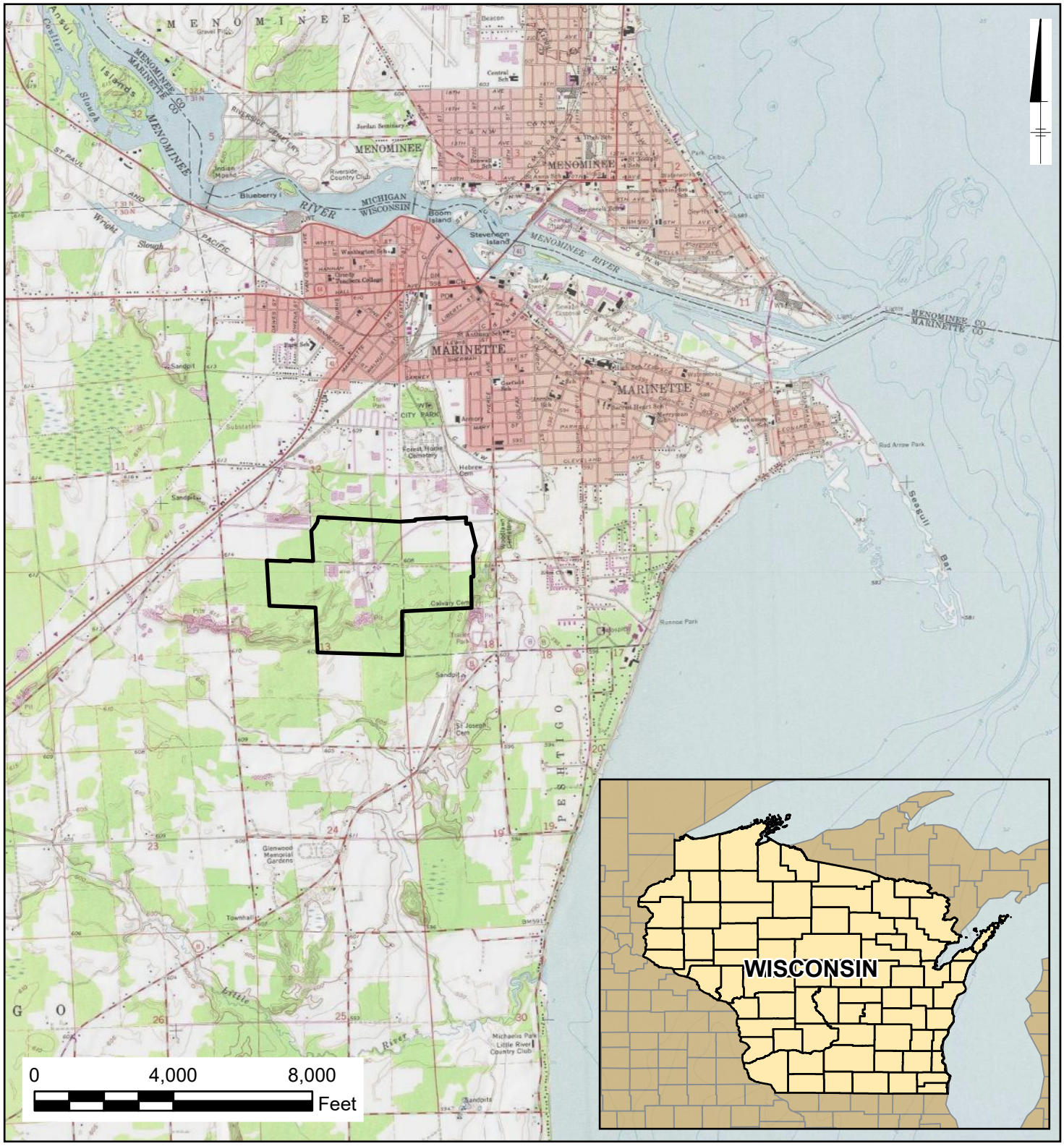
5 References

Arcadis. 2020a. Interim Site Investigation Report. Tyco Fire Technology Center, Marinette, Wisconsin. 2700 Industrial Parkway, Marinette, Wisconsin. BRRTS No. 02-38-580694. May 15.

Arcadis. 2020b. Sample Results Notification. Tyco Fire Technology Center, Marinette, Wisconsin. 2700 Industrial Parkway, Marinette, Wisconsin. BRRTS No. 02-38-580694. November 6.

Arcadis. 2023. Quality Assurance Project Plan Addendum. Tyco Fire Technology Center, Marinette, Wisconsin. 2700 Industrial Parkway, Marinette, Wisconsin. BRRTS No. 02-38-580694. May 1.

Figures



APPROXIMATE SITE PROPERTY BOUNDARY

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
MATERIALS MANAGEMENT PLAN

PROPERTY MAP

ARCADIS

FIGURE
1

Note:
1. TOPOGRAPHIC MAP SOURCE: COPYRIGHT:© 2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED, ACCESSED APRIL 2020.

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LEGEND:

- BUILDING
- DITCH OR STREAM

0 250 500 Feet

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
MATERIALS MANAGEMENT PLAN

PROPERTY PLAN

ARCADIS

FIGURE
2

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LEGEND:

- BUILDING
- CONTAINMENT AREA
- DITCH OR STREAM

0 250 500 Feet

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
MATERIALS MANAGEMENT PLAN

CONTAINMENT AREA LOCATION

ARCADIS

FIGURE
3

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