

State of Wisconsin
 Department of Natural Resources
 PO Box 7921, Madison WI 53707-7921
 dnr.wi.gov



Development at Historic Fill Site or Licensed Landfill Exemption Application

Form 4400-226 (R 9/14)

Notice: Use of this form is required by the DNR for any application to develop at a historic fill site or licensed landfill pursuant to secs. NR 506.085 and NR 500.08(4), Wis. Adm. Code. The Department will not consider your application unless you provide complete information requested. Personally identifiable information collected will be used to process your application and will also be accessible by request under Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.]

Instructions: See *Development at Historic Fill Sites and Licensed Landfills: What you need to know* (PUB-RR-683, November 2013) for detailed instructions.

- All Exemption Application materials should be sent to the region where the site is located, as listed on page 6.
- Include \$700 fee payment with this application unless a fee was already paid for the review of the remedial design report under the NR 700 process. If the site is a licensed landfill and the Waste and Materials Management program is doing the review, submit no fee now. You will be sent an invoice upon receipt of this application.
- Determine the appropriate exemption type for the site and check appropriate box below.
- Provide complete information requested for each type of exemption. Include the following attachments:
Required: Summary of Existing and Potential Impacts described in Section V as an attachment, under the seal of a professional engineer or geologist registered to practice in Wisconsin.
Optional: Site Visit Summary Comments (Section IX) including any photos, sketches or site visit notes.

Exemption Type

- Remediation and Redevelopment Program NR 700 Rule Series Process Exemption:** Site with remedial actions conducted in accordance with NR 700 series
Required: Sections I - VI **Optional:** Sections VII - X
- Case-by-Case Evaluation:** Sites with anticipated environmental impacts or wastes of special concerns
Required: Sections I - VI **Optional:** Sections VII - X
- Expedited Exemption:** Site with no expected environmental impact
Required: Sections I - VI **and** Form 4400-226A Expedited Exemption Application **Optional:** Sections VII - X

I. Applicant Information

Owner - Last Name	First	MI	Phone Number (include area code)	
Olejniczak	Martin			
Contact Name (if different)				
City of Sturgeon Bay				
Street Address	City	State	ZIP Code	
421 Michigan Street	Sturgeon Bay	WI	53718	
Developer - Last Name	First	MI	Phone Number (include area code)	
Street Address	City	State	ZIP Code	

II. Site Name and Location

Site Name	Location / Address		
West Waterfront Redevelopment	92 and 100 E. Maple Street		
Is the site known by another name(s)? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown	<input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village		
If yes, provide name: Door County Coop	of Sturgeon Bay		
Does the site have a license number? <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	State	ZIP Code	County
If yes, License Number:	WI	54235	Door

A. Attach a map with site location and limits of fill/waste disposal area.

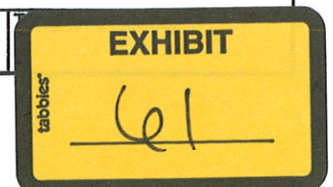
B. Global Positioning System Coordinates

Describe method for collecting GPS Coordinates
 WDNR BRRTS on the Web

Latitude	DEG	MIN	SEC	Longitude	DEG	MIN	SEC
	44	49	46.4800 N		87	22	57.8300 W

Program Lead, Fee Status and Regulatory ID Numbers (This area for DNR use only)

<input type="radio"/> Waste Management Bureau	<input type="checkbox"/> Payment Attached	
<input type="radio"/> Remediation and Redevelopment Bureau - Exemption is part of remedy under NR 700 program	Amount	
<input type="radio"/> Fee already paid for review of remedial design report.	\$	
<input type="radio"/> Review of remedial design report not requested and payment is attached.		
Hazardous Waste Facility License ID #:(5 digits)	DNR FID #:(9 digits)	USEPA ID #:(used for both RCRA & CERCLIS #s) (WI+Alpha+9 digits)
Region	Project Manager	



Development at Historic Fill Site or Licensed Landfill Exemption Application

Form 4400-226 (R 9/14)

Page 2 of 6

III. Site Ownership History

Previous Owner - Last Name Freedom Bank		First	MI	Telephone Number	
Street Address 500 E. Leclair Road		City Eldridge	State IA	ZIP Code 52748	
Responsible Municipal / Private Operator - Last Name (if applicable)		First	MI	Telephone Number	
Street Address		City	State	ZIP Code	

IV. Evaluation of Existing and Potential Impacts. See Development at Historic Fill Sites and Licensed Landfill: Guidance for Investigation and Development at Historic Fill Sites and Licensed Landfill: Potential Problems and Considerations.

- A. Analytical data for the following media have been collected and/or examined before completing this application:
- Groundwater: Yes No
 - Soil: Yes No
 - Surface water / sediment: Yes No
 - Air: Yes No
 - Methane or other explosive gases: Yes No
- B. Based on known or suspected sources and wastes, their physical characteristics, containment and geologic environment, do you suspect a release of pollutants to the environment?
- Yes: Groundwater Soil Surface Water / Sediment Methane or Other Explosive Gases
- No
- C. If there is NOT a likelihood of a release of pollutants or evidence of a release, would the impact of the proposed development be likely to cause a release to the environment?
- Yes: If yes, be sure to summarize actions to be taken to prevent adverse environmental impacts in V. Part C below.
- No

V. Summary of Existing and Potential Impacts. See Development at Historic Fill Sites and Licensed Landfill: Guidance for Investigation and Development at Historic Fill Sites and Licensed Landfill: Potential Problems and Considerations.

Describe the following in an attached narrative under the signature of a qualified professional. Organize, label and package as listed below.

- Existing Site Conditions
 - existing site conditions including waste types,
 - potential for impacts, and
 - evaluation of existing impacts.
- Proposed Development Summary. Include explanation for overall site decision.
- Summary of actions to be taken and engineering controls that will prevent or minimize adverse environmental impacts and potential threats to human health and welfare, including worker safety.

VI. Certification of Application Information

I certify that information in this application and all its attachments is true and correct and in conformity with applicable Wis. statutes.

Print / Type Name of Applicant:

Martin Olejniczak, Community Development Director, City of Sturgeon Bay

Applicant Signature Martin Olejniczak

Date Signed 6/30/15

Development at Historic Fill Site or Licensed Landfill Exemption Application

Form 4400-226 (R 9/14)

Page 3 of 6

Sections VII - IX are optional for all Applicants.

VII. Current and Historic Type of Waste Disposal Site (Check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Licensed Landfill | <input type="checkbox"/> One-time Disposal |
| <input type="checkbox"/> Non-approved {See s.289.01(3)}, Wis Stats. | <input type="checkbox"/> Construction / Demolition |
| <input type="checkbox"/> Approved | <input type="checkbox"/> Historic Fill Site |

Liner

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Unlined | <input type="checkbox"/> Clay Liner |
| <input type="checkbox"/> Lined | <input type="checkbox"/> Unengineered |
| <input type="checkbox"/> Composite Liner | |
| <input type="checkbox"/> Other Liner (Describe): _____ | |

Total Landfill Volume

- < 50,000 yd³
 50,000-500,000 yd³
 > 500,000 yd³

Does the landfill have a closure plan? Yes No Unknown

Does the landfill have a groundwater monitoring plan? Yes No Unknown

Have groundwater monitoring wells been installed? Yes No Unknown

Was a cover installed? Yes: No **If no, go to Past Land Uses.**

- Composite cap
- Layered soil cap with clay barrier
- Clay cap
- Soil cap - not recompacted clay
- Other cover
- Unknown

What is the thickness of the cover? < 6 in 6-12 in 12-24 in > 24 in Unknown

Past Land Uses. (Check all that apply)

- | | | |
|--|--|--|
| <input type="checkbox"/> Agricultural co-op | <input type="checkbox"/> Electroplater | <input type="checkbox"/> Salvage yard |
| <input type="checkbox"/> Brush pile | <input type="checkbox"/> Lagoon | <input type="checkbox"/> Service Station |
| <input type="checkbox"/> Bulk plant | <input type="checkbox"/> Manufacturing Type: _____ | <input type="checkbox"/> Tannery |
| <input type="checkbox"/> Coal gas manufacturer | <input type="checkbox"/> Old burn pit | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Deer pit | <input type="checkbox"/> Pipeline | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Dry cleaner | <input type="checkbox"/> RCRA generator | |

Date(s) of Site Operation:

From: _____ To: _____ No. of Years Unknown

VIII. Waste Information & Geologic Environment. See Development at Historic Fill Sites and Licensed Landfills: Guidance for Investigation

A. Known or Suspected Sources/Wastes. (Check all that apply)

- | | | |
|--|---|---|
| <input type="checkbox"/> Abandoned containers | <input type="checkbox"/> Known or suspected hazardous materials | <input type="checkbox"/> Demolition/construction waste |
| <input type="checkbox"/> Above ground pipeline or tank | <input type="checkbox"/> Municipal waste | <input type="checkbox"/> Surface impoundment/lagoons |
| <input type="checkbox"/> Animal carcasses | <input type="checkbox"/> Paper mill sludge | <input type="checkbox"/> Underground pipeline or tank |
| <input type="checkbox"/> Buried drums | <input type="checkbox"/> Transformer | <input type="checkbox"/> Exempted fill [NR 500.08(1) and (2)] |
| <input type="checkbox"/> Burning of materials | <input type="checkbox"/> Trees/brush | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Foundry sand | <input type="checkbox"/> Surface spills | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Industrial accident | <input type="checkbox"/> Fly ash | |

B. Physical Characteristics of Sources/Wastes

Liquid Solid Liquid & Solid Unknown

Development at Historic Fill Site or Licensed Landfill Exemption Application

Form 4400-226 (R 9/14)

Page 4 of 6

VIII. Waste Information & Geologic Environment (continued)

C. Waste Containment

Liner

Unknown

Not applicable

Engineered cover

Functioning leachate collection & removal system

Maintained Not maintained

Functioning & maintained run-off management system

Functioning groundwater monitoring system

D. Soil Type: Estimate distances or determinations based on regional or site specific information.

Regional Site specific

Clay, silt or other fine grained soils present? (lacustrine, tills, etc.) Yes No

At surface? Yes No At depth? Yes No _____ feet

Sand & gravel, coarse grained soils present? Yes No

At surface? Yes No At depth? Yes No _____ feet

E. Depth to Groundwater

Regional Site specific _____ feet

F. Direction of Groundwater Flow

Regional Site specific _____ direction

G. Depth to Bedrock

Regional Site specific _____ direction

H. Bedrock Type

Regional

Site specific

Sandstone

Limestone/Dolomite

Metamorphic/Igneous

IX. Site Visit

Conduct a site visit to complete site screening and determine general site conditions, on-site activities and adjacent land use encroachment issues. As appropriate to document the site, take photos, sketch the site and prepare a Site Visit Report.

On-site visit conducted? Yes No

General site conditions: Document any observed releases and note whether or not you were able to walk the site. Examples of things to be aware of include the following:

- leachate seeps or evidence of seeps such as stained soil/vegetation
- stressed vegetation as a sign of gas migration to the surface or of leachate seeps;
- quality and coverage of vegetation on the cap;
- odors which may indicate gas migration to the atmosphere;
- erosion of the cap;
- maintenance of positive drainage over the capped area;
- visual desiccation cracks in the cap.

Attach the following to your application:

Photographs, regular or digital

Site sketch

Site Visit Report

Name(s) of Person(s) Conducting Site Visit

Date of Site Visit

IX. Site Visit (continued)

A. Adjacent Land Uses. Indicate all directions. (Check all that apply)

<input type="checkbox"/> Agricultural	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<input type="checkbox"/> Industrial	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<input type="checkbox"/> Recreational	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<input type="checkbox"/> Residential	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<input type="checkbox"/> Undeveloped	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<input type="checkbox"/> Commercial	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW
<input type="checkbox"/> Other:	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> E	<input type="checkbox"/> W	<input type="checkbox"/> NE	<input type="checkbox"/> NW	<input type="checkbox"/> SE	<input type="checkbox"/> SW

B. Potential Groundwater Receptors. Estimate distances. (1 mile = 5,280 ft)

Distance to and direction of nearest municipal well: _____ feet > ½ mile from the waste _____ direction

Distance to and direction of nearest other-than-municipal well: _____ feet > ½ mile from the waste _____ direction

Distance to and direction of nearest non-community well: _____ feet > ½ mile from the waste _____ direction

Distance to and direction of nearest private well: _____ feet > ½ mile from the waste _____ direction

Distance to and direction of nearest private well: _____ feet > ½ mile from the waste _____ direction

C. Potential For Gas Migration

_____ No. of homes within 300 feet of waste (gas migration potential)

_____ No. of homes between 300 & 1,000 ft to waste (gas migration potential)

Distance to and direction of nearest building: _____ feet > ½ mile from the waste _____ direction

Type of building: On-site building Municipal Residential Commercial Industrial Unknown

D. Potential Surface Water Receptors. Estimate distances.

Creek _____ feet Drainage ditch: _____ feet Intermittent stream: _____ feet

River _____ feet Lake _____ feet Wetland: _____ feet

E. Based on the site visit, did you visually observe...

1. a release to a surface water body? Yes No Unknown

2. a leachate seep? Yes No Unknown

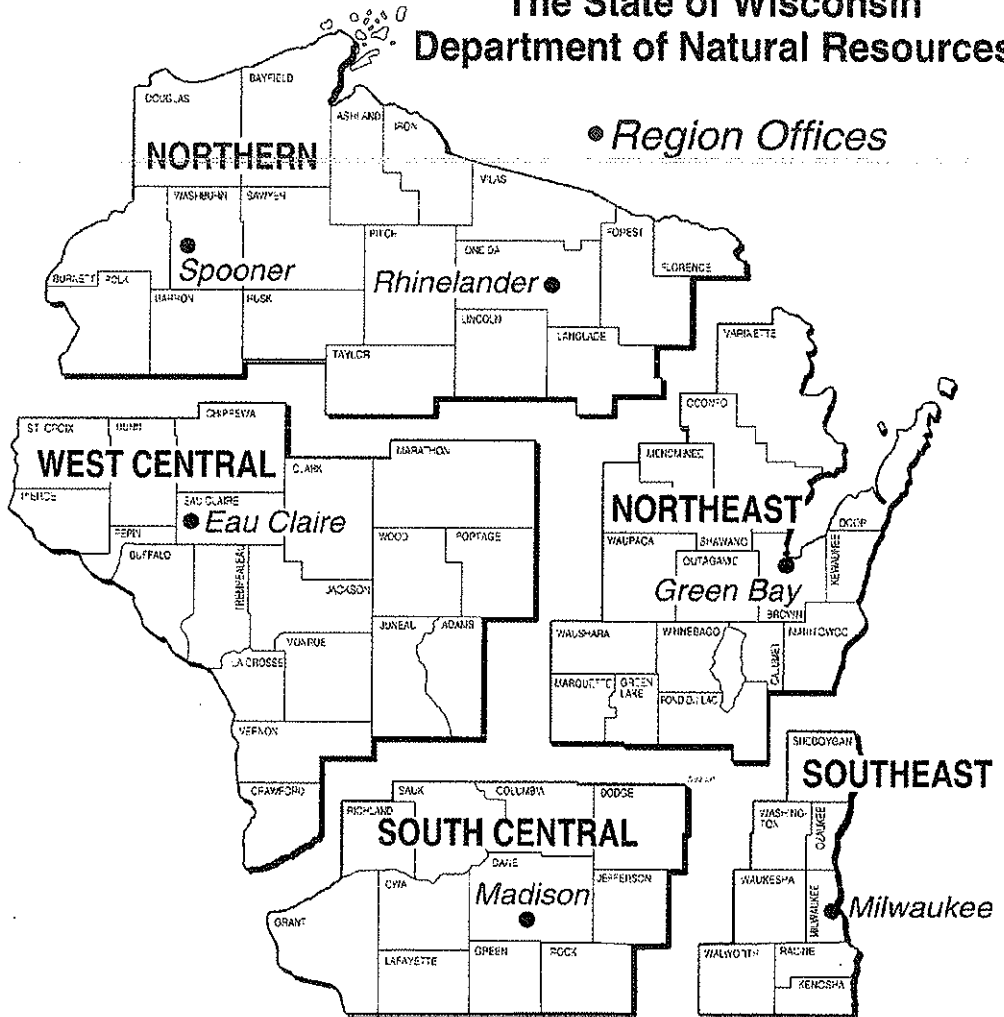
3. a release to soils? Yes No Unknown

X. Comments: Use this section to provide comments on any aspect of the site visit. Attach any information or explanations labeled with the appropriate section number to which the material applies.

Region Map

The State of Wisconsin
Department of Natural Resources

• *Region Offices*



NORTHERN REGION
Remediation & Redevelopment
Team Supervisor
Department of Natural Resources
107 Sutliff Avenue
Rhineland, WI 54501
(715) 365-8976

OR
Regional Waste Program Manager
Department of Natural Resources
107 Sutliff Avenue
Rhineland WI 54501
(715) 365-8946

NORTHEAST REGION
Remediation & Redevelopment
Team Supervisor
Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727
(920) 662-5160

OR
Regional Waste Program Manager
Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727
(920) 662-5120

SOUTHEAST REGION
Remediation & Redevelopment
Team Supervisor
Department of Natural Resources
P.O. Box 12436
Milwaukee, WI 53212-0436
(414) 263-8561 or (414) 263-8714

OR
Regional Waste Program Manager
Department of Natural Resources
P.O. Box 12436
Milwaukee, WI 53212-0436
(414) 263-8694 or (414) 263-8697

WEST CENTRAL REGION
Remediation & Redevelopment
Team Supervisor
Department of Natural Resources
1300 West Clairemont Avenue
Eau Claire, WI 54701
(715) 839-3710

OR
Regional Waste Program Manager
Department of Natural Resources
1300 West Clairemont Avenue
Eau Claire, WI 54701
(715) 839-3708

SOUTH CENTRAL REGION
Remediation & Redevelopment
Team Supervisor
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3241

OR Regional Waste Program Manager
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3466

V. Summary of Existing and Potential Impacts

A. Existing Site Conditions

1. Existing Site Conditions Including Waste Types

Activities outlined in this document represent the remediation phase of the Brownfield development process for the Door County Coop (DNR BRRS # 03-15-000659), Door County Coop- Fill (DNR BRRS # 02-15-544253), Former Door County Coop- VPLE (DNR BRRS # 06-15-560738), Former US Coast Guard- Above OHWM (DNR BRRS # 02-15-563484), Former US Coast Guard- Above OHWM- VPLE (DNR BRRS # 06-15-563486) and limited portions of the Former US Coast Guard- Below OHWM (DNR BRRS #: 02-15-563485) BRRS cases located at 92 and 100 East Maple Street, Sturgeon Bay, Wisconsin

The property proposed for the West Waterfront Redevelopment, 92 and 100 East Maple Street, Sturgeon Bay was historically developed for industrial and municipal use since at least 1885. Development began on the western portion of the site and later progressed eastward as the shoreline of Sturgeon Bay was filled in. The site was occupied over the years by a dock, grain elevator, seed warehouse, lumberyard planing mill, cement storage and agricultural cooperative. The agricultural cooperative, which was the most recent occupant of the property, ceased operations in 2007. The site has since been vacant and idle. On site structures were demolished in July 2014.

Previous environmental activities conducted on the property have documented the storage of petroleum products in aboveground and underground storage tanks as well as mixing and storage of fertilizer. Fill material placed on the site was reported to contain wood chips, charred wood and concrete. The presence of organic matter in the fill material has the potential to generate methane gas.

In anticipation of proposed mixed use redevelopment of the site, environmental assessment activities were conducted on the property between May 2013 and May 2015 to assess possible soil and groundwater contamination resulting from past use of the site and placement waste fill material. A methane gas assessment was also conducted.

Results of these recent assessment activities indicate that the property is underlain by up to 13 feet of fill material containing bricks, cinders, concrete, and wood debris. Unconsolidated sediments beneath the fill are lacustrine deposits consisting of discontinuous layers of sand and gravel, silty sand and clay to the total depth of exploration at 35 feet bls.

Contaminants of concern in soil/fill at this site are polycyclic aromatic hydrocarbons (PAH) detected above direct contact and groundwater pathway residual contaminant levels (RCL), and heavy metals detected above the groundwater pathway RCL. The elevated PAH and heavy metals concentrations were detected in the fill material beneath the site and are likely the result of the composition of the fill. Groundwater, encountered within five feet of ground surface, indicated isolated areas of PAH, benzene, lead and arsenic concentrations slightly above enforcement standards.

Vapor assessment activities indicate that methane is being generated at this site through the decomposition of organic matter in the fill material. Methane concentrations greater

than the lower explosive limit (LEL) were detected in three of the nine shallow soil vapor probes advanced at the site.

The nature and extent of contamination at this site are described in the NR 716 Site Assessment Report – Addendum for the West Waterfront Redevelopment dated July 2015. Contaminants at this site warranting remediation are as follows:

Soil

- PAH – Concentrations of PAH above NR 720 direct contact and groundwater pathway RCL were detected in fill material across the site. The industrial direct contact RCL was exceeded, primarily for benzo(a)pyrene, in samples of fill material collected.
- Heavy Metals – Concentrations of arsenic and lead were detected above the NR 720 groundwater pathway residual contaminant level (RCL) in fill material across the majority of the site. Barium was detected above the NR 720 groundwater pathway RCL in a single sample collected from probe WGP-1 advanced in the southwest portion of the site. Arsenic was detected below the background threshold value and within the range of naturally occurring concentrations of arsenic for the region. None of the other heavy metals were detected above NR 720 direct contact RCL.

Groundwater

- Isolated areas of PAH, benzene, lead and arsenic were detected at concentrations slightly above their respective enforcement standard. These isolated low level detections do not warrant remediation. However, additional groundwater monitoring is recommended to confirm the presence and trend in concentration of these compounds in groundwater.

Vapor

- Vapor assessment activities indicate that methane gas is being generated beneath the site. Measures should be taken to mitigate accumulation of methane gas in any buildings or underground utilities constructed on site.

2. Potential for Impacts

Contamination at this site consists primarily of PAH at concentrations above direct contact RCL. The proposed redevelopment of the site includes a hotel and public space and, therefore, there is a potential for human health impacts due to direct contact with the soil exposure route. PAH were also detected above the groundwater pathway RCL. However, PAH are relatively immobile due to their low solubility and affinity for adsorption and their potential for impact on groundwater and surface water is low. This is supported by the low levels of PAH detected in groundwater beneath the site.

Arsenic, lead and barium were detected at concentrations above the groundwater pathway RCL. However, groundwater analysis only detected low levels of these metals indicating that the concentrations in soil are having a negligible impact on groundwater. Concentrations of heavy metals in groundwater do not warrant remediation.

Methane gas generation beneath the site has the potential to accumulate within indoor air space or along utility corridors causing an explosion hazard. Currently the site is vacant and methane gas is venting directly through the ground surface and into the atmosphere. However, when buildings are constructed or subsurface utilities installed during site redevelopment, engineered controls should be implemented to mitigate vapor migration and accumulation into enclosed spaces.

3. Evaluation of Existing Impacts

Soil assessment activities including characterization and laboratory analysis of soil samples collected from 15 soil probes and 17 monitoring well boreholes indicates that up to 13 feet of fill comprised of variable amounts of sand, wood, brick, cinders and concrete is present across the majority of the site. The presence of wood waste creates the potential for methane gas generation. Site redevelopment should include construction of an engineered system to mitigate potential accumulation and migration of methane gas.

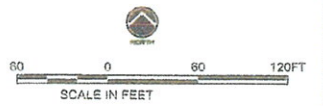
Existing impacts that affect redevelopment are primarily the elevated concentrations of PAH. PAH impacts will require remediation to eliminate the potential direct contact pathway for the proposed redevelopment of the site. Remediation of the site should also consider protection of the groundwater pathway from PAH and low levels of arsenic, lead and barium. Figure 1 shows the PAH, arsenic, lead and barium impacts requiring remediation.

Groundwater samples collected from 17 monitoring wells, indicated low levels of PAH, benzene, arsenic and lead slightly above enforcement standard. These isolated detections do not warrant remediation. Additional groundwater monitoring is recommended to evaluate contaminant concentrations following site redevelopment and remediation.

Door County Coop - FILL
 82 East Maple Street, Sturgeon Bay, Wisconsin
 DNR BRRTS # 02-15-54222 (formerly 03-16-54423)

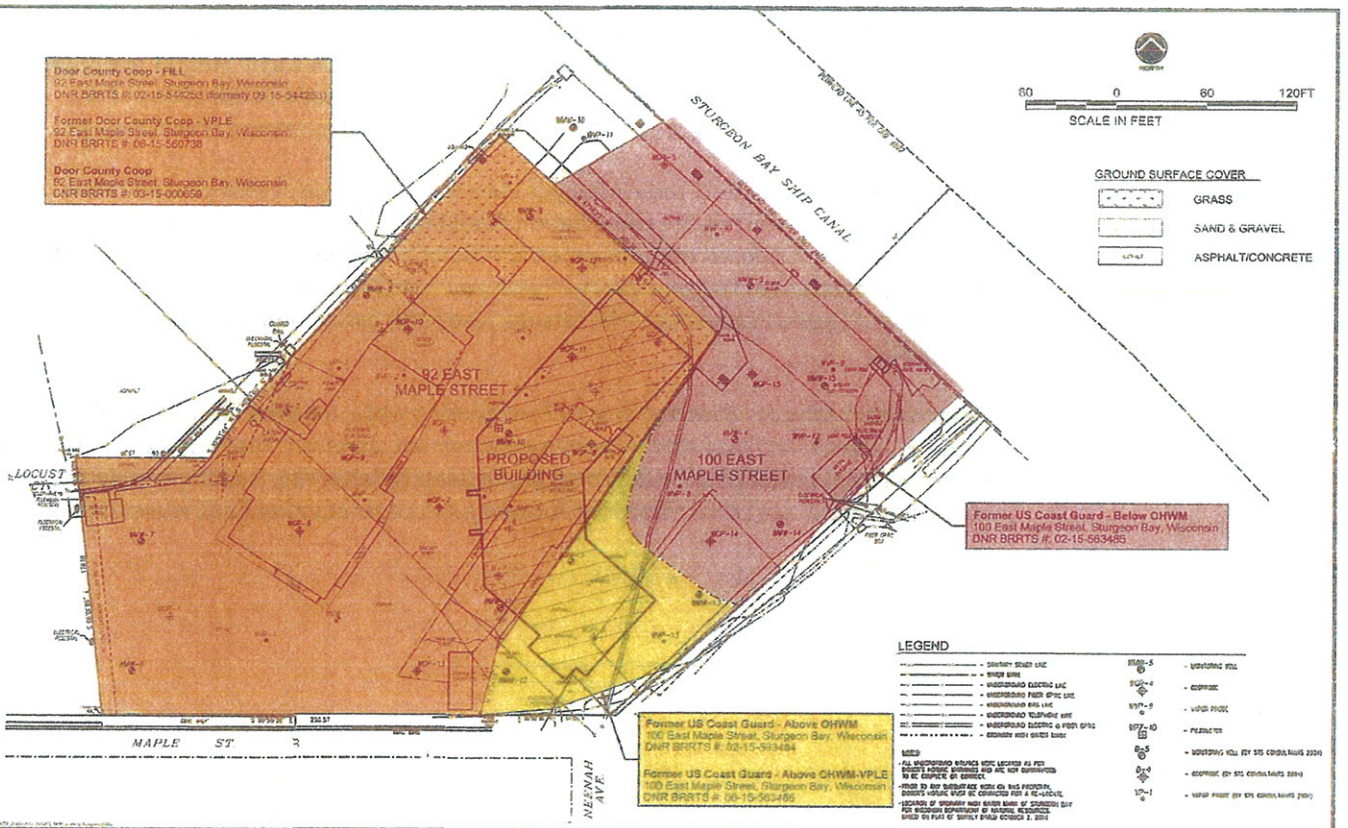
Former Door County Coop - VPLE
 82 East Maple Street, Sturgeon Bay, Wisconsin
 DNR BRRTS # 06-15-560738

Door County Coop
 82 East Maple Street, Sturgeon Bay, Wisconsin
 DNR BRRTS # 03-15-000659



GROUND SURFACE COVER

- GRASS
- SAND & GRAVEL
- ASPHALT/CONCRETE



Former US Coast Guard - Below CHWM
 100 East Maple Street, Sturgeon Bay, Wisconsin
 DNR BRRTS # 02-15-563485

Former US Coast Guard - Above OHWM
 100 East Maple Street, Sturgeon Bay, Wisconsin
 DNR BRRTS # 02-15-93484

Former US Coast Guard - Above CHWM-VPLE
 100 East Maple Street, Sturgeon Bay, Wisconsin
 DNR BRRTS # 06-15-560469

LEGEND

- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING ELECTRIC LAC
- EXISTING FIBER OPTIC LAC
- EXISTING GAS LAC
- EXISTING TELEPHONE LAC
- EXISTING CABLE TV LAC
- EXISTING SANITARY LAC
- EXISTING SANITARY LAC

NOTES

- ALL UNDERGROUND UTILITIES SHOWN LOCATED AS PER RECORD DRAWINGS AND ARE NOT GUARANTEED TO BE CORRECT IN DETAIL.
- UTILITIES NOT SHOWN ARE TO BE LOCATED BY THE CONTRACTOR.
- LOCATIONS OF UTILITY MAINS SHOWN ARE OF RECORD ONLY AND ARE NOT GUARANTEED TO BE CORRECT IN DETAIL.
- LOCATIONS OF UTILITY MAINS SHOWN ARE OF RECORD ONLY AND ARE NOT GUARANTEED TO BE CORRECT IN DETAIL.

WEST WATERFRONT REDEVELOPMENT PROJECT			SITE MAP	1
CITY OF STURGEON BAY				
STURGEON BAY, WISCONSIN				

B. Proposed Development Summary

Sawyer Hotel Development, LLC, and Bayland Buildings, Inc (general contractor) of Green Bay, Wisconsin will be constructing a 4-story hotel, with approximately a 19,420-square-foot (SF) footprint. The building will be located across portions of the 92 and 100 E. Maple Street sites above the ordinary high water mark shown on Figure 2. All currently proposed private development activities (i.e. activities not open to public trust lakebed uses) on the 92 and 100 East Maple Street properties will occur above the OHWM (i.e. landward of the bulkhead area). Development activities associated with the Former US Coast Guard- Below OHWM (DNR BRRTS # 02-15-563485) BRRTS case will be handled separately and at a later point in time. Portions of the development below the ordinary high water mark will be completed with lawn, landscaping, a concrete or asphalt river walk and other appurtenances at a later date.

Based upon current grading plans for the project, clean, structural fill will be imported and placed on the existing ground surface to raise the elevation of the site 4½ feet. The estimated volume of soil to be placed underneath the building is 2,800 cubic yards. The estimated quantity of soil used to backfill around the foundation is 1,390 cubic yards.

Building construction will consist of a concrete slab on poured concrete foundation walls supported on approximately 466, 24-inch diameter aggregate geopiers. It is anticipated that minimal amount of soil will be disturbed during construction and that the majority of soil will remain in place beneath future site structures.

The remedial action objectives for the West Waterfront Redevelopment include preventing direct contact risk to patrons and workers at the proposed hotel and restaurant posed by contamination in near surface fill. This will be accomplished by capping the affected fill beneath four feet of clean fill, impervious concrete building slabs, asphalt parking lots and driveways. Elements of the engineered cap are shown on Figure 3.

There may be some contaminated fill material generated from excavation of foundations or footings that may require removal and on-site relocation. The excavated soil/historic fill will be relocated within the same BRRTS case property limits from which it was generated (i.e. keep soil/historic fill generated from the 92 East Maple Street BRRTS case within the 92 East Maple Street BRRTS case property limits). Contaminated fill that cannot be used on site will be disposed off-site as a solid waste.

The City will also install new sanitary and sewer lines across the property concurrently with site development. The City's engineer estimated that approximately 1,300 cubic yards of soil/fill material will be excavated during utility construction. Excess fill material excavated from the utility trenches cannot be relocated on the hotel development site. Historic fill characterized as solid waste that is suitable for reuse will be used as backfill in the utility trenches. Excavated soil and fill material that is unsuitable for reuse will be removed from the development sites and disposed at a licensed landfill. During this phase of development, any excavated soil/historic fill generated from the Former US Coast Guard- Below OHWM (DNR BRRTS # 02-15-563485) BRRTS case property (i.e. from the bulkhead area) will also be landfilled.

C. Actions to Minimize Impacts

Remedial actions including engineering controls will be implemented during redevelopment activities to minimize adverse environmental impacts and potential threats to human health. The objectives of the remedial actions include the following:

- Prevent direct human contact risk posed by contaminated near-surface fill;
- Minimize exposure to contaminated fill by patrons and workers at the proposed hotel and restaurant and the general public using the proposed public greenspace, and
- Mitigate migration and accumulation of methane gas in enclosed building spaces.

These objectives will be accomplished by capping the site with an estimated four feet of clean fill, and subsequent construction of proposed buildings, paved surfaces and landscaped greenspace. Remedial activities will result in the entire site being capped to eliminate the direct contact risk. Placement of compacted fill along with construction of impervious surface associated with the proposed hotel and restaurant will minimize infiltration of water through the waste and into the underlying groundwater.

Because site grades are being raised with the placement of four feet of clean fill, it is anticipated that only approximately 120 cubic yards of contaminated fill currently situated on the site will be excavated during site redevelopment. The waste will be relocated on-site and covered as discussed in the Environmental Management Plan below. The excavated soil/historic fill will be relocated within the same BRRTS case property limits from which it was generated (i.e. keep soil/historic fill generated from the 92 East Maple Street BRRTS case within the 92 East Maple Street BRRTS case property limits).

Accumulation of methane gas within proposed buildings will be prevented by installing sub slab active vapor mitigation systems. Details of vapor mitigation are discussed below and are included in the Soil Vapor Management Plan, West Waterfront Hotel Development Project – Sturgeon Bay (Ayres Associates, August 2015) submitted under separate cover.

Potential methane migration and accumulation in utility trenches will also be addressed through engineering controls by the engineering consultant installing the utilities for the City. Engineering controls will include clay dams and venting of the trench. Each trench, mainline and laterals will have a clay dam constructed at the high end of the trench to prevent methane to mitigate off-site through the excavation. In addition, at Sanitary Sewer Manhole#100 and Storm Sewer Manhole# 200, a perforated PVC pipe will be installed along the manhole to vent the trenches to the atmosphere. Details of the consultants approach will be submitted to the WDNR under separate cover.

Groundwater dewatering is not anticipated during construction of the hotel given the starting elevation of the land surface after structural fill is imported. Groundwater that is encountered during pier construction, or excavation of the pool that reaches the land surface, or surface water encountered during storm events, will be collected and stored in on-site poly tanks or frac tank. The water will subsequently be analyzed, treated, and discharged to the storm sewer or transferred to the wastewater treatment plant for disposal.

Groundwater dewatering will be required for utility installation that is being performed by the City concurrently with the hotel development. Plans and permit requests for groundwater dewatering during utility construction will be submitted under separate cover by the engineering firm designing the utilities.

Environmental Management Plan

Environmental management will be performed to achieve a technically sound and environmentally acceptable approach to site redevelopment. Environmental management functions include providing independent review and guidance on environmental issues during site redevelopment, monitoring environmental conditions during construction activities, and performing environmental sampling and analysis for waste characterization and disposal, as needed.

The following environmental management activities or practices will be applied to natural soil materials, construction debris, and wastes known to exist at the site. These guidance or management procedures are based upon information obtained from previous investigations and are subject to change as additional information becomes available.

Fill Material Management

Ex-situ remediation at this site may involve limited excavation of impacted soil from the subsurface with beneficial reuse of the material on-site. Site development will necessarily require some modifications to existing site grades (elevations). However, based upon current grading plans for the project, clean, structural fill will be imported and placed on the existing ground surface beneath the building to raise the elevation a minimum of four and one-half (4½) feet. The estimated volume of soil to be placed underneath the building is 2,800 CY. The estimated quantity of soil used to backfill around the foundation is 1,390 CY.

Soil (and fill) at the site, not required for construction, may include excess material from site grading, utility trenching, soil removed during installation of poured concrete foundation walls, installation of 466 drilled aggregate geopiers to a depth of 11 to 18 feet below ground surface, pool excavation, and utility trenches. Limited spoil is anticipated from the geopier installation as a displacement process will be used to advance the borehole and place the aggregate. Material generated from excavations and trenching will be reused on site and incorporated into the final project design. All historic fill that is relocated will remain within the existing limits of fill determined during the site assessment. The excavated soil/historic fill will be kept within the same BRRTS case property limits from which it was generated (i.e. keep soil/historic fill generated from the 92 East Maple Street BRRTS case within the 92 East Maple Street BRRTS case property limits). Any historical fill that is reused on site will be covered with 18-inches of clean soil. The locations and estimated quantity of soil spoil requiring on-site relocation and reuse, and areas of clean imported soil, are shown on Figure 4.

The quantity of soil spoil requiring on-site relocation (estimated at 120 cubic yards) is contingent on final grading elevations, the method of geopier installation, depth and length of utility trenching, size and depth of pool excavation, and length and depth of foundation

structures installed. A contractor will be hired to perform the soil excavation and on-site disposal tasks.

The general project approach and sequencing is outlined below:

- Prepare design plans and specification
- Prepare bid package and let for bid
- Select contractor and prepare contracts
- Perform waste characterization and obtain necessary permits
- Perform underground locate/clearance calls
- Abandon monitoring wells in development area, as necessary
- Mobilize equipment and personnel
- Install geopiers within building footprint
- Excavate target soil and manage excavation water
- Relocate soil spoil to designated on-site re-location areas (no on-site storage)
- Collect water entering the excavation and transfer to a poly tank for storage and analysis, pending treatment and final disposal
- Backfill the excavation with clean fill and compact, as necessary for construction
- Install vapor barrier underneath building footprint prior to pouring foundation slab
- Replace monitoring wells removed during excavation, if necessary

Any historic fill excavated from the site that cannot be used on-site for construction will be transported and disposed at Advanced Disposal landfill located at 428 High Street, Chilton, Wisconsin, approximately 82 miles south of the City.

New parking lots will be constructed over existing grades at the locations shown in the attached Figure 5. Final designs are not complete but a typical parking lot profile will consist of 8-inches of crushed stone and 2.5-inches of asphalt. Importation or removal of soil for parking lot construction will be addressed in a separate document at a later date.

Imported Fill

Preliminary grading plans prepared to facilitate redevelopment of the 100 East Maple Street (Hotel) Property indicate that approximately 5,000 cubic yards of soil will be required to be imported to the site to achieve design grades beneath and around the hotel foundation. The estimated volume of soil to be placed underneath the building is 2,800 CY. The estimated quantity of soil used to backfill around the foundation is 1,390 CY. A grading plan showing cut areas and the distribution and thickness of imported clean fill is shown on Figure 5.

The City of Sturgeon Bay is currently constructing a storm water detention pond located at 1030 N. 14th Street. Construction of the Egg Harbor stormwater detention pond is expected to generate approximately 9,500 cubic yards of excess soil. Approximately 5,500 cubic yards of

the excess soil (silty sand) generated from the construction of the storm water pond will be imported to the 100 East Maple Street Property and used as general fill underneath the building footprint and as backfill around the foundation.

The WDNR recently prepared a guidance document proposing a process to document soil, or other material, imported to a VPLE site. According to the draft guidance document (RR-041) the following factors were considered when evaluating the imported fill:

- Past history of the property-where the soil and other filled materials are generated;
- The volume of soil and other fill materials to be used;
- Zoning restrictions on planned end uses of the receiving property;
- Location on the receiving property where the material will be placed, including the locational criteria in Section NR718.12(1), Wis. Adm. Code; and
- Results of sampling and comparison with RCLs established in accordance with Chapter NR720, Wis. Adm. Code.

The borrow source has historically been the site of a private residence and open field and does not have a history of commercial or industrial use. A Phase I Environmental Site Assessment of the property, prepared by Robert E. Lee and Associates, was submitted to the WDNR under separate cover. Based on the past use of the borrow source property, it is our opinion that laboratory analysis of samples of this fill source is not warranted and the imported fill from the storm water pond project does not represent an environmental risk.

The City performed sampling and analysis of the imported soil at the request of the WDNR. Twelve samples were collected from the soil stockpiles temporarily stored on the East Maple Street property. The samples were collected from six stockpiles and placed in sealable plastic baggies. The samples were subsequently screened for the presence of volatile organic compounds (VOCs) using a photoionization detector equipped with a 10.7 electron volt lamp. The 12 samples were submitted to Pace Laboratories in Green Bay, Wisconsin and analyzed for polynuclear aromatic hydrocarbons (PAH) and lead. None of the samples were analyzed for VOCs based on PID screening results and olfactory observations.

The results of the analysis are summarized in Table 1. Laboratory analytical sheets are provided in Appendix B. As expected, low levels of one PAH compound (Benzo(a)pyrene) were detected in four of the twelve soil samples collected. PAHs form from incomplete combustion and are common in the environment due to atmospheric deposition, although they can also occur naturally. Benzo(a)pyrene in particular has a very low soil screening level and is the PAH compound that most commonly exceeds EPA screening levels and NR 720 RCLs, which are based on EPA screening levels. It should be noted that EPA soil screening levels, which NR 720 values are based, are not cleanup standards and do not define "unacceptable" levels of contaminants in the soil. These values are based on very conservative assumptions that may or may not be valid for all sites. They are used to facilitate identification of contaminants and exposure areas of potential concern that may warrant further assessment but not necessarily cleanup.

The low levels of benzo(a)pyrene found in the borrow source soils do not represent a significant concern and should not preclude the use of these soils for fill at the development

site. The predominant exposure concern for benzo(a)pyrene is ingestion, the reason it has such a low soil screening value. The imported soil is being used at the site for fill underneath the building, from the existing ground surface to approximately 4.5 feet above the surface, and will be covered by the building. Therefore, there is no potential direct contact exposure from this material. Furthermore, the potential for PAHs to leach from the soil is negligible due to the low solubility and high partition coefficients of PAHs.

The literature shows that asphalt-based products contain PAHs. Asphalt pavement and sealants produce particulate matter that can contain concentrations of PAHs in the sub-percent range (100s to 1,000s mg/kg total PAHs) that is transported in stormwater runoff. Some studies show that this can cause soil and sediment contamination with total PAH concentrations in the range of 1 to 10 mg/kg. From a remediation perspective, many site cleanups are conducted to remediate the presence of PAHs to cleanup goals below 1 mg/kg or lower. From a risk perspective, remediating sites to low PAH cleanup goals is unwarranted in light of the risk of transportable PAHs produced from paved parking surfaces. It is unreasonable to conduct a cleanup to remediate low PAH concentrations and then redevelop the area with asphalt pavement.

Temporary Stockpiles

Imported soil obtained from storm water detention basin project will be temporally stockpiled on the development site's existing asphalt parking lot for approximately two to three weeks pending completion of the geopiers. The soil will then be relocated on top of the geopiers within the building footprint. The location of the temporary stockpiles is shown on Figure 4.

Contaminated fill from within the historic fill limits is expected to be excavated and relocated in a continuous effort such that temporarily stockpiling this material will not be necessary. However, should it be necessary to place excavated fill material in stockpiles, temporary stockpiles will be maintained in general accordance with s. NR 718.05 (3). Conditions for temporary stockpiles include:

- Placing the soil on an impervious base (e.g., concrete, asphalt, or plastic sheeting)
- Covering the soil when it is not being moved with a cover material sufficient to prevent infiltration of precipitation and inhibit volatilization of contaminants (e.g., plastic sheeting)
- Preventing surface water contact with the stockpiled soil using constructed berms, if necessary, to control surface water movement

If stockpiles are maintained for longer than 15 days, requirements under s. NR 718.05(2) would also apply including stockpile inspections at least once every 30 days, immediately repairing or replacing any base, cover, anchoring, or berm materials, and notification to the WDNR if soil is stored for more than 90 days before final disposition.

The proposed soil handling and placement procedures will meet environmental closure requirements of s. NR 726.13(b) and not pose an unacceptable threat to public health, safety, welfare, or the environment. The site will be placed on the WDNR online Geographic Information System Registry (GIS Registry) for sites with residual soil and/or groundwater

contamination, and will have an approved cap maintenance plan which describes requirements for annual cap inspection and timely repair of any damaged/deteriorated areas.

Water Management

Groundwater dewatering is not anticipated during construction of the hotel given the starting elevation of the land surface after structural fill is imported. Groundwater that is encountered during Geopier construction or utility excavations that reaches the land surface, or surface water encountered during storm events, will be properly managed. The water will be collected and stored in on-site poly tanks, frac tank, or (upon receiving appropriate approvals) discharged directly to the sanitary sewer.

Groundwater dewatering will be required for utility installation that is being performed by the City concurrently with the hotel development. Plans and permit requests for groundwater dewatering during utility construction will be submitted under separate cover by the engineering firm designing the utilities.

Vapor Mitigation

The vapor intrusion mitigation approach for this site will include engineering controls to prevent the entry of vapors into the building by eliminating the vapors beneath the slab and routes of entry. Specific engineering controls incorporated into the construction will consist of the following methods including, 1) an active sub-slab venting system, 2) vapor barrier sheet (geomembrane) installed beneath the slab, and 3) sealing of utility penetrations.

The soil vapor mitigation system (SVMS) design approach utilizes the WDNR-recommended design reference prepared by the United States Navy Alternative Restoration Technology Team titled, *Vapor Intrusion Mitigation in Construction of New Buildings Fact Sheet* (2011); as well as the United States Environmental Protection Agency (USEPA) Engineering Issue *Indoor Air Vapor Intrusion Mitigation Approaches* (2008). The design of the SVMS includes the selection of suitable materials, component sizes, and design configurations for the SVMS components. The components include the subbase, aggregate stone venting/concrete subgrade layer (above the subbase and beneath the plastic vapor barrier), ventilation and discharge piping, vapor barrier (above the aggregate), vacuum pump, sub-slab vapor probes, and associated appurtenances.

The SVMS will be designed to utilize the proposed building's aggregate subgrade for the concrete floor of the lower level, which in the areas of the trench laterals will be designed to consist of an 8-inch thick layer of suitably sized aggregate stone, and a vapor barrier, located between the top of the aggregate layer and the building concrete slab. The aggregate stone will collect and allow potential soil vapors to flow away from the area beneath the building to a discharge point located safely above the building. The vapor barrier, together with proper seals of floor penetrations, will prevent soil vapors from migrating upward into the building. Per the WDNR guidance documents, a vapor barrier and passive venting system, if shown effective at managing subsurface vapors, is allowable for new construction. Active and passive systems have been used in many other locations where methane has been encountered from decomposing materials, and has been shown to be an effective remedy in suitably protecting health and environmental concerns. However, an active system will be installed at this site to

provide for additional protection. Details of the SVMS are provided in the Soil Vapor Management Plan, West Waterfront Hotel Development Project – Sturgeon Bay (Ayres Associates, August 2015) submitted under separate cover.

Potential methane migration and accumulation in utility trenches will also be addressed through engineering controls by the engineering consultant installing the utilities for the City. Engineering controls will include clay dams and venting of the trench. Each trench, mainline and laterals will have a clay dam constructed at the high end of the trench to prevent methane to mitigate off-site through the excavation. In addition, at Sanitary Sewer Manhole# 100 and Storm Sewer Manhole #200, a perforated PVC pipe will be installed along the manhole to vent the trenches to the atmosphere. Details of the consultants approach will be submitted to the WDNR under separate cover.

Data Analysis and Reporting

An NR 724 construction documentation report will be submitted within 60 days after the date that construction of the remedial action is completed. The report will document that the completed final remedial action meets or exceeds the design criteria and the plans and specifications developed in accordance with the requirements of NR 724.15. The report will include the following information:

- The regulatory status of the facility.
- As-built maps, plan sheets, drawings, and cross sections.
- A synopsis of the remedial or interim action and a certification that the design and construction was carried out in accordance with the plans and specifications.
- An explanation of any minor changes to the plans and why these were necessary for the project.
- Results of site monitoring conducted during construction.
- A brief description of the public health and environmental laws applicable to the contamination and the interim or remedial action selected, including the physical location where the environmental laws shall be complied with for all media of concern.
- A revised operations and maintenance plan in accordance with s. NR 724.13 (4), unless the cover letter indicates that there are no revisions to the operations and maintenance plan.
- A Cap Maintenance Plan will be prepared for the site in accordance with WDNR guidelines.