Appendix G

Wetland Evaluation

G-1 – Wetland Evaluation Memo

G-2 – Vernon County Surface Water Data View Map

G-1 – Wetland Evaluation Memo

Building a Better World for All of Us®

TECHNICAL MEMORANDUM

TO: Stacie Sanborn, Vernon County Solid Waste Department

FROM: Renee Wilde, PWS, CFM - SEH Wetland Scientist
WDNR Assured Wetland Delineator

DATE: June 4, 2021

RE: 2021 Expansion Planning – Evaluation for Wetlands
SEH No. VERSW 157634 14.00

This Memorandum summarizes SEH's site reconnaissance for the proposed expansion of the landfill area at the Vernon County Solid Waste and Recycling Facility, located at S3705 County Road LF, Viroqua, WI. SEH reviewed the natural vegetation and landscape conditions in the landfill expansion area to determine if any areas met the technical criteria of a wetland, as set forth in the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to Wetland Delineation Manual: Midwest Region* (USACE 2010) on May 4, 2021. The field reconnaissance was completed by Renee Wilde, PWS, CFM, Wisconsin Department of Natural Resources (WDNR) Assured Wetland Delineator.

The site is located in the southwest 1/4 of Section 15 in Township 13 North, Range 4 West in the Town of Viroqua, Vernon County, Wisconsin (**Figure 1**). In general, the property is located north of County Road LF, east of Bakkom Road, south of County Road Y, and west of Asbury Road.

The approximately 10.4-acre survey area is located north of the existing landfill footprint, as shown on **Figure 2**. The landfill facility is located along a ridgeline within the Western Coulee and Ridges ecological landscape. The landscape within the project area drains north towards the Seas Branch, which flows east to the West Fork of the Kickapoo River. The project site is approximately 160-180 feet higher in elevation than the waterway. In general, the current landfill operation and proposed expansion area sits high in the landscape. Representative photographs (**Appendix A**) of the area investigated are attached.

All three of the following criteria must be present in order to make a positive wetland determination, which are as follows: 1) Greater than 50% dominance of hydrophytic plant species, 2) Presence of hydric soil, and 3) Indicators of wetland hydrology observed. To document current site conditions, sample point data was collected and recorded on Wetland Determination Data Forms (**Appendix B**).

The WDNR Wisconsin Wetlands Inventory (WWI) does not identify wetlands within the survey limits, nor within the general vicinity. Soils within the project area are classified as "Valton silt loam," "Pepin silt loam," and "Mt. Carroll silt loam" by the Natural Resource Conservation Service (NRCS). These types of soils are classified as non-hydric, which is consistent with observations made during the site visit. Four "wet spots" were identified by the NRCS as areas that have the potential to be wetland (**Figure 2**). These areas were investigated to determine the presence or absence of wetlands.

A potential "wet spot" was identified by the NRCS in the southwest portion of the site. At this location, the area is a transition zone between an open field and forested, and the ground elevation slopes towards the northwest.

Sample point data (SP1U) was collected to document site conditions. Vegetation was dominated by Kentucky bluegrass (*Poa pratensis* – FAC), Canadian goldenrod (*Solidago canadensis* – FACU), and Allegheny blackberry (*Rhubus allegheniensis* – FACU) in the herbaceous stratum, choke cherry (*Prunus virginiana* – FACU) in the shrub stratum, and black cherry and ash-leaf maple/boxelder (*Acer negundo* – FAC) in the tree stratum. Soils at SP1U are composed of 6 inches of dark yellowish brown (10YR 3/4) silty clay loam, underlain by 4 inches of dark yellowish brown (10YR 4/4) loam. This was followed by 4 inches of yellowish brown (10YR 5/4) loam with 5% redoximorphic concentrations (10YR 4/4), and at least 8 inches of yellowish brown (10YR 5/4) clay loam with 20% redoximorphic concentrations (10YR 4/4). The soil profile does not meet the technical criteria for hydric soils. No primary or secondary hydrology indicators were present. None of the three wetland criteria were met, therefore the area is non-wetland.

Within the forested area in the northwest portion of the site, multiple NRCS “wet spots” were mapped. The forested appears to have been selectively logged in the past. There are multiple old logging roads in this area that have overgrown with grasses. It is anticipated that these grassed roads appear “greener” on aerial photographs and is likely the reason potential “wet spots” were marked here. Topography in the forest slopes relatively steeply towards the east and northeast. Sample point data (SP2U) was collected in the vicinity of the marked “wet spots.” Vegetation within the forest was dominated by Spotted crane’s bill/wild geranium (Geranium maculatum – FACU), Kentucky bluegrass, Pennsylvania sedge (*Carex pensylvanica* – UPL), Virginia spring beauty (*Claytonia virginica* – FACU), creeping buttercup (*Ranunculus repens* – FAC), hooded blue violet (*Viola sororia* – FAC), and Shawnee-salad/Virginia waterleaf (*Hydrophyllum virginianum* – FAC) in the herbaceous stratum; the shrub stratum was dominated by American elm (*Ulmus americana* – FACW) and the tree stratum was dominated by American elm, red maple (*Acer rubrum* – FAC), and northern red oak (*Quercus rubra* – FACU). Soils at SP2U are composed of 3 inches of dark brown (10YR 3/3) silt loam, underlain by 8 inches of dark yellowish brown (10YR 3/4) silt loam. This was followed by 4 inches of dark yellowish brown (10YR 3/6) silt loam, and at least 7 inches of dark yellowish brown (10YR 4/4) silt loam. The soil profile does not meet the technical criteria for hydric soils. No primary or secondary hydrology indicators were present. Although the hydrophytic vegetation criteria was met, hydric soils and hydrology was not present, therefore the area does not meet wetland criteria.

The field visit was conducted under temperature that were normal and precipitation conditions that were drier than normal as compared to the historical average for the region according to USDA Field Office Climate Data WETS tables from the Viroqua, WI Station in Vernon County (**Appendix C**). The drier than normal conditions did not hinder the investigation for wetlands.

From this field visit, it was concluded that no areas meeting the technical criteria for wetland are present within the area investigated.

Thank you for the opportunity to provide wetland services to the Vernon County Solid Waste Department. Short Elliott Hendrickson Inc. (SEH®) is pleased to provide you with this information for your records. If you have any questions, please contact me directly at 715-720-6263 or via e-mail at rwilde@sehinc.com.

Attachments
Figure 1 – Site Location & Topographic Map
Figure 2 – Wisconsin Wetland Inventory & Vernon County Soil Survey

Appendix A – Site Photographs
Appendix B – Wetland Determination Data Forms
Appendix C – Climate Summary Data

Path: C:\Users\mfalk\OneDrive - Short Elliott Hendrickson Inc\Desktop\2021 Projects\Vernon County Landfill - VERSW 157634\1 - Location and Topography.mxd

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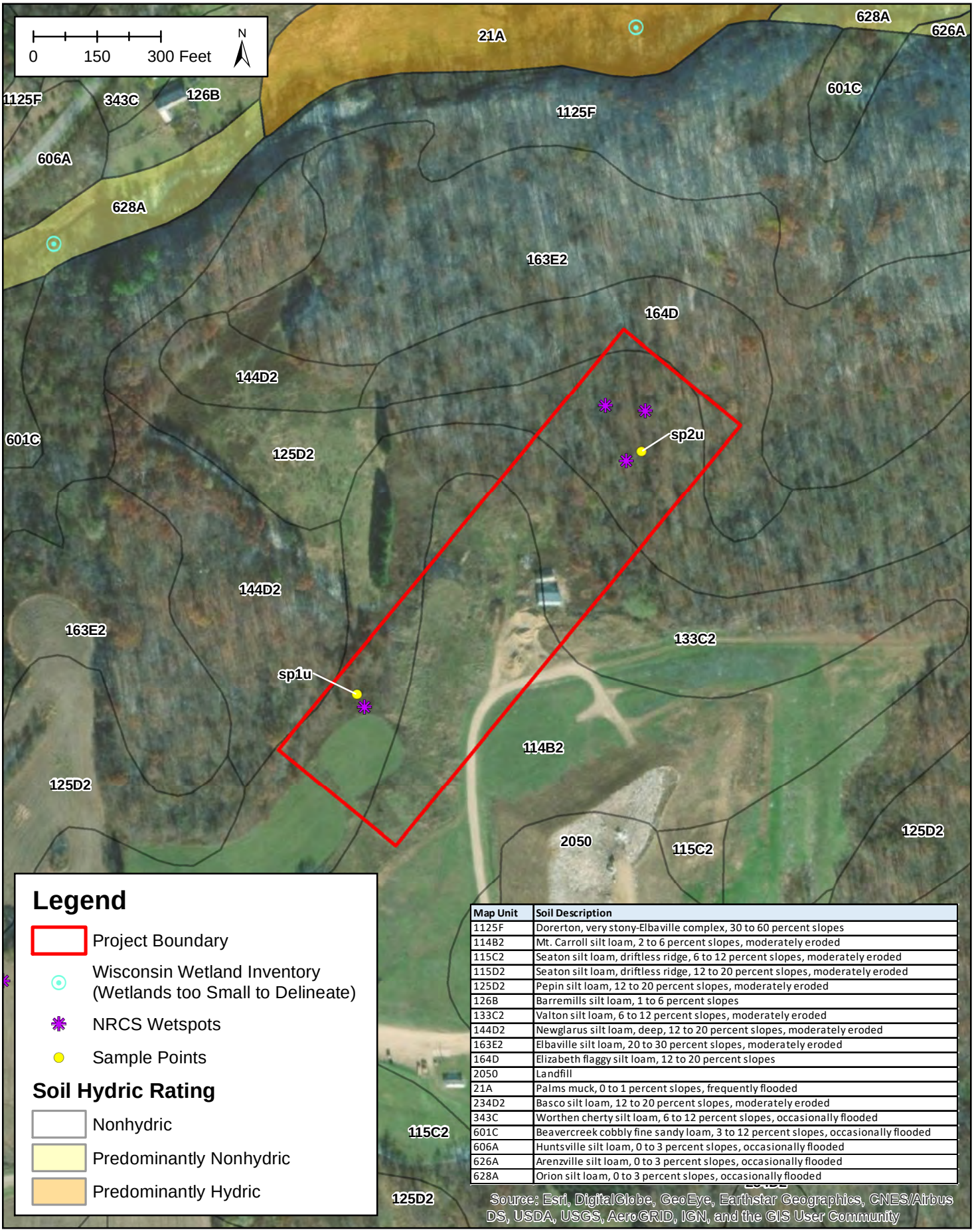
Project: VERSW 157634
Print Date: 6/1/2021

Map by: mfalk
Prj: WISCRS, Vernon Co (ft)
Source: WDNR, USGS, Vernon County

Site Location and Topographic Map
2021 Expansion Planning
Town of Viroqua, Vernon County, WI

Figure 1



Map Unit	Soil Description
1125F	Dorerton, very stony-Elbaville complex, 30 to 60 percent slopes
114B2	Mt. Carroll silt loam, 2 to 6 percent slopes, moderately eroded
115C2	Seaton silt loam, driftless ridge, 6 to 12 percent slopes, moderately eroded
115D2	Seaton silt loam, driftless ridge, 12 to 20 percent slopes, moderately eroded
125D2	Pepin silt loam, 12 to 20 percent slopes, moderately eroded
126B	Barremills silt loam, 1 to 6 percent slopes
133C2	Valton silt loam, 6 to 12 percent slopes, moderately eroded
144D2	Newglarus silt loam, deep, 12 to 20 percent slopes, moderately eroded
163E2	Elbaville silt loam, 20 to 30 percent slopes, moderately eroded
164D	Elizabeth flaggy silt loam, 12 to 20 percent slopes
2050	Landfill
21A	Palms muck, 0 to 1 percent slopes, frequently flooded
234D2	Basco silt loam, 12 to 20 percent slopes, moderately eroded
343C	Worthen cherty silt loam, 6 to 12 percent slopes, occasionally flooded
601C	Beavercreek cobbly fine sandy loam, 3 to 12 percent slopes, occasionally flooded
606A	Huntsville silt loam, 0 to 3 percent slopes, occasionally flooded
626A	Arenzville silt loam, 0 to 3 percent slopes, occasionally flooded
628A	Orion silt loam, 0 to 3 percent slopes, occasionally flooded

Path: C:\Users\mfalk\OneDrive - Short Elliott Hendrickson Inc\Desktop\2021 Projects\Vernon County Landfill - VERSW 157634\2 - WWI + Soil Survey.mxd

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Project: VERSW 157634
Print Date: 6/1/2021

Map by: mfalk
Prj: WISCRS, Vernon Co (ft)
Aerial Year: 2020
Source: WDNR, USDA

Wisconsin Wetland Inventory and Vernon County Soil Survey
2021 Expansion Planning
Town of Viroqua, Vernon County, WI

Figure 2

Photo 1 Upland field dominated by dandelion and clover in the southwest corner of the survey limits, facing southwest from the northern edge of the field

Photo 2 Northern edge of upland field (same as above photo), facing northwest

Photo 3 Transition zone between shrub area and forest located north of the upland field (see Photo 1), facing north towards Sample Point 1U

Photo 4 Upland area adjacent to Sample Point 1U; area dominated by species of Kentucky bluegrass, Canada goldenrod, blackberry, and raspberry

Photo 5 Old logging road within woods that appears to have been selectively cut in the past. In the northern portion of the site, photo taken facing northeast and approximately 50 feet inside the tree line. Trail slopes downward, towards the northeast.

Photo 6 Old logging road overgrown with grasses; the road slopes towards the northeast

Photo 7 Intersection of two logging roads within the woods, facing south from the vicinity of Sample Point 2U. The topography slopes towards the northeast, with the landfill seen in the background.

Photo 8 Typical understory found within the forested area. The forest is high in the landscape and vegetation is dominated by upland species.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 2021 Expansion Planning | City/County: Vernon County | Sampling Date: May 4, 2021

Applicant/Owner: Vernon County Solid Waste Department | State: Wisconsin | Sampling Point: SP1U

Investigator(s): Renee Wilde, SEH | Section, Township, Range: SW 1/4 Sec 15, T13N R4W

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex

Slope (%): 15% | Lat: 43° 35' 55.8" N | Long: 90° 50' 32.1" W | Datum: Vernon County Coordinates

Soil Map Unit Name: Valton silt loam, 6-12% slopes, moderately eroded (133C2) | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Per National Weather Service precipitation data and WETS table, climate conditions are "drier than normal"

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	*Prunus virginiana* -- *Choke Cherry*	15	Y	FACU
2	*Acer negundo* -- *Ash-Leaf Maple*	5	Y	FAC
3	--			
4	--			
5	--			
		20	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	*Prunus virginiana* -- *Choke Cherry*	15	Y	FACU
2	*Acer negundo* -- *Ash-Leaf Maple*	5	N	FAC
3	*Rubus allegheniensis* -- *Allegheny Blackberry*	5	N	FACU
4	*Lonicera tatarica* -- *Twinsisters*	5	N	FACU
5	--			
		30	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	40	Y	FAC
2	*Solidago canadensis* -- *Canadian Goldenrod*	30	Y	FACU
3	*Rubus allegheniensis* -- *Allegheny Blackberry*	15	N	FACU
4	*Taraxacum officinale* -- *Common Dandelion*	10	N	FACU
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		95	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 40.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column totals	145 (A)		530 (B)

Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2018 National Wetland Plant List:
U.S. Army Corps of Engineers 2018. National Wetland Plant List, version 3.4

SOIL **Sampling Point:** SP1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 3/4	100					Silty Clay Loam	
6-10	10YR 4/4	100					Loam	
10-14	10YR 5/4	95	10YR 4/4	5	C	M	Loam	
14-22+	10YR 5/4	80	10YR 4/4	20	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 2021 Expansion Planning | City/County: Vernon County | Sampling Date: May 4, 2021

Applicant/Owner: Vernon County Solid Waste Department | State: Wisconsin | Sampling Point: SP2U

Investigator(s): Renee Wilde, SEH | Section, Township, Range: SW 1/4 Sec 15, T13N R4W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex

Slope (%): 25% | Lat: 43° 36' 02.0" N | Long: 90° 50' 23.1" W | Datum: Vernon County Coordinates

Soil Map Unit Name: Pepin silt loam, 12-20% slopes, moderately eroded (125D2) | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

Per National Weather Service precipitation data and WETS table, climate conditions are "drier than normal"

VEGETATION -- Use scientific names of plants.

	Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	*Ulmus americana*	-- *American Elm*	25	Y	FACW
2	*Acer rubrum*	-- *Red Maple*	20	Y	FAC
3	*Quercus rubra*	-- *Northern Red Oak*	15	Y	FACU
4	*Fraxinus pennsylvanica*	-- *Green Ash*	10	N	FACW
5		--			
			70	= Total Cover	
	Sapling/Shrub stratum (Plot size: 15' Radius)				
1	*Ulmus americana*	-- *American Elm*	10	Y	FACW
2		--			
3		--			
4		--			
5		--			
			10	= Total Cover	
	Herb stratum (Plot size: 5' Radius)				
1	*Geranium maculatum*	-- *Spotted Crane's-Bill*	20	Y	FACU
2	*Poa pratensis*	-- *Kentucky Blue Grass*	15	Y	FAC
3	*Carex pensylvanica*	-- *Pennsylvania Sedge*	15	Y	UPL
4	*Claytonia virginica*	-- *Virginia Springbeauty*	10	Y	FACU
5	*Ranunculus repens*	-- *Creeping Buttercup*	10	Y	FAC
6	*Viola sororia*	-- *Hooded Blue Violet*	10	Y	FAC
7	*Hydrophyllum virginianum*	-- *Shawnee-Salad*	10	Y	FAC
8	*Ribes cynosbati*	-- *Eastern Prickly Goosebe*	5	N	FAC
9	*Anemone virginiana*	-- *Tall Thimbleweed*	5	N	FACU
10	*Trillium cernuum*	-- *Whip-Poor-Will-Flower*	5	N	FAC
			105	= Total Cover	
	Woody vine stratum (Plot size: 30' Radius)				
1		--			
2		--			
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across all Strata: 11 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 63.64% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	75	x 3 =	225
FACU species	50	x 4 =	200
UPL species	15	x 5 =	75
Column totals	185 (A)		590 (B)

Prevalence Index = B/A = 3.19

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Additional herbaceous species observed: Alliaria petiolata, Thalictrum dioicum, Sanguinaria canadensis

Note: This data sheet has been adapted to use the 2018 National Wetland Plant List:
U.S. Army Corps of Engineers 2018. National Wetland Plant List, version 3.4

SOIL

Sampling Point: SP2U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-3	10YR 3/3	100					Silt Loam	
3-11	10YR 3/4	100					Silt Loam	
11-15	10YR 3/6	100					Silt Loam	
15-22+	10YR 4/4	100					Silt Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Field Visit Date: May 4, 2021

		Long-term rainfall records							
	Month	**3 yrs. in 10 less than**	**Normal**	**3 yrs. in 10 more than**	**Rain fall**	**Condition: dry, wet, normal**	**Condition value**	**Month weight value**	**Product of previous two columns**
1st prior month*	April	2.56	3.72	4.44	0.62	1	Dry	**3**	3
2nd prior month*	March	0.92	1.77	2.16	1.86	2	Normal	**2**	4
3rd prior month*	February	0.51	1.02	1.23	0.79	2	Normal	**1**	2
								Sum	9

* Compared to field date

**Monthly data prior to field date

"Drier than Normal"

Note: If sum is

6-9	then prior period has been drier than normal
10-14	then prior period has been normal
15-18	then prior period has been wetter than normal

Condition va	=1
Dry	=2
Normal	=3
Wet	

Monthly Data between Specific Months
VIROQUA (WI)
USC00478827

To sort multiple columns, hold SHIFT while clicking on the columns.

Monthly Sum/Averages

Date	Precipitation (in)	Snowfall (in)	Avg. Max Temp (°F)	Avg. Min Temp (°F)	Avg. Mean Temp (°F)
Feb-2021	0.79	9.0	18.0	1.1	9.6
Mar-2021	1.86	3.4	47.5	28.4	38.0
Apr-2021	0.62	0.0	55.4	35.3	45.3
May-2021	M	M	M	M	M
Sum:	3.27	12.4			
Count:	3	3	3	3	3
Average:	1.09	4.1	40.3	21.6	31.0
Median:	0.79	3.4	47.5	28.4	38.0
Low Value:	0.62	0.0	18.0	1.1	9.6
High Value:	1.86	9.0	55.4	35.3	45.3

M = Missing

T = Trace

Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 5/6/2021 3:49:22 PM CDT

WETS Station: VIROQUA, WI

Requested years: 1971 - 2020

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	23.6	5.5	14.6	0.96	0.6	1.16	3	10.9
Feb	28.9	9.7	19.3	1.02	0.51	1.23	3	8.8
Mar	41.3	21.9	31.6	1.77	0.92	2.16	4	6.5
Apr	56.1	33.4	44.8	3.72	2.56	4.44	7	3.1
May	67.8	44.9	56.4	4.16	2.76	4.98	8	0
Jun	76.7	54.6	65.7	4.79	3.05	5.78	7	0
Jul	80.8	59	69.9	4.55	3.01	5.46	7	0
Aug	78.6	56.9	67.7	4.6	2.65	5.6	7	0
Sep	70.7	48.4	59.5	3.73	2.02	4.56	6	0
Oct	57.9	36.7	47.3	2.5	1.64	3.01	5	0.4
Nov	42	24.8	33.4	1.95	1.09	2.37	4	4.1
Dec	28.2	12.1	20.1	1.54	0.74	1.88	4	10.2
Annual:					31.23	39.5		
Average	54.4	34	44.2	-	-	-	-	-
Total	-	-	-	35.3			65	44.1

GROWING SEASON DATES

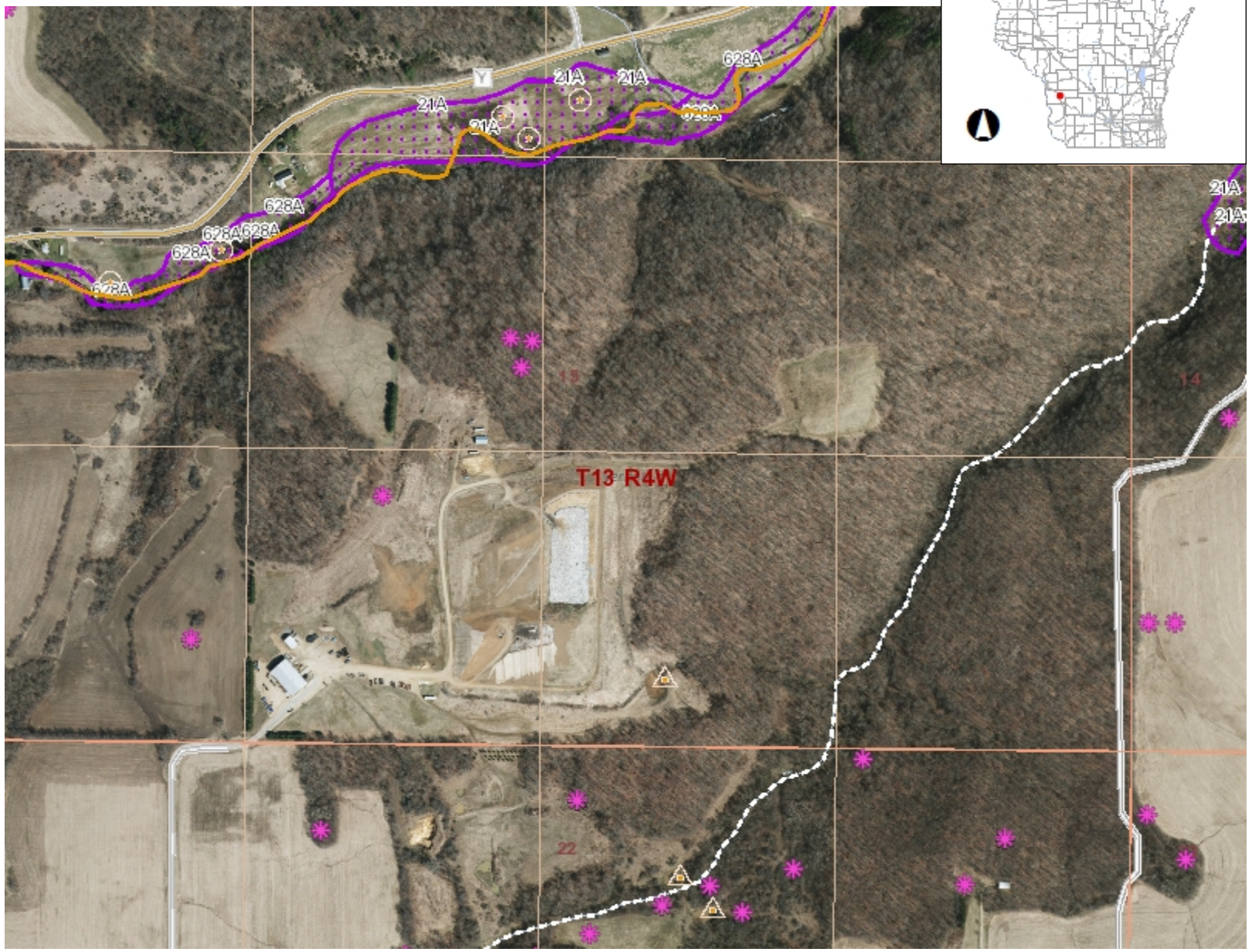
Years with missing data:	24 deg = 6	28 deg = 6	32 deg = 5
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0
Data years used:	24 deg = 44	28 deg = 44	32 deg = 45
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	4/14 to 10/20: 189 days	4/29 to 10/9: 163 days	5/7 to 9/30: 146 days
70 percent *	4/9 to 10/25: 199 days	4/24 to 10/14: 173 days	5/2 to 10/6: 157 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

Creation date: 2016-07-22

G-2 – Vernon County Surface Water Data Viewer Map

Surface Water Data Viewer Map



Legend

- PNW-ASNRI Sensitive Areas of Lakes
- PNW-ASNRI Wild and Scenic Rivers
- PNW-ASNRI Outstanding and Exceptional Streams
- PNW-ASNRI Trout Streams
- PNW-ASNRI Wild Rice Streams
- PNW-ASNRI Outstanding and Exceptional Lakes
- PNW-ASNRI Special Area Management Plan Streams
- PNW-ASNRI Special Wetlands Inventory Study Streams
- PNW-ASNRI Coastal Wisconsin Wetlands Streams
- PNW-ASNRI Special Area Management Plan Areas
- PNW-ASNRI Special Wetlands Inventory Study Areas
- PNW-ASNRI Coastal Wisconsin Wetlands Areas
- PNW-ASNRI Wild Rice Areas
- PNW-ASNRI Trout Spring Ponds
- PNW-ASNRI State Natural Areas
- PNW-PRF Other Public Rights Features
- PNW Musky Streams
- PNW Sturgeon Streams
- PNW Musky Areas
- PNW Sturgeon Areas
- PNW Walleye Areas

Notes

NRCS Wetspots

0.3 0 0.13 0.3 Miles

NAD_1983_HARN_Wisconsin_TM

1: 7,920

Appendix H

FAA Correspondence

H-1 – FAA Email Notification
H-2 – FAA Email Response

H-1 – FAA Email Notification

Building a Better World for All of Us®

October 23, 2020

RE: Vernon County Landfill
Proposed Landfill Expansion (WDNR License No. 3268)
SEH No. VERSW 157634 14.00

FAA Airport Division
AGL - 600
2300 East Devon Avenue
Des Plaines, IL 60018

Dear Sir or Madam:

Short Elliott Hendrickson Inc. (SEH) is submitting this letter on behalf of Vernon County to notify the Federal Aviation Administration (FAA), and other concerned parties, of the County's proposed expansion of the Vernon County Landfill (WDNR License No. 3268). This notification is being provided to meet the provisions and requirements outlined in the following State and Federal Rules and guidance:

- s. NR504.04(3)(e) Wisconsin Administrative Code
- 40 CFR 258.10 –Airport Safety
- 49 USC Section 44718(d), as amended by Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, Pub. L No. 106-181 (April 5, 2000)
- FAA Advisory Circular AC No. 150/5200-34A (January 26, 2006) : Construction or Establishment of Landfills Near Public Airports
- FAA Advisory Circular AC No. 150/5200-33B (August 28, 2007) : Hazardous Wildlife Attractants On Or Near Airports

The proposed Vernon County Landfill Expansion (Landfill Expansion) is located in the Southern Half of Section 12, T13N, R4W, Town of Viroqua, Vernon County, Wisconsin. The proposed horizontal landfill expansion encompasses approximately 10-acres due west and north and contiguous to the current permitted landfill. As shown the Attached Figure 1, "Site Location" the landfill expansion is located approximately 2.8 miles northeast of the closest runway at the Viroqua Municipal Airport and the existing landfill and expansion are not located in the approach or departure path for the airport.

The limitations of 49 USC Section 44718(d) apply to new municipal solid waste landfills (MSWLF's), which are defined as a municipal waste landfill that was established or constructed after April 5, 2000. Additionally, FAA Advisory Circular AC No. 150/5200-34A states that 49 USC Section 44718(d) does not apply to the expansion or modification of an existing MSWLF. The current active Vernon County Landfill was first constructed in 1993, therefore exempt from the limitations of 49 USC Section 44718(d).

As part of the last expansion process, Vernon County issued a letter to the FAA on May 29, 2002 notifying interested parties of their intention to expand. In a letter dated June 16, 2002 the FAA responded with a letter concurring with the proposal relative to compatibility standards contained in FAA Advisory Circular AC No. 150/5200-33, with the following conditions:

1. The landfill facility must be properly supervised to assure that the bird populations are not increasing and that appropriate control procedures are being followed.
2. Any increases in bird activity that might be hazardous to safe aircraft operations will result in prompt mitigation actions and/or closure of the landfill
3. The above conditions must be clearly defined via State/Local licensing procedures associated with establishment of the landfill.
4. The landfill owner/operator should develop and implement a Wildlife Hazard Management Plan for operation of the landfill.

A Wildlife Hazard Management Plan (Plan) was included in their Plan of Operation, which has been approved by the WDNR and part of the facility operating record. The Plan utilizes the following strategies:

- Minimization of standing water areas
- Minimization of uncovered waste areas
- Prompt revegetation of disturbed areas outside of the waste footprint
- Utilization of bird harassment techniques, perch deterrents, and avoidance structures, as needed

We understand that the FAA does not approve or disapprove of solid waste landfill locations but is primarily concerned about location relative to safety. We request that you review this letter and attachments and reply with your assessment of the proposed landfill expansion. Please contact me at 608.498.4844 with any questions or concerns.

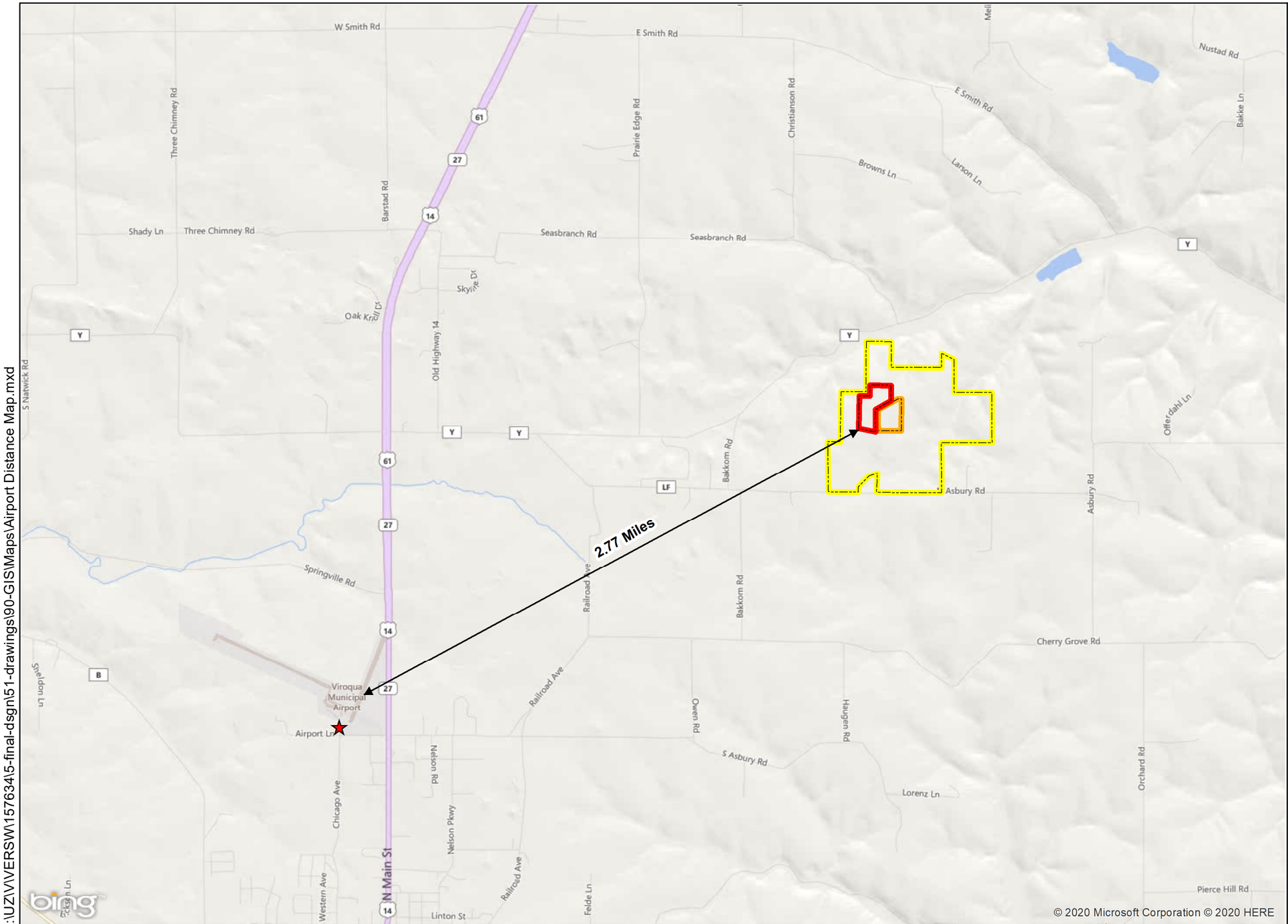
Sincerely,

SHORT ELLIOTT HENDRICKSON INC.

Brian L. Kent, CHMM
Project Manager

BLK
Attachment
c: Stacie Sanborn, Vernon County Solid Waste (electronic)
Stacey Miller, Wisconsin DOT, Bureau of Aeronautics
Michael Skildum, Viroqua Municipal Airport Manager
Darryl R. Heaps, SEH (electronic)

x:\uz\v\versw\157634\3-env-stdy-regs\isi_isr\faa_airport\versw_faa notification letter 10.23.2020.docx



Legend

- Landfill Property Boundary
- Active Landfill Limits
- Approximate Limits of Proposed Horizontal Landfill Expansion

N
W E
S

0 0.25 0.5 1 Miles

Source:
Vernon County, and WIDNR.
Projection:
Vernon County Coordinates, Feet
Map by:
rjh

Document Path: X:\UZ\V\VERSW\157634\5-final-dsgn\51-drawings\90-GIS\Maps\Airport Distance Map.mxd

SEH
10 North Bridge Street
Chippewa Falls, WI 54729
PHONE: (715) 720-6200
FAX: (715) 720-6300
WATTS: 800-472-5881
www.sehinc.com

PROJECT: VERSW157634

DATE: 10/20/2020

ISI REQUEST
VERNON COUNTY LANDFILL
(WIDNR LICENSE NO.3268)

Distance to Viroqua Municipal Airport

Figure 1

H-2 – FAA Email Response

From: Beauchamp, Bobb (FAA)
To: Brian Kent
Subject: RE: Vernon County Landfill
Date: Friday, March 19, 2021 2:20:11 PM

Mr. Kent,

This email is responding to your October 23, 2020 notification of a proposed horizontal expansion at the Vernon County Landfill. Your notification was to meet provisions and requirements of:

- s. NR504.04(3)(e) Wisconsin Administrative Code
- 40 CFR 258.10 –Airport Safety
- 49 USC Section 44718(d), as amended by Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, Pub. L No. 106-181 (April 5, 2000)
- FAA Advisory Circular AC No. 150/5200-34A (January 26, 2006) : Construction or Establishment of Landfills Near Public Airports
- FAA Advisory Circular AC No. 150/5200-33B (August 28, 2007) : Hazardous Wildlife Attractants On Or Near Airports

This e-mail of course only responds on behalf of the FAA and the Federal provisions shown above.

We concur with your conclusion that the provisions of 49 USC 44718(d) do not apply to this proposed expansion of the Vernon County Landfill. These provisions specifically do not apply to landfills that were constructed or in operation prior to April 5, 2000. The Vernon County Landfill was first constructed in 1993. In addition, the Viroqua Airport does not have regularly scheduled service in addition to general aviation operations, so the provisions of FAA AC 150/5200-34A, Construction or Establishment of Landfills Near Public Airports do also not apply.

Regarding the provisions of FAA Advisory Circular No 150/5200-33B, Hazardous Wildlife Attractants On Or Near Airports: The Landfill is outside the 10,000' area of primary concern identified in the AC. While FAA encourages the Landfill to continue its efforts under their Wildlife Hazard Management Plan, we recognize that FAA does not have regulatory or approval authority over the Landfill in this regard.

Based on the above, FAA has no objection to the proposed expansion at the Vernon County Landfill. Please feel free to contact me if you have any questions or additional concerns.

From: Brian Kent <bkent@sehinc.com>
Sent: Thursday, March 18, 2021 4:02 PM
To: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Subject: RE: Vernon County Landfill

Thank you

Brian L. Kent, CHMM
Principal, Project Manager
Short Elliott Hendrickson Inc.
715.456.4621 mobile | 608.498.4844 direct
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From: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Sent: Thursday, March 18, 2021 1:46 PM
To: Brian Kent <bkent@sehinc.com>
Subject: RE: Vernon County Landfill

Brian, I apologize for not getting back to you. I'll do my best to get you a more formal response by end of day tomorrow.

From: Brian Kent <bkent@sehinc.com>
Sent: Thursday, March 18, 2021 1:38 PM
To: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Subject: FW: Vernon County Landfill

Hi Bobb-
I apologize for my persistence but I am following up to check on the status of your response. Your response is needed as part of our permitting process and we are needing to get this to the WDNR in the very near future. Please reply at your earliest convenience. Thank you.

Brian L. Kent, CHMM
Principal, Project Manager
Short Elliott Hendrickson Inc.
715.456.4621 mobile | 608.498.4844 direct
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From: Brian Kent
Sent: Tuesday, March 2, 2021 9:55 AM
To: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Subject: RE: Vernon County Landfill

Hi Bobb-
I hope all is well. Just following up with the below email correspondence. I have not received a formal response and wondering if it perhaps was misplaced? Thanks much.

Brian L. Kent, CHMM
Principal, Project Manager
Short Elliott Hendrickson Inc.
715.456.4621 mobile | 608.498.4844 direct
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From: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Sent: Tuesday, December 29, 2020 3:08 PM
To: Brian Kent <bkent@sehinc.com>
Subject: RE: Vernon County Landfill

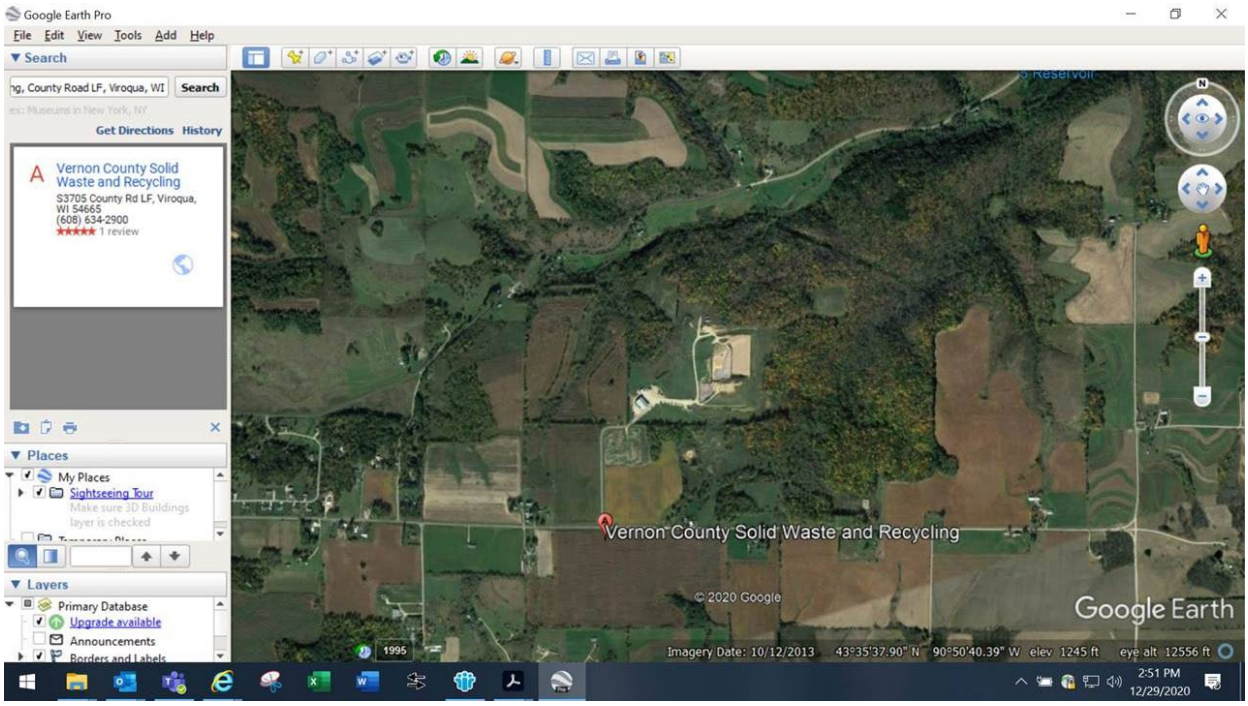
Great, that's the same facility I'm looking at.

Informally the expansion is exempt from 49 USC Section 44718(d) for 2 reasons: the expansion is of an existing landfill, and the Viroqua airport does not have regularly scheduled service in addition to general aviation. It's also outside the 10,000' area of primary concern put forth in FAA's Advisory Circular 150/5200-33B.

I'll work on a formal response email later this week.

From: Brian Kent <bkent@sehinc.com>
Sent: Tuesday, December 29, 2020 2:53 PM
To: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Subject: RE: Vernon County Landfill

Yes- below is a screen shot of what shows up for me.



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From: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Sent: Tuesday, December 29, 2020 2:14 PM
To: Brian Kent <bkent@sehinc.com>
Subject: RE: Vernon County Landfill

Hi Brian,

I'm also working remotely, and it's been impacting my normal ability to evaluate landfill requests such as this. Can you confirm that the facility identifies as Vernon County Solid Waste and Recycling on Google Earth?

From: Brian Kent <bkent@sehinc.com>
Sent: Tuesday, December 29, 2020 1:52 PM
To: Beauchamp, Bobb (FAA) <Bobb.Beauchamp@faa.gov>
Subject: Vernon County Landfill

Bobb-
Attached is the letter SEH issued on October 23, 2020 providing notification of Vernon County's plan to expand their existing municipal waste landfill. I had not heard anything yet so I figured I better check on the status. Please feel free to contact me to discuss should you have any questions or issues. Please note I am working remotely due to COVID. If you prefer to call, please call my cell number at 715.456.4621. Also, if you already responded by mail it is possible that I have not received it yet since it takes a while to get my mail with our office being closed. Thanks in advance for your response.

Brian L. Kent, CHMM
Principal, Project Manager
Short Elliott Hendrickson Inc.
715.456.4621 mobile | 608.498.4844 direct
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