

Project Summary and Environmental Analysis for the Proposed Vernon County Landfill Eastern Expansion

General Facility Information

Proposed Facility: Proposed Vernon County Landfill Eastern Expansion
License No. 3268
Facility Identification Number (FID) 663038310

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Licensee/Property Owner: Vernon County

Facility Location: SE ¼ of the SW ¼ and SW ¼ of the SE ¼ of Section 15, T13N, R4W, Town of Viroqua, Vernon County, Wisconsin

Facility Description

The existing Vernon County Landfill (existing landfill, license No. 3268) is located on approximately 250 acres of contiguous property owned by Vernon County. The proposed Eastern Expansion (proposed expansion would be on the same property and contiguous to the exiting landfill.

The proposed expansion would expand the existing landfill both horizontally and vertically. The proposed expansion's horizontal component is approximately 4.0-acres and would be located due east and contiguous to Phases IV through VI of the existing landfill. The proposed expansion's vertical overlay on top of Phases IV through VI of the existing landfill is approximately 5.0-acres. The total acreage of the proposed expansion is approximately 9.0-acres. The existing landfill's footprint is approximately 11.0-acres. The existing landfill plus the proposed expansion would result in a total landfill footprint of approximately 15.0-acres.

The proposed expansion would have a design capacity of approximately 427,355 cubic yards (CY). The design capacity is based on a maximum 15-year site life.

Primary Service Area

The proposed expansion would serve all municipalities, commercial businesses, and industry located within Vernon County, which includes 21 townships, 9 villages, and three cities. Based on population estimates from the Wisconsin Department of Administration, the estimated population of Vernon County at the start of 2023 was 30,914.

Proposed Waste Types and Leachate Characteristics

It is anticipated that the future waste types accepted at the proposed expansion would remain similar to the waste currently being accepted at the existing landfill. Slight changes may occur as the result of improvement to national, regional, and local recycling initiatives, such as food wastes or other high organic waste streams being diverted. Approximately 17,327 tons of waste was placed in the existing landfill in 2022. Of this tonnage, approximately 94% was municipal solid waste (MSW), 5% was construction & demolition (C&D) material, and less than 1% was alternate daily cover (ADC) materials.

Special waste is accepted at the existing landfill and is planned to be accepted at the proposed expansion. Special wastes are wastes that have certain characteristics that require prior review or special handling. Special waste may be non-municipal solid waste types that are not disposed of on a recurring basis. To accept special waste, landfills develop and implement a Special Waste Management Plan as a screening procedure to determine if the waste is suitable for disposal. Prior to accepting special wastes at the proposed expansion, each waste type and generator would be reviewed in accordance with Vernon County's approved Special Waste Management Plan to ensure the material is appropriate for disposal and would not negatively impact landfill operations. Special waste sources that are not appropriate would be rejected as part of the landfill expansion application process and would not be received at the proposed expansion.

Leachate analytical data has been collected since inception of the existing landfill as part of its ongoing monitoring program. Leachate from the proposed expansion is expected to be similar in composition and concentration to leachate from the current landfill due to the similarities in waste composition.

Relevant Approvals/Permits

The following approvals and permits are required for the proposed expansion:

- Favorable feasibility determination under ch. NR 512, Wis. Adm. Code
- Plan of operation approval under ch. NR 514, Wis. Adm. Code
- Construction documentation approval under ch. NR 516, Wis. Adm. Code
- Air permit(s) under NR 400, Wis. Adm. Code, Series (operating and construction)
- Amendment of the Storm Water Pollution Plan (SWPPP) for the facility's Tier 2 Industrial Storm Water Permit
- Local Negotiated Agreements with all participating affected municipalities and compliance with all applicable local rules and approvals. This process is independent from the department plan review process.

The affected municipalities as defined under s. 289.01(1), Wis. Stats, in the area of the proposed expansion, include the Town of Viroqua and Vernon County. Notifications to the affected municipalities regarding the proposed expansion were sent on June 1, 2022. Copies of the notification letters and responses from the affected municipalities are included in Appendix C of the feasibility report. Vernon County is also the owner of the existing landfill and proposed expansion, and therefore not allowed to negotiate as an affected municipality.

Proposed Exemptions

Vernon County has requested exemptions from the following Wisconsin Administrative Code (Wis. Adm. Code) requirements. Decisions regarding whether to approve the proposed exemptions will be made at the time of the feasibility determination.

1. Multiple exemptions to Wis. Adm. Code that pertain to geotechnical testing requirements.

The existing landfill has been used as a landfill and licensed under department chapters 500 through 538, Wis. Adm. Code since the early 1990s. Subsurface conditions at and near the existing landfill were evaluated prior to feasibility determinations in 1992 and 2004. Some of the geotechnical information collected during these investigations is also relevant to the area of the proposed expansion, and this existing information was available to supplement the additional data collected for the current proposed expansion.

An Alternative Geotechnical Investigation Program (AGIP), as outlined in s. NR 512.085, Wis. Adm. Code, was requested by Vernon County. The department accepted the proposed AGIP in a letter dated March 30, 2022. The final decision regarding the AGIP will be included in the feasibility determination.

Vernon County is requesting the following exemptions associated with the AGIP (although these items are requested as exemptions, if approved the items technically would not be exemptions but would instead be considered accepted modifications consistent with an AGIP, pending the final decision of the AGIP in the feasibility determination).

- a. An exemption from **s. NR 507.05(1)(e), Wis. Adm. Code**, which requires retention of soil samples until the department approves the report that included documentation of the soil samples. The soil samples from the historic borings utilized for the AGIP have not been retained. The borings were completed during previous permitting processes or investigations and approved by the department.
- b. An exemption from **s. NR 507.05(2), Wis. Adm. Code**, which requires collection of continuous core samples in bedrock. Vernon County stated that previous attempts to core bedrock have been unsuccessful due to weathering, existing fractures, and layered heterogeneity of dolomite, dolomitic sandstone, and siltstone. Vernon County proposed that bedrock coring initially be attempted at only one drilling location (MW-14WT). The bedrock coring attempt at MW-14WT was unsuccessful. Therefore, in lieu of bedrock coring, downhole geophysical logging (gamma logging down groundwater monitoring wells) was used to evaluate bedrock. The downhole geophysical logging did not provide adequate information. Therefore, exposed bedrock faces at nearby quarries that are of the same formation and elevation as those observed in the subsurface at the landfill were also examined to assess bedrock characteristics.
- c. Exemptions from **ss. NR 507.14 and NR 140.23, Wis. Adm. Code**, which require that soil boring information be presented on department forms and include the information listed in s. NR 507.14(2), (3) and (4), Wis. Adm. Code. Some data from historical files are not available; however, some historical soil boring descriptions are presented on geological figures in historical files. Vernon County is requesting an exemption for the use of all historical logs presented in the feasibility report, if appropriate, to assist in the overall site interpretation.
- d. An exemption from **s. NR 512.09, Wis. Adm. Code**, which specifies minimum numbers of borings, wells, and associated analyses for proposed landfills. Vernon County is requesting an exemption to allow the use of previously collected data to meet the requirements of s. NR 512.09, Wis. Adm. Code. Use of this data would include, but not be limited to, the following: field hydraulic conductivity tests completed on the existing wells, including those wells which have been abandoned; grain size analysis, Atterberg limits, soil classification, and laboratory hydraulic conductivity from past investigations; soil boring logs from past investigations; and existing groundwater quality data as background data.

- e. An exemption from **s. NR 512.11(2) Wis. Adm. Code**, which requires that geological cross-sections be constructed through all borings. Given the amount of historic boring and monitoring well available, Vernon County proposes to construct cross-sections only through the borings and wells that assist in defining the lateral and vertical extent of the major lithostratigraphic units, including all borings that characterize the subsurface within 300 feet of the proposed expansion.
2. Vernon County is requesting exemptions to **ch. NR 140, Wis. Adm. Code**, which establishes groundwater quality standards for a list of substances that need to be met at their designated point of standards application for the proposed facility. Section NR 140.28 (1), Wis. Adm. Code, states that the department may not approve a proposed facility at a location where a Preventive Action Limit (PAL) or an Enforcement Standard (ES) has been attained or exceeded in groundwater unless an exemption has been granted. Sections NR 140.28 (2) through (4), Wis. Adm. Code, provide the criteria for granting exemption where background concentrations of substances exceed their respective groundwater quality standards.
3. Vernon County is requesting an exemption from **s. NR 504.06(3)(h), Wis. Adm. Code**, which requires that the clay component of a liner in adjacent phases be keyed together using a minimum of 4 steps, with the total width of the spliced area measuring a minimum of 15 feet. Vernon County is requesting that the clay tie-in be performed with 4 steps over a 5-foot distance to minimize disruption to in-place waste and composite clay and geomembrane base liner.
4. Vernon County is requesting an exemption from **s. NR 504.09(2)(h), Wis. Adm. Code**, which requires that the final slopes of landfills not exceed 4 horizontal to 1 vertical. Vernon County requests the exemption to temporarily allow final outboard fill slopes to exceed 4 horizontal to 1 vertical. The proposed modification is to allow maximum intermediate waste filling grades that are slightly higher than the approved final waste grades in areas of the landfill that have not received final cover. Vernon County is requesting approval for the maximum intermediate waste grades to be 5 percent higher than the final waste grades when compared to the total depth of waste at a given location. At no time during the operating life of the existing landfill or proposed expansion would the waste volume exceed the permitted capacity. This modification would not change the final waste grades, the permitted capacity, or the closure sequencing for the existing landfill or proposed expansion. Geotechnical slope stability analysis would account for 5% overfill grades and would be completed in the plan of operation.

Land Use and Zoning

The existing landfill and proposed expansion property is located within the Town of Viroqua jurisdictional boundary. According to the Town of Viroqua Clerk, the township has adopted a zoning ordinance which is available on their website. Based on review of the draft ordinance and zoning map (Town of Viroqua 2017) on the website, the existing landfill and proposed expansion property is located in a “Special Purpose District.” Permitted uses in the special purpose district, so long as such sites are secured in a sufficient manner to ensure public and environmental safety, including meeting all applicable state or federal standards and laws, include the following uses: landfills and former landfills; junk yards; and, chemical, biological, and/or hazardous material production or handling.

The proposed expansion is located approximately 2.7 miles (>15,840 feet) northeast of the closest runway at the Viroqua Airport and is not located in the approach or departure path for the airport. In a 2021 email, the Federal Aviation Administration (FAA) confirmed that the proposed expansion is exempt from the requirements of 49 USC Section 44718(d) and encouraged the continued use and implementation of a wildlife hazard management plan that is part of the existing landfill’s plan of operation.

Current zoning would not require special applications or variances to facilitate the proposed expansion. Since the entire proposed expansion footprint is located on Vernon County property, and does not require a purchase of agricultural property, an Agricultural Impact Statement would not be required.

The proposed expansion is not located in a floodplain, conservancy, or shore land. Therefore zoning ordinances relating to these instances are not applicable.

Regional and Site-Specific Geological Information

Soils and Geology

Regional Characteristics

Unconsolidated deposits in the vicinity of the proposed expansion generally consist of alluvium in the river and stream channels and terraces deposited during Holocene time. These soils are typically fine-grained and range from clays to medium sands. The proposed expansion is situated in the driftless zone of southwestern Wisconsin. As a result, unconsolidated materials away from stream channels are generally associated with windblown deposition or mass wasting that occurred during the Late Pleistocene.

Rolling topography along the lower slopes of the Paleozoic bedrock ridges is evidence of the downslope movement of the primarily sandstone and dolostone bedrock due to mass wasting processes. Colluvium deposits are generated from the weathering and subsequent re-deposition of materials comprising the sandstone and dolostone bluffs in the region. A thin layer of loess (silt) is often found on the surface or buried below colluvium across the region. Residuum deposits are generated from in-place weathering of sandstone and dolostone bedrock. Thickness of unconsolidated deposits in the vicinity of the proposed expansion ranges from 0 to 50 feet in upland areas, to over 200 feet in stream valleys.

Regional bedrock geology generally consists of Paleozoic sedimentary beds overlying pre-Cambrian basement rock. The Paleozoic rock units generally have a regional dip to the southwest at a rate of approximately 10 feet per mile, which largely parallels the Precambrian surface. The primary uppermost sedimentary bedrock units in Vernon County within the vicinity of the proposed expansion consist of Ordovician aged dolostone, sandy dolostone, and dolomitic sandstone of the Oneota and Shakopee Formations (Prairie du Chien Group). The Prairie du Chien Group dolomite formations in the area of the site are overlain and infilled in places by a sandstone formation that is either a member of the Ordovician St. Peter sandstone or part of the New Richmond Member of the Shakopee formation. The Prairie du Chien Group is underlain by the Cambrian aged sandstone and dolomitic siltstone of the Jordan Formation and St. Lawrence Formation (of the Trempealeau Group), the glauconitic sandstone of the Lone Rock Formation (of the Tunnel City Group), and the quartz sandstone of the Wonewoc Formation (of the Elk Mound Group).

Based on regional publications, the bedrock encountered at the proposed expansion is the Prairie du Chien Group. Observed at the proposed expansion but not documented in the publications cited in the feasibility report is a separate sandstone layer that overlays and infills portions of dolomite bedrock from the Prairie du Chien Group. This sandstone is either part of the New Richmond Member of the Shakopee Formation (Prairie du Chien Group) or part of the St. Peter Sandstone Formation (Ancell Group). Based on boring logs from the City of Viroqua municipal wells, the Jordan Sandstone should occur approximately 250 feet below ground surface (bgs) near the proposed expansion.

The Prairie du Chien Group consists of the upper Shakopee Formation and the lower Oneota Formation. The Shakopee Formation is further divided into the Willow River and New Richmond members. The Oneota Formation is further divided into the Hager City and Stockton Hill members. The Stockton Hill Member is the

basal member of the Prairie du Chien Group and is characterized by silty to sandy dolostone and dolomitic sandstone. The Hager City Member is characterized by thin to medium beds of laminated and stromatolitic dolostone with little to no silt or sand. The New Richmond Member is characterized by fine-grained, feldspathic quartz sandstone. The Willow River Member is the upper-most member of the Prairie du Chien Group and is characterized by stromatolitic and wavy laminated sandy dolostone.

The Jordan Formation has not been encountered during on-site drilling at the proposed expansion but underlays the Prairie du Chien Group. The Jordan Formation is characterized by a quartz-rich sandstone with medium to large-scale sets of cross-stratification.

Site Characteristics

The uppermost site geologic units have been defined in reference to four primary depositional environments as follows: unconsolidated deposits including loess and residuum; saprolite; poorly consolidated sandstone bedrock; and dolostone bedrock. For purposes of site characterization, saprolite refers to weathered bedrock retaining details or structural features of the bedrock, and residuum, while also formed from bedrock, no longer retains the structural features or details of its bedrock and represents a true unconsolidated deposit.

Unconsolidated deposits at the proposed expansion consist of loess and residuum deposits overlying dolostone and sandstone bedrock. In some areas, saprolite separates the unconsolidated deposits from the dolostone bedrock below. Generally, the more competent saprolite and dolostone bedrock are distinguished by refusal during standard penetration testing.

The total thickness of unconsolidated sediments identified within borings completed within 300 feet of the proposed expansion ranges from approximately 14.0 feet to 79.5 feet. The variability in unconsolidated soil thickness is a result of the land surface topography and the topography of the upper bedrock surface. In general, the residuum is thicker within valleys due to greater weathering occurring as water moves downslope away from more resistant bedrock that forms ridges in the area.

Loess soils in the vicinity of the proposed expansion consist of windblown fine-grained sediment deposited during the Late Pleistocene. These deposits are discontinuous at the site, particularly because most loess has been removed as part of site development. Where present, loess deposits can generally be described as light brown to brown to gray, clayey silt to silty clay to clay with silt (Unified Soil Classification System [USCS]) classification ML to CL). Thickness of loess soils in the vicinity of the proposed expansion range from 0 to 10 feet with the greatest thickness found along ridges in undeveloped portions of the existing landfill and proposed expansion property.

Residuum deposits at the proposed expansion site were generated from the weathering of the underlying dolostone bedrock. Although residuum originates from bedrock, the extent of weathering has removed all bedrock structure and it is therefore considered an unconsolidated deposit. The residuum can be generally described as brown to red brown to red, clay (CL) with trace sand and gravel to clayey sand (SC) with trace gravel.

Saprolite at the proposed expansion site was generated from the weathering of the underlying dolostone bedrock. Unlike residuum, the saprolite unit still holds the original bedrock structure and is therefore more similar to bedrock than an unconsolidated deposit. The saprolite can be generally described as weathered dolostone to weathered dolostone with silty sand to weathered dolostone with clay. As with the residuum, the physical variability of the saprolites is due to layering within the original bedrock prior to weathering. Since the saprolite unit still holds the original bedrock structure, the top of the saprolite surface, where it is present, would be used for bedrock separation for the proposed subbase elevations.

The uppermost bedrock formation in the vicinity of the proposed expansion appears to be the Ordovician-aged Prairie du Chien Group, with the exception of Ordovician-aged sandstones that overlay and infill the dolomites of the Prairie du Chien group in some areas. The sandstone infills appear to be primarily in an east-west trending channel carved in the dolomite surface near the southern boundary of the proposed expansion area. All borings installed to investigate the proposed expansion area terminate within the lower part of the Prairie du Chien Group;

Fractures and small vugs are noted within the Prairie du Chien formation dolomites at the site. No significant voids or large cavities were noted in the borings advanced during the feasibility investigations. Some historical voids have been infilled with soils (primarily clays). The presence of fractures is commonly noted in carbonate rocks. Visits to nearby quarries confirm the presence of a network of small fractures in the carbonate bedrock. Fracture networks are a typical conduit for groundwater flow through a carbonate aquifer.

Hydrogeology

Regional hydrogeologic reports recognize six hydrogeologic units in Vernon County within the vicinity of the proposed expansion: 1) St. Peter-Prairie du Chien-Jordan aquifer, 2) St. Lawrence-Lone Rock confining unit, 3) Wonewoc aquifer, 4) Eau Claire confining unit, 5) Mt. Simon aquifer, and 6) Precambrian confining unit.

Within Vernon County, the St. Peter-Prairie du Chien-Jordan aquifer is typically the uppermost aquifer but has a limited potential as a source of drinking water. Well yields from this formation are reported to average less than 15 gallons per minute (gpm). Therefore, this aquifer typically provides sufficient yield for individual domestic wells, but not public supply wells. Domestic well logs within the vicinity of the proposed expansion confirm this with maximum construction depths of 300 feet, which places them within the St. Peter-Prairie du Chien-Jordan aquifer.

The deeper aquifers of the Wonewoc Formation and the Mt. Simon Formation can yield more than 500 gpm, and therefore these aquifers are typically used for public supply wells. The closest municipal well (Viroqua's Well No. 5) is located approximately 2.7 miles southwest of the proposed expansion and draws its water from both the Wonewoc and Mt. Simon aquifers.

In the vicinity of the proposed expansion, the St. Peter-Prairie du Chien-Jordan aquifer system is typically hydraulically connected to streams because of steep topography within the region. The degree of this connection, however, is affected by the permeability of the deposits comprising the aquifer. The most permeable deposits have the greatest connection to streams, but the connection decreases with decreasing permeability.

Groundwater in the aquifer system moves from recharge areas at or near the outcrop of the aquifer to discharge areas, which is regionally the Kickapoo River and its tributaries. In the vicinity of the proposed expansion, the main discharge area is north of the site at Seas Branch Creek. Regional groundwater in the vicinity of the site flows primarily to the north to northeast, towards Seas Branch Creek.

The majority of the regional groundwater flow within the Cambrian aquifer system occurs within the Mt. Simon aquifer which is generally under a leaky artesian (confined) system and moves toward the Mississippi River, the regional discharge area. Although individual aquifers in the system are separated by confining units that may be much less permeable than the aquifers, some water moves vertically through these confining units. Hydraulic heads in the individual aquifers of the Cambrian aquifer system generally are at successively lower altitudes, which indicated that water moves vertically downward into the aquifer system in most areas. Depth to the water table in the vicinity of the proposed expansion depends largely on topography and ranges from 0 to almost 200 feet bgs. The extreme depths occur in regions where the water table is near the surface in valleys and is deep below ridges.

Groundwater Flow and Gradients

The deepest borings installed to investigate the existing landfill and proposed expansion area terminate within the basal member of the Prairie du Chien Group, meaning that the St. Peter-Prairie du Chien-Jordan aquifer is the primary hydrogeologic unit monitored at the existing landfill and proposed expansion area. Groundwater is encountered primarily within the competent bedrock layers (dolostone and sandstone), with the exception of the area around the MW-16 well nest where the residuum layer extends below the perched and regional water tables.

Previous investigations at the existing landfill and current investigations of the proposed expansion area have identified a perched aquifer overlying a regional aquifer. The perched aquifer generally flows toward the south/southeast across the proposed expansion area, while the regional aquifer flows toward the northeast. Investigations performed during the current feasibility assessment have shown that an area of the perched aquifer water table dissipates to the east of the proposed expansion area and transitions into the underlying regional water table. This transition area corresponds with a valley in the dolomite bedrock where weathered bedrock extends deeper and the lithology changes from dolomite to sandstone. In the area where the perched water dissipates downward to the regional aquifer, localized mounding is formed on the regional water table. The transition area appears to be defined by gradient flow and appears typical of flow in a porous or relatively uniform fractured aquifer. The perched water transition zone can be roughly defined by observations at the following groundwater monitoring well locations.

- Dry at MW-15WT and MW-16WT.
- No perched water at MW-19.
- Perched water table well MW-20WT (screened in sandstone) confirmed the approximate edge of the perched system with the ability to be purged dry with slow seepage to recharge.
- Regional water table well MW-20 (screened in sandstone) confirmed the presence of the regional water table under MW-20WT. Recharge characteristics in MW-20 are similar to those of other regional water table wells.
- Perched water was identified at an approximate elevation of 1,220 feet mean sea level (MSL) in soil boring B-22 within the proposed expansion footprint.

Two of the wells (MW-15WT and MW-16WT) installed as part of the investigations of the proposed expansion area have remained dry. Although dry wells would appear to have limited value for hydrogeologic investigation purposes, the fact that the wells are dry provided information to understanding the site hydrogeology, particularly in reference to the perched groundwater system and the area where the perched water system dissipates to the regional aquifer. Groundwater MW-20WT, screened in the perched aquifer, can be bailed dry and has slow recharge relative to other perched aquifer wells, indicating it appears to be on the margin of the zone where the perched aquifer dissipates to the regional aquifer.

The perched water table surface slopes generally from north to south-southeast across the proposed expansion area. The highest perched water table elevations are along the northern boundary of the existing landfill and proposed expansion area. The lowest perched water table elevations are on the southeastern edge of the proposed expansion area within a bedrock valley. The perched water table flows to the south-southeast with significant head loss within the southeast edge of the proposed expansion area surrounding groundwater monitoring well MW-16WT and south of groundwater monitoring well MW-15WT, where the perched water table dissipates to the underlying regional water table as described above.

The regional water table surface slopes generally from south to northeast across the proposed expansion area. The highest regional water table elevations are along the southeastern edge of the proposed expansion near groundwater monitoring well MW-16WT and southern boundary of the existing landfill. The lowest regional

water table elevations are on the northeastern edge of the proposed expansion area. The regional water table merges with the overlying perched water table at higher elevations within the southeast edge of the proposed expansion area near groundwater monitoring well MW-16. Some mounding of the regional water table is noted within this merger zone.

Deeper potentiometric groundwater conditions indicate a flow pattern similar to the regional water table conditions with the highest elevations to the south and the lowest elevations to the northeast.

The horizontal hydraulic conductivity of the water bearing formations vary widely (2.4×10^{-5} centimeters per second [cm/sec] to 6.7×10^{-2} cm/sec); therefore, the wells have been grouped into perched water table wells, regional water table wells, and piezometers. Hydraulic conductivity values for each zone are as follows.

- **Perched Water Table Wells:** Hydraulic conductivity values in perched water table wells screened within dolostone vary between 6.34×10^{-4} cm/sec to 1.18×10^{-2} cm/sec. The two perched water table wells screened in sandstone had hydraulic conductivity values of 2.43×10^{-5} cm/sec and 2.43×10^{-3} cm/sec. Values are variable but likely reflect some heterogeneities in the geologic conditions at the perched water table. The hydraulic conductivity test results generally show typical recharge curves, indicating the formations appear to be responding to testing as porous or fractured media without turbulent flow.
- **Regional Water Table Wells:** Hydraulic conductivity values for wells screened in dolostone range from 1.18×10^{-5} cm/sec to 6.67×10^{-2} cm/sec with a geometric mean of 1.84×10^{-3} cm/sec, which is reflective of variable geologic conditions (variations from hard to sandy dolostone, possible changes in degree of fracturing) within the dolostone aquifer at the regional water table. The two regional water table wells screened in sandstone had hydraulic conductivity values of 2.94×10^{-5} cm/sec and 1.04×10^{-4} cm/sec. The relatively low hydraulic conductivity of the sandstone appears to reflect the fine-grained texture of the unit. Overall, the hydraulic conductivity of the regional aquifer is about one order of magnitude lower than the perched aquifer.
- **Piezometers:** Hydraulic conductivity values range from 1.04×10^{-4} cm/sec to 3.07×10^{-2} cm/sec with a geometric mean of 2.01×10^{-3} cm/sec in the dolostone-screened wells, and a hydraulic conductivity of 2.13×10^{-4} cm/sec for the piezometer screened in sandstone. Similar to the regional water table wells, variability of hydraulic conductivity likely reflects heterogeneities in the geologic conditions below the water table.

The horizontal gradient of the perched water table is reflective of a localized system that is more directly tied to precipitation and localized recharge and better mimics local topography than the regional groundwater system. Within the perched water table, the head loss across the landfill property is approximately 40 feet, with the largest head loss in the southeast near groundwater monitoring well MW-16WT where the perched system diminishes and merges with the underlying regional water table. The horizontal gradient for the perched water table is approximately 0.062 feet/foot to the south-southeast. The hydraulic gradient within the perched water table directly beneath the proposed expansion area is similar at approximately 0.066 feet/foot toward the south-southeast.

The horizontal gradient of the regional water table is reflective of a regional groundwater system that intercepts and discharges to nearby surface water features. Within the regional water table, the head loss across the landfill property is approximately 17 feet for a horizontal gradient of approximately 0.020 feet/foot to the north-northeast with flow toward and discharging to Seas Branch Creek more than 1,700 feet to the north. The hydraulic gradient within the regional water table across the proposed expansion area is approximately 0.026 feet/foot toward the north-northeast.

Vertical gradients were calculated and are summarized below.

- **Perched Water Table vs Regional Water Table:** The average vertical gradients between the perched and regional water table range from 0.536 feet/foot (MW-20WT/MW-20) to 1.106 feet/foot (MW-1PR/MW-1R) downward. Vertical gradients greater than a value of one (1) are indicative of perched groundwater conditions formed due to the presence of low-permeability formations within the dolostone restricting downward groundwater movement.
- **Regional Water Table vs Piezometer:** The average vertical gradient between the regional water table and piezometers (screened below the regional water table) ranges from 0.023 (MW-1R/MW-1RZ) to 0.311 feet/foot (MW-16/MW-16Z) downward, with the exception of well nest MW-19/MW-19Z, where the vertical gradient varies from slightly upward to slightly downward.
- **Upper Piezometer vs Lower Piezometer:** The average vertical gradient between the upper and lower piezometers (screened below the regional water table) ranges from 0.175 (MW-8R/MW-7) to 0.225 feet/foot (MW-3/MW-6) downward.

The horizontal average linear flow velocity across the landfill property (applying the geometric mean for hydraulic conductivity) within the perched water table is approximately 587 feet per year. However, upgradient of the proposed expansion in the vicinity of groundwater monitoring well MW-9 where the hydraulic conductivity is greater, horizontal flow velocities may exceed 4,000 feet per year. The horizontal average linear flow velocity across the landfill property (applying the geometric mean for hydraulic conductivity) within the regional water table is approximately 248 feet per year.

Baseline Groundwater Quality

The existing landfill currently utilizes 26 groundwater monitoring wells or piezometers to assess groundwater conditions. An additional twelve groundwater monitoring points (MW-14WT, MW-15WT, MW-16WT, MW-16, MW-16Z, MW-17WT, MW-18WT, MW-18, MW-19, MW-19Z, MW-20WT, and MW-20) were newly installed as part of the proposed expansion. Four to six rounds of monthly baseline groundwater analytical data have been collected from all of the new wells, with the exception of monitoring wells MW-15WT, MW-16WT, and MW-20WT. Note that MW-15WT and MW-16WT were dry during each event and therefore, no groundwater samples could be collected. In addition, baseline groundwater samples were not collected from groundwater monitoring well MW-20WT due to very slow recovery.

The parameters listed below had at least two PAL exceedances, one ES exceedance, or an average concentration (over the initial four baseline monitoring rounds) exceeding the PAL during the baseline monitoring events at the newly installed groundwater monitoring points.

- **Arsenic:** Groundwater from MW-14WT exceeded the arsenic PAL (1.0 micrograms per liter [$\mu\text{g}/\text{l}$]) during the March 1, 2023, (2.6 $\mu\text{g}/\text{l}$) and March 27, 2023, (1.0 $\mu\text{g}/\text{l}$) sampling events. Groundwater from MW-18WT exceeded the arsenic ES (10 $\mu\text{g}/\text{L}$) during the August 27, 2024, (11 $\mu\text{g}/\text{L}$) sampling event. During the October 2, 2024 sampling event, arsenic was non-detect within MW-18WT. The average arsenic concentration in MW-19 over four rounds of baseline monitoring exceeded the PAL, although only the initial baseline concentration (5.3 $\mu\text{g}/\text{L}$) exceeded the PAL as a stand-alone concentration. Arsenic is a common naturally occurring element found in Wisconsin groundwater.
- **Benzene:** Groundwater from MW-19 exceeded the benzene ES (5 $\mu\text{g}/\text{L}$) during the August 27, 2024, (47 $\mu\text{g}/\text{L}$) sampling event. Benzene concentrations within MW-19 subsequently decreased to a level below the PAL (0.5 $\mu\text{g}/\text{L}$), as benzene was detected at 0.38 $\mu\text{g}/\text{L}$ during the October 2, 2024, sampling event and was not detected during the last two baseline sampling events. Several other volatile organic compounds (VOCs) were detected below applicable PALs within MW-19 during the August 27, 2024, and October 2,

2024, sampling events. Vernon County has attributed the preliminary cause of the benzene exceedance and VOC detections to be potential contamination from well installation activities or sampling equipment.

- **Cadmium:** Cadmium concentrations attained or exceeded the PAL (0.5 µg/L) in two of the four baseline monitoring rounds for well MW-16Z, with a maximum concentration detected of 1.4 µg/L. The remaining two baseline rounds were non-detect for cadmium. Naturally occurring metal-bearing minerals within the carbonate bedrock are a potential source for the trace concentrations of cadmium.
- **Chromium:** Wells MW-18WT and MW-19 had one PAL (10 µg/L) exceedance each for chromium during the initial baseline monitoring event, with the average concentration over four rounds exceeding the PAL. Naturally occurring metal-bearing minerals within the carbonate bedrock are a potential source for the trace concentrations of chromium, and mobilization of chromium caused by well installation activities may have lead to the initial elevated concentrations in these wells.
- **Lead:** Groundwater from MW-18WT exceeded the lead ES (15 µg/L) during the August 27, 2024, (18 µg/L) sampling event. During the October 2, 2024, sampling event, lead was non-detect within MW-18WT. Lead within MW-18WT will continue to be assessed during the remainder of the baseline sampling events. Naturally occurring metal-bearing minerals within the carbonate bedrock are a potential source for the trace concentrations of lead.
- **Manganese:** Groundwater from MW-14WT exceeded the manganese PAL (60 µg/l) or ES (300 µg/l) during each sampling event between December 2023 and May 2023. Manganese from MW-16Z, MW-18WT, MW-19, MW-19Z, and MW-20 had two PAL exceedances or at least one ES exceedance during the two initial baseline sampling events. Manganese is prevalent in groundwater in Wisconsin and is commonly detected at elevated concentrations in groundwater samples collected from groundwater monitoring wells following their installation. Manganese is often released from soils into groundwater when the soil in contact with groundwater is disturbed during well installation; the manganese concentrations in groundwater typically decrease with time.
- **Nitrate + Nitrite:** Concentrations of nitrate + nitrite exceeded the PAL (2 mg/L) in two of the four baseline monitoring rounds for both well MW-18WT and well MW-18. Nitrate + nitrite has historically been detected in site wells dating to before initial construction of the existing landfill, with some exceedances warranting exemptions during previous landfill sitings. Historical agricultural practices are a potential source of nitrate + nitrite in the area.

In accordance with s. NR 507.18(2), Wis. Adm. Code, a minimum of eight rounds of baseline groundwater quality data would be collected from the above wells for the specified parameters prior to submittal of a plan of operation for the proposed expansion. Depending on the results, alternative concentration limits (ACLs) would be proposed for the above wells and parameters in the plan of operation in the event of a favorable feasibility determination.

Constraints on Landfill Development

Locational Criteria and Performance Standards

An evaluation of s. NR 504.04(3), Wis. Adm. Code, locational criteria is as follows:

- The proposed expansion would not be located within 1,000 feet of a navigable lake, pond, or flowage.
- The proposed expansion would not be located within 300 feet of a navigable river or stream.
- The proposed expansion would not be located in a flood hazard area or the 100-year floodplain.
- The proposed expansion would not be located within 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate, or federal aid primary highway.

- The proposed expansion would be located approximately 2.7 miles (>15,840 feet) northeast of the closest runway at the Viroqua Municipal Airport and would not be located in the approach or departure path for the airport. Since the proposed expansion would be located less than 5 miles from the airport, Vernon County issued a letter dated October 23, 2020, to the FAA notifying them of Vernon County's intent to expand the existing landfill. The proposed expansion was determined to be exempt from requirements of 49 USC Section 44718(d), since it does not apply to the proposed expansion or modification of an existing municipal solid waste landfill.
- The proposed expansion would not be located within 1,200 feet of a public or private water supply well. The facility well that serves the landfill office and recycling facility is located greater than 1,200 feet from the proposed expansion. The facility well is located roughly 1,550 feet to the southwest, and the closest residential water supply well is located roughly 1,650 feet to the south.
- According to the US Geological Survey (USGS) Earthquake Hazards Program Interactive Fault Map, there are no faults in the vicinity of the proposed expansion. No such faults are known to exist within Vernon County.
- According to the USGS Earthquake Hazards Program Seismic Hazards Map, the proposed expansion, and most of Wisconsin in general, is located in an area of very low seismic hazard.
- There are no known current or historic data for the landfill property that suggests the proposed expansion would be located in an unstable area. Further analyses regarding landfill stability would be performed in the plan of operation.

An evaluation of s. NR 504.04(4), Wis. Adm. Code, performance criteria is as follows:

- The proposed expansion would not be anticipated to have a significant adverse impact on wetland functional values. There are no wetlands present in the proposed expansion area, and storm water run-off during construction and operation would be managed in accordance with applicable storm water regulations.
- There are no records of occurrences of endangered, threatened, or special concern species, natural communities, or state natural areas in the vicinity of the proposed expansion.
- The proposed expansion would not be anticipated to have a detrimental effect on surface water quality assuming the landfill is designed, constructed, and operated in accordance with applicable regulations and approvals. Storm water would be managed in accordance with applicable regulations, and storm water management systems would be designed and maintained in accordance with industry best management practices.
- The proposed expansion would not be anticipated to cause or exacerbate an attainment or exceedance of a groundwater quality standard at a point of standards application as defined in ch. NR 140, Wis. Adm. Code, assuming the landfill is designed, constructed, and operated in accordance with state regulations and approvals.
- The proposed expansion would not be anticipated to cause the migration of explosive gases in excess of 25% of the lower explosive limit (LEL) assuming the landfill is designed, constructed, and operated in accordance with state regulations and approvals.
- The proposed expansion would not be anticipated to cause the emission of any hazardous air pollutant (HAP) exceeding the limitations contained in s. NR 445.07 Wis. Adm. Code, assuming the landfill is designed, constructed, and operated in accordance with state regulations and approvals.

Geotechnical Information

Site geologic conditions which may affect development of the proposed expansion include the types of soil, depth to bedrock, type of bedrock, bedrock characteristics (porosity, degree of fracturing), and depth to groundwater. The unconsolidated deposits in the proposed expansion area generally consist of loess and residuum deposits overlying dolostone and sandstone bedrock. In some areas, saprolite (weathered dolostone) separates the unconsolidated deposits from the dolostone bedrock below. Generally, dolostone bedrock is distinguished by refusal during standard penetration testing.

The total thickness of unconsolidated sediments identified within borings completed within 300 feet of the proposed expansion ranges from approximately 14.0 feet (MW-3/MW-4P/MW-6) to 79.5 feet (MW-10/MW-11/MW-12). The top of saprolite or bedrock is approximately 10 feet below (B-22) to 23 feet below (B-20) the proposed subbase elevations. The variability in unconsolidated soil thickness is a result of the land surface topography and the topography of the upper bedrock surface.

Saprolite in the proposed expansion area was generated from the weathering of the underlying dolostone bedrock. Unlike residuum, the saprolite unit still holds the original bedrock structure and is therefore similar to a weathered bedrock. The saprolite can be generally described as weathered dolostone to weathered dolostone with silty sand to weathered dolostone with clay.

The bedrock surface in the proposed expansion area generally follows the topography. The site is located on a dolostone ridge that is oriented in the northeast to southwest direction. The bedrock consists of fractured dolostone with small vugs, silty and sandy dolostone, and dolomitic sandstone. Sandstone infills a channel in the dolostone bedrock near the eastern portion of the existing landfill and within the proposed expansion area. As discussed above, a greater than 10-foot separation distance between the bottom of the landfill clay liner (subbase) and the top of bedrock surface exists within the proposed expansion area.

Site hydrogeologic conditions which may affect development of the proposed expansion include the depth to groundwater. The aquifer present beneath the proposed expansion area is the St. Peter-Prairie du Chien-Jordan aquifer. Vernon County has determined that a perched water table and a regional water table exist on-site. Based on the water levels measured in May 2023, depth to water within the proposed expansion area ranged from approximately 60 to 115 feet bgs.

Shallow groundwater is found within the perched water table on-site, which has groundwater flow to the south to southeast. The groundwater flow within the regional water table is to the north to northeast. There is an area to the east of the existing landfill where unconsolidated deposits trend deeper and the perched aquifer flows toward and merges with the regional aquifer. This transition appears to cause localized mounding of the regional aquifer within the merger area.

The proposed expansion's subbase elevations are greater than 10 feet above the seasonal high groundwater elevation for the perched water table and regional water table. Since the proposed expansion's base is above the groundwater surface, the potential for hydrostatic uplift on the composite landfill liner does not exist.

The existing landfill facility's private water supply well (P-1) is located greater than 1,200 feet from the proposed expansion area. One private well (P-2) is also located south of the landfill property and is also greater than 1,200 feet of the proposed expansion area. Both private water supply wells are sampled semi-annually. No landfill-related impacts have been identified within either private well.

Construction and Operation

No constraints regarding material or support services necessary to construct and operate the proposed expansion have been identified. Construction and operational support requirements are expected to be similar to the existing landfill. No specialized engineering structures outside of the requirements of chs. NR 500- 538, Wis. Adm. Code, are anticipated to support landfilling activities.

On-site excavation and existing stockpiles would provide sufficient and suitable material for general fill for subgrade and berm construction, rooting zone soil for the final cover, topsoil, and daily and interim cover soil. Other materials, such as the granular drainage layer material for final cover and stone for the leachate collection

system are available locally from commercial sources. The geomembrane and other geosynthetics needed for construction are commercially available.

Clay for liner and cover construction are located in an on-site approved clay borrow source which would require excavation and segregation of soils. A 5-foot-thick clay liner is proposed for the expansion, which exceeds the minimum 4-foot-thick clay liner required in s. NR 504.06(2)(e), Wis. Adm. Code, and is similar in design to the existing landfill's clay composite liner.

The proposed expansion would utilize the same facilities, equipment, infrastructure, and personnel used to operate the existing landfill. Engineering consultants would also be utilized to assist with solid waste design, planning and compliance, and operations and monitoring. The design of an active gas extraction system implementing the proposed expansion would be included in the plan of operation.

Proposed Preliminary Landfill Design and Operation

The preliminary design conforms to the requirements and standards of ch. NR 504, Wis. Adm. Code, unless otherwise noted. The proposed expansion would create an additional 427,355 CY of permitted airspace. It is anticipated that the proposed expansion would extend the existing landfill's airspace capacity by 15 years.

Solid waste would be hauled by department-licensed vehicles to the proposed expansion via major highways within the service area in accordance with applicable weight restrictions. The current traffic routes being used for the existing landfill would be used for the proposed expansion.

Screening is required by s. NR 504.04(3)(d), Wis. Adm. Code, for sites within 1,000 feet of the nearest right-of-way of any state trunk highway, interstate or federal aid primary highway, public park, or state natural area. No such features are within 1,000-feet of the existing landfill or proposed expansion, however natural screening is provided by a combination of topography, woodlands, and phased vegetated intermediate and final cover.

Subbase Grades

Elevations of the proposed expansion's subbase grades range from approximately 1,203 feet MSL in Phase VII to approximately 1,255 feet MSL on the northern limits of Phase IX. Soil excavated in establishing subbase grade would be used in construction of the site (i.e., perimeter berms, daily, intermediate, and final cover, access roads or other features), or stockpiled for later use. The sump invert elevation would be four feet below the leachate collection trench flow line.

The proposed expansion's subbase grades are designed to provide a minimum ten feet of separation between the bottom of the clay liner and the seasonal high groundwater elevation and the bedrock surface. Given the hydrogeology of the proposed expansion area, the nearest seasonal high water table elevations are between 60 to 100 feet below the bottom of the proposed expansion's clay liner.

Base Grade Slopes and Elevations

Elevations of the proposed expansion's base grades range from approximately 1,208 feet to 1,260 feet MSL. The interior sidewalls are designed at a maximum three horizontal to one vertical (3H:1V) slope from the landfill base to the top of the berm.

The base grades are designed with an approximate 5 percent slope toward the leachate collection pipe, with drainage patterns in a herringbone pattern. The proposed design meets the requirements of s. NR 504.06(2)(d),

Wis. Adm. Code, which requires a minimum 2% slope of the liner toward the leachate collection lines, and s. NR 504.06(5)(a), Wis. Adm. Code, which limits the flow distance across the base liner to not more than 130 feet before entering a perforated leachate collection pipe.

Liner

A composite liner system consisting of a 5-foot-thick compacted clay liner overlain with 60-mil textured high density polyethylene (HDPE) geomembrane would be installed within the entire proposed expansion area. A minimum 16-ounce per square yard protective geotextile would be placed over the geomembrane. This composite liner system would function as the primary containment system.

Leachate Collection and Treatment

The leachate collection system would consist of a 12-inch-thick gravel drainage blanket constructed directly over the geotextile protecting the geomembrane component of the composite liner. Perforated HDPE pipes surrounded by gravel would be placed in V-shaped leachate collection trenches constructed in the valleys on the base of the liner. The leachate collection lines would be sloped at a minimum of 1%. Leachate collected in the drainage blanket would flow from the north to the south into sumps. Leachate would be pumped from each sump to a perimeter leachate vault or manhole. From there, a dual walled forcemain or gravity line would direct the leachate to the on-site leachate storage tanks.

The existing landfill has an on-site underground storage tank (UST) with a capacity of 15,000 gallons and above ground storage tank (AST) with a capacity of 30,000 gallons. Leachate generated within the existing landfill is discharged to these tanks through a lift station at the southeast corner of the existing landfill. The underground storage tank and above ground storage tank are located southwest of the existing landfill near the leachate loading structure. The leachate is removed via a tanker truck and disposed of at the City of Viroqua Wastewater Treatment Plant (WWTP) or City of Sparta WWTP. Additionally, Vernon County disposes of its leachate at the La Crosse County Landfill (license #3253) through its approved research, development, and demonstration (RD&D) plan.

The proposed expansion is not anticipated to require a separate UST or additional leachate loading structure to be installed. The existing leachate loadout, leachate AST and UST would have adequate capacity to handle the existing landfill and proposed expansion's anticipated worst-case leachate generation rate and maintain a 4-day tank storage capacity.

At least two leachate headwells would be included in each major phase of the proposed expansion to measure the leachate head on the liner system, as required in s. NR 504.08(2)(i), Wis. Adm. Code.

Leachate Generation Rate

The anticipated worst-case leachate generation rate during operation of the proposed expansion would be 3.2 gpm an approximate leachate volume of 18,600 gallons during a 4-day time period. The worst-case scenario anticipates that approximately 9.58 acres would be active, which comprises all proposed phases and all existing areas of the landfill within the proposed expansion limits. In addition, approximately 5.02 acres would be closed, and accounts for all areas of the existing landfill outside of the proposed vertical expansion limits. It is anticipated that approximately 1,100 gallons of leachate per day, would be generated after closure of the existing landfill and proposed expansion.

Gas Collection and Management

No landfill gas (LFG) management system has been installed at the existing landfill. The existing landfill is approved for a passive LFG management system with the option to convert to an active collection due to the low hazardous air pollutants (HAP) emission potential of the existing landfill.

The proposed expansion is anticipated to need an active gas system in accordance with s. NR 504.08, Wis. Adm. Code. A detailed design of the LFG extraction system for the landfill would be provided in the plan of operation. The LFG extraction system design, including the need for destruction devices (i.e., a flare), would be based on anticipated HAP emissions, LFG generation potential, leachate recirculation, and operational considerations such as odor control. The system design may consist of vertical LFG extraction wells, horizontal wells, a blower, LFG condensate management structures such as drip legs, header and lateral piping, and potentially a treatment device that would be suited to control anticipated HAP and LFG emissions.

Final Waste Grades and Final Cover

A composite final cover system would be installed over the entire proposed expansion and would consist of the following, from bottom to top: a grading layer above the final waste grades, a two-foot thick compacted clay capping layer, 40-mil textured linear low-density polyethylene (LLDPE) geomembrane, one-foot sand drainage layer, two-foot-thick rooting zone layer, and six inches of topsoil. This composite final cover system would function as the primary storm water infiltration deterrent.

From the proposed waste limits, the final cover system would project upward at sideslopes of 4H:1V for a peak vertical elevation on the eastern side of 1,334 feet MSL. The proposed expansion's western side would tie into the existing landfill. The anticipated final peak elevation of the proposed expansion is 1,334 feet MSL.

Surface Water Runoff Management

The surface water management system would be designed to meet the requirements of s. NR 504.09 and chapters NR 216 and NR 151, Wis. Adm. Code. During landfill operations, surface water runoff that contacts waste or daily cover would be treated as leachate. Surface water runoff from intermediate or final cover areas would be routed via diversion berms, downslope flumes, and perimeter ditches to sedimentation basin. The storm water management system would be designed to meet department and Vernon County storm water performance standards, which includes providing a post-development discharge rate for multiple storm events less than or equal to the predevelopment discharge rate. The full storm water management system design, including appropriate sizing of storm water control features, would be included in the plan of operation.

Key features of the storm water management system would include:

- Diversion berms to collect and route runoff from the final cover system to downslope flumes. The berms reduce the runoff slope length along the final cover, reducing the potential for erosion of the cover system.
- Downslope flumes to collect and convey surface water from the diversion berms to the perimeter ditches.
- Perimeter ditches to route surface water to the sedimentation basin.
- Culverts to route surface water from the perimeter ditches to the sedimentation basin and at other infrastructure crossings.
- A sedimentation basin to provide treatment for the collected storm water before discharging to surface water locations.

Proposed Soil Borrow Source

The existing landfill currently has two approved clay borrow sources, which are designated Clay Borrow A and Clay Borrow B and are located on-site. Both clay borrow sources meet the soil borrow source and clay liner requirements specified in ss. NR 504.075 and NR 504.06(2), Wis. Adm. Code.

Approximately 85,980 CY of clay is needed to complete all phase development liner constructions and final closure of the existing landfill and proposed expansion. In-situ acceptable clay volumes is estimated to be 119,190 CY for Clay Borrow A and 28,580 CY for Clay Borrow B. This means that there is approximately 147,770 CY of acceptable clay in approved on-site clay borrow sources, which yields an estimated 61,790 CY clay surplus after all projected clay requirements have been satisfied.

Final Use

The current final use plan for the existing landfill and proposed expansion area is open green space.

Proposed Operations

Daily Landfill Operations

Daily operations would be confined to as small a landfill area as possible. Filling would proceed from the low point on the base of each phase. Daily cover consisting of soil or an approved alternate daily cover material would be placed over the waste at the end of each day of operation. Intermediate waste grades and slopes for each phase and cell may vary from the final design waste grades and slopes. Final waste grades would be 5.5 feet below the final cover grades.

Intermediate Waste Grades

Vernon County has proposed that the intermediate waste grades of outboard slopes may at times be as much as 5% higher than the final waste grades, when compared to the total depth of waste at a given location. Prior to the placement of final cover in a given area, waste grades would be surveyed and regraded as necessary to accommodate placement of the composite cover to permitted 4H:1V final grades. At no time during the life of the existing landfill or proposed expansion would waste volume exceed the permitted capacity. The intermediate waste grades depth would be included in slope stability analyses in the plan of operation.

Dust, Noise, Odor, and Litter Control

Dust, noise, odor, and litter would be minimized in accordance with generally accepted standard operating procedures.

- Dust would be controlled by minimizing the active area and with a water truck as needed. A detailed dust control plan would be included as part of the plan of operation.
- Operational noise would occur during hours of operation, including typical business hours and may be adjusted as a result of local negotiations.
- Odors would be controlled through:
 - minimizing the active area, including installing permanent cap over closed areas of the landfill, and installing temporary cover soils over as much of the uncapped landfill area as possible,
 - placement of daily cover over the active area at the end of each operating day,
 - installing landfill gas wells sooner and potentially closer together than required to collect landfill gas as it is generated,
 - operating the active gas extraction system,

A detailed odor control plan would be included as part of the plan of operation.

- Windblown litter would be controlled by proper waste compaction and placement of daily cover and perimeter fencing as needed. Wind-blown debris would be collected as necessary. A litter control plan would be included with the plan of operation.

Environmental Monitoring

A preliminary environmental monitoring program is included in Appendix J of Addendum 2 of the feasibility report. If a favorable feasibility determination is issued, the plan of operation would include a comprehensive environmental monitoring program that follows the requirements of ch. NR 507, Wis. Adm. Code. The environmental monitoring program would include routine monitoring of the following:

- Groundwater quality at groundwater monitoring wells and water supply wells, and groundwater levels at groundwater monitoring wells.
- Leachate quality and quantity at the leachate storage tanks.
- Leachate head on the liner at the leachate headwells and sideslope risers,
- Surface water in accordance with Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit requirements, as well as the Storm Water Pollution Prevention Plan (SWPPP) that would be included as part of the plan of operation.
- Landfill gas quality at the gas extraction wells and the blower system, as well as gas probes located near the perimeter of the proposed landfill to monitor for subsurface gas migration.

Environmental Analysis

Proposed Physical Changes

Terrestrial Resources

The approximate 4.5-acre horizontal expansion area is currently vegetated, vacant, and undeveloped. The vertical portion of the proposed expansion would overlay portions of the eastern slope of the existing landfill. The existing sedimentation pond in the southeast of the landfill property is located in the proposed expansion's waste limits and would be relocated further to the east.

From the proposed waste limits, the final cover system would project upward at sideslopes of 4H:1V for a peak vertical elevation on the eastern side of 1,334 feet MSL as shown on Plan Sheet 26. The western side would tie into the existing landfill. The anticipated final peak elevation of the proposed expansion is 1,334 feet MSL.

Modifications to the existing terrestrial setting in and around the proposed expansion area would be primarily due to soil removal and backfill and tree removal to prepare the landfill subgrade, waste placement during operations, final cover placement, and construction of storm water management and perimeter berms and access roads.

Aquatic Resources

Development and operation of the proposed expansion is not expected to have a significant adverse impact on surface water or wetlands. The nearest surface water feature is located more than 1,500 feet from the proposed expansion. The nearest wetlands are mapped approximately 1,500 feet north of the proposed expansion along Seas Branch. The proposed expansion would be designed to include a sedimentation/infiltration basin that would limit the release of sediment in accordance with applicable soil erosion and storm water runoff regulations. There are no direct discharge points to nearby wetlands from the surface water control system.

Storm water flow patterns have been previously established for the existing landfill and the proposed expansion would have minimal impact on existing storm water patterns. Diversion berms would be designed above the final cover system to collect and convey storm water runoff to downslope channels. Diversion berms concentrate and control flow, and would discharge runoff from the proposed expansion quickly. The downslope channels would collect and convey surface water from diversion berms to perimeter ditches and ultimately to the sedimentation basin. The proposed storm water sedimentation basin to the southeast of the existing landfill would be designed to meet the volumetric and treatment requirements of the increased drainage area associated with the proposed expansion.

Changes to groundwater flow and direction are not anticipated as part of construction or operation of the proposed expansion. The proposed expansion would cause a net decrease in site infiltration quantities to groundwater in the area of the proposed expansion.

Buildings, Roads, and Other Structures

No new buildings or structures intended for human occupation are planned as part of the proposed expansion. The proposed expansion would include service roads, leachate collection system infrastructure, landfill gas system infrastructure, and sedimentation basin. Additional service roads are proposed along the perimeter of the proposed expansion to provide access for waste hauling, monitoring, and maintenance of the additional phases.

Emissions and Discharges

The anticipated emissions and discharges from construction and operation of the proposed expansion include the following:

Engine Exhaust – Engine exhaust from diesel and gasoline-powered vehicles and equipment would be discharged to the atmosphere. The discharge volume would vary depending on the number of vehicles or equipment pieces in operation at a given time. Vehicle exhaust would be kept to a minimum by maintaining vehicles in good operating condition and minimizing idling time when vehicles or equipment are not in immediate activity. No significant increase in vehicular traffic is expected during operation of the proposed expansion over that which currently occurs at the existing landfill.

Dust – Dust may be generated from the gravel access or haul roads, earthwork activities, and wind blowing across exposed areas. Dust quantity would vary depending on the number of vehicles or equipment in operation, weather conditions, and amount of exposed area. Dust would be controlled by establishment of permanent paved roads and sweeping activities, applying water or commercial dust suppressants to gravel access and haul roads during dry weather conditions, and establishing vegetation on completed, disturbed areas. A Dust Control Plan has been developed for the existing landfill and would be updated for the proposed expansion during the plan of operation.

Noise – Noise impacts associated with the proposed expansion would occur from bulldozers, scrapers, and other earth moving equipment during liner and final cover construction. During operation, noise would be generated by waste hauling trucks and landfill equipment. These would occur during the hours of operation and are not expected to increase over existing noise levels in the vicinity of the site. Hours of operation are determined in the host agreement, but presumably would remain unchanged.

Leachate – The proposed expansion would utilize and expand upon the existing leachate collection and transportation system for the existing landfill. The quality and characteristics of the leachate are expected to remain similar to those of the leachate that is currently being collected and treated.

Landfill Gas – LFG from the decomposition of waste would be generated as part of the proposed expansion and with current waste filling operations. The chemical characteristics of the LFG are not expected to change. The

proposed expansion includes a final cover system with a gas extraction system. These controls would prevent significant subsurface gas migration. A network of gas monitoring probes has already been installed around portions of the existing landfill to monitor for gas migration, and an additional gas probe is proposed to be installed east of the expansion footprint to have a complete gas monitoring probe system. The gas collection and control systems would be permitted in accordance with the Title V construction and operating permit requirements.

Odors – The control of odors would be achieved by cover soil placement and by the installation of the above-noted gas collection and control system. Highly putrescible waste would be covered immediately upon placement. An Odor Control Plan is currently in place for the existing landfill and would be updated in the plan of operation for the proposed expansion.

Surface Water Runoff – The proposed expansion has been designed to maintain a close surface water balance between the existing and post-development conditions. Maximum storm water discharge would occur under final cover conditions after the existing landfill and proposed expansion have ceased operations.

Groundwater – The potential for contamination from the proposed expansion would be minimized by following chs. NR 500 to 538, Wis. Adm. Code, regulations and design requirements, which include the use of a composite liner and cover system, and a leachate collection and management system, and operational best management practices. A groundwater monitoring network exists to detect potential releases from the existing landfill and proposed expansion into the perched aquifer and within potential transport pathways to the regional aquifer.

Existing Environment

The proposed expansion footprint is a continuation of an existing landfill operation and is not expected to have an effect on surrounding land use in the immediate vicinity. Most of the surrounding land is used for agricultural or low-density residential development, much as it was before the existing landfill opened.

The proposed landfill expansion is located in an unglaciated portion of Wisconsin known as the “Driftless” region. Topography within this area is typified by systems of bedrock ridges cut by stream and river valleys. The ridge and valley system is present in the immediate vicinity of the site, with elevations ranging from approximately 1,040 MSL feet to 1,260 feet MSL within the site boundaries. Generally, the lower elevations are present to the north along the Seas Branch Drainage and to the southeast along an unnamed discontinuous drainage. A system of bluffs forms the higher elevations generally through the central portion of the site. The proposed horizontal expansion area is along the top of this bluff system. Surface water from the site generally flows either to the north toward Seas Branch (recently improved trout stream) or to the southeast (toward the unnamed discontinuous drainage way) and then northeast along this drainage way, which flows into the nearby Seas Branch 5 Reservoir.

The chemical quality of surface water in the Lower Wisconsin River Basin is generally good. The water is generally calcium magnesium bicarbonate type, similar to groundwater. The primary water quality concerns are caused from nonpoint sources of pollution, particularly from agricultural operations, excessive populations of rough fish, and hydrologic modifications of the streams such as damming, straightening, ditching, draining, or other alteration of wetlands. The potential for surface water contamination within the West Fork Kickapoo River Watershed is considered high due to over 50% of the land is used for agriculture.

No wetlands are present in the area of the proposed expansion. All site surface water would be diverted to the proposed storm water sedimentation basin, and therefore no site surface water would discharge directly into a wetland.

The proposed expansion limits of disturbance would impact a part of a wooded area east of the existing landfill. This area is sloped to the southeast ranging in elevation from 1,250 feet MSL on the proposed expansion area's north side to 1,150 feet MSL on the east side. This area would be cleared and backfilled to the proposed subbase grades. The uncleared wooded area would be left as-is to provide separation between the proposed expansion and adjacent properties.

The unconsolidated deposits in the proposed expansion area consist of loess and residuum deposits overlying dolostone and sandstone bedrock. In some areas, a saprolite or weathered dolostone separates the unconsolidated deposits from the bedrock below.

The deepest on-site borings terminate within the basal member of the Prairie du Chien Group, meaning that the St. Peter-Prairie du Chien-Jordan aquifer is the only hydrogeologic unit being monitored on-site. Vernon County has determined that a perched water table and a regional water table exist on-site. The perched aquifer discharges to the regional aquifer to the east of the proposed expansion area via gradient flow. This creates localized groundwater mounding within the regional aquifer.

Karst terrain is present in areas within Vernon County, including places relatively close to the proposed landfill expansion. Karst terrain can include caves, voids, and other dissolution features that form in carbonate bedrock and can result in landscape features such as sinkholes, especially where bedrock is relatively shallow. The department evaluates two main criteria when siting a landfill near karst environments, including stability and monitorability. The potential stability of the landfill considers if there is risk of settlement due to karst features and the monitorability is the consideration of the ability to evaluate the quality of the water in the underlying groundwater aquifers through a monitoring network at the landfill. Carbonate bedrock in the area of the proposed expansion is fractured and has small vugs, but large voids were not encountered during the geotechnical investigations. Historical voids have been infilled with clays and other consolidated deposits over time. The Wisconsin Geological and Natural History Survey (WGNHS) indicated in discussions with the department that substantive sinkhole development typically only occurs in the Prairie du Chien formation where bedrock is less than 30 feet deep. Depth to bedrock in the proposed expansion area is 40 feet deep or greater. A geotechnical engineer with Vernon County's consultant did not identify any stability issues associated with bedrock at the site. Monitorability of the site has been established by consistent flow patterns in the perched and regional aquifers. The most complex feature of groundwater flow at the site, where the perched aquifer dissipates into the regional aquifer, is defined by gradient flow that appears typical of flow through fractured or porous media. Anomalously high or low water levels in wells, which may be indicators of significant voids or unpredictable groundwater flow through the aquifer, were not encountered at the site.

The proposed expansion would create air emissions similar to those of the existing landfill. The proposed expansion is not anticipated to have significant impacts on air quality. LFG constituents from the existing landfill and operations potentially being emitted to the atmosphere include methane, carbon dioxide and monoxide, sulfur dioxide, nitrogen dioxide, and nonmethane organic compounds (NMOCs). Since the proposed expansion would permit additional airspace, the landfill would be open approximately 15 years after plan of operation approval, and more LFG producing waste would be placed. While the total amount of LFG generated would increase, the daily or annual emissions are not anticipated to increase substantially from current emissions since the daily and annual waste placement tonnage is not anticipated to increase significantly during operation. The Organic Stability Plan would be revised for the proposed expansion during the plan of operation to ensure the objectives of organic stability are achieved.

Prior to the arrival of settlers in the mid-1800s, the dominant vegetation in central Vernon County consisted of oak savanna (bur and white oaks) and prairie. However, during the late 1800's and early 1900's much of the land near Viroqua was logged for timber or converted to agricultural fields. Although farming has been on the decline in recent years, agricultural fields continue to dominate the landscape near the proposed expansion. Woodland

areas (land reverted from agriculture or never used for that purpose) contain mostly oak trees, although shrubs and transitional growth exist in areas immediately adjacent to fields.

The proposed expansion area is in an upland prairie that covers the broad ridge between Westby and Viroqua and extends two miles to the west. This prairie-woodland interface provides good habitat for many types of mammals, birds, reptiles, amphibians, and invertebrates. However, it appears unlikely that the proposed expansion would result in any significant adverse impact on critical habitat areas or endangered or threatened species. As of August 2026, no critical habitat areas or endangered or threatened species are identified for the area in the department's Natural Heritage Inventory (NHI) portal.

There are no unique social or economic conditions identified near the proposed expansion area. Land use in this area includes mostly farms and low-density residential development. Consequently, no particular ethnic, cultural, or socio-economic groups exist other than farmers and rural residents, which are not unique to this part of Vernon County.

Environmental Consequences

Physical Impacts

Potential physical impacts caused by the proposed expansion and possible mitigation measures are as follows.

- Odors and emissions (from waste and LFG) - can be mitigated by proper waste placement and cover practices, and optimization of LFG collection systems.
- Windblown debris - can be mitigated by fencing, waste covering, and utilization of external core berms.
- Dust (from operation and construction) - can be mitigated by watering roads and utilizing gravel haul roads.
- Changes to landscape (topography changes, removal of trees) - remaining topography and landscaping is expected to screen these changes from view away from the proposed expansion.
- Noise - can be mitigated by maintaining equipment and complying with the host agreement.

Biological Impacts

It appears unlikely that the proposed expansion would result in any significant adverse impact on critical habitat areas or endangered or threatened species. Construction and operation of the proposed expansion would result in the loss or diversion of a portion of existing non-threatened species habitat in the area, but some species may migrate to nearby suitable habitat

Impacts on Land Use

The proposed expansion footprint is a continuation of an existing landfill operation and is not expected to have an effect on surrounding land use in the immediate vicinity. Most of the surrounding land is used for agricultural or low-density residential development, much as it was before the existing landfill opened, and therefore there is no reason to expect that this would change if the proposed expansion was built. Additionally, the property is currently zoned for landfill use within the Town of Viroqua zoning ordinance.

Social and Economic Impacts

There are no unique ethnic, cultural, or socioeconomic groups in the area that would be affected by the proposed expansion. The primary effects of using the proposed site for solid waste disposal would be the loss of land from

the local tax base and the increase in noise; however, these changes would have already occurred in the construction and operation of the existing landfill.

Traffic impacts and patterns for users of the existing landfill are anticipated to remain similar throughout the operational life of the proposed expansion. The expansion is proposed to service Vernon County and essentially would be an extension of the existing landfill's operating life. Therefore, traffic to local roads from hauling vehicles and recycling trucks are anticipated to remain similar to the level currently experienced and would be extended over the course of operation.

Special Resources

No special resources, including archaeological or historical areas, or prime agricultural land would be impacted by the proposed expansion.

Probable Adverse Impacts that Cannot be Avoided

If a favorable feasibility determination is issued, certain environmental impacts from the proposed expansion may not be completely avoided. To the extent practicable, the impacts would be minimized through engineering design and best management and operational practices. Probable adverse impacts that cannot be avoided include the following.

- **Land Use Impacts** – During operation and after the landfill is closed there would be limitation on how the site is used. Construction of buildings or other structures may be limited or restricted.
- **Topographic Impacts** – The topography and appearance of the site would be altered during construction and operation and following closure of the landfill.
- **Wildlife/Habitat Impacts** – Localized plant and animal populations may be disturbed during construction and operation. However, there are areas adjacent to the proposed expansion that would not be disturbed and are very similar to the area being utilized for the proposed expansion.
- **Traffic Impacts** – Traffic impacts are not anticipated to increase compared to existing conditions, but they would be extended further in time due to the proposed expansion.
- **Odor/Emission Impacts** – Odor and emission impacts are not anticipated to increase compared to existing conditions, but they would be extended further in time due to the proposed expansion. These impacts would continue to be minimized by good operating practices and utilization of a LFG collection system.

Alternatives Analysis

Alternative: No Action

If the proposed expansion is not constructed, waste would have to be disposed of at other landfills or solid waste facilities. This would shorten the life of the other landfills and increase the need for additional waste disposal facilities in the area. There would be additional cost for transportation to the other facilities as it is likely that waste would have to be transported to a larger existing private landfill, which is located more than 100 miles away. Also, there is no guarantee that the disposal capacity replacement required could be approved at a site where potential impacts can be minimized to the same extent that they are by the proposed expansion.

If the proposed expansion did not proceed, this would avoid the environmental impact associated with the proposed expansion area of the landfill property, however, this would not avoid any existing environmental impact associated with the existing landfill. The proposed expansion utilizes land on a property already dedicated to landfilling activities and has environmental controls in place. Socioeconomic factors such as employment opportunities for local residents and contractors would likely shift to a different municipality or region.

Alternative: Enlargement Reduction or Modification of the Project

The proposed expansion has been designed to optimize disposal volume within the constraints of site conditions, regulatory requirements, and economic considerations. Enlarging the proposed expansion area is not feasible due to the physical constraints of the site and regulatory limits prohibiting landfill expansion life to exceed 15 years. The area west of the existing landfill is limited by shallower bedrock and an existing high pressure natural gas line. The area south of the existing landfill is constrained by the leachate collection system and other existing landfill related infrastructure and an overhead power line. The area to the north and west of the existing landfill is constrained by shallow bedrock.

Reducing the size of the proposed expansion would likely result in under-utilization of the existing landfill property and result in loss of air space for the service area. Due to the constraints above, the area of potential contiguous expansion would reach its feasible limits with this proposed expansion. If the size of the site is reduced, that would require Vernon County to pursue another expansion in the future or permit a new site sooner and not capitalize on the efficiencies of a contiguous expansion (use of existing leachate management systems, roads, scales, etc.). Alternatively, it would require another landfill to pursue an expansion or new development sooner to account for the waste currently being managed in the Vernon County system.

Alternative: Other Landfills, Locations or Methods

The closest alternative active MSW landfills to the existing landfill and proposed expansion include Monroe County Ridgeville II Sanitary Landfill (35 miles away), La Crosse County Solid Waste Landfill (40 miles), Waste Management Cranberry Creek Landfill (102 miles), and Green for Life Seven Mile Creek Landfill (112 miles). Although feasible to use alternate facilities, diversion of Vernon County service area tonnage would reduce the remaining capacity and site life of these facilities, which would cause these facilities to either expand sooner than expected or permit a new landfill. Although municipally owned facilities are located within reasonable distances (i.e., La Crosse and Monroe County being the closest), there is no guarantee these facilities would accept all or a portion of Vernon County waste.

A local transfer station in Vernon County is privately owned. Therefore, it's reasonable to expect Vernon County waste may be transported to a privately owned facility over 100 miles away (single trip, one way). This would increase wear and tear on roads, increase greenhouse gas (GHG) emissions due to the haul distance, and may result in increased tipping fees to Vernon County residents.

Evaluation of Alternatives to Land Disposal

Analysis of Alternatives to Land Disposal

Solid waste disposal alternatives include waste reduction, reuse, recycling, composting, incineration, and processing. The feasibility of each of these options is based on factors such as cost/market economy, quantity, economies of scale, public acceptance, environmental protection, location, hauling and transportation systems, and long-term sustainability.

Disposal costs or disposal costs savings for waste reduction are very difficult to estimate. Unless industry or large retailers force change through their sustainability programs, it would likely be up to governmental entities and consumers to be the primary driving force behind encouraging waste reduction at the manufacturing level. For waste reduction efforts to have a long-term impact, consumers would need to support manufacturers, and their distributors, that embrace waste reduction with their purchasing decisions. The cost-benefit of the public

education process and the corresponding reduction in waste quantity produced includes multiple variables and is very difficult to quantify.

The reuse of waste items prior to landfill disposal reduces landfill needs, conserves resources, and in some cases, reduces the environmental impact of landfilling. Reuse applications include the use of multiple use products as well as the sharing, repairing, and rebuilding of other items for reuse.

Industrial implementation of this solid waste management technique could possibly include the reuse of machinery, spare and extra parts, by-products, liquids, barrels, drums, pallets, and scraps. With the limited supply and increasing costs of natural resources, the high costs for raw materials and waste disposal would serve as an incentive for implementing waste reuse. Zero waste initiatives, or waste disposal reduction initiatives can also be an important driver in identifying reuse applications.

At the municipal level, mandatory reuse of products could be difficult to enforce, so education and information on programs available to consumers for reuse of household items may be appropriate. Increased reuse of waste items can be encouraged by working with organizations and providing publicity and assistance in promoting collection drives.

Recycling programs often have an advantage over other methods of solid waste reduction techniques in that they generally employ relatively simple technology. In addition, they can often be implemented rather quickly and are adaptable and flexible to program location and the market demands. The types of recycling programs most often implemented are classified by collection method, and include curbside collection, drop-off centers, and buy-back centers.

Activities like waste diversion and recycling have been effective at reducing the quantity of waste entering the waste stream. However, not all materials are suitable for reuse or recycling, and waste reduction and recycling technologies still have residual waste which currently requires the need for landfilling. Recent reductions in the acceptance of United States recyclables by foreign countries that historically accepted the recyclables has resulted in recycled materials stacking up with little market value. Much of this material had to be landfilled while the recycling industry addressed recycling contamination issues and moved to identify alternative markets. Market value for recyclable materials have historically been volatile, and market disruptions such as the shift in foreign policies not to accept recyclables have significant short and long-term effects on the viability of recycling programs.

Composting is the biodegradation of the organic portion of solid waste materials (food, wood, leaves, grass clippings, etc.). Since it is rich in humus (partially or wholly decayed vegetable matter), compost is generally used as a soil conditioner or mulch. Many different composting processes exist, ranging from simple backyard composting to automated composting in digesters to large scale operations with composting windrows.

Through s. 287.07, Wis. Stats., the State of Wisconsin banned yard waste from landfills in an effort to reduce the volume of waste disposed at landfills. Yard wastes make up the majority of material that is available as good composting material. Because yard waste is already banned from landfill disposal, composting yard waste would not save additional landfill space and is not an alternative to land disposal.

Evaluation of Implementing Alternatives to Land Disposal

In efforts to conserve airspace and maximize the value of discarded resources, Vernon County provides opportunities for system users to divert reusable/recyclable resources from the existing landfill and works with stakeholders to find uses for the diverted waste streams. Vernon County would continue to provide recycling services for typical household recyclables as well as household hazardous materials collection either through their fee-based program or semi-annual clean sweep events.

Additional waste reduction, reuse, and recycling opportunities would continue to be evaluated and implemented, where feasible, during operation of the proposed expansion. To eliminate the need for landfilling requires societal changes on a global scale and no single alternative provides a comprehensive solution. Activities like waste diversion and recycling have been effective at reducing the quantity of waste entering the waste stream. However, not all materials are suitable for reuse or recycling, and waste reduction and recycling technologies still have residual waste which currently requires the need for landfilling. Eliminating landfills would likely result in improper waste management and create much larger environmental impacts than a properly designed and operated landfill.

Needs and Design Capacity Analysis

Section 289.28, Wis. Stats., requires the department to determine whether a proposed facility is needed, and if there is insufficient need to deny permission to construct or operate the proposed facility. The department has generally held that seven years of existing service area capacity or less suggests a new landfill is needed, because it could reasonably take up to seven years to site an alternative new landfill. The department has also used a 60-mile radius around a facility to estimate a reasonable hauling distance to other potential facilities when determining need.

To determine if there is sufficient need for the proposed expansion, the feasibility report compared the available waste disposal capacity in the estimated service area to the amount of waste disposal capacity consumed each year (accounting for projected population growth) within the service area to estimate how many years of waste disposal capacity would be available without the proposed expansion. The original feasibility report (submitted September 2023) estimates the waste disposal capacity for the service area would be completely exhausted before 2025 without the proposed expansion. Vernon County is currently taking waste reduction and diversion measures to retain a small portion of remaining capacity at the existing landfill. The feasibility report concludes that the proposed expansion is needed due to the low remaining capacity in the service area.

Section 289.29(1)(d), Wis. Stats., prohibits the department from approving a feasibility report for a proposed facility unless its proposed capacity is designed to be consumed within 15 years after it begins accepting waste. The projected site-life contained in the feasibility report is less than 15 years. The department will evaluate the need for the proposed expansion and the projected site-life and provide a determination on both in the feasibility determination.

Public Participation

On August 17, 2026, the department determined that Vernon County's feasibility report is complete. A public notice to that effect will be published in the Wisconsin State Journal and the Vernon County Times and will be posted on the department's website on or around August 26, 2026. A 30-day public comment period begins once the department posts the public notice on its website. This comment period affords the public the opportunity to request an informational or contested case hearing in the matter of this proposal. Upon the completion of any hearing or within 90 days of the issuance of this completeness determination, the department will then issue a feasibility determination and a final decision on the need for an environmental impact statement (EIS).

If a favorable feasibility determination is made, then Vernon County may submit a plan of operation report containing the proposed engineering details, specifications, environmental monitoring, and operational procedures for the proposed expansion. Upon the department's approval of a plan of operation report, construction of the proposed expansion may commence. Site construction documentation and department inspections would occur throughout various phases of construction. Vernon County would also be required to obtain all other applicable federal, state, and local permits or approvals for construction and operation of the proposed expansion.

Wisconsin Environmental Policy Act (WEPA) Compliance

Pursuant to s. NR 150.35, Wis. Adm. Code, the department has determined that the landfill feasibility review and public input process for the proposed landfill expansion meets the requirements of the Wisconsin Environmental Policy Act (WEPA) under s. 1.11(2)(c), Wis. Stats., and s. NR 150.20, Wis. Adm. Code. Pursuant to s. NR 150.20(2)(a)7, Wis. Adm. Code, a solid waste feasibility approval is an integrated analysis action, meaning department programmatic procedures provide for public disclosure and include an environmental analysis that provides sufficient information to establish that an EIS is not required. This project summary contains an environmental analysis of the proposed landfill expansion. Pursuant to s. NR 512.06(3), Wis. Adm. Code, the department has made a preliminary determination that an EIS is not required for the proposed expansion.

The landfill feasibility review process will provide for a 30-day public comment period, in which the public may submit written comments on the feasibility completeness determination, the environmental analysis, including the preliminary decision on the need for an EIS, and on the feasibility report. Members of the public may also request a public informational or contested case hearing on the proposed project during the 30-day public comment period.

Signed:

Evaluators:



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