

ENVIRONMENTAL ANALYSIS AND DECISION ON THE NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT (EIS)

Form 1600-1

Rev. 6-2010

Department of Natural Resources (DNR)

Region or Bureau

Northeast Region

Type List Designation

NR 150.03(8)(e)5a

NOTE TO REVIEWERS: This document is a DNR environmental analysis that evaluates probable environmental effects and decides on the need for an EIS. The attached analysis includes a description of the proposal and the affected environment. The DNR has reviewed the attachments and, upon certification, accepts responsibility for their scope and content to fulfill requirements in s. NR 150.22, Wis. Adm. Code. Your comments should address completeness, accuracy or the EIS decision. For your comments to be considered, they must be received by the contact person before 4:30 p.m., January 19, 2012.

Contact Person: **Greg Tilkens**
Title: **Hydrogeologist**
Address: **2984 Shawano Avenue**
Green Bay, WI 54313
Phone: **(920) 662-5433**

Applicant: Veolia ES Hickory Meadows Landfill LLC

Address: W3105 Schneider Road, Hilbert Wisconsin 54129

Title of Proposal: Veolia ES Hickory Meadows Landfill Expansion

Location: County: Calumet

City/Town/Village: Town of Chilton

Township Range Section(s): NE ¼ and SE ¼, Section 23, T19N, R19E, Town of Chilton, Calumet County, Wisconsin

PROJECT SUMMARY

- 1. Brief overview of the proposal including the DNR action (include cost and funding source if public funds involved)

Veolia proposes to construct and operate an expansion to their currently operating Hickory Meadows Landfill. The property is located about 6 miles southwest of Brillion, about 3 miles north of Chilton, and west of USH 57 (see figure 1). The proposed expansion would occupy approximately 76 acres immediately south and east of the existing landfill with an overlay onto the existing landfill of approximately 29 acres (see figure 2). The proposed expansion would have a capacity of 14,170,000 cubic yards. Veolia owns approximately 734 acres around the existing landfill. The parcel containing the existing and proposed facility is bounded by Schneider Road on the north, McHugh Road on the east, the Killsnake River on the south, and Cnty Road BB on the west.

Under s. NR 150.03(8)(e)5a, Wis. Adm. Code, a proposal to construct a new or expanded solid waste landfill with a capacity of more than 500,000 cubic yards is a Type II action requiring an Environmental Analysis and Decision on the Need for an Environmental Impact Statement.

- 2. Purpose and Need (include history and background as appropriate)

On January 29, 1998 the Department of Natural Resources (Department) issued plan of operation approval for the existing landfill. It has been in operation since. The existing landfill has a total capacity of approximately 7,546,000 cubic yards and occupies approximately 59 acres. At the current rate of waste filling, Veolia estimates that the existing landfill will reach capacity in less than 2 years. The proposed expansion would add approximately 14,170,000 cubic yards of capacity which would provide an estimated 14 to 15 years of additional site life. The anticipated closure date is between 2026 and 2027. The primary service area for the proposed expansion would be municipalities and industries in Brown, Calumet, Door, Fond du Lac, Green Lake, Kewaunee, Manitowoc,

Marquette, Outagamie, Ozaukee, Portage, Shawano, Sheboygan, Waupaca, Waushara, and Winnebago Counties. The service area for the expansion is expected to be similar to the existing landfill and may include waste generated from areas other than those listed above. Municipal, commercial, industrial, and special wastes, similar to those currently disposed of at the existing landfill, would be accepted at the expansion. Since 2003, municipal waste made up approximately 33% of the waste disposed of at the existing landfill, while over that same time period commercial and special waste made up approximately 67% of the waste stream. Commercial and special wastes include foundry waste, sludges, high volume industrial waste, shredder fluff, contaminated soil, and PCB contaminated sediment. In 2009 a significant amount of PCB contaminated sediment from the Fox River clean-up was disposed of; approximately 43% of the waste total. No hazardous waste would be accepted at the expansion.

The needs analysis included in the feasibility report documents the need for additional disposal capacity in the service area. Based on the needs analysis, without the proposed expansion, waste disposal capacity in the service area would be depleted in the year 2022.

3. Authorities and Approvals (list local, state and federal permits or approvals required)

Under ss. 289.23 to 289.31, Wis. Stats., and chs. NR 500-520, Wis. Adm. Code, Veolia must obtain approval from the Department of Natural Resources to construct and operate the proposed landfill expansion. Approval from the Department includes a determination that the landfill expansion is feasible, written approval of a plan of operation, and written approval of the construction of the expansion (if the plan of operation satisfies the stormwater management requirements of ch. NR 216, Wis. Adm. Code, no separate stormwater permit is needed). Once Veolia secures these approvals, it must obtain a waste disposal operating license from the Department. In addition to the above approvals, Veolia must obtain prior to breaking ground on the new site, a construction permit from the Department's Air Management program. This permit would incorporate federal New Source Performance Standards for air emissions.

The Department must comply with the requirements of ch. NR 150, Wis. Adm. Code, the Wisconsin Environmental Policy Act, in evaluating the proposal prior to issuing any permit. Because the proposed facility would have a capacity exceeding 500,000 cubic yards of waste, the Department must prepare an Environmental Analysis and determine whether an Environmental Impact Statement is needed.

Veolia has requested an exemption to NR 504.06(2)(b), Wis. Adm. Code, which specifies that the separation distance between the seasonal high water table and the bottom of the clay component of a composite liner must be at least 10 feet. This exemption would be necessary to develop most of the horizontal portion of the expansion. This exemption would be issued by the Department's Waste and Materials Management program in a feasibility determination for the project if they were determined to be appropriate.

Veolia would also need exemptions to groundwater quality standards in ch. NR 140, Wis. Adm. Code, because of elevated levels of numerous substances, either naturally occurring or related to a preexisting contaminant source. These exemptions would be issued by the Department's Waste and Materials Management program in a feasibility determination for the project if they were determined to be appropriate. These substances are further addressed in the discussion of groundwater, below.

The proposed expansion would be regulated as a "Subtitle D" landfill under USEPA 40 CFR Parts 257 and 258. The Department has incorporated the necessary elements of Subtitle D into Administrative Codes NR 500-520, and has been granted approval from USEPA to enforce the Subtitle D requirements.

Under s. 289.41, Wis. Stats., Veolia's responsibility and liability for environmental damage, as established by Department standards, does not terminate over time. Veolia would be required to maintain proof of financial responsibility for 40 years from the time of closure, or longer, if the Department determines that it is necessary to protect human health or the environment. The owner's responsibility for the long-term care of a facility does not terminate even after the 40-year long-term care period, and responsibility for the landfill, and any potential or actual liabilities from it, would be transferred to another person or entity that acquires the rights to ownership.

Veolia is subject to the requirements of ch. 287, Wis. Stats., for the recycling of industrial, commercial, and municipal solid waste.

Revisions to Wisconsin Administrative Code approved by the Legislature during the investigation period now require a landfill organic stability plan be submitted as part of the plan of operation.

Local Authorities and Approvals: State statutes provide for local participation in the process of siting a new or expanded landfill. In accordance with the siting statute (ss. 289.21-289.36, Stats.) and the procedures administered by the Wisconsin Waste Facility Siting Board, Veolia, on April 28, 2010, formally notified the affected municipalities, the Town of Chilton and Calumet County, of its intent to site a landfill expansion, described the rights of the municipalities to enter into negotiation/arbitration, and requested that the municipalities specify all local approvals that would be necessary. Neither the Town of Chilton nor Calumet County took the action required to participate in the negotiation and arbitration process.

Federal Permits: The project includes the filling of two small wetland areas, totaling 0.1 acres, located within the expansion footprint. The filling of the wetlands would require a permit from Army Corps of Engineers.

Availability of Feasibility Report: The proposed project is described in detail in the Veolia ES Hickory Meadows Landfill Expansion Feasibility Report. Copies of the report along with its associated plan sheets and additional information are available for review at the DNR Northeast Region Waste Management Office, 2984 Shawano Avenue, Green Bay, WI 54313; the Calumet County Courthouse, 206 Court Street, Chilton, WI 53014; and the Town of Chilton, N4695 CTY BB, Chilton, WI 53014.

PROPOSED PHYSICAL CHANGES (more fully describe the proposal)

4. Manipulation of Terrestrial Resources (include relevant quantities - sq. ft., cu. yard, etc.)

The proposed expansion consists of both a horizontal and vertical expansion. Development of the vertical portion of the expansion will involve filling waste to a higher elevation over areas already approved for landfill development. Development of the horizontal portion of the expansion will involve filling waste over an area not currently approved for landfill development. The horizontal expansion will extend to the south and east and will be contiguous to the existing landfill.

Development of the expansion will occur in phases and will result in the alteration of approximately 76 acres for the footprint of the horizontal expansion. An additional approximately 15 acres will be altered to accommodate construction of peripheral landfill features including access roads, ditches, sedimentation basins, and biofilters. The vertical expansion over the existing landfill will occupy approximately 29 acres. Earthen modifications will include clearing and grubbing, excavation, soil placement, and construction of access roads, stockpiles, and stormwater management features. The proposed expansion final cover will extend to a maximum elevation of approximately 1,170 feet msl. This elevation is approximately 130 feet higher than the approved maximum final grade for the existing landfill.

Development of the sub-base grades will require the excavation of approximately 709,925 cubic yards of soil. Soil used in development of the proposed expansion will be obtained from both on-site and offsite sources. Soil excavated to achieve sub-base grades for the horizontal expansion will be used as clay borrow material for the liner and cap; as general fill for construction of access roads, berms, and final cover rooting zone layer; and as daily and intermediate cover. Placement of fill to reach the subbase grades will be required in a portion of the site where the sub-base grades are above the existing ground surface. Select granular fill used in the liner and final cover systems will be obtained from an offsite commercial quarry. Topsoil will be scraped from the horizontal expansion area and stockpiled for use in the landfill final cover system. Excess soil excavated from the landfill

footprint will be stockpiled on site for future use. Stockpiles that will not be used within six months of generation will be seeded.

Soils excavated for construction of the expansion would provide a portion of the clay necessary for construction of the clay portions of the liner and cap. Enough clay has been identified within the footprint of the expansion to construct and close the first phase of the expansion. Additional clay would be obtained for construction of future phases from one or more clay borrow sites adjacent to the proposed expansion on Veolia property; and/or excess clay from the Veolia Emerald Park Landfill in Muskego would be brought in. Coarse aggregate for the leachate drainage layer and other soils would be purchased from commercial sources as each phase is developed over the life of the expansion.

The existing landfill perimeter road will be extended around the perimeter of the expansion, following the top of the perimeter berm. Stormwater collection ditches will be constructed on the landfill side of the perimeter road to convey stormwater runoff from the landfill cover to the proposed sedimentation basins. The proposed expansion project will include construction of three additional sedimentation basins and biofilters. The basins will be located along the eastern and western sides of the proposed expansion and would be sized as part of the Plan of Operation.

5. Manipulation of Aquatic Resources (include relevant quantities - cfs, acre feet, MGD, etc.)

The existing landfill straddles a local surface water drainage divide. Runoff from the northern portion of the existing landfill area discharges via Sedimentation Basin No. 1 to an unnamed tributary to the North Branch of the Manitowoc River, which flows to Lake Michigan. Runoff from the southern portion of the existing landfill area discharges via Sedimentation Basin No. 2 to the Killsnake River, which flows to the South Branch of the Manitowoc River and to Lake Michigan. Surface water flow would continue to be split between these two watersheds if the proposed expansion would be approved.

Under the post-development conditions, runoff from the proposed vertical expansion area would continue to be balanced between the two watersheds. Runoff from the horizontal expansion area would continue to be routed to the Killsnake River. Diversion berms, downslope flumes, and perimeter swales would route the surface water runoff from the expansion to one of the four existing and proposed sedimentation basins. Each sedimentation basin would include a biofilter at the outlet structure discharge. From the biofilter, water would discharge to existing ditches. Detailed calculations would be performed as part of the Plan of Operation to properly size the stormwater management features to meet the requirements of NR 504.09, Wis. Adm. Code and to provide an approximate balance in existing versus post-development flow rates.

The proposed design for surface water management system would provide runoff and stormwater flow control in accordance with s. NR 504.09 and ch. NR 216, Wis. Adm. Code by being sized to accommodate the runoff from a 15- and 100-year, 24 hour storm event. Leachate, fluid generated by the waste fill or passing through the waste mass, would be managed separately from stormwater. Leachate from the expansion would be recirculated and/or hauled to the City of Appleton Wastewater Treatment Plant. The City of Appleton Wastewater Treatment Plant accepts leachate from the existing landfill. This agreement is expected to remain in place for the proposed expansion.

Two small wetland areas, totaling 0.1 acres, are located within the expansion footprint. These small low quality wetlands would be lost to develop the facility. An NR 103 assessment concluded that the loss of these small wetlands could not be avoided and would not result in significant adverse impacts to wetland functional values or water quality, or other significant adverse environmental consequences.

During construction and operation of the expansion, Veolia would use Wisconsin Best Management Practices to minimize and control soil erosion, minimizing potential sediment load to waterways. Examples of Best Management Practices include temporary diversion berms, silt fencing and hay bale check dams.

6. Buildings, Treatment Units, Roads and Other Structures (include size of facilities, road miles, etc.)

Additional structures would need to be built at the Veolia property to serve the expansion. These include three sedimentation basins. Refuse vehicles would enter the Veolia property from Schneider Road, as at present. No changes or improvements would need to be made, either to Schneider Road or to any of the roads that feed into Schneider Road to accommodate the expansion.

7. Emissions and Discharges (include relevant characteristics and quantities)

The proposed expansion would generate landfill gas consisting primarily of methane and carbon dioxide, with lesser quantities of approximately 100 non-methane organic compounds (NMOCs). Landfill gas is generated within the waste mass by the bacterial decomposition of organic refuse in the absence of oxygen. However, the Department does not anticipate significant impacts on air quality from the proposed expansion because the proposed design includes engineered systems to manage, contain, and utilize most of the landfill gas.

The proposed design includes provisions for a composite cover system to be installed on top of areas that reach final grades to eliminate the direct escape of landfill gas to the environment. Prior to installation of the composite cover, an intermediate cover consisting of a fine-grained, compacted soil would be constructed to prevent the direct escape of landfill gas to the environment. An active gas extraction system would be installed to capture the gas. A blower would provide the necessary negative pressure to induce the landfill gas to flow from the waste mass to vertical extraction wells, and transfer the gas via a system of lateral and header piping beneath the expansion's cap to gas lines outside the expansion. Gas condensate would be collected at several locations along the transfer piping network. The collected landfill gas would be routed to an on-site gas-to-energy system or flare. A gas-to-energy facility was constructed at the site associated with the existing landfill. The facility allows gas to be combusted in internal combustion engines for electricity generation. The facility operates in conjunction with flaring. In the process of burning landfill gas, a potent greenhouse gas, methane, is converted to a gas of lesser potency, carbon dioxide, and electricity is generated. The production of electricity negates the necessity to produce an equivalent amount of electricity at coal or natural gas-fired power plants within the electrical service area. If the expansion produces a volume of gas beyond the capacity of the internal combustion engines, it would be flared. Combusting the excess methane results in production of more carbon dioxide. Methane is roughly 21 times more potent as a green house gas than is carbon dioxide.

Some methane and other gases are emitted from landfills at the working face and from other areas prior to the installation of final cover. Landfill operators have an incentive to minimize these emissions to prevent odors and recover gas for energy production through such methods as early connection of the gas extraction system to leachate collection cleanouts and other piping within the waste.

The proposed facility would be subject to federal New Source Performance Standards (NSPSs) under the federal Clean Air Act. Among other provisions, the NSPSs would require the gas control system to destroy 98 percent of the NMOCs generated at the site. The Department would incorporate the NSPS requirements into the facility's air pollution control permit, which would also regulate other landfill generated pollutants such as particulates, sulfur dioxides, nitrogen oxides, hazardous pollutants, fugitive dust and odors. To obtain an air permit, Veolia would need to demonstrate that its gas control system would reduce landfill gas emissions to allowable levels. Veolia would need to obtain the permit from the Department's Air Program before construction of the expansion could begin.

Migration of landfill gas through the subsoil and sediments surrounding the landfill would be minimized because of the landfill's composite liner, as well as the proposed active gas extraction system. However, gas monitoring probes would be installed outside the limits of waste on all sides of the facility, in order to detect and monitor any migration of landfill gas.

Vehicle and equipment exhaust from landfill operations would be discharged to the atmosphere during construction, closure and active landfill operations. Since the proposed expansion would essentially allow continuation of the active landfill, there should be little overall increase in the volume of vehicle and equipment

exhaust from current levels. Vehicle and equipment emissions would be short-term environmental effects of the proposed expansion.

Leachate is either generated by moisture within the waste or is precipitation or surface water that has migrated through waste. Veolia would contain and control leachate produced at the expansion by several means; limitations on the size of exposed waste fill areas, phased landfill development, diversion of runoff water, and an engineered leachate collection system. The design of the leachate collection system incorporates a network of perforated pipes embedded in a drainage layer of coarse aggregate located above the landfill liner. Leachate entering the pipes would travel by gravity flow to low points at the base of the landfill where pumps would pump the leachate back into the waste mass or pumped to the on-site leachate storage tanks.

Veolia estimates conservatively the proposed expansion would produce peak daily leachate volumes as great as 26,000 gallons per day during its operating life, and approximately 10,000 gallons per day after final closure. This leachate would be recirculated into the waste mass during operations to promote waste stability, or trucked to a wastewater treatment facility for treatment.

Veolia anticipates the strength and composition of leachate generated by the proposed expansion would be similar to that produced by the active landfill. The current strength and composition of leachate produced at the active landfill meets the requirements for treatment at wastewater treatment facilities.

If maintained and operated as approved, the proposed expansion should not release leachate into the environment either beneath the waste fill area, along the waste perimeter, or along the transfer pipes, before discharge to the storage tank. After landfill closure, the waste mass would be protected by the composite cover system but would continue to produce some leachate internally. Over the long term, the volume and chemical strength of leachate produced by the waste mass would decline.

The Department requires that all operating landfills develop and implement an organic waste stabilization plan. Various methods for achieving organic waste stability exist. These include diversion to non-landfill management of organic material, pre-landfill mechanical or biological treatment of organic material, or in-landfill treatment of organic material (generally involving the introduction of leachate and additional liquids to the waste mass), which would significantly reduce the amount of degradable organic material remaining after site closing and shorten the time the landfill would take to achieve landfill organic stability. Veolia would be required to include an organic stability plan with its plan of operation submitted to the Department.

Precipitation falling onto the landfill would follow one of two paths: precipitation that contacts waste would become leachate that would eventually be recirculated into the waste mass or pumped to the storage tank; non-contact runoff water would flow through drainage ditches to on-site sedimentation basins. The sedimentation basins have been sized to hold runoff water from the proposed expansion. The system would be designed for a 25-year, 24-hour storm event for the entire catchment area. Runoff from the northern portion of the existing landfill area ultimately discharges to an unnamed tributary to the North Branch of the Manitowoc River, which flows to Lake Michigan. Runoff from the southern portion of the existing landfill area ultimately discharges to the KILLSNAKE RIVER, which flows to the South Branch of the Manitowoc River and to Lake Michigan. Runoff from the existing landfill passes through the one of the two sedimentation basins and associated biofilters prior to discharge. The proposed horizontal expansion area is located south of the surface water drainage divide and the entire area drains to the KILLSNAKE RIVER.

The landfill and other impervious surfaces comprising landfill infrastructure would permanently prevent recharge from occurring to underlying groundwater over approximately 76 acres. The existing landfill straddles a local surface water drainage divide, and the stormwater management features were designed to maintain the pre-development balance between stormwater runoff to the two watersheds.

During construction and operation of the expansion, impacts to surface water from soil erosion and run-off would be minimized by diversion berms, ditches and channels and by implementation of the procedures in the Wisconsin

Best Management Practices Handbook (WBMPH). Diversion structures would also function to direct surface water away from open waste areas in order to minimize the amount of leachate produced.

Leachate recirculation would increase the likelihood of leachate seeps occurring. These could reach drainageways if they are not aggressively monitored and repaired.

Based on the engineered design and the geology of the site location, the expansion is unlikely to negatively affect groundwater quality or quantity outside the landfill property. Current regulation of landfill design and construction under chapters NR 500-520, Wis. Adm. Code and 40 CFR Part 258 (Subtitle "D") of the federal administrative code provide for composite liner design, engineered leachate and gas collection systems, organic stability measures, and engineered barrier cover systems to ensure that landfill contaminants are not likely to reach groundwater at concentrations that could result in the exceedance of a health based standard beyond the Ch. NR 140, Wis. Adm. Code, Design Management Zone.

The impervious landfill liner would create a barrier to shallow horizontal groundwater flow. The water table forms a "divide" that transects the site from the northeast to the southwest, thus groundwater at the water table generally flows laterally from the central portion of the site to the northwest and to the southeast. However, vertical gradients (the water levels in shallow and deeper wells located next to each other) indicate that downward flow is dominant across the site. This is due to the more permeable underlying bedrock. Groundwater flow in the bedrock across the site is generally to the northeast. This is consistent with expected regional flow towards Lake Michigan. Most private water supply wells in the area appear to be drawing groundwater from the dolomite bedrock underlying the subsurface glacial deposits.

Groundwater at the site would be monitored for contaminants and indicator substances typical of municipal solid waste landfills to ensure that any groundwater contamination that did occur would be detected and remediated before migration offsite or to a point of groundwater use onsite. If any groundwater standards were exceeded in any of the Subtitle "D" monitoring wells, additional substances would be added to the monitoring protocol. In the event of contaminant migration beyond the property boundary, enforceable groundwater standards under chapter NR 140, Wis. Adm. Code, would require the Department to seek restoration to acceptable standards.

Baseline groundwater monitoring indicates that elevated levels of arsenic, boron, chromium, copper, lead, manganese, chloride, and sulfate occur at the site. Of this list only nitrate-plus-nitrite-as-nitrogen, manganese, arsenic, and sulfate are widespread. These substances are either naturally occurring, that is, derived from sediments located within the region, or are from upgradient contaminant sources.

The Department would provide exemptions for the parameters listed above at the time of feasibility determination. Once the exemptions were granted, any assessments of the expansion's affect on water quality would have to take into account the pre-existing, background levels present at the time of development of the expansion.

8. Other Changes

Dust, noise, litter and odors are inherent effects of landfill activities. Dust may develop from recently emplaced or stored soils, earthwork activities such as berm and drainage ditch construction, and from vehicles on roadways. These dust sources are minimized by administrative code limitations on the size of open landfill areas, and by approved sequential landfill development. In addition, Dust would be controlled by applying water or commercial dust suppressants to access and haul roads during dry weather conditions, and establishing vegetation on completed, disturbed areas. A Dust, Odor, and Wind Blown Debris Control Plan has been developed for the existing landfill and would continue to be used for the proposed expansion.

Windblown paper and debris, if not properly controlled, can create an eyesore and negatively affect adjacent agricultural operations. This becomes a greater concern as each phase develops and operations rise above the adjacent landscape. The effects would cease as each phase is filled to capacity and capped. Veolia has a Dust, Odor, and Wind Blown Debris Control Plan that has been developed for the existing landfill and would continue to be used for the proposed expansion.

Waste decomposition and landfill gas production creates strong, unpleasant odors. Collection of gas, cover systems, and other standard methods are available for odor control. Leachate recirculation speeds waste decomposition and stabilization while enhancing gas production. If adequate engineering controls are not implemented the potential for nuisance odors to be generated is increased in the short-term.

9. Identify the maps, plans and other descriptive material attached

Figure 1 - General area of the project and access route

Figure 2 - Landfill footprint

AFFECTED ENVIRONMENT (describe existing features that may be affected by proposal)

10. Information Based On (check all that apply):

Literature/correspondence (specify major sources)

- Department letter dated September 26, 2008 Re: Proposed Landfill Initial Site Inspection, approximate 101 acre parcel located in portions of the NE ¼ and SE ¼ of Section 23, T19N, R19E, Town of Chilton, Calumet County
- Letter dated November 3, 2008 from Angela Engelman of the Department's Endangered Resources Program to Sherren Clark of BT², Inc. regarding endangered resources review.
- Feasibility Report - Veolia ES Hickory Meadows Landfill Expansion, Town of Chilton, Wisconsin received by the Department on December 3, 2010, dated December 2, 2010, and submitted by BT², Inc.
 - Feasibility Report Addendum 1 - Veolia ES Hickory Meadows Landfill Expansion, Town of Chilton, Wisconsin received by the Department on April 20, 2011, dated April 19, 2011, and submitted by BT², Inc.
 - Feasibility Report Addendum 2 - Veolia ES Hickory Meadows Landfill Expansion, Town of Chilton, Wisconsin received by the Department on May 3, 2011, dated May 2, 2011, and submitted by BT², Inc.
 - Feasibility Report Addendum 3 - Veolia ES Hickory Meadows Landfill Expansion, Town of Chilton, Wisconsin received by the Department on June 6, 2011, dated June 2, 2011, and submitted by BT², Inc.
 - Feasibility Report Addendum 4 - Veolia ES Hickory Meadows Landfill Expansion, Town of Chilton, Wisconsin received by the Department on August 3, 2011, dated August 1, 2011, and submitted by BT², Inc.
- Undated comments from Mary Gansberg, Department Water Resources Management Specialist, regarding surface water impacts from the proposed project.
- Three letters dated March 29, 2011 to Ms. Kari Rabideau from Mark F. Putra, Private Water Systems Section Chief, Bureau of Drinking and Groundwater, WDNR, regarding Grant of Variance for water supply wells within 1,200 feet of a landfill under Chapter NR 812, Wisconsin Administrative Code.
- May 13, 2011 memo from Craig Stemler, Department Air Management Engineer, regarding air impacts from the proposed project.
- Comments dated June 3, 2011 from Dick Nikolai, Department Biologist, regarding wildlife impacts from the proposed site.

- Comments dated July 7, 2011 from Jon Brand, Department Water Management Specialist, regarding impacts to wetlands adjacent to proposed expansion.
- A letter dated October 3, 2011 to Randy Frank of Veolia from Robert Rosenberger, Department Water Management Specialist, regarding wetland areas on the proposed site.
- A letter dated October 25, 2011 to Randy Frank of Veolia from Tamara Cameron of the Department of the Army regarding wetland areas on the proposed site.

Personal Contacts (list in item 26)

Field Analysis By: Author Other (list in item 26)

Past Experience With Site By: Other (list in item 26)

11. Physical Environment (topography, soils, water, air)

Topography at the site is gently rolling and hummocky. Ground surface elevations at the site range from approximately 1,015 feet above mean sea level (msl) at the top of the existing landfill, to approximately 889 msl at the natural drainageway at the southeast corner of the site. The approved peak elevation for the existing landfill is approximately 1,040 MSL. If the proposed expansion were to be approved, the peak elevation would increase 130 feet higher than the approved maximum final grade for the existing landfill to approximately 1,170 MSL.

Land use in the proposed horizontal expansion area is currently agricultural with some scattered single-family homes. Typical Wisconsin agricultural crops (corn, wheat, alfalfa, soybeans) are grown on the property.

The glacial deposits at the proposed site are associated with several advances of the Green Bay Lobe of the Laurentide Ice Sheet. The most recent ice to advance into the area deposited red clayey Chilton till of the Kewaunee Formation. The Chilton till extends as far south as the City of Chilton in central Calumet County, and in the vicinity of the site forms a ridge with about 50 feet of relief above the surrounding landscape. The ridge is a recessional moraine as it likely marks an area where the ice margin stood for some period of time and laid down thick deposits of till. The moraine curves around the higher topography that lies to the south of the moraine. South of the moraine, the red clay till is generally thinner, and most of the relief is due to bedrock topography and older glacial deposits that form north-south trending drumlins and streamlined hills. The older glacial deposits in the area include dense, gray silty till and loess of the Hayton Formation and brown sandy till of the Holy Hill Formation.

During excavation for construction of the proposed expansion, the various sediment types encountered in the excavation would be segregated and stored for different construction purposes. For example, soil meeting s. NR 504.06(2), Wis. Adm. Code, clay specifications would be saved for liner and barrier cap material; well sorted sand and gravel would be segregated and saved for drainage layer material; sediments not meeting specifications would be set aside for landfill cover rooting zone material; and topsoil would be saved for the topmost layer of the landfill cover.

The uppermost bedrock in the vicinity of the landfill is Silurian dolomite. The Silurian dolomite dips gently toward the east-southeast into the Michigan Basin at about 8 meters per kilometer (a slope of about 0.008) and is underlain by the Ordovician Maquoketa Formation, which contains shale and acts as a regional confining unit. The dolomite beneath the landfill is generally uniform with little contrast in lithology and ranges in elevation from a high of over 880 feet msl near the northeast corner to a low of approximately 840 feet msl on the west side. The main lithological features observed are stylolites, beds with abundant chert nodules, and oxidation and other geochemical alteration. The site investigation has revealed a zone of extensively fractured and weathered dolomite beneath the landfill site just below the contact of the dolomite with the overlying unconsolidated sediments.

Groundwater occurs in all of the geologic units at the site, and is monitored at several levels. The water table resides in the unconsolidated glacial till underlying the site. It varies from approximately 1 foot to 17 feet below the surface across the site. The water table forms a "divide" that transects the site from the northeast to the southwest, thus groundwater at the water table generally flows laterally from the central portion of the site to the northwest and to the southeast. However vertical gradients (the water levels in shallow and deeper wells located next to each other) indicate that downward flow is dominant across the site. This is due to the more permeable underlying bedrock.

Groundwater flow in the bedrock across the site is generally to the northeast. This is consistent with expected regional flow towards Lake Michigan.

The most extensive soil association across the site is the Kewaunee-Manawa-Poygan Association. This is nearly level to sloping, well-to poorly-drained soil that has a predominantly clayey subsoil and substratum.

The expansion would be lined and engineered to current federal and state standards. The composite landfill liner, which would be the base of the horizontal portion of the expansion, would be composed of four feet of select, compacted clay overlain by a 60 mil thick HDPE geomembrane. After the final grades were reached, the expansion would be covered with a composite barrier cap consisting of either two feet of compacted soil with a geosynthetic clay liner, or two feet of select compacted clay. Either option would be overlain by a 40 mil thick PE geomembrane, a geocomposite drainage layer, and top soil vegetated to help prevent erosion and deterioration of the protective cap. Additional engineering infrastructure at the landfill would include a leachate collection system and an active gas extraction system. Surface water run-off that has not contacted waste would be diverted to sedimentation basins that would include biofilters at their outlets.

Routine environmental monitoring at the expansion would include groundwater and air quality testing, gas probe monitoring for gas migrating underground, leachate composition testing and quantity measurements, and gas condensate monitoring. Landfill gas would be collected and routed to an on-site gas-to-energy system or flare. Leachate would either be recirculated into the waste to aid in decomposition, or pumped via a forcemain to leachate storage tanks. Leachate not recirculated into the waste would be transported to the City of Appleton Wastewater Treatment Plant for treatment. Environmental monitoring and gas and leachate collection would continue at the landfill indefinitely, or until such time as the facility owner can demonstrate to the Department that these activities are no longer necessary.

The proposed expansion would be located beyond all regulatory set-back distances for navigable lakes, ponds, flowages, streams or rivers, airport runways, and public parks. The site is not within a geologically unstable area such as an active fault area, seismic impact zone, or area of unstable bedrock. Screening surveys did not reveal any endangered, threatened or special concern species or critical habitat at the property, or any sites of historical or archaeological significance. Six water supply wells are located within 1,200 feet of the proposed expansion limits. All of the wells are owned by Veolia. Veolia has requested exemptions to this setback requirement for three of these wells, and three would be abandoned. The Department will evaluate the locations of the three wells requested for exemption and determine whether these exemptions can be granted.

12. Biological Environment (dominant aquatic and terrestrial plant and animal species and habitats including threatened/endangered resources; wetland amounts, types and hydraulic value)

There is no evidence that the proposed landfill site provides critical habitat for any federal or state endangered or threatened species, or for any Species of Special Concern in Wisconsin. There are no State Natural Areas either at the site or in a location that could be affected by the expansion. A search of the Department's Natural Heritage Inventory (NHI) database revealed the Killsnake River has potential to provide habitat for one Threatened and one Endangered species. However, neither species is expected to be directly impacted by the project.

In the short term, the expansion would impact the area used by small mammals, deer, waterfowl, and other animals. However, these animals could easily relocate to other areas on the property or nearby, and in the long term would undoubtedly return to the landfill area. The expansion would permanently remove about 76 acres from

any future agricultural or forestry use, short or long term. Upon closure the expansion would be seeded with a mixture of grasses such as fescue, bluegrass, and ryegrass.

The proposed facility would not be located within a floodplain. Three small isolated wetland areas are located adjacent to the proposed expansion area. These wetlands are surface water dependent. The proposed expansion and associated infrastructure are proposed to be outside of the wetlands' primary drainage basin. Thus the wetland area should not be significantly impacted by the proposal.

Two small wetland areas, totaling 0.1 acres, are located within the expansion footprint. These small low quality wetlands would be lost to develop the facility. An NR 103 assessment concluded that the loss of these small wetlands could not be avoided and would not result in significant adverse impacts to wetland functional values or water quality, or other significant adverse environmental consequences.

13. Cultural Environment

a. Land use (dominant features and uses including zoning if applicable)

The present land use in the area surrounding the proposed expansion is mainly agricultural, with some scattered single-family homes. Typical Wisconsin agricultural crops (corn, wheat, alfalfa, soybeans) are grown on the property. Adverse social and economic impacts are not expected from the proposed expansion. The operation of the expansion would contribute to the local economy as a source of tax base and employment. The proposed expansion would not result in significant changes in the waste filling operations. Therefore, impacts on adjacent neighbors would be similar to those of the existing landfill. The proposed expansion is consistent with local planning and zoning. Because the land for the proposed expansion is already owned by Veolia, an Agricultural Impact Statement would not need to be prepared prior to the development of the proposed expansion.

Veolia has indicated that after closure the site would be designated as open green space, and has not proposed any public access or use of the closed landfill. State codes prohibit building structures on, or excavating the cover of, closed landfills, or using them for agricultural purposes.

b. Social/Economic (including ethnic and cultural groups)

Since the expansion would continue operation of the existing landfill, it would continue providing short term economic benefits to the local community, in particular employment for a few employees and the associated purchase of local goods and services by the employees and the business. Also in the short term, the new facility would continue to provide cost effective solid waste services to the local community. Offsetting these benefits are environmental costs that might accrue from the expansion including degraded visual aesthetics, particularly during the active life of the expansion, ongoing truck traffic on local roads, odors, dust, noise, litter, nuisance birds, and lost economic opportunity costs associated with foregoing other types of land development, agriculture or land restoration.

Land values for the residences located near the expansion could potentially be affected by the expansion, but since landfill activities are ongoing at the property, land values are likely to have already adjusted accordingly. There are no airports in the area that are located close enough to the expansion to be affected by birds or waterfowl that may be attracted to the expansion.

The State of Wisconsin receives a tipping fee for each ton of waste received by the facility. If the existing facility closes and an alternative facility were sited in another state and waste diverted to that facility, the State would lose these fees (the distances involved make this outcome unlikely).

The only municipalities that would be "affected municipalities" as defined by s. 289.01, Wis. Stats., by the proposed expansion are the Town of Chilton and Calumet County. Each affected municipality has been notified of the proposed project.

c. Archaeological/Historical

Although the area undoubtedly experienced human use before European settlement, no historic or cultural sites have been identified for the site. There would be no significant effects on scenic and/or recreational resources in the area due to landfill development.

14. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

There are no other special resources in the area of the proposed expansion.

ENVIRONMENTAL CONSEQUENCES (probable adverse and beneficial impacts including indirect and secondary impacts)

15. Physical (include visual if applicable)

The expansion would permanently remove approximately 76 acres from resource use or other types of development, and would create a permanent concentration of municipal solid waste. The waste would be emplaced and compacted in conformance with the landfill design specifications. At closure, a hill covering about 76 acres and rising approximately 200 feet above the existing land surface would exist. Several small internally drained water basins and predevelopment groundwater recharge patterns would be permanently altered by the redirection of runoff water to sedimentation ponds. The small low quality wetlands, identified in section 12 above, would be lost to develop the facility. The final slopes would be relatively steep (4:1) and very sensitive to erosion. Cultivation to grow row crops would not be allowed since it would disrupt the engineered landfill cover system.

Waste disposal operations have been conducted at this property since 1998. The proposed expansion would increase the total amount of acreage dedicated to waste disposal to approximately 135 acres. This concentration of waste filling has advantages and disadvantages. The expansion would increase the cumulative impact to the area with landfilling and remove the acreage from other types of development, such as, agriculture or recreational use. A landfill expansion increases the environmental effects of landfilling such as a reduction in infiltration/aquifer recharge, and concentrates the potential risks from landfill failure into a specific geographic area.

It is reasonable to anticipate that, if this facility is constructed and filled to capacity, the owner would seek to site a new facility on the contiguous property they own in the Town of Chilton. If future landfills are allowed this would further concentrate the amount of solid waste disposed of in this area, increasing the potential for environmental damage to occur.

Alternatively, a concentration of landfills would generate economies of scale for support activities, infrastructure, energy use, and energy generation. Existing transportation routes would be used thus no additional transportation routes would not need to be developed. Utilizing Veolia's existing ownership prevents other 'green field' sites from being developed thus concentrating any environmental risk to an area where institutional controls on development, such as increased casing for potable wells, are already in place.

16. Biological (including impacts to threatened/endangered resources)

Disruption of existing habitat for small mammals, deer, waterfowl, birds, reptiles, etc. would likely be temporary and reversible. Animals, such as amphibians, which occupy wooded areas, would be permanently displaced since woody vegetation is not allowed to grow on landfills after closure nor is surface water allowed to pond.

No threatened or endangered terrestrial species have been identified on the property. However, the adjacent floodway of the Killsnake River may be habitat for the Blanchard's Cricket Frog and/or Osprey. The Department has determined that it is unlikely that rare species or natural communities would be directly impacted by the expansion.

17. Cultural

a. Land Use (including indirect and secondary impacts)

The land adjacent to the proposed expansion is used primarily for agricultural purposes. Residential use is low density, primarily single-family homes on small tracts and farms. Development of the proposed expansion would take place on land owned by Veolia. The proposed expansion site is located on property with an active landfill, so it is consistent with existing land uses in the site vicinity.

b. Social/Economic (including ethnic and cultural groups, and zoning if applicable)

Adverse social and economic impacts are not expected from the proposed expansion. The operation of the expansion would contribute to the local economy as a source of tax base and employment. The proposed expansion would not result in significant changes in the waste filling operations. Therefore, impacts on adjacent neighbors would be similar to those of the existing landfill. The proposed expansion is consistent with local planning and zoning. The preferred land use, based on a zoning map developed by the Town, is Agricultural Enterprise. Veolia has a permit with the Town of Chilton to engage in solid waste activities on the property. The same access route used for the existing landfill would be used for the expansion (see figure 1). In addition, operation activity would occur during normal business hours, not during evening hours. Significant changes in traffic noise levels or congestion are not expected.

Truck traffic levels would be similar to current conditions. The entrance and routes would be the same as already approved for VHML. Nearby residences should not experience additional noise, dust, or odor from the landfill as a result of the expansion. No impacts to ethnic or cultural groups are anticipated.

A beneficial aspect of the expansion is that solid waste disposal would continue on an area already used for landfilling. The cost and land disturbance is significantly less for an expansion than for a new landfill located away from the existing facility. The proposed expansion provides efficient disposal capacity in an environmentally acceptable manner; consequently, residential, commercial, and industrial users in eastern Wisconsin can continue to be served.

18. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

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

Two small wetland areas, totaling 0.1 acres, are located within the proposed expansion footprint. These small low quality wetlands would be lost to develop the facility. An NR 103 assessment concluded that the loss of these small wetlands could not be avoided and would not result in significant adverse impacts to wetland functional values or water quality, or other significant adverse environmental consequences.

19. Summary of Adverse Impacts That Cannot Be Avoided (more fully discussed in 15 through 18)

The expansion would permanently remove approximately 76 acres from resource use or other types of development, and would create a permanent concentration of municipal solid waste. The waste would be emplaced and compacted in conformance with the landfill design specifications. At closure, a hill covering about 76 acres and rising approximately 200 feet above the existing land surface would exist. Several small internally drained water basins and predevelopment groundwater recharge patterns would be permanently altered by the redirection of runoff water to sedimentation ponds. The small low quality wetlands, identified in section 18 above, would be lost to develop the facility. The final slopes would be relatively steep (4:1) and very sensitive to erosion.

The expansion would increase the cumulative impact to the area with landfilling and remove the acreage from other types of development, such as, agriculture or recreational use. A landfill expansion increases the environmental effects of landfilling such as a reduction in infiltration/aquifer recharge, and concentrates the potential risks from landfill failure into a specific geographic area.

DNR EVALUATION OF PROJECT SIGNIFICANCE (complete each item)

20. Environmental Effects and Their Significance

- a. Discuss which of the primary and secondary environmental effects listed in the environmental consequences section are long-term or short-term.

Long-term Effects: The effects on terrestrial resources would be long-term. Construction of the proposed expansion would permanently alter the existing topography, drainage, and physical resources of the site. Approximately 91 acres of property would be permanently altered by the expansion; approximately 76 acres of landfill, and approximately 15 acres by associated access roads, ditches, and sedimentation basins. Thus, for the foreseeable future this acreage would no longer be available for any agricultural, silvicultural, residential, commercial, or industrial development; or further soil borrow activities.

Several small internally drained water basins and predevelopment groundwater recharge patterns would be permanently altered by the redirection of runoff water to sedimentation ponds. Animals, such as amphibians, which occupy wooded areas, would be permanently displaced since woody vegetation is not allowed to grow on landfills after closure nor is surface water allowed to pond.

Two small wetland areas, totaling 0.1 acres, are located within the proposed expansion footprint. These small low quality wetlands would be lost to develop the facility. An NR 103 assessment concluded that the loss of these small wetlands could not be avoided and would not result in significant adverse impacts to wetland functional values or water quality, or other significant adverse environmental consequences.

Permanent and short-term effects of the proposed expansion on aquatic resources would be minimal. The proposed expansion would alter the natural partitioning of precipitation between surface water and infiltration over approximately 76 acres. Infiltration would be permanently eliminated from the area that encompasses the expansion footprint.

Short-term Effects: When the landfill is operating the disturbance of truck traffic, odors, dust, wind blown waste and noise related to waste disposal may be issues. Disruption of existing habitat for small mammals, deer, waterfowl, birds, etc. would likely be temporary and reversible.

- b. Discuss which of the primary and secondary environmental effects listed in the environmental consequences section are effects on geographically scarce resources (e.g. historic or cultural resources, scenic and recreational resources, prime agricultural lands, threatened or endangered resources or ecologically sensitive areas).

No threatened or endangered terrestrial species have been identified on the property. The Department has determined that it is unlikely that rare species or natural communities would be directly impacted by the landfill expansion.

- c. Discuss the extent to which the primary and secondary environmental effects listed in the environmental consequences section are reversible.

Disruption of existing habitat for small mammals, deer, waterfowl, birds, etc. would likely be temporary and reversible.

21. Significance of Cumulative Effects

Discuss the significance of reasonably anticipated cumulative effects on the environment (and energy usage, if applicable). Consider cumulative effects from repeated projects of the same type. Would the cumulative effects be more severe or substantially change the quality of the environment? Include other activities planned or proposed in the area that would compound effects on the environment.

It is reasonable to anticipate that, if this facility is constructed and filled to capacity, the owner would seek to site a new facility on the contiguous property they own in the Town of Chilton. If future landfills are allowed this would further concentrate the amount of solid waste disposed of in this area, increasing the potential for environmental

damage to occur.

22. Significance of Risk

- a. Explain the significance of any unknowns that create substantial uncertainty in predicting effects on the quality of the environment. What additional studies or analysis would eliminate or reduce these unknowns?

The environmental effects of municipal solid waste disposal facilities have been well documented by the Department as well as nationwide in the scientific literature. The requirements and specifications for landfill siting, design, construction, operation, monitoring, closure and long-term care, as defined by chapters NR 500 through 538, Wis. Adm. Code, have been developed to prevent the adverse environmental effects that have been associated with landfills in the past. All new municipal solid waste facilities must be developed in accordance with chapters NR 500 through 538, Wis. Adm. Code, and with federal criteria (40 CFR Part 258), and are expected to meet the performance standards established by these rules. If these performance standards are met the proposed landfill expansion would not be a significant risk to the quality of the environment. Other regulations restrict the types of materials that can be disposed of in these facilities, thus the concentrations of contaminants such as VOCs are lower than those in historic landfills.

Department staff would inspect key areas of construction to ensure compliance with the above codes. Veolia staff and consultants and Department staff would also evaluate the landfill performance during operation and after closure for compliance with pertinent performance standards through an extensive environmental monitoring program to reduce the possibility, or the extent, of any groundwater contamination or the uncontrolled release of hazardous air contaminants. Leachate generated within the waste and any precipitation or surface water that contacts waste would be collected in the leachate collection system.

Landfill gas and gas condensate would be collected in the active gas collection system minimizing the possibility for subsurface gas migration. Gas monitoring probes would monitor the effectiveness of the gas collection system in controlling subsurface gas migration. Landfill surface emission scans would be performed on a regular basis to detect the migration of landfill gas through the cover materials and around gas extraction wells. Hazardous air pollutants generated by the expansion would largely be collected by the gas collection system and destroyed either through internal combustion or by external combustion at the landfill flare.

Landfill engineers and regulators generally agree that over the long term, possibly decades or centuries, the engineered components of modern landfills will fail. Many of these engineered components such as gas extraction wells, landfill cover and drainage components can be repaired, but others, such as the composite liner, cannot. As long as decomposition of the waste proceeds fast enough to render the waste stable and eliminate the generation of toxic components of leachate and gas before the liner fails, there is little risk that the expansion would produce significant adverse environmental effects.

- b. Explain the environmental significance of reasonably anticipated operating problems such as malfunctions, spills, fires or other hazards (particularly those relating to health or safety). Consider reasonable detection and emergency response, and discuss the potential for these hazards.

Potential, remediable problems that could occur at the proposed facility involve construction errors or equipment failures. These might include faulty seaming of the geomembrane, geomembrane flaws, inadequate clay liner compaction, improper liner construction, leachate pipe failure, and improper base grade preparation. In general, such problems are minimized by required materials standards, construction documentation, quality assurance/quality control measures, and routine leachate pipe cleaning, for example. Periodic inspections by Department staff during landfill construction, operation and closure also help minimize these and other failures and help improve long-term landfill performance. The integrity of the HDPE liner would be tested by performing electrical resistivity leak location surveys after placement of the overlying drainage blanket prior to accepting waste, in accordance with current code requirements.

Leachate recirculation, as proposed for this facility, would increase the moisture content within the waste and speed waste degradation in the short-term. It would also increase gas production and correspondingly the

potential for odor generation and uncontrolled emissions of hazardous air contaminants if gas extraction rates were not balanced.

If too much negative pressure is applied to the gas extraction system excess oxygen can be drawn into the waste mass increasing the risk of a fire within. Fires of this nature can be difficult to impossible to extinguish. This can be avoided by routine monitoring of oxygen and carbon dioxide content and temperature within the gas wells and adjusting vacuums on extraction wells accordingly.

Application of too much leachate can result in decreased waste stability and increased potential for slope instability to occur. The result may be similar to a landslide. Preventative measures include the installation and diligent monitoring of the leachate head wells, the surface for leachate seeps, saturated waste conditions and surface cracks or other expressions of mass waste movement.

Household hazardous wastes, for example solvents and pesticides, are routinely mixed with the solid waste stream disposed of in municipal landfills. The Department anticipates this waste stream in its evaluation of all municipal waste disposal sites, and is part of the reason the current 40 CFR Part 258 federal regulations were developed. In addition, 40 CFR Part 258.20 requires owners/operators to implement a program to detect and prevent the disposal of regulated hazardous waste and PCB waste. The Department does not anticipate the disposal of regulated hazardous waste at the proposed expansion because of the serious liabilities that would ensue from their illegal disposal.

23. Significance of Precedent

Would a decision on this proposal influence future decisions or foreclose options that may additionally affect the quality of the environment? Describe any conflicts the proposal has with plans or policy of local, state or federal agencies. Explain the significance of each.

Wisconsin regulations allow two design criteria considering various geological settings for landfills; zone-of-saturation, where the base of the clay liner would be located below the water table with at least 25 feet of clay below the base of the liner, or zone-of-aeration, where the base of the liner would be located at least 10 feet above the water table. The horizontal portion of the expansion is proposed over an area where either design could be utilized, but due to the size of the horizontal expansion and the geology of the site, both design criteria would have to be met. In an attempt to meet both criteria, Veolia has proposed a unique site design that includes: 1) meeting the zone-of-saturation design criteria in a small portion of the horizontal expansion; 2) a design that includes an underdrain to meet the intent of the zone-of-aeration design criteria; and 3) a zone of transition between the two designs.

Veolia has requested an exemption to the zone-of-aeration design criteria. The exemption request includes a proposal to install an underdrain to artificially lower the water table to meet the intent of the zone-of-aeration design. The Department has granted exemptions to this requirement for landfill proposals in the past that were justified by the installation of an underdrain. Granting the variance for Veolia's facility would not be precedent-setting.

However, the combination of the two design criterion creates a unique situation. An unavoidable small transition zone under the base of the liner would be created where the design criterion for the zone-of-saturation would not be met, and the drainage layer (to justify an exemption to the zone-of-aeration design requirement) would not be placed. Although it is very likely that similar situations exist at other approved landfills in Wisconsin, the design has not been intentionally approved, thus approval of Veolia's overall design would be precedent setting.

The Department is confident that the design would not cause problems with the construction of the liner, nor would it compromise the integrity of the environmental protection capability of the liner. Where the zone-of-saturation design elements are present, the advantage of inward gradients to counter any outward flow would be present. In the area of the gradient control layer, the layer provides means of collecting any outward flow from the landfill, should any occur. The soils below the liner in all areas are clayey, which provides additional benefits of attenuation of contaminants. Such unique design proposals are expected in the future considering the trend

towards larger landfills covering many acres.

There are no other unusual or especially problematic aspects to the proposed expansion and no known controversies over any technical or socio/economic issues.

24. Significance of Controversy Over Environmental Effects

Discuss the effects on the quality of the environment, including socio-economic effects, that are (or are likely to be) highly controversial, and summarize the controversy.

Potentially controversial socio-economic effects may be addressed through negotiations between Veolia, Calumet County, and the Town of Chilton. To date, there has been no inquiry from the public regarding the proposed landfill expansion.

Controversial impacts could include: potential impact on private water supply wells, adjacent land values, visual impacts and screening, nuisance impacts such as odor, noise, dust, traffic, and windblown litter or loss of habitat and potential post closure uses of the site. Other issues may or may not become significant. The proposed site is not located in a densely populated area so a relatively low number of people would potentially be affected.

Failure to site the proposed expansion would result in the loss of several local jobs and small businesses selling goods and services to Veolia. Thus, these local businesses would see a potential sales drop. Additional energy would be consumed to transport waste to other disposal facilities located farther away resulting in higher fees for waste disposal services for some customers and increased air pollutant emissions.

ALTERNATIVES

25. Briefly describe the impacts of no action and of alternatives that would decrease or eliminate adverse environmental effects. (Refer to any appropriate alternatives from the applicant or anyone else.)

The currently operating Veolia Hickory Meadows Landfill is expected to reach capacity between 2012 and 2015. If the proposed expansion is not developed municipal, commercial, industrial, and special non-hazardous solid waste would have to be taken to other landfills. This would shorten the life of other existing facilities in the region and increase the need to expand waste disposal facilities at other locations in the area.

The facility design, including side slopes and final elevations, maximizes the waste capacity. Developing the same amount of landfill capacity at another location would increase the costs and forego the efficiencies of using the roads and other facilities already located at the existing facility.

Waste reduction, reuse, and recycling are alternatives to land disposal, and these activities have already reduced the volume of waste in the service area requiring disposal. Other alternatives to landfilling, such as incineration and waste to energy conversion, do not appear to be cost effective at this time.

SUMMARY OF ISSUE IDENTIFICATION ACTIVITIES

26. List agencies, citizen groups and individuals contacted regarding the project (include DNR personnel and title) and summarize public contacts, completed or proposed).

<u>Date</u>	<u>Contact</u>	<u>Comment Summary</u>
Various	Jim Zellmer, Waste Mgt Supervisor	Numerous feasibility report review issues, including design, operation, liner construction issues
Various	Bob Grefe, DNR Waste Mgt Engineer	Engineering design and operation, landfill design criteria exemptions, liner construction issues, zone-of-saturation landfills, zone-of-aeration landfills

Environmental Analysis - Veolia ES Hickory Meadows Landfill Expansion

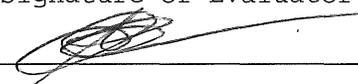
Various	Brad Wolbert, DNR Hydrogeologist [former]	Various feasibility issues, landfill design criteria exemptions, liner construction issues, zone-of-saturation landfills, zone-of-aeration landfills
Various	Sally Hronek, DNR Waste Mgt Engineer	Engineering design and operation, landfill design criteria exemptions, liner construction issues, zone-of-saturation landfills, zone-of-aeration landfills
Various	Randell Clark, DNR Drinking Water Program	Variances to allow <1200' setback distances for private wells
Various	Mary Gansberg, DNR Water Resources Biologist	Impacts to surface water resources
Various	Craig Stemler, DNR Air Management Engineer	Compliance with State air management regulations
Various	Dick Nikolai, DNR Wildlife Biologist	Impacts to terrestrial resources on subject property
Various	Ron Bruch, DNR Fisheries Biologist	Impacts to aquatic resources in the watershed
Various	Jon Brand, DNR Water Management Specialist	Impacts to wetlands adjacent to proposed footprint
Various	Jim Doperalski Jr., DNR Env. Analysis and Review Specialist	EA review

Project Name: Veolia ES Hickory Meadows Landfill Expansion County: Calumet

PRELIMINARY DECISION

In accordance with s. 1.11, Wis. Stats., and Ch. NR 150, Wis. Adm. Code, the Department is authorized and required to determine whether it has complied with s. 1.11, Wis. Stats., and ch. NR 150, Wis. Adm. Code.

The Department has made a preliminary determination that the Environmental Impact Statement process will not be required for this action/project. This recommendation does not represent approval from other DNR sections which may also require a review of the action/project.

Signature of Evaluator 	Date Signed 12-20-11
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FINAL DECISION

The public review process has been completed. The Department received and fully considered  responses to the news release or other notice.

Pursuant to s. NR 150.22(2)a., Wis. Adm. Code, the attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action, and therefore the environmental impact statement process is not required prior to final action by the Department.

The Department has determined that it has complied with s. 1.11, Wis. Stats., and ch. NR 150, Wis. Adm. Code. This decision does not represent approval from other DNR sections which may also require a review of the action/project.

Signature of Environmental Analysis Program Staff 	Date Signed 2/1/2012
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NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to sections 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to section 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with section NR 2.05(5), Wis. Adm. Code, and served on the Secretary in accordance with section NR 2.03, Wis. Adm. Code. The filing of a request for a contested case hearing does not extend the 30 day period for filing a petition for judicial review.

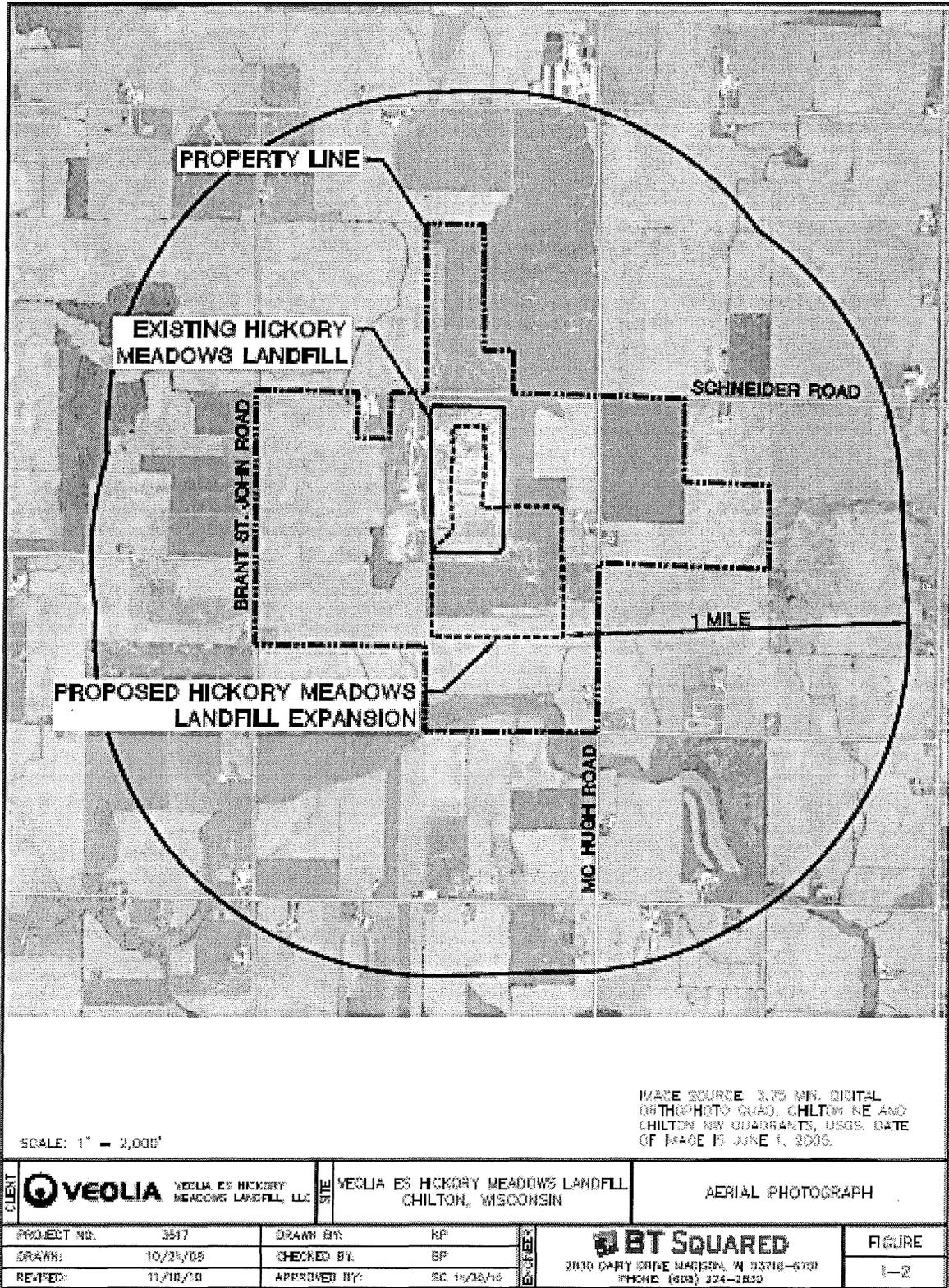


Figure 2

