State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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November 17, 2025

FID # 252108450
Kenosha County
Approval

Mr. Eric Kovatch
We Energies
333 W. Everett Street
Milwaukee, WI 53203

Subject: DRAFT Conditional Plan of Operation Approval Modification, Initial Permitting of Coal Combustion Residuals (CCR) Landfill, We Energies Caledonia Ash Landfill, License #3232

Dear Mr. Kovatch:

The Department of Natural Resources (department) is approving the proposed plan of operation modification for initial permitting of a coal combustion residuals (CCR) landfill for the We Energies Caledonia Ash Landfill, subject to the conditions listed in the attached approval. There are attachments to this letter which include a project summary, the plan of operation approval modification, environmental monitoring tables, preventive action limit (PAL) and alternative concentration limit (ACL) tables, closure and long-term care cost estimate tables, and a summary of existing conditions.

Please include this approval in the written operating record and on the CCR Landfill publicly accessible internet site for the landfill in accordance with s. NR 506.17(2) and (3), Wis. Adm. Code. Provide notification to the department upon placing the documents on the internet site.

A condition of this approval requires proof of financial responsibility for closure and long-term care be adjusted within 60 days. The revised proof of financial responsibility must be established based upon the approved costs contained herein and the requirements of ch. NR 520, Wis. Adm. Code. Please contact Dustin Sholly, owner financial responsibility specialist, at Dustin.Sholly@wisconsin.gov or 608-886-0154 if you have questions.

Please keep in mind that this approval does not relieve you of obligations to meet all other applicable federal, state and local permits, as well as zoning and regulatory requirements. If you have questions regarding this approval, please contact Alicia Fager at (262) 336-3071 or email at Alicia.Fager@wisconsin.gov or Mark Peters at (608) 516-0820 or email at Mark.Peters@wisconsin.gov

Sincerely,

DRAFT

Melanie Burns
Waste and Materials Management Program Supervisor
Southeast Region

cc: John Trast – jtrast@geiconsultants.com
Andrew Schwoerer - aschwoerer@geiconsultants.com
Alicia Fager – DNR/WA (e-copy)
Mark Peters – DNR/WA (e-copy)

Tess Brester – DNR/WA (e-copy)
Joe Lourigan – DNR/WA (e-copy)
Malena Grimm – DNR/WA (e-copy)

Attachments:
1. Draft Project Summary
2. Draft Conditional Plan of Operation Approval Modification for Initial Permitting
3. Draft Environmental Monitoring Tables
4. Draft Preventive Action Limit (PAL) and Alternative Concentration Limit (ACL) Tables
5. Draft Closure and Long-Term Care Cost Estimates

DRAFT PROJECT SUMMARY
PLAN OF OPERATION APPROVAL MODIFICATION
COAL COMBUSTION RESIDUALS (CCR) INITIAL PERMITTING
FOR THE
WE ENERGIES CALEDONIA ASH LANDFILL,
LICENSE #3232

GENERAL INFORMATION

AUTHORIZED CONTACT: Mr. Eric Kovatch
We Energies
333 W. Everett Street
Milwaukee, WI 53203

LICENSEE AND PROPERTY OWNER: The We Energies Caledonia Ash Landfill (Caledonia Landfill) is owned by We Energies.

SITE LOCATION: Caledonia is located in NE 1/4 of Section 1, Township 4 North, Range 22 East, in the Village of Caledonia, Racine County, Wisconsin

CCR LANDFILL DESCRIPTION:

The initial plan of operation was approved on August 27, 1987, for a landfill approximately 45 acres in size with a design capacity of 4,050,000 cubic yards. The landfill was originally divided into 18 sequential cells, 10 cells at base grade and 8 cells overlying the base grade cells.

Cells 1, 2, 3, 4, 6, 8, and 10 are an existing CCR landfill as defined in 40 CFR 257.53 of the federal CCR Rule. Cells 12, 14, and 16, which have not been constructed yet, will be included in the new CCR landfill.

The cells and their current status are as follows:

- Cell 1 – This cell has received final cover and is fully closed.
- Cell 2 – The perimeter slope of this cell has received final cover.
- Cell 3 – The perimeter slope of this cell has received final cover.
- Cell 4 – The perimeter slope of this cell has received partial final cover.
- Cell 6 – The perimeter slope of this cell has received partial final cover.
- Cell 8 – The perimeter slope of this cell has received partial final cover.
- Cell 10 – This cell has been constructed.
- Cell 12 – This cell is currently proposed for approval. The cell will be constructed and filled following approval.
- Cell 14 – This cell is currently proposed for approval. The cell will be constructed and filled following approval.
- Cell 16 – This cell is currently proposed for approval. The cell will be constructed and filled following approval.

INITIAL PERMITTING REQUIREMENTS

PERFORMANCE CRITERIA, s. NR 514.045(1)(b), Wis. Adm. Code:

Wetlands, s. NR 504.04(4)(a), Wis. Adm. Code:

The existing waste footprint of the landfill are not located in a wetland. Unconstructed Cells 12, 14, and 16 will border wetland class areas but will not encroach on the wetland. Appendix A of the September 29, 2023 Revised Submittal shows the use of WDNR wetland map, National Wetlands Inventory (NWI) map, and US Department of Agriculture (USDA) Natural Resources Conversation Services (NRCS) soil survey map to determine if the landfill is located withing a wetland.

Endangered or Threatened Species, s. NR 504.04(4)(b), Wis. Adm. Code:

In October 2022, an endangered resources review was renewed for the CCR landfill. The review indicated the landfill overlaps a high potential zone for one species and a high potential zone for another species. The final cover and final site restoration, specifically the seeding, will take into consideration improvements to make the site an attractive habitat for the two species.

Surface water, s. NR 504.04(4)(c), Wis. Adm. Code:

Based on a review of the WDNR Surface Water Data Viewer Map and Figure 1 and Drawing PM-5 in Appendix C of the September 29, 2023 Revised Submittal, the only potential surface water located on-site is from an intermittent unnamed stream (WBIC-5038361) located on the east limit of the active landfill. This stream connects to the sedimentation basin, which collects stormwater from perimeter run-on control ditches, as shown on the Run-On Stormwater Flow Diagram in Appendix C. The perimeter stormwater ditches and the sedimentation basin are designed for a 24-hour, 25-year precipitation event. The unnamed stream connects to a second unnamed stream (WBIC-5038418) approximately 1,300 feet south of the landfill where it drains into Lake Michigan, approximately 3,600 feet southeast of the landfill. The point at which the unnamed streams become navigable is uncertain.

Leachate generated onsite is removed via a double contained gravity conveyance pipe penetrating the east sidewall of the landfill and drains into a manhole located outside the limit of waste. Each manhole is tied in series via a double encased leachate transfer gravity main that flows south to the Manhole 1 Pump Station. From there, leachate is pumped to the leachate loadout facility located west of Cell 10 and is transported to the on-site wastewater treatment facility or used in the landfill for CCR conditioning and dust control. Drawing PM-5 in Appendix C of the September 29, 2023 Revised Submittal shows the locations of the leachate collection manholes, leachate transfer lines, pump station, and leachate loadout facility.

LOCATIONAL CRITERIA, s. NR 514.045(1)(c), Wis. Adm. Code:

Faults, s. NR 504.04(3)(g), Wis. Adm. Code:

Based on a review of the U.S. Geological Survey (USGS) and Illinois State Geological Survey Quaternary faults and folds database, the CCR landfill is not located within 200 feet of the outermost damage zone of a fault that has had displacement in Holocene time. In s. NR 500.03 (103), Wis. Adm. Code, Holocene is defined as the most recent epoch of the Quaternary period extending from the end of the Pleistocene Epoch to the present. The nearest fault zone (Wabash Valley Seismic Zone) is primarily located in central and southeastern Illinois and southwestern Indiana and is located approximately 270 miles south of the CCR landfill.

Seismic Impact Zones, s. NR 504.04(3)(h), Wis. Adm. Code:

The CCR landfill is not located in a seismic impact zone. Section NR 500.03(208), Wis. Adm. Code, defines a seismic impact zone as an area having a 10 percent or greater probability that the maximum expected horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed

0.10 g in 50 years. The USGS Earthquake Hazard Program (EHP) and National Seismic Hazard Mapping Project (NSHMP) Unified Hazard Tool and calculations from Earthquake Hazards 201 – Technical Q&A, USGS, August 6, 2019, was utilized to calculate the annual frequency of exceedance and expected horizontal ground acceleration at Caledonia to determine if the landfill is established within a seismic impact zone. Based on the review, the Caledonia is below the threshold for a seismic impact zone.

Unstable Areas and Differential Settling, ss. NR 504.04(3)(i) and NR 514.045(1)(c)1., Wis. Adm. Code:

The CCR landfill is not located in on-site or local soil conditions that may result in significant differential settling. The overburden soil type and depth, the slope of the underlying bedrock, the proximity of the site to documented karst regions, the proximity of the site to documented oil wells, and the proximity of the site to documented gas wells were considered to determine the site conditions.

Unstable Areas and Geologic or Geomorphologic Features, ss. NR 504.04(3)(i) and NR 514.045(1)(c)2., Wis. Adm. Code:

The CCR landfill is not located in on-site or local geologic or geomorphologic features that are unstable. An image provided in the August 23, 2024 report show the site is located in an area where carbonate rocks are buried under less than 50 feet of glacially derived insoluble sediments.

Unstable Areas and Human-made Features or Events, ss. NR 504.04(3)(i) and NR 514.045(1)(c)3., Wis. Adm. Code:

The CCR landfill is not located in on-site or local human-made features or events (both surface and subsurface) that are unstable. The proximity of the site to documented oil wells and gas wells were considered.

Floodplains, s. NR 514.045(1)(d), Wis. Adm. Code:

Based on the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer Map, the footprint of the CCR landfill is outside of the flood plain and is in an area of minimal flood hazards.

CRITICAL HABITAT OF ENDANGERED OR THREATENED SPECIES, s. NR 514.045(1)(e), Wis. Adm. Code:

In February 2025, an endangered resources review was conducted for the CCR landfill. The review indicated that there are one endangered plant species and one endangered animal species within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the project area. However, the landfill and the immediate surrounding area are not suitable habitats for the species identified. The area is also a high-potential zone for the Rusty Patched Bumble Bee. Although the active landfill is not suitable bee habitat, the closed and vegetated landfill would be a potential habitat area.

LANDFILL DESIGN, s. NR 514.045(1)(f), Wis. Adm. Code:

Subbase and Base Grades:

Soil in the areas of Cells 12, 14, and 16 will be excavated to reach subbase grades. The subbase grades for the bottom of the cells range from approximately 690 feet to 700 feet above meal sea level (MSL), and the existing grades in the area of the cells range from approximately 700 feet to 720 feet above MSL. Once subbase grades are reached, the surface will be compacted with a 30,000-pound pad foot compactor to observe for soft or wet areas. Areas with unsuitable subbase soils must be removed and replaced with structural fill and placed in 12-inch lifts

and compacted to a minimum of 90 or 95 percent of the modified or standard Proctor maximum dry density, respectively.

Composite Liner design:

The composite liner system for the unconstructed Cells 12, 14, and 16 will consist of the following components, from bottom to top:

- 4-foot-thick compacted clay layer with a hydraulic conductivity of $1x10^{-7}$ cm/sec or less
- 60-mil textured high density polyethylene (HDPE) geomembrane
- 12-inch-thick leachate collection layer with a permeability of at least $1x10^{-2}$ cm/sec.

A second option for the composite liner system for the unconstructed cells consist of the following components from bottom to top:

- 24-inch-thick soil barrier layer
- Geosynthetic clay liner (GCL)
- 60-mil textured HDPE geomembrane
- 12-inch-thick leachate collection layer with a permeability of at least $1x10^{-2}$ cm/sec

The liner design meets the minimum design and construction criteria for CCR Landfills listed in s. NR 504.06(7), Wis. Adm. Code. Construction of the liner system will be documented in accordance with s. NR 516, Wis. Adm. Code.

The compacted clay layer or soil barrier layer will be constructed in accordance with s. NR 504.06(2) Wis. Adm. Code and documented in accordance with ch. NR 516, Wis. Adm. Code. The compacted clay layer or soil barrier layer will be placed in 6-inch compacted lifts and compacted to a minimum 90% of the modified Proctor maximum dry density or 95% of the standard Proctor dry density at the appropriate water content as defined in s. NR 504.06(2)(f)(3), Wis. Adm. Code. Testing and monitoring of the compacted clay layer or soil barrier layer will follow the construction quality assurance (CQA) Plan included in Appendix N of the September 29, 2023 report.

If a GCL layer is used, it will be placed directly above the 24-inch-thick low-permeability soil barrier layer in accordance with s. NR 504.07(4)(a), Wis. Adm. Code, and Section 9 of the CQA plan. As required in s. 504.12(3)(a)5, Wis. Adm. Code, a liner that utilizes a GCL and soil barrier layer will be designed to have a liquid flow rate no greater than the liquid flow rate through 2-feet of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec.

A 60-mil HDPE geomembrane layer will be installed above the compacted clay liner or GCL in accordance with s. NR 504.06(3), Wis. Adm. Code, and Section 6 of the CQA plan. A geotextile cushion layer will be installed above the geomembrane to provide protection during installation of the leachate collection system. Specifications for the materials, installation, and documentation of the geotextile cushion layer are provided in Section 8.0, of the CQA Plan.

Leachate Collection and Removal system:

The leachate collection system will be construct in accordance with s. NR 504.06(5), Wis. Adm. Code and will consist of the following: a 12-inch-thick layer of granular drainage material, a network of leachate collection and transfer pipes, sumps, cleanout pipes, and manholes. V-shaped trenched graded into the liner base grades will be sloped at 6H:1V.

Leachate generated in the landfill is removed via a double contained gravity conveyance pipe penetrating the east sidewall of the landfill and drains into a manhole located outside the limit of waste. Each manhole is tied in series via a double encased leachate transfer gravity main that flows south to the Manhole 1 Pump Station. From there, leachate is pumped to the leachate loadout facility located west of Cell 10 and is transported to the on-site wastewater treatment facility or used in the landfill for CCR conditioning and dust control.

Unconstructed Cells 12, 14 and 16 will each be installed with two leachate headwells to monitor leachate load levels on the base liner system.

Final Cover System:

Final cover has been constructed on existing Cell 1 and sections of Cells 2, 3, 4, 6, and 8. The existing final cover consists of a composite cover with the following components, from bottom to top:

- 6-inch grading layer
- 24-inch compacted flue gas desulfurization (FGD) filter cake/fly ash barrier layer
- 40-mil textured liner low-density polyethylene (LLDPE) geomembrane
- Geocomposite drainage layer
- 24 to 30-inch general fill rooting zone layer
- 6-inch topsoil layer

The final cover for the remaining areas of the active landfill will consist of the following components, from bottom to top:

- 6-inch grading layer
- 24-inch clay liner or a soil barrier layer with a geosynthetic clay liner (GCL)
- 40-mil textured LLDPE geomembrane
- Geocomposite drainage layer
- 30-inch general fill rooting zone layer
- 6-inch-thick topsoil layer

Final cover will be constructed in accordance with s. NR 504.07, Wis. Adm. Code, and documented in accordance with ch. NR 516, Wis. Adm. Code.

If the 24-inch-thick compacted clay layer final cover design is utilized then the clay layer will meet the requirements of s. NR 504.06(2)(a), Wis. Adm. Code and will be constructed in accordance with s. NR 504.06(2)(f), Wis. Adm. Code and Section 5 of the CQA plan.

If the soil barrier layer and GCL design are utilized, a 24-inch-thick layer of compacted soil barrier material will be placed in accordance with s. NR 504.07(4)(a)(12), Wis. Adm. Code and Section 5 of the CQA plan. GCL will be placed directly above the compacted soil barrier layer. Specifications for the materials, installation, and documentation of the GCL will meet the requirements of s. NR 504.07(4), Wis. Adm. Code and Section 9 of the CQA plan.

A 40-mil HDPE geomembrane layer will be installed above the compacted clay layer or the GCL in accordance with s. NR 504.06(3), Wis. Adm. Code and Section 6 of the CQA plan. A geocomposite drainage layer will be installed above the geomembrane and will have an equivalent or greater hydraulic conductivity flow capacity of 1 foot of sand with a minimum hydraulic conductivity of 1.0 x 10-3 cm/sec, in accordance with s. NR 504.07(6)(a), Wis. Adm. Code and Section 7 of the CQA plan.

A 30-inch-thick rooting layer will be installed immediately above the geocomposite drainage layer in accordance with s. NR 504.07(6), Wis. Adm. Code and Section 5 of the CQA plan. The rooting zone will be overtopped by a 6-inch layer of topsoil in accordance with s. NR 504.07(7), Wis. Adm. Code and Section 5 of the CQA plan.

CCR LANDFILL PLANS, s. NR 514.045(1)(g), Wis. Adm. Code:

Fugitive Dust Control Plan, s. NR 514.07(10)(a), Wis. Adm. Code:

The fugitive dust control plan is included in Appendix J of the September 29, 2023, Revised Submittal.

Measures for controlling fugitive dust include the following for minimizing CCR from becoming airborne at the facility:

- All CCR delivered to the landfill are conditioned with water at the source prior to transporting the materials.
- All CCR, except flue gas desulfurization (FGD) filter cake from Elm Road Generating Station (ERGS), is delivered to the Caledonia Ash Landfill in dump trucks equipped with deployed tarpaulins. FGD filter cake from ERGS is dropped into special luggers in the wastewater treatment plant. These luggers are not equipped with covers. The FGD filter cake is thoroughly and evenly conditioned during the filter press process and only needs to travel less than 1-1/2 miles to the Caledonia Ash Landfill over private roads.
- The access road leading into the CCR Landfill is paved. The access road will be swept and watered as necessary to minimize the accumulation of dust and dirt on the road surface that might become airborne due to the periodic truck traffic or high winds.
- The entire surface of the active landfill, including stockpiles, is kept groomed to minimize the amount of loose material that could become airborne under windy conditions.
- Roads within the active area of the landfill are constructed of bottom ash and minimize the need to have traffic routed over areas with fine grained surfaces, such as fly ash. Bottom ash provides structurally sound all-season roads, containing low fines content. These bottom ash roads are watered regularly to minimize dust generation due to wind or traffic.
- All trucks and equipment are routed over a stone tracking pad, through a wheel wash station, and over a cattle guard prior to leaving the active landfill area.
- Windborne fugitive dust is effectively minimized by regularly wetting exposed CCR surfaces with a water truck equipped with spray bars and water jets.
- Sections of final cover are installed as soon as final waste grades are achieved over a sufficient area to support a practical final cover installation work scope.

The CCR fugitive dust control plan will be reviewed annually, and updated as necessary, in conjunction with preparation of the annual CCR fugitive dust control report required by s. NR 514.07(10)(a)(5), Wis. Adm. Code. The annual CCR fugitive dust control report will be included in the annual report in accordance with s. NR 506.20(3)(a), Wis. Adm. Code, and include a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken.

Run-On And Run-Off Control System Plan, s. NR 514.07(10)(b), Wis. Adm. Code:

The run-on and run-off control system plan is included in Appendix K of the September 29, 2023 submittal.

In order to prevent run-on from entering the active landfill, perimeter berms have been established. The east, west, and south perimeter berms contain stormwater in stormwater ditches and convey the water southward. On the east

side of the landfill, the stormwater is routed to the stormwater sedimentation basin immediately southeast of the landfill. On the west side of the landfill, the stormwater ditches route stormwater to the south, through a culvert running under the site screening berm, and then east to the sedimentation basin. Along the north perimeter of the active landfill, an intercell berm between Cell 10 and unconstructed Cell 12 has been constructed to prevent run-on from entering the landfill and to prevent run-off from leaving the landfill. A perimeter ditch along the north edge of the intercell berm intercepts and directs stormwater run-on to the east, away from the active area, and conveys the stormwater to the sedimentation basin.

Precipitation within the active area of the landfill is handled as contact stormwater and is treated as leachate. The contact stormwater is directed to the temporary stormwater ditches on the inside of the landfill and routed to temporary infiltrations area in Cells 8 and 10, where it is allowed to infiltrate into the leachate collection system. On the areas that are closed, stormwater sheds off the final cover and is conveyed to the perimeter stormwater ditches where it is carried to the southwest sedimentation basin.

The run-on and run-off control plan will be reviewed at least every 5 years in accordance with s. NR 514.07(10)(b)(4), Wis. Adm. Code.

Closure Plan, s. NR 514.07(10)(c), Wis. Adm. Code:

The closure plan is included in Appendix L of the September 29, 2023, Revised Submittal.

The closure plan describes the engineering design of the landfill, phased development, a description of the final cover system, and how the final cover system will meet the applicable performance standards contained in s. NR 506.083(6), Wis. Adm. Code. In addition, it also includes an estimate of the maximum open area that would require closure at one time and an estimated closure schedule based on the anticipated landfill filling rates.

In accordance with s. NR 514.07(10)(c)(6), Wis. Adm. Code, a schedule for completion of all closure activities, broken down into the different cells that will receive final cover and the estimated of the year in which the closure activities will be completed was included in the closure plan, Table 1 below. The estimated year in which all closure activities will be completed for each area is dependent on CCR generation rates, beneficial reuse programs, and disposal rate volumes. Table 1 is based on the current CCR disposal rate of approximately 10,000 cubic yards per year.

Table 1. Estimated Closure Schedule.

Unit	Estimated Closure Date
Cell 2	Fall 2035
Cell 3	Fall 2047
Cell 4	Fall 2059
Cell 6	Fall 2090
Cell 8	Fall 2107
Cell 10	Fall 2157
Cell 12	Fall 2203
Cells 14/16	Fall 2265

When CCR placement is completed in a CCR unit, or if early closure is required, the unit will be closed by covering the CCR with the final cover system described in the previous section of the project summary. Prior to final cover system construction, the CCR surfaces will be graded and compacted to establish a firm subgrade for final cover construction. In addition, all required notifications will be submitted to the department, and the landfill will obtain all additional necessary permits (for example, general permit coverage for construction storm water

management). The initiation of closure activities will commence no later than 30 days after the known final receipt of CCR as required by ss. NR 506.083(2)(a) and (b), Wis. Adm. Code.

We Energies will provide notification as follows:

- Intent to initiate closure
- Closure completion
- Availability of the written Closure Plan and any amendments

The closure plan will be modified when a new module is constructed, when there is a change in the operation of the CCR unit that affects the plan, or when unanticipated events warrant revision to the closure plan as required by s. NR 514.07(10)(c)(7), Wis. Adm. Code.

Long-term Care Plan, s. NR 514.07(10)(d), Wis. Adm. Code:

The long-term care plan is included in Appendix M of the August 23, 2024.

Table 2. Estimated Long-Term Care Activities Schedule.

Monitoring and Maintenance Activities	Frequency
Mowing	Annually for first five years, every five years thereafter (mowing on a more frequent basis may be needed to accommodate more vigorous growth rate or to prevent woody vegetation)
Inspections of Stormwater Control Structures and Final Cover System	Annually
Final Cover Maintenance and Repairs	As needed, determined by inspection
Leachate Collection Line Cleaning	Annually
Environmental Monitoring – Groundwater and Leachate	Semi-Annually

The owner/operator will perform quarterly inspections of the landfill surface, leachate control system, and groundwater monitoring systems. If issues are noticed during the inspection, action will be taken to remedy the situation. Eroded areas will be repaired and reseeded. Repairs or replacement will be performed on the groundwater monitoring system as needed.

The leachate collection and removal system for the existing CCR landfill and future units will be maintained to meet state requirements including leachate collection line cleaning, leachate collection video inspection, and any needed repairs to the existing system. Leachate collection video inspections will occur at 5-year intervals, following the annual pipe cleaning required by s. NR 506.07(5)(c), Wis. Adm. Code. The video camera inspection will extend a minimum of 300 feet onto the base grades of each leachate collection line.

Currently, the contact information for Caledonia during the post-closure/long-term care period is as follows:

Mr. Eric P. Kovatch, P.G.
WEC Energy Group
333 West Everett Street
Milwaukee, WI 53203
(414) 221-2457
eric.kovatch@wecenergygroup.com

The final use of the Caledonia Ash Landfill will be privately owned green space. With this use, there will be no disturbance of the final cover or any other landfill-related components.

We Energies will amend the long-term care plan if there is a change in operation of the CCR unit that affects the long-term care plan or, if after post-closure activities have started, unexpected events cause a revision of the plan.

GROUNDWATER MONITORING SYSTEM, s. NR 514.045(1)(h), Wis. Adm. Code:

CCR Groundwater Monitoring System Plan, ss. NR 507.15(3)(a) through (e), Wis. Adm. Code:

The CCR groundwater monitoring system plan is included in Appendix G of the September 1, 2023, Addendum No. 2.

The CCR groundwater monitoring system includes the following monitoring wells:

- Upgradient wells: W46D and W48
- Downgradient wells: W08D, W09D, W10D, W49, and W50

The Silurian-aged Niagara Dolomite comprises the Uppermost Aquifer beneath the site. It is generally identified as a thickly-bedded dolomite with weathered material on top of competent bedrock. The Uppermost Aquifer was encountered in all borings advanced in 2015 and 2017 (W08D, W09D, W10D, W46D, W48, W49, and W50). The bedrock surface indicates a shallow valley trending to the northwest. Bedrock was drilled using rotosonic methods which recovered core sections for logging and observations. The rock observed in these borings is described as a massive, fossiliferous dolomite with pitting. Slight to moderate decomposition and disintegration was noted in all borings. Site-specific data for the Uppermost Aquifer collected from packer tests conducted during investigations for the Elm Road Generating Station (ERGS) indicated bedrock hydraulic conductivities ranged from 1x10-7 to 1x10-6 cm/s. Regional estimates of hydraulic conductivity in the Niagara Aquifer range between 1x10-4 and 1x10-2 cm/s, based on yield tests for domestic and high-capacity wells.

Wells W08D, W09D, W10D, W46D, W48, W49, and W50 monitor groundwater flow in the Uppermost Aquifer. Groundwater elevations measured on May 4-5, 2022, were between approximately 654 and 657 feet NAVD88 and indicate a groundwater flow direction to the north and east, and these observations are generally consistent with previous monitoring events. Seasonal variation in the Uppermost Aquifer groundwater elevations occurs but generally groundwater elevations measured in the spring are up to five feet higher than those measured in the fall. Although elevations seasonally vary, the Uppermost Aquifer groundwater flow direction is generally consistent and likely controlled by the proximity and hydraulic connection to Lake Michigan.

The proposed s. NR 507.15(3), Wis Adm. Code monitoring network (CCR wells) will consist of two background monitoring wells (W46D and W48) and five downgradient monitoring wells (W08D, W09D, W10D, W49, and W50). Wells are located at the point of standards application in accordance with s. NR 507.15(3)(L)(4), Wis Adm. Code (waste boundary). The network is designed to monitor potential impacts to the Uppermost Aquifer from the CAL. CCR wells will be inspected in accordance with s. NR 507.13, Wis. Adm. Code, and maintained as necessary to ensure representative groundwater samples are collected for the purposes of this monitoring program. Samples will be collected and analyzed in accordance with the Sampling and Analysis Plan (SAP) included in the plan modification request.

Baseline Groundwater Quality, s. NR 507.15(3)(i), Wis. Adm. Code:

Chapters NR 507.15(3)(L)(1) and NR507.18(5), Wis. Adm. Code require baseline groundwater quality be established and submitted to WDNR through the collection of eight independent samples and analysis for the parameters listed for CCR landfills in Tables 1A and 3 of Appendix I, Ch. NR 507, Wis. Adm. Code. Eight

rounds of baseline groundwater quality data for the parameters referenced in Appendices III and IV of 40 CFR § 257 were collected beginning on December 2, 2015 and extending through August 31, 2017. All laboratory analyses were performed by the We Energies laboratory or Pace Analytical, Wisconsin certified laboratories, using appropriate methods that yielded adequate sensitivity and detection limits lower than the Ch. NR 140 PAL and ES.

Copper, manganese, silver, zinc, alkalinity, hardness, and nitrate + nitrite (as N) are not required to be monitored under 40 CFR § 257. Data collection for baseline groundwater quality for these parameters was conducted in 2023 and 2024 and submitted to the department with the semiannual reporting (GEMS submittals) to meet this requirement.

Groundwater quality standard exemptions in accordance with ss. NR 507.29 and NR 140.28, Wis. Adm. Code, were requested and are being granted for the following CCR wells and parameters:

- Boron at all CCR wells
- Fluoride at all CCR wells
- Sulfate at W08D

Detection Groundwater Monitoring, s. NR 507.15(3)(L), Wis. Adm. Code:

Detection monitoring will be performed at CCR wells on a semiannual basis (May and November). Baseline groundwater quality will be established at each CCR monitoring well in accordance with s. NR 507.18, Wis. Adm. Code.

The department will be informed in accordance with s. NR 507.26, Wis. Adm. Code, of any CCR well that purges dry, is damaged or obstructed, or in any way is rendered such that a sample was unable to be collected from the well during a scheduled sampling event when the sampling event data are submitted.

A notification and response in accordance with s. NR 507.30, Wis. Adm. Code, will be made when a groundwater standard at the point of standards application has been attained or exceeded at any CCR well. This response includes the establishment of an assessment monitoring program meeting the requirements under s. NR 508.06, Wis. Adm. Code, unless the exceedance is determined by the department to be from a source other than the CCR landfill, or that the groundwater standard exceedance resulted from error in sampling, analysis, or natural variation in background groundwater quality in accordance with s. NR 508.06 (2)(f)2, Wis. Adm. Code.

The point of standards application for a groundwater quality exceedance at a CCR well is 0 feet from the waste boundary. Future compliance monitoring wells will be located as close as practicable to the waste boundary. Factors that may require siting wells further from the waste boundary include overhead or buried utility lines, slopes, landfill haul roads or access roads, storm water management features, rail lines and rights-of-way, and other site-specific features.

Annual Groundwater Monitoring and Corrective Action Report, s. NR 507.15(3)(m), Wis. Adm. Code:

Annual Groundwater Monitoring and Corrective Action Reports documenting the status of the groundwater monitoring, and any corrective action implemented at the CCR landfill will be submitted to the WNDR by January 31 of the following year, and placed in the operating record and on the publicly accessible website as required by Ch. 506.17(2) and (3), Wis. Adm. Code. Annual reports will:

- Summarize key activities completed [including at least those required in Ch. NR 507.15(3)(m)]
- Describe any problems encountered,
- Discuss actions to resolve the problems, and

- Project key activities for the upcoming year.

SAMPLING PLAN, s. NR 514.045(1)(i), Wis. Adm. Code:

Sampling Plan, ss. NR 507.15(3)(f), (g), (h), (j), (k), Wis. Adm. Code:

The sampling plan included in Appendix O of Section 2 of the August 23, 2024, revised plan modification request submittal addresses the CCR groundwater monitoring system, as well as monitoring at non-CCR wells and other monitoring points. Appropriate sampling and analytical methods are described in the sampling plan. Groundwater elevation data will be reported to the department semiannually in accordance with s. NR 507.26, Wis. Adm. Code. During each sampling event, depths to groundwater at all wells will be measured prior to the start of groundwater sample collection. If possible, all water level measurements will be collected within the same day. The rate and direction of groundwater flow will be determined for each semiannual sampling event. Field pH, temperature, and specific conductance will be measured using a portable electronic meter. For samples collected using low-flow methods, field dissolved oxygen, oxidation/reduction potential, and turbidity will also be measured using a portable electronic meter. Monitoring wells will be generally sampled in an order from least to most contaminated. Pumps used for purging and sample collection at CCR monitoring wells are dedicated to specific wells. Monitoring wells will be purged using low-flow techniques.

All groundwater samples collected under the CCR monitoring program will be unfiltered (total analysis). Groundwater samples collected under the continuation of the site monitoring program that predated the requirements of s. NR 514.045, Wis. Adm. Code, will be filtered (dissolved analysis) or unfiltered (total analysis).

The department will be notified in writing if a groundwater standard at a point of standards application has been attained or exceeded.

RECORD KEEPING

All plan modifications, documentation reports, monitoring, annual reports, plans, notifications, and amendments will be placed in the facility's operating record and on We Energies' CCR Rule Compliance Data and Information website as required by s. NR 506.17(3), Wis. Adm. Code.

CLOSURE AND LONG-TERM CARE COST ESTIMATES

Although We Energies will be perpetually responsible, in accordance with s. 289.41(1m)(c), Wis. Stats., for the long-term care of this landfill, proof of owner financial responsibility is required for the closure of the most expensive area, and for long term care of the entire facility for a minimum period of 40 years. Closure costs reflect the most expensive area to close, which includes 22.7 acres of the landfill. The closure costs include the purchasing, hauling, placement and documentation testing of all the final cover materials including soils, membranes, fabrics, and topsoil; seeding, fertilizing, mulching and labor; the cost of preparing an engineering report documenting the work performed and a 10% contingency per s. NR 520.02(2), Wis. Adm, Code. Long-term care costs include land surface care; leachate pumping, transportation, monitoring and treatment; groundwater monitoring including sample collection and analysis; leachate line jetting and televising; annual cost of electricity for maintaining the closed site; and a 10% contingency per s. NR 520.02(3), Wis. Adm. Code.

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

DRAFT CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION FOR INITIAL PERMITTING OF COAL COMBUSTION RESIDUALS (CCR) LANDFILL FOR THE CALEDONIA ASH LANDFILL (LICENSE #3232)

FINDINGS OF FACT

The Department of Natural Resources (department) finds that:

1. We Energies owns and operates a non-hazardous solid waste disposal facility located in NE 1/4 of Section 1, Township 4 North, Range 22 East, Village of Caledonia, Racine County, Wisconsin.

2. The department conditionally approved a plan of operation for the facility on August 27, 1987.

3. On January 31, 2023, GEI Consultants, on behalf of We Energies, submitted a plan modification request to the department for the initial permitting of a CCR landfill. The review fee of $30,500 was received by the department on February 15, 2023.

4. The information submitted in connection with the modification request includes the following:

    a. A report titled "We Energies Caledonia Ash Landfill, License #3232 – FID# 252108450, Plan of Operation Modification" dated and received January 31, 2023.

    b. A report titled "Plan of Operation Modification, We Energies Caledonia Ash Landfill, License #3232 – FID# 252108450" dated and received December 13, 2023.

    c. A report titled "Plan of Operation Modification; Revised Submittal, We Energies Caledonia Ash Landfill, License #3232 – FID# 252108450" dated and received August 23, 2024.

5. Additional documents considered in connection with the modification request include the following:

    a. The department's August 27, 1987, plan of operation approval.

    b. The department's February 12, 2020, plan of operation approval modification for revised closure and ling-term care cost estimates.

    c. An internal department memo dated May 5, 2025 from the department's Drinking Water and Groundwater Program concurring with the request for an exemption from ch. NR 140, Wis. Adm. Code, groundwater quality standards for sulfate at well W08D.

    d. An internal department memo dated October 2, 2025 from the department's Drinking Water and Groundwater Program concurring with the request for an exemption from ch. NR 140, Wis. Adm. Code, groundwater quality standards for the following parameters and wells.

        i. Boron at wells W08D, W09D, W10D, W46D, W48, W49, and W50
        ii. Fluoride at wells W08D, W09D, W10D, W46D, W48, W49, and W50

e. An internal department memo dated October 15, 2025 from the department's Drinking Water and Groundwater Program concurring with the request for an exemption from ch. NR 140, Wis. Adm. Code, groundwater quality standards for molybdenum at wells W08D, W09D, W10D,W46D, W49, and W50.

f. A memo to the We Energies Caledonia Ash Landfill file dated November 17, 2025, summarizing the department's evaluation of the preventive action limits (PALs) and alternative concentration limits (ACLs).

g. The department's Solid Waste Technical Guidance for PAL/ACL Calculations (guidance document WA 1105, 2007).

h. Groundwater monitoring data for the We Energies Caledonia Ash Landfill contained in the department's Groundwater and Environmental Monitoring System (GEMS).

i. The department files for the We Energies Caledonia Ash Landfill, License #3232.

6. Additional information considered in connection with the modification request include the following:

a. A virtual public information meeting was held on December 10, 2024, to comply with s. NR 514.045(3), Wis. Adm. Code, regarding the initial permitting of CCR landfill. During this meeting the department received no oral comments from the public regarding the proposed plan modification.

b. A 60-day public comment period was held between November 21, 2024, and January 20, 2025, to comply with s. NR 514.045(3), Wis. Adm. Code, regarding the initial permitting of a CCR landfill. The department received no written comments from the public regarding the proposed plan modification.

c. A 30-day public comment period was held between [add date] and [add date] to comply with s. NR 514.045(4), Wis. Adm. Code, regarding the initial permitting of a CCR landfill.

7. Additional facts relevant to the review of the plan of operation modification request include:

a. CCR landfills are regulated under 40 CFR Part 257 A and D. Wisconsin updated chs. NR 500 – 520, Wis. Adm. Code, to incorporate federal requirements related to CCR landfills in July 2022. Wisconsin intends to seek Environmental Protection Agency (EPA) approval for a partial permit program for CCR landfills in Wisconsin. To obtain EPA approval of a partial permit program for CCR landfills, Wisconsin regulations are required to be as protective as the federal rule.

b. It is necessary to establish a special groundwater protection standard at all designated CCR monitoring wells for total cobalt to be applied as the PAL for the purpose of evaluating the need for response actions under s. NR 508.06, Wis. Adm. Code. The special groundwater protection standard for cobalt serves to maintain Wisconsin's regulations of the CCR landfill as protective as the federal CCR rule.

8. The department considered the following information pertaining to the request for groundwater quality exemptions:

a. We Energies has requested an exemption from ch. NR 140, Wis. Adm. Code, groundwater quality standards for boron, fluoride, molybdenum, and sulfate in accordance with s. NR 140.28(1), Wis. Adm. Code, to allow for approval of this plan of operation for initial permitting where a PAL adopted under ss. NR 140.10 or 140.12, Wis. Adm. Code has been attained or exceeded.

The department considered the following information while reviewing the need for exemptions to groundwater standards at this facility:

i. Baseline groundwater monitoring data provided in the August 23, 2024 plan of operation modification request.

ii. Well construction details, boring logs, well location plan sheets, and water table maps provided in the August 23, 2024 plan of operation modification request.

iii. The landfill design specifications provided in the August 23, 2024 plan of operation modification request.

iv. Groundwater sample data collected from around the Caledonia Ash Landfill that is available in GEMS dating back to 1980.

v. Information in the department's files relating to groundwater conditions at the Caledonia Ash Landfill.

b. The department finds the following related to the design of the landfill and substances associated with the Caledonia Ash Landfill that exceed ch. NR 140, Wis. Adm. Code, groundwater quality standards, including boron, fluoride, molybdenum and sulfate:

i. To minimize any incremental increase in contamination from the Caledonia Ash Landfill, the facility is designed to contain and collect leachate. The design of the Caledonia Ash Landfill includes a liner (either five feet of compacted clay or a composite liner of four feet of compacted clay with HDPE geomembrane), leachate collection system, and composite final cover. These design features will limit increases of contaminants in the groundwater.

ii. In accordance with s. NR 504.05(1), Wis. Adm. Code, the department considers landfills designed in substantial conformance with these design criteria to be designed to achieve the lowest possible concentration of these substances in the groundwater which is technically and economically feasible.

iii. The Caledonia Ash Landfill will not cause the concentrations of the substances with detection sample concentrations between the PAL and the ES to attain or exceed the ES for these substances at a point of standards application because of the facility design.

iv. The anticipated increase in the concentrations of these substances does not present a threat to public health or welfare because of the landfill design.

v. Based on an examination of site conditions, the department finds that the groundwater concentrations of boron, fluoride, molybdenum and sulfate in the site area were found at

concentrations exceeding the ch. NR 140, Wis. Adm. Code groundwater quality standards.

c. Based on an examination of the groundwater quality data for the Caledonia Ash Landfill and the information in findings of fact 8.a and 8.b above, the department finds the requested groundwater quality exemptions to be warranted for the following wells and substances:

i. **PAL** exemptions for substances of **public welfare concern and nitrate plus nitrite (as N)** in accordance with s. NR 140.28(3)(a), Wis. Adm. Code [remove/edit this FOF as applicable]:

Substance:	**Monitoring Wells:**
Sulfate	W08D
Notes: - Baseline concentrations attain or exceed the **PAL** but are below the ES in **two or more** sample rounds at the monitoring wells. - PALs for substances of public welfare concern are established in s. NR 140.12, Wis. Adm. Code, and for nitrate plus nitrite (as N) in s. NR 140.10, Wis. Adm. Code.	

ii. **PAL** exemptions for substances of **public health concern (other than nitrate plus nitrite (as N))** in accordance with s. NR 140.28(3)(b), Wis. Adm. Code [remove/edit this FOF as applicable]:

Substance:	**Monitoring Wells:**
Boron	W08D, W09D, W10D, W46D, W48, W49,W50
Fluoride	W08D, W09D, W10D, W46D, W48, W49,W50
Molybdenum	W09D, W46D
Notes: - Baseline concentrations attain or exceed the **PAL** but are below the ES in **two or more** sample rounds at the monitoring wells. - PALs for substances of public health concern are established in s. NR 140.10, Wis. Adm. Code.	

iii. **ES** exemptions for substances of **public health concern (other than nitrate plus nitrite (as N))** in accordance with s. NR 140.28(4)(b), Wis. Adm. Code:

Substance:	**Monitoring Wells:**
Molybdenum	W08D, W10D, W49, W50
Notes: - Baseline concentrations attain or exceed the **ES** in at least **one or more** sample rounds at the monitoring wells. - ESs for substances of public health concern are established in s. NR 140.10, Wis. Adm. Code.	

9. The department considered the following information with respect to the review of PALs and ACLs:

    a. The PALs for indicator parameters and the ACLs established in this approval are based on at least 8 sample results for each substance at each monitoring well.

    b. The PALs for indicator parameters established in this approval are equal to the mean background water quality plus 3 standard deviations or the mean background water quality plus the minimum increase specified in Table 3, ch. NR 140, Wis. Adm. Code, whichever is greater.

    c. The ACLs established in this approval are equal to the mean background water quality plus 2 standard deviations.

    d. The calculated PALs and ACLs were rounded up to 2 significant figures.

10. The department considered the following information while reviewing the proposed changes to the non-CCR groundwater monitoring parameter list.

    a. Removal of chloride from the parameter list for non-CCR monitoring wells.

        i. Chloride has been sampled semiannually at non-CCR monitoring wells since at least 2010.

        ii. No chloride concentrations have been detected above the PAL of 125 mg/L.

        iii. Chloride is not a required groundwater monitoring parameter for landfills accepting fly or bottom ash waste in ch. NR 507 Appendix 1, Table 2, Wis. Adm. Code.

        iv. Chloride will be sampled as a detection monitoring parameter at CCR monitoring wells in accordance with ch. NR 507 Appendix 1, Table 1A, Wis. Adm. Code.

    b. Removal of potassium from the parameter list for non-CCR monitoring wells.

        i. Potassium has been sampled semiannually at non-CCR monitoring wells since at least 2010.

        ii. Potassium concentrations are relatively stable in the wells.

        iii. There are no established PALs or ACLs for potassium.

        iv. Potassium is not a required groundwater monitoring parameter for landfills accepting fly or bottom ash waste in ch. NR 507 Appendix 1, Table 2, Wis. Adm. Code.

    c. Removal of calcium from the parameter list for non-CCR monitoring wells.

        i. Calcium has been sampled semiannually at non-CCR monitoring wells since at least 2010.

        ii. Although there have been instances of exceedances of well-specific PALs for calcium due to an increasing trend in calcium, the boron concentrations in those wells remains stable, indicating the landfill is not a likely cause of the calcium increases.

iii. Calcium is not a required groundwater monitoring parameter for landfills accepting fly or bottom ash waste in ch. NR 507 Appendix 1, Table 2, Wis. Adm. Code.

d. Removal of magnesium from the parameter list for non-CCR monitoring wells.

i. Magnesium has been sampled semiannually at non-CCR monitoring wells since at least 2010.

ii. Although there have been instances of exceedances of well-specific PALs for magnesium due to an increasing trend in magnesium, the boron concentrations in those wells remains stable, indicating the landfill is not a likely cause of the magnesium increases.

iii. Magnesium is not a required groundwater monitoring parameter for landfills accepting fly or bottom ash waste in ch. NR 507 Appendix 1, Table 2, Wis. Adm. Code.

e. Removal of sodium from the parameter list for non-CCR monitoring wells.

i. Sodium has been sampled semiannually at non-CCR monitoring wells since at least 2010.

ii. Although there have been instances of exceedances of well-specific PALs for calcium due to an increasing trend in sodium, the boron concentrations in those wells remains stable, indicating the landfill is not a likely cause of the sodium increases.

iii. Sodium is not a required groundwater monitoring parameter for landfills accepting fly or bottom ash waste in ch. NR 507 Appendix 1, Table 2, Wis. Adm. Code.

f. Removal of molybdenum from the parameter list for non-CCR monitoring wells.

i. Molybdenum has been sampled semiannually at non-CCR monitoring wells since at least 2010.

ii. Concentrations of molybdenum appear to increase with depth at the site, with highest concentrations in deeper non-CCR wells. This pattern of increasing concentrations with depth is inconsistent with a potential release from a landfill into shallow groundwater.

iii. Wells with higher molybdenum concentrations in the landfill correlate with wells that have lower alkalinity, calcium, and magnesium concentrations. Previous studies in the region have correlated wells with lower alkalinity, calcium and magnesium with bedrock-influenced groundwater.

iv. The ionic composition of the deeper wells where the molybdenum exceedances occur appears to be more consistent with bedrock groundwater than shallow groundwater at the landfill.

v. Molybdenum is not a required groundwater monitoring parameter for landfills accepting fly or bottom ash waste in ch. NR 507 Appendix 1, Table 2, Wis. Adm. Code.

g. Removal of selenium from the parameter list for non-CCR monitoring wells.

i. Selenium has been sampled semiannually at non-CCR monitoring wells since at least 2010.

ii. Selenium concentrations at active non-CCR monitoring wells have not been detected above the PAL at the landfill.

iii. Selenium is not a required groundwater monitoring parameter for landfills accepting fly or bottom ash waste in ch. NR 507 Appendix 1, Table 2, Wis. Adm. Code.

11. Granting the exemptions that are set forth below will not inhibit compliance with Wisconsin solid waste management standards in chs. NR 500 through 538, Wis. Adm. Code.

12. The special conditions set forth below are needed to assure that the sites are operated and maintained in an environmentally sound manner. If the special conditions are complied with, the proposed modifications will not inhibit compliance with the standards set forth in the applicable portions of chs. NR 500-538, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The department has the authority under s. 289.30(6), Wis. Stats., to modify a plan of operation approval if the modification would not inhibit compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

2. The department has the authority to approve a modification to the plan of operation with special conditions if the conditions are needed to ensure compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

3. The initial permitting for CCR landfills plan modification is required in accordance with s. NR 514.045, Wis. Adm. Code to update the plan of operation to comply with the applicable requirements under chs. NR 500 to 520, Wis. Adm. Code, for CCR landfills.

4. The department has authority under ss. NR 140.28 and NR 507.27, Wis. Adm. Code, and ss. 160.19(8) to (10), Wis. Stats., to grant exemptions to groundwater quality standards and to establish corresponding alternative concentration limits.

5. The department has authority under s. NR 140.20, Wis. Adm. Code, and s. 160.15(3), Wis. Stats., to establish preventive action limits for groundwater indicator parameters at waste disposal facilities.

6. The conditions of approval set forth below are needed to ensure compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

7. In accordance with the foregoing, the department has the authority under s. 289.30(6), Wis. Stats., to issue the following conditional plan of operation modification approval.

8. 40 CFR 257.95(h)(2)(i) establishes a groundwater protection standard of 6 micrograms per liter of water (ug/L) for total cobalt which is less than the preventative action limit (PAL) for cobalt established in s. NR 140.10, Wis. Adm. Code.

GRANT OF EXEMPTION

1. The Caledonia Ash Landfill has demonstrated circumstances which warrant an exemption to the groundwater standards in ch. NR 140, Wis. Adm. Code, as specified in s. NR 140.28, Wis. Adm. Code, for the wells and substances listed below. The exemption allows the construction of the Caledonia Ash Landfill in an area where the baseline concentration of a substance has attained or exceeded a PAL or enforcement standard (ES). Refer to Finding of Facts 8.a – 8.c for additional information. This exemption is granted under the authority of ss. NR 140.28 and NR 507.27, Wis. Adm. Code and ss. 160.19(8) to (10), Wis. Stats. as noted above. The following exemptions to the specified NR 140 groundwater quality standards are hereby granted and apply only to the Caledonia Ash Landfill and do not apply to any other present or past facility or activity.

   a. **PAL** exemptions for substances of **public welfare concern and nitrate plus nitrite (as N)** in accordance with s. NR 140.28(3)(a), Wis. Adm. Code:

Substance:	**Monitoring Wells:**
Sulfate	W08D

   b. **PAL** exemptions for substances of **public health concern (other than nitrate plus nitrite (as N))** in accordance with s. NR 140.28(3)(b), Wis. Adm. Code:

Substance:	**Monitoring Wells:**
Boron	W08D, W09D, W10D, W46D, W48, W49,W50
Fluoride	W08D, W09D, W10D, W46D, W48, W49,W50
Molybdenum	W09D. W46D

   c. **ES** exemptions for substances of **public health concern (other than nitrate plus nitrite (as N))** in accordance with s. NR 140.28(4)(b), Wis. Adm. Code:

Substance:	**Monitoring Wells:**
Molybdenum	W08D, W10D,W49,W50

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The department hereby approves the proposed modifications for the initial permitting of a CCR landfill for the Caledonia Ash Landfill, subject to compliance with the applicable sections of ch. 289, Wis. Stats., applicable sections of chs. NR 500 through 538, Wis. Adm. Code and the following conditions:

1. The landfill owner or operator shall place all of the following on the landfill's publicly accessible internet site and shall do so in accordance with the requirements specified in s. NR 506.17(3), Wis. Adm. Code.

   a. The landfill's annual report required under s. NR 506.20(3), Wis. Adm. Code.

b. The landfill's notification required by s. NR 506.084(2)(b), Wis. Adm. Code related to the end of the long-term care proof period.

c. All notifications required for CCR landfills in addition to those specified under s. NR 506.17(3)(d), Wis. Adm. Code.

d. A copy of the affidavit for the deed notation required under s. NR 506.083(4), Wis. Adm. Code.

2. The landfill owner or operator shall notify the department when the information required under s. NR 506.17(3)(d), Wis. Adm. Code and Condition 1. above have been placed on the landfill's publicly accessible internet site.

3. The annual report required by s. NR 506.20(3), Wis. Adm. Code, shall also include the following:

a. The leachate line video camera inspection required by s. NR 506.07(5)(c), Wis. Adm. Code.

b. The following information pertaining to the non-CCR well environmental monitoring program:

i. a summary of groundwater sampling results (including lysimeter and water supply well data) that exceed any approved PAL or ACL or ch. NR 140, PAL or ES (where ACLs are not approved), and an assessment of the cause and significance of the exceedances.

ii. an assessment of any increasing concentration trends of monitored parameters in groundwater over the past 4 or more sampling events.

iii. a groundwater elevation contour map with a summary of any significant change in flow patterns compared to previous flow patterns, unless otherwise approved by the department in writing.

iv. a summary of the status and condition of all environmental monitoring devices including:

1. a list of all monitoring devices that did not function properly or were damaged.

2. a description of repairs, replacements, or modifications completed to regain function of the monitoring device.

3. a summary of anticipated significant monitoring device activities for the upcoming year, such as installations or abandonments.

This condition supersedes condition 13 of the department's May 19, 2010, approval.

4. The landfill owner or operator shall maintain procedures within the fugitive dust control plan for logging citizen complaints received by the landfill involving CCR fugitive dust events at the facility throughout the active life of the landfill.

5. Environmental monitoring shall be performed during both the active life and after closure in accordance with the schedules provided in the environmental monitoring tables of Attachment #3. Attachment #3,

Table 1 establishes the designated CCR monitoring wells for compliance with s. NR 508.06, Wis. Adm. Code.

This condition supersedes condition 1 of the department's January 28, 2015 approval.

6. In addition to the monitoring requirements of condition #5, the landfill owner or operator shall collect at least one additional sample from monitoring wells W08D and W49 for lithium and then calculate and propose PALs for lithium in these wells.

7. The ch. NR 140, Wis. Adm. Code, preventive action limits PALs and ACLs for the groundwater monitoring points shall be those listed in Attachment # 4.The groundwater protection standard for total cobalt at all CCR designated monitoring wells shall be 6 ug/L, and be applied as a PAL for the purpose of evaluating the need for response actions under s. NR 508.06, Wis. Adm. Code (see FOF 7, b and c; COL 8).

8. The PALs and enforcement standards (ESs) for all other substances not identified in condition #7 and Attachment #4 shall be as specified in ch. NR 140, Wis. Adm. Code, unless specifically approved by the department in writing.

9. Proof of financial responsibility for closure and long-term care shall be adjusted in accordance with ch. NR 520, Wis. Adm. Code. The proof of financial responsibility shall be established based upon the approved closure and long-term care cost estimates included in the attached Tables 1and 2of Attachment #5.

10. Vegetative cover shall be maintained on all areas of final cover to prevent erosion. The final cover vegetation shall be mowed to prevent the growth of tall weeds and woody vegetation.

Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

This approval is based on the information available to the department as of the date of approval. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the department may ask you to provide further information relating to this activity. Likewise, the department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the department, you should know that Wisconsin statutes and administrative codes establish time periods and requirements for reviewing department decisions.

To seek judicial review of the department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. 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. The petition shall name the Department of Natural Resources as the respondent.

Dated: November 17, 2025

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

DRAFT

_____
Melanie Burns
Waste and Materials Management Program Supervisor
Southeast Region

DRAFT

_____
Alicia Fager
Waste Management Engineer
Southeast Region

DRAFT

_____
Mark Peters
Waste Management Hydrogeologist
Southeast Region

Attachment #3 for We Energies Caledonia Ash Landfill -
CCR Initial Permitting Plan of Operation Modification Approval
License # 3232
Environmental Monitoring Tables

Table 1
Detection Groundwater Monitoring

Wells	DNR ID#	WUWN	Comment	Sampling & Reporting[1] Frequency	Parameter Codes	Parameters
CCR Wells						
W08D	280	PI728		Sample Semiannually May and November	04189	Elevation, Groundwater (feet above mean sea level)
W09D	282	PI727			00001	Odor
W10D	284	PI726			00002	Color
W46D	286	PI725			00003	Turbidity
W48	288	PI724			00010	Temperature, of water taken in field ^{0}C
W49	290	VR990			00094	Field Conductivity @ 25^{0} C(umho/cm)
W50	292	VR991			00400	Field pH (standard units)
					00410	Alkalinity,total (mg/L)
					00900	Hardness, total (mg/L)
					00916	Calcium, total (mg/L)
					00940	Chloride, total (mg/L)
					00945	Sulfate, total (mg/L)
					00951	Fluoride, total (mg/L)
					01022	Boron, total (mg/L)
					70300	Total Dissolved Solids (TDS) (mg/L)
Non-CCR Wells						
3AR	230	LO754		Sample Semiannually May and November	04189	Elevation, Groundwater (feet above mean sea level)
3BR	232	LO755			00001	Odor
3CR	234	LO756			00002	Color
8A	213	DM420			00003	Turbidity
8B	214	DM421			00010	Temperature, of water taken in field ^{0}C
8C	215	DM422			00094	Field Conductivity @ 25^{0} C(umho/cm)
9A	216	DM423			00400	Field pH (standard units)
9B	217	DM424			00681	Dissolved Organic Carbon (DOC) (mg/L)
9C	218	DM425			00946	Sulfate, filtered (mg/L)
JOA	219	DM426			01020	Boron, filtered (mg/L)
l0C	221	DM428			22413	Total Hardness, filtered (mg/L)
W-12D	229	IM537			39036	Alkalinity, filtered (mg/L)
16AR	236	LO757				
16BR	238	LO758				
16CR	240	LO759				
27RR	222	DM429				
W-32A	224	DM431				
W-32BR	225	DM432				
W-32C	226	DM433				
W-46A	253	VY300				
W-46B	254	VY301				
W-46C	255	VY302				

1. Unless specifically stated, reporting is as per code typically within 60 days after the end of the specified monitoring period. Trip Blank (999) and/or Field Blank (997) data must also be submitted electronically.

Attachment #3 for We Energies Caledonia Ash Landfill -
CCR Initial Permitting Plan of Operation Modification Approval
License # 3232
Environmental Monitoring Tables

Table 2
Leachate Monitoring

Wells	DNR ID#	Comment	Sampling & Reporting[1] Frequency	Parameter Codes	Parameters
Leachate Monitoring Points					
Ltank	300		Complie Monthly Report Semiannually May and November	00032	Leachate Volume Pumped (1000s of Gallons)
			Sample Semiannually May and November	00094	Field Conductivity @ 25° C(umho/cm)
				00310	Biochemical Oxygen Demand (BOD), 5 day@ 20° C (mg/l)
				00400	Field pH (standard units)
				00410	Alkalinity,total (mg/L)
				00900	Hardness, total (mg/L)
				00900	Hardness, total (mg/L as CaCO3)
				00940	Chloride, total (mg/L)
				00945	Sulfate, total (mg/L)
				00951	Fluoride, total (mg/L)
				01012	Beryllium, total (ug/L)
				01022	Boron, total (mg/L)
				01027	Cadmium, total (ug/L)
				01037	Cobalt, total (ug/L)
				01051	Lead, total (ug/L)
				01055	Manganese, total (ug/L)
				01059	Thallium, total (ug/L)
				01062	Molybdenum, total (ug/L)
				01097	Antimony, total (ug/L)
				01132	Lithium, total (ug/L)
				01147	Selenium, total (ug/L)
				11503	Radium 226+228, total in water (pCi/L)
				71900	Mercury, total (ug/L)
				74010	Iron, total (mg/L)
			Sample Annually May		SVOCs (ug/L) Using EPA Solid Waste Method 8270 (NR 507, appendix IV)
Leachate Head Wells					
LH-1	410	To be constructed	Measure Quarterly Report Semiannually May and November	00031	Leachate Depth (feet)
LH-2	412	To be constructed		99423	Leachate Elevation (feet above mean sea level)
LH-3	414	To be constructed			
LH-4	416	To be constructed			
LH-5	418	To be constructed			

1. Unless specifically stated, reporting is as per code typically within 60 days after the end of the specified monitoring period.
Trip Blank (999) and/or Field Blank (997) data must also be submitted electronically.

Attachment #3 for We Energies Caledonia Ash Landfill -
CCR Initial Permitting Plan of Operation Modification Approval
License # 3232
Environmental Monitoring Tables

Table 3					
Surface Water Monitoring					
Wells	**DNR ID#**	**Comment**	**Sampling & Reporting[1] Frequency**	**Parameter Codes**	**Parameters**
Surface Water Monitoring Points					
Sedimentation Basin	400		Sample Semiannually May and November	00010 00094 00150 00400	Temperature, of water taken in field °C Field Conductivity @ 25° C(umho/cm) Total Suspended Solids (mg/L) Field pH (standard units)

1. Unless specifically stated, reporting is as per code typically within 60 days after the end of the specified monitoring period.

Attachment #4 for Caledonia Ash Landfill - CCR Initial Permitting Plan of Operation Modification
License # 3232
PAL and ACL Tables

Table 1 - CCR Well Preventive Action Limits (PALs)

Wells[1.]	DNR ID#	WUWN	Alkalinity (mg/L) GEMS ID#: 00410	Calcium (mg/L) GEMS ID#: 00916	Hardness (mg/L) GEMS ID#: 00900	Specific Conductance (umhos/cm) GEMS ID#: 00094	Total Dissolved Solids (mg/L) GEMS ID#: 70295	Lithium (ug/L) GEMS ID#: 01132	pH Lower/Upper (SU) GEMS ID#: 00094
W08D	280	PI728	260	77	320	1100	660	TBD*	6.5/8.6
W09D	282	PI727	240	44	190	570	390	6.3	7.0/9.1
W10D	284	PI726	240	47	190	580	400	5.6	6.99.0
W46D	286	PI725	270	53	230	630	420	6	6.5/8.6
W48	288	PI724	330	52	240	670	430	7.8	6.9/9.0
W49	290	VR990	230	45	180	580	410	TBD*	6.9/9.0
W50	292	VR991	250	54	220	770	470	6.9	6.6/8.7

Notes *TBD= To be Determined. Additional data will be colllected to obtain minimum number of samples for calculation in accordance with Condition 7 of this Plan of Operation modification decision.

Attachment #4 for Caledonia Ash Landfill -
CCR Initial Permitting Plan of Operation Modification
License #3232
PAL and ACL Tables

Table 2 - CCR Well Alternative Concentration Limits (ACLs)

Wells	DNR ID#	WUWN	Boron (mg/L) GEMS ID#: 01022	Fluoride (mg/L) GEMS ID#: 00951	Molybdenum (ug/L) GEMS ID#: 01062	Sulfate (mg/L) GEMS ID#: 00945
W08D	280	PI728	0.51	1.4	52	240
W09D	282	PI727	0.45	1.5	33	
W10D	284	PI726	0.46	1.5	44	
W46D	286	PI725	0.42	1.9	36	
W48	288	PI724	0.42	1.1		
W49	290	VR990	0.48	1.7	54	
W50	292	VR991	0.56	1.5	45	

Notes.

Attachment #4 for Caledonia Ash Landfill - CCR Initial Permitting Plan of Operation Modification
License # 3232
PAL and ACL Tables

Table 3- Non- CCR Well Preventive Action Limits (PALs)

Wells[1.]	DNR ID#	WUWN	Alkalinity (mg/L) GEMS ID#: 39036	Calcium (mg/L) GEMS ID#: 00915	Hardness (mg/L) GEMS ID#: 22413	Magnesium (mg/L) GEMS ID#: 00925	Potassium (mg/L) GEMS ID#: 00935	Sodium (ug/L) GEMS ID#: 00930	Specific Conductance (umhos/cm) GEMS ID#: 00094
W-3AR	230	LO754	200	90	500	52	NA	110	1100
W-3BR	232	LO755	510	92	590	110	NA	52	1200
W-3CR	234	LO756	180	63	270	42	NA	84	830
W-8A	213	DM420	480	83	510	75	NA	97	2000
W-8B	214	DM421	630	150	860	150	NA	18	2000
W-8C	215	DM422	500	120	1200	120	NA	23	3100
W-9A	216	DM423	540	97	1100	140	NA	48	2600
W-9B	217	DM424	450	110	690	110	NA	47	1800
W-9C	218	DM425	420	75	400	61	NA	81	1400
W-10A	219	DM426	440	120	510	84	NA	27	1500
W-IOC	221	DM428	380	92	640	67	NA	43	1500
W-12D	229	IM537	230	52	210	35	NA	70	670
W-I6AR	236	LO757	420	58	330	60	NA	170	1200
W-16BR	238	LO758	520	110	610	96	NA	53	1200
W-I6CR	240	LO759	500	71	500	93	NA	32	930
W-27RR	222	DM429	540	120	650	110	NA	43	1300
W-32A	224	DM43I	430	91	590	82	NA	26	1600
W-32BR	225	DM432	410	130	680	82	NA	20	1600
W-32C	226	DM433	450	110	590	80	NA	39	1900
W-46A	253	VY300	380	76	380	62	6.7	39	820
W-46B	254	VY30I	390	88	430	66	19	110	1000
W-46C	255	VY302	260	86	350	38	7.9	86	770

Notes

Attachment #4 for Caledonia Ash Landfill -
CCR Initial Permitting Plan of Operation Modification
License #3232
PAL and ACL Tables

Table 4 - Non-CCR Well Alternative Concentration Limits (ACLs)

Wells	DNR ID#	WUWN	Arsenic (mg/L) GEMS ID#: 01000	Boron (mg/L) GEMS ID#: 01020	Fluoride (mg/L) GEMS ID#: 00950	Manganese (ug/L) GEMS ID#:01056	Mercury (ug/L) GEMS ID#:71890	Molybdenum (ug/L) GEMS ID#:01060	Nitrate (as N) (mg/L) GEMS ID#: 00618	Sulfate (mg/L) GEMS ID#: 00946
W-3AR	230	LO754	3	0.6	0.9			110		320
W-3BR	232	LO755	2.1		1.04			49		150
W-3CR	234	LO756	4	0.56	1.01	45		62		260
W-8A	213	DM420	12		0.96	200		13		220
W-8B	214	DM421				880	1	13	25	290
W-8C	215	DM422	12			140	2	16	20	320
W-9A	216	DM423			1.1	130	1.4	21	15	340
W-9B	217	DM424			1		0.8	17	61	200
W-9C	218	DM425		0.65	1.2	120	1.5	56		220
W-10A	219	DM426			1.1	460	2	21		170
W-IOC	221	DM428		0.34	1	270	1.5	20		210
W-12D	229	IM537		0.62	1.3			90		
W-I6AR	236	LO757	5	0.45	1.31	53				
W-16BR	238	LO758	1.5					38		200
W-I6CR	240	LO759	1.8	0.23	1.31			25		
W-27RR	222	DM429		0.57				33		180
W-32A	224	DM43I				560	0.6	17		150
W-32BR	225	DM432				210	0.8			190
W-32C	226	DM433				120	1.7	15		200
W-46A	253	VY300						14		
W-46B	254	VY30I		0.27				18		
W-46C	255	VY302								

Notes.

Attachment #5 - Closure Cost Estimate
Caledonia Ash Landfill
License #3232
Table 1 - Closure Cost Estimates

Item(1)	*Quantity*	*Unit*	*Unit Cost(3)*	*Total(4)*
Engineering Plans and Specifications				
Engineering Plans and Specifications	1	LS	$ 30,000.00	$ 30,000.00
Final Cover Construction				
Mobilization	1	LS	$ 10,000.00	$ 10,000.00
Survey and Construction Staking	1	LS	$ 20,000.00	$ 20,000.00
24-inch Barrier Layer (Clay or Soil) - Haul, Place, and Compact	73,245	cy	$ 12.00	$ 878,940.00
Geosynthetic Clay Liner (GCL) (if soil barrier layer is utilized)	988,812	sf	$ 0.70	$ 692,168.00
40-mil LLDPE Geomembrane Textured	988,812	sf	$ 0.69	$ 682,280.00
Geocomposite Drainage Layer	988,812	sf	$ 0.75	$ 741,609.00
Rooting Zone Soil (30-inches)	91,556	cy	$ 15.30	$ 1,400,807.00
Topsoil (6-inches)	18,311	cy	$ 25.00	$ 457,775.00
Seed, Mulch, Fertilizer, Lime	22.7	acre	$ 5,000.00	$ 113,500.00
Construction QA & Documentation				
Construction QA & Documentation	22.7	acre	$ 25,000.00	$ 567,500.00
			Subtotal Closure Cost	$ 5,594,579.00
			Contingency (10%)	$ 559,458.00
			Total Closure Cost	**$ 6,154,037.00**

Notes
(1)This closure cost estimate is based on the largest open area of the staged construction plan of 22.7 acres.
(2)The final cover cross-section is based on the Plan of Operation Modfiction dated September 2023.
(3)Costs are in 2023 dollars.
(4)Costs are rounded to the nearest dollar.

Attachment #5
Caledonia Ash Landfill
License #3232
Table 2 - Long-Term Care Cost Estimates

Item	*Quantity*	*Unit*	*Unit Cost(1)*	*Total (4)*
Cover Maintenance				
Erosion Repair, Fertilizer, Seed/Mulch	1.8	ac	$6,000.00	$ 10,800.00
Mowing	9.00	ac	$140.00	$ 1,260.00
Road/Site Access Maintenance	1.00	LS	$2,000.00	$ 2,000.00
Monitoring System Maintenance				
Groundwater Monitoring Wells	0.68	ea	$2,500.00	$ 1,700.00
Leachate Management System Maintenance				
Leachate Line Cleaning	6500.00	lf	$0.72	$ 4,680.00
Lift Pump Inspection	24.00	hr	$140.00	$ 3,360.00
Leachate Pumping Electricity Costs	1.00	LS	$1,325.00	$ 1,325.00
Pump Replacement(2)	0.10	ea	$11,000.00	$ 1100.00
Leachate/Condensate Hauling(3)	1221.90	1000 gal	$60.00	$ 73,314.00
Leachate/Condensate Treatment & Disposal(3)	1221.90	1000 gal	$30.00	$ 36,657.00
Site Inspections				
Inspection of Final Cover System - Semi-Annual	2.00	LS	$3,000.00	$ 6,000.00
Groundwater and Groundwater Head Monitoring (Semi-Annual and Annual)				
Semi-annual Landfill Well Monitoring (22 wells - field parameters & analytical)	44.00	ea	$231.79	$ 10,199.00
Piezometer Monitoring (Elevation)	4.00	ea	$193.13	$ 773.00
Leachate Monitoring				
Leachate Head Well Elevation (Quarterly)	20.00	ea	$13.02	$ 260.00
Leachate Sample Analysis (Semi-Annual)	2.00	ea	$489.52	$ 979.00
Leachate Analysis for SVOCs (annual)	1.00	ea	$281.40	$ 281.00
Sedimentation Basin Monitoring (Semi-Annual)				
Sedimentation Basin Analysis	2.00	ea	$170.52	$ 341.00
Lab Report Generation / Mobilization				
EDD/Reporting	2.00	ea	$60.00	$ 120.00
Mobilizations, travel, miles. S&H support, & misc exspenses	1.00	ea	$4,000.00	$ 4,000.00

Summary	Years	Annual Cost	Total Cost
Land Surface Care	40	$14,060.00	$562,400.00
Site Inspection Years	40	$6,000.00	$240,000.00
Groundwater Monitoring	40	$15,211.28	$608,451.00
Leachate Monitoring	40	$1260.44	$50,418.00
Leachate Hauling	40	$73,314.00	$2,932,560.00
Leachate Treatment	40	$36,657.00	$1,466,280.00
Leachate System Maintenance	40	$10,465.00	$418,600.00
Leachate Head Monitoring	40	$260.40	$10,416.00
Sedimentation Basin Monitoring	40	$341.04	$13,642.00
Subtotal Long-Term Care Cost:		$157,569.16	**$6,302,766.00**
Contingency (10%)		$15,756.92	$630,277.00
Total Annual Long-Term Care Cost:		$173,326.08	**$6,933,043.00**

Notes
(1)Annual costs are in 2023 dollars.
(2)Assumes the leachate pumps will be replaced once throughout the duration of LTC.
(3)Leachate volume based on estimated 1 in/acre per year per NR 512.12(3)(b).
(4)Average costs per year are rounded to the nearest dollar.