APPENDIX A1: CORRESPONDENCE

WDNR Conditional Plan of Operation Approval for the Adams County Landfill Horizontal Expansion (2/14/2019)

WDNR Incompleteness Determination for the Feasibility Report for the Proposed Adams County Sanitary Landfill Vertical Expansion (4/14/2023)

WDNR Construction Documentation Approval for Phase 6 Liner, Adams County Sanitary Landfill (3/22/2024)

Email from Colin Maus (WDNR) to Jalen Thomas (Tetra Tech) regarding Clarification on WDNR Incompleteness Item 4a (6/27/2025)

Email from Drae Rogers (WDNR) to Jalen Thomas (Tetra Tech) regarding Baseline Lab Report Submittal Expectations (7/8/2025)

WDNR No Objection to Expedited Plan Modification for Phasing Plan Revisions at the Adams County Sanitary Landfill (7/17/2025)

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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Fitchburg WI 53711-5397

Tony Evers, Governor
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February 14, 2019

FID 701104056
Adams County
SW / Approval File

Ms. Shannel Parr, Interim Director
Adams County Landfill & Recycling Center
1420 State Highway 13
Friendship, WI 53934

Subject: Conditional Plan of Operation Approval for the Adams County Landfill Horizontal Expansion, DNR License Number 3150

Dear Ms. Parr:

The Department of Natural Resources (department) has reviewed and approves the plan of operation for the Adams County Landfill Horizontal Expansion subject to compliance with Chapters NR 500 through NR 538, Wis. Adm. Code, and the conditions listed in the attached approval. Please include the attached approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The attachments to this letter include a project summary, the plan of operation approval, and a summary of existing conditions. Please carefully read the conditions of this approval and the summary of existing conditions since they contain additional requirements for the construction and operation of the landfill. Environmental monitoring tables and closure and long-term care cost estimate tables are also attached to the approval.

Please be aware that a condition of this approval requires revised proof of financial responsibility for closure and long-term care be established within 60 calendar days from the date of this letter. The revised proof of financial responsibility must be established based upon the approved costs contained herein and ch. NR 520, Wis. Adm. Code. Please contact Dustin Sholly, owner financial responsibility specialist, at Dustin.Sholly@wisconsin.gov, or telephone 608/266-1486 if you have questions.

You are reminded 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 Eric Syftestad, waste management engineer, at 608/275-3211, or eric.syftestad@wisconsin.gov, or contact Adam Hogan, hydrogeologist, at 608/275-3292 or adam.hogan@wisconsin.gov.

Sincerely,

Cynthia Moore

Cynthia Moore
Waste and Materials Management Program Supervisor
South Central Region

Attachments

cc: Shannel Parr – Adams County Landfill – shannel.parr@co.adams.wi.us
Casey Bradley – Adams County, P.O. Box 102, Friendship, WI 53934 – casey.bradley@co.adams.wi.us (e-copy)
Ben Peotter – Ayres (Madison) peotterb@ayresassociates.com (e-copy)
Adam Hogan – DNR WA (e-copy)
Brad Johnson – DNR WT (e-copy)
Valerie Joosten – DNR WA (e-copy)
Joe Lourigan – DNR WA/5 (e-copy)
Cynthia Moore – DNR WA (e-copy)
Mike Ross – DNR AM LaCrosse(e-copy)
Dustin Sholly – DNR WA/5 (e-copy)
Eric Syftestad – DNR WA (e-copy)
WCR WA files (Amanda Dehmlow)

PROJECT SUMMARY
ADAMS COUNTY SANITARY LANDFILL
HORIZONTAL EXPANSION

GENERAL INFORMATION

AUTHORIZED CONTACT:

Ms. Shannel Parr
Adams County Landfill
1420 State Highway 21
Friendship, WI 53934
(608) 339-9178

CONSULTANT:

Ben Peotter, P.E. (WI E-36784) (current certifying engineer)
Ryan Shimko, P.E. (WI E-45074-6) (formerly of Ayres Associates)
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Ayres Associates
3433 Oakwood Hills Parkway
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LICENSEE AND PROPERTY OWNER:

Adams County Solid Waste Department

SITE LOCATION: Adams County proposed a contiguous vertical and horizontal expansion (Horizontal Expansion) to the Adams County Sanitary Landfill located in the NE ¼ of Section 13, Town 18 North, Range 5 East in Adams County, Wisconsin, on land owned by Adams County. The address for the expansion is 1420 State Highway 21, Friendship, WI 53934. An approximate 10-acre clay and soil borrow site to supply clay and other soils for the proposed expansion is located in the NW ¼ of the SW ¼ of Section 12, T18N, R5E in Adams County, WI, and extends into the SW ¼ of the NE ¼ of the SW ¼ of Section 12, T18N, R5E. The clay and soil borrow site lies within a mile north of the existing landfill. The landfill is located on the north side of State Trunk Highway (STH) 21 approximately two miles west of STH 13, and five miles north-northwest of the Village of Friendship.

ACREAGE AND ACCESS: The current landfill is 13.8 acres and the proposed expansion consists of 8.1 acres for a total landfill area of approximately 21.9 acres within an approximate 433 acre parcel of land owned by Adams County. Access to the facility would be via the existing route for the site, STH 21. A gate and fence currently control access to all facilities on the property.

PROPOSED CAPACITY AND SITE LIFE: The current landfill has a design capacity of 700,000 cubic yards (cy) and a remaining site life of less than three years. The total design capacity of the proposed expansion, including daily and intermediate cover, is 548,200 cubic yards (cy). The combined capacity of the existing landfill and proposed expansion is 1,248,000 cubic yards, which results in a total site life of approximately 17 years. Adams County anticipates that it will receive about 30,000 cubic yards of waste annually.

WASTE TYPES AND GENERATORS SERVED: The landfill will accept non-hazardous municipal, commercial, and industrial solid waste from within Adams County and the municipalities located within it, and the Village of Oxford in Marquette County. Additional waste may originate from areas outside

Adams County including but not limited to the surrounding counties of Columbia, Juneau, Marquette, Sauk, Waushara, and Wood.
The Horizontal Expansion will receive the same waste streams as the existing landfill. This includes approximately 80 to 90 percent municipal solid waste (MSW), 10 to 15 percent construction and demolition (C&D) wastes, 1 to 2 percent materials recovery facility (MRF) residuals, and less than 1 percent of special wastes.

A special waste acceptance plan within the plan of operation will continue to be used to screen "special waste" or non-MSW to determine if the waste is suitable for disposal. The plan calls for specific testing protocols and disposal procedures based on the waste type. The landfill is able to accept for disposal certain categorized special wastes without department review. The plan identifies certain waste types which must receive prior department approval on a case-by-case basis. Special wastes may include, but are not limited to, friable and non-friable asbestos, contaminated soil (petroleum and other contaminants), street sweepings, animal carcasses, small amounts of nonhazardous municipal water supply and wastewater treatment plant sludge, and wood wastes.

The landfill does not currently use alternative daily covers; however, petroleum contaminated soil may be used as alternate daily cover in accordance with s. NR 506.105(1), Wis. Adm. Code, and in accordance with the special waste acceptance plan. Other materials may be proposed for use as alternate daily cover by providing the information required in accordance with s. NR 506.055(1), Wis. Adm. Code.

PERIOD OF LONG-TERM CARE RESPONSIBILITY: Adams County must, by law, set aside funds sufficient to care for the landfill for a period of 40 years following landfill closure. However, Adams County will be responsible for long term care of the facility in perpetuity.

FACILITY DESIGN

For a detailed description of the site characteristics refer to the department's April 11, 2018 feasibility determination for the Horizontal Expansion.

The Horizontal Expansion would consist of a vertical overlay (3 acres) on Phase 4 of the existing landfill and an 8.1-acre horizontal expansion consisting of new Phases 5 and 6. The approved maximum height of the proposed expansion final grade would be 1,032 feet above mean sea level (MSL) and the maximum waste thickness will be approximately 66 feet (with subbase grades at 966 MSL). The combined area of the proposed expansion and the existing approved limits of waste is approximately 21.9 acres. An additional approximate four to seven acres adjacent to the landfill would be disturbed to install drainage ditches, storm water ponds, and soil stockpiles.

The proposed landfill expansion (Phases 5 and 6) is designed with a composite liner consisting of four (4) feet of clay overlain with a 60 mil HDPE geomembrane. All six phases of the existing (Phases 1 through 4) and proposed landfill phases have a leachate collection system. A vertical gas extraction system is designed to collect and transport gas to the existing on-site skid mounted blower and open flare station where the landfill gas is effectively combusted.

The existing landfill includes four constructed phases (Phases 1 through 4). Waste is currently being disposed of in Phase 4. Phases 1 and 2 were constructed between 1989 and 1994 with five feet of clay liner, and Phases 3 and 4, were constructed between 2001 and 2015 with a composite liner consisting of four feet of clay and a 60 mil HDPE geomembrane. A composite final cover was installed on phases 1 and 2 in 2016. After vertical gas extraction wells were installed in Phases 1 and 2 in 2016, a leachate recirculation plan was approved on March 15, 2017. To date, no leachate has been recirculated.

CONSTRUCTION AND CLOSURE SEQUENCE: The landfill expansion is configured as a rectangle to be constructed in two liner phases and two cover phases over approximately 11 acres. Liner is scheduled to be constructed as follows: Phase 5 (4.1 acres) in 2019; and, Phase 6 (4.0 acres) in 2026. Final cover is planned to be constructed as follows: Phases 3 and 4 (8.2 acres) in 2025; and, Phases 5 and 6 (8.1 acres) in 2036. Initially, the plan of operation proposed temporary higher interim waste grades and a 3-year delay in final cover placement to allow for settlement of interim waste grades prior to capping. This request for higher interim waste grades was subsequently withdrawn. The attached approval allows final cover to be delayed for no more than two years after attaining final waste grades in each phase of closure provided the requirements of s. NR 514.07(3), Wis. Adm. Code, are met. Gas extraction wells and intermediate cover will be installed periodically as areas reach final waste grades.

SUBBASE GRADES: Subbase grades are the bottom of the four-foot clay liner and will follow base grade contours that are the top of the clay liner. The subbase grades at the leachate collection sumps are over 10 feet above high seasonal groundwater and the subbase excavation for Phases 5 and 6 range from approximately 954 ft. MSL in the sumps to 966 ft. MSL in the north end of Phases 5 and 6. Bedrock lies below fine grained glaciolacustrine deposits and at least 75 feet below existing ground contours based on geotechnical investigation.

COMPOSITE LINER: The liner will consist of four (4) feet of compacted clay overlain by a 60 mil HDPE geomembrane. The clay used in the liner will meet the specifications listed in s. NR 504.06(2), Wis. Adm. Code. Clay and other soils for liner and final cover construction will originate from the landfill's existing approved clay borrow source and a contiguous expansion of the existing clay borrow source. Other borrow sources proposed for future use will be characterized according to s. NR 504.075, Wis. Adm. Code, and subject to department approval. The 60 mil HDPE geomembrane will consist of a double-sided textured 60 mil HDPE geomembrane on the 3:1 side slopes and may include smooth geomembrane on the base of the landfill. The geomembrane will be covered by a 12 ounce (oz)/square yard (sy) nonwoven geotextile and a one-foot thick drainage blanket.

DRAINAGE BLANKET: The one (1) foot thick granular drainage blanket will have a permeability of one (1) cm/s or greater and will be composed of rounded to subangular gravel with a gradation no larger than ¾-inch diameter. The drainage blanket will meet the specifications listed in s. NR 504.06(5)(t), Wis. Adm. Code.

LEACHATE LEVEL MONITORING: There will be two leachate head wells in each liner phase of the proposed expansion, for a total of ten (10) leachate head wells within the landfill. Head wells will be non-perforated pipe extending up the sidewall to the surface connected to pipe laid on a horizontal grade and extending into the base grades. At the end of the solid wall pipe, a five-foot long section of 3-inch diameter sch. 80 PVC perforated pipe will be installed. The head well piping will be bedded at the base of the granular drainage blanket and have 18 inches of drainage blanket stone mounded over it.

LEACHATE COLLECTION SYSTEM: The proposed leachate collection system will consist of 6-inch diameter schedule (sch.) 80 PVC pipes installed in shallow v-shaped trenches. The collection lines will be graded from the south to the north at a slope of 1%. The liner will be graded at a 2.4% slope running perpendicular to the piping and trenches. A minimum of four inches of gravel will be placed in the trenches prior to installation of the leachate collection pipes. The pipe bedding material will consist of leachate drainage layer aggregate, noted above. Limestone and dolomite aggregate will not be used in the leachate collection system. After the pipes have been installed, the remaining backfill will be placed so that a minimum of 18 inches of material is above the top of the pipe after the trenches are filled. Cleanouts will be installed on both ends of each pipeline segment. The maximum cleanout length in the expansion area will be 760 feet.

The leachate conveyance system will consist of two (2) sumps. Each sump will contain a pump housed inside an 18-inch diameter SDR 17 polyethylene (HDPE) riser pipe to pump leachate up the sidewall into the perimeter leachate conveyance system. Each of the collection sumps is designed to minimize the volume of liquid that remains in the sump after pumping. Each sump will have a one-inch thick HDPE base plate placed under the side slope riser (SSR) during installation to protect the composite liner system. An electrical resistivity leak location survey will be conducted and repairs will be made to all detected defects.

An access vault in each sump (2) permits the installation of a pump that automatically pumps leachate into a leachate forcemain that delivers the leachate to the underground storage tank located near the northeast corner of the landfill. The access vault will provide an extraction point for maintenance of the pump. The pump controls and alarm will be centrally located on a control panel located near the access vaults.

The leachate forcemain piping will be a double contained pipe consisting of 3-inch diameter SDR 17 HDPE forcemain pipe within a 6-inch SDR 17 HDPE containment pipe. The leachate will be pumped to the proposed underground leachate storage tank.

LEACHATE RECIRCULATION: The leachate collection and removal system will be operated routinely under normal operations. A daily analysis of the recirculation will be made by the site operator and will control the location and quantity of leachate routed from the collection sumps and the storage tank. Leachate removed from the site will be routed to the leachate storage tank, pumped into a tanker truck, and surface applied to the landfill working face or will be recirculated using horizontal distribution trenches. Operations will be conducted only during the months of April through October and in areas where gas is actively being collected. No leachate recirculation will occur within 50 feet of exterior sideslopes nor until at least 20 vertical feet of waste has been placed over the entire phase's constructed leachate collection system drainage layer. The allowable recirculation rate will not exceed 2740 gallons per acre per day. This limit is based on the anticipated waste disposal rate, anticipated waste moisture content, and assumption that 50 percent of the applied leachate will be absorbed by the waste. No leachate will be recirculated in Phases 1 or 2.

Warning Symptoms

Leachate recirculation will be suspended upon discovery of warning symptoms and may not resume in the area where the problem occurred until changes are made to the system or the warning symptoms have declined to acceptable levels. The department will be notified in writing within 7 days of the discovery of warning symptoms and suspension of leachate recirculation. In accordance with s. NR 514.07(7)(f), Wis. Adm. Code, warning symptoms may include the following:

- Leachate chemistry showing acidic conditions or other monitoring data indicative of poor waste decomposition
- Leachate head wells showing persistent elevated liquid levels
- Gas wells flooded and/or showing little or no gas production
- Leachate seeps that are constant or recurring in areas near active recirculation or liquids addition
- Ponded leachate over recirculation trenches or on the active fill area
- Gas or odor emissions that require major adjustments of the gas extraction system to control
- Subsurface fire indicators such as high carbon monoxide levels in gas extraction wells, smoke, burning odors, elevated temperatures in gas extraction

Failure Thresholds

Leachate recirculation will be suspended whenever any of the failure thresholds are exceeded. Leachate recirculation may not resume until the department has reviewed and approved changes to the system that will result in meeting the thresholds. The department will be notified within three (3) days of the discovery of exceeding any failure threshold. In accordance with s. NR 514.07(7)(f), Wis. Adm. Code, failure thresholds may include the following:

- Flowing leachate seeps with constant liquid output and observable flow for many feet down a sideslope
- Cracks or fissures in the waste surface
- Abnormal vibration or shaking while standing on the waste surface from traffic several feet away
- Soft and/or yielding areas observed from traffic traveling across the waste during dry periods
- Visible changes in outline of the waste mass (i.e., sloughing, collapse or failures of intermediate waste slopes)
- Collapse of access roads or other soil structures such as biopiles or stockpiles
- Significant odor and gas release that cannot be readily controlled by operation of gas extraction system.

Monitoring and Reporting

Leachate recirculation will be monitored for a liquids mass balance, in accordance with s. NR 507.215, Wis. Adm. Code. That is, monthly measurement of the volume of leachate pumped in each leachate drainage basin or sump, volume of leachate recirculated, and monthly local precipitation records. The annual report for leachate recirculation required under s. NR 506.135(5), Wis. Adm. Code, may be submitted with the landfill annual report.

LEACHATE STORAGE AND TREATMENT: The design proposes to store leachate and gas condensate from the landfill in an underground 30,000 gallon leachate storage tank that replaces a 30,000 gallon fiberglass tank on the north side of the landfill. It is designed to hold at least four days of storage. The tank will consist of dual wall construction, with an interstitial monitor to note any leakage from the primary tank to the secondary containment. The tank will be an ACT-100 double-walled steel and fiberglass reinforced plastic (FRP) composite tank. The new tank will be custom built and further details will be provided in the associated construction documentation report.

The leachate loadout facility will be constructed with a concrete pad sloped toward a central drain, which will drain to a spill collection sump and manhole whose contents will be managed as leachate or solid waste (sediment) and either pumped back into the leachate collection tank or, when the landfill is operating, disposed in the landfill. The amount of leachate collected and removed from the site will be documented by means of its weight, as measured at the site truck scale, and then volume will be calculated. The leachate will be treated primarily at the City of Adams wastewater treatment plant, or secondarily, at the Village of Plover or City of Elroy wastewater treatment plants.

FINAL COVER: The facility will have a maximum final waste grade elevation of 1027 ft. MSL. The final cover will consist of (top to bottom): 6 inches of topsoil with vegetation; 1.5 feet (18 inches) of rooting zone over a one (1) foot sand drainage layer; a doublesided textured 40 mil LLDPE geomembrane; two (2) feet of recompacted clay; and, a 6-inch grading layer. A textured 40 mil LLDPE geomembrane will be used for added stability. A grass seed mix will be sowed to establish a vegetative cover on the final cover and erosion control matting (class 1 type A WI DOT erosion control mat) will be used with initial cap vegetation. No diversion berms will be created; however, prior to vegetation being established on the final cover, temporary storm water controls will include ditch checks, temporary seeding, and culverts. Ditch checks are spaced at 100-foot intervals to limit runoff velocity. Water

collected in the sand drainage layer above the geomembrane will be collected in a toe drain pipe consisting of 6-inch diameter perforated polyethylene (PE) pipe surrounded by ¾-inch washed stone placed around the entire perimeter of the landfill. Non-perforated 4-inch PE discharge pipes will be located approximately every 200 feet along the toe drain pipe and will discharge to the drainage ditch surrounding the perimeter of the landfill.

SURFACE WATER DRAINAGE: Surface water runoff will be controlled by drainage channels, diversion berms, culverts, and infiltration basins. The perimeter drainage ditches will have trapezoidal shaped cross sections and grass lined beds with a minimum bottom width of two (2) feet and a depth of two (2) feet. To minimize erosion or scouring, the ditches have been sized to maintain velocities less than or equal to five feet per second. These perimeter drainage ditches will surround the landfill and will direct surface water runoff from the final cover to the three (3) infiltration basins located near the northeast, northwest, and southeast corners of the landfill. The north basin will be constructed when Phase 5 liner is installed, and the south basin will be constructed when Phase 6 is installed. The west basin was constructed in 1989. The proposed basins are designed to meet a 24-hour, 100 year storm event and meet the separation distance and filtering layer requirements in ss. NR 151.124(4)(b) and NR 151.002(14r), Wis. Adm. Code, respectively.

GAS EXTRACTION SYSTEM: The gas control system is designed to withdraw gas and prevent the migration of gas from the landfill. The proposed gas extraction system for the entire landfill will consist of 15 vertical gas extraction wells, with six of them in proposed Phases 5 and 6. The initial three wells were installed in 2015 in Phases 1 and 2 and produce about 60 standard cubic feet per minute (scfm), to date.

Gas well placement is based on an approximate 150 feet radius of influence. The borings for the wells will be drilled 36 inches in diameter and will extend to 10 feet above the leachate collection system. An eight-inch diameter schedule 80 PVC perforated pipe will be placed in the 36 inch diameter gravel pack. The bottom 2/3 to 3/4 of the pipe within each well will be perforated. The non-perforated piping will extend through the landfill cover for maintenance access and flow rate adjustments. The wells will be connected to a looped HDPE header pipe with a minimum 5% slope to allow condensate to flow to a dripleg (DL-1) that flows by gravity into the leachate storage tank. Gas header piping installed outside the limits of waste will have secondary containment (i.e., GCL wrapped) and will have a minimum slope of 0.5% and drain to the dripleg (DL-1).

The proposed gas and condensate collection system will consist of 6-inch diameter SDR 17 HDPE header pipe and will transport the extracted landfill gas from the wells to the existing blower and flare station located north of Phases 1 and 2. The existing system was installed in 2015 and uses a blower with two electric motors operating alternately. The maximum gas flow of the site is projected to be approximately 295 standard cubic feet per minute and matches the design output of the circa 2015 candlestick flare. The blower system is designed to achieve a minimum vacuum of 10 inches of water column at the gas well that is located the furthest distance from the blower.

FACILITY OPERATION

DISPOSAL OPERATION: Placement of waste will begin in the expansion area in Phase 5 and progress south; thereafter, Phase 6 will be constructed and filled southward. Access from the north end has been and will continue to be the sequence for filling. All access roads will be constructed with less than 10% slope and initial lifts of waste in a new phase will be placed with nonangular materials or wastes not containing significant fine particulate so as to minimize the risk of damage to the liner geomembrane or compromise the leachate drainage layer function. Compaction equipment and procedures capable of

achieving a minimum waste density of 1500 pounds per cubic yard of municipal waste will be used. At the end of each day of operation, at least six (6) inches of daily cover soil or an approved alternate daily cover will be placed on the active face. Daily cover may be scraped off the next operating day to continue filling in that area.

WASTE SCREENING: Incoming waste loads will be weighed at the scale. If the gate attendant identifies unauthorized waste in a load, the load will not be accepted for disposal. Random inspections (pursuant to s. NR 506.16, Wis. Adm. Code) will be made of incoming solid waste to check for the presence of hazardous wastes and other prohibited waste. Inspections will be conducted on every 5000 tons of solid waste or one inspection per month, whichever occurs more often. The entrance gate will be locked during non-operating hours.

SOIL STOCKPILING PLAN: Excavated soils (i.e., topsoil and general soil) will be stockpiled north of the existing landfill. Soil materials required for development of the proposed expansion will come from the landfill excavation, excavation for the new infiltration basins, and from the approved off-site clay and other soils borrow site owned by Adams County, as needed. The plan shows the location of storm water erosion controls around the stockpiles and the hauling route around the expansion. The stockpile for topsoil will be vegetated, and both stockpiles will have sideslopes at no more than 4:1.

CONTROL OF ODORS: If landfill gas odors occur, Adams County will be responsible for locating and correcting the source of the emissions. This generally means correcting defects in daily or intermediate cover, maintaining a small working face, maintaining proper drainage to reduce ponding, selectively adding gas extraction wells, collecting gas from leachate cleanouts and horizontal trenches, sealing and drawing gas from structures such as manholes and leachate sump vaults, or installing final cover. Surface emissions scans will be performed periodically during the operating life of the landfill to identify odor causing emission points.

CONTROL OF TOTAL SUSPENDED PARTICULATE MATTER (TSP) AND WINDBLOWN DEBRIS: During construction TSP will be controlled primarily through the application of water to haul roads, limiting the number of haul roads and limiting the speed of vehicles on haul roads. During daily landfill operations the primary means of controlling TSP generated by vehicular traffic will be though the application of dust suppressant and water to haul roads. The amount of bare soil onsite will be minimized by vegetating exposed soil areas and soil stockpiles.

The primary methods of controlling windblown litter and debris will be: 1) maintaining a small working face, 2) covering portions of the active area as they are filled, 3) taking advantage of prevailing wind directions and orienting daily landfill operations accordingly, 4) collecting windblown litter on a routine basis, and 5) positioning temporary fences or wind screens around the working area to intercept windblown debris.

ORGANIC STABILITY

An organic stability plan was included in the plan of operation report in accordance with s. NR 514.07(9), Wis. Adm. Code, which requires landfills to submit a plan for significantly reducing the amount of degradable organic material remaining after site closing in order to materially reduce the amount of time the landfill will take to achieve landfill organic stability.

The objective of the landfill organic stability plan is achievement of all of the measured goals in s. NR 514.07(9)(c), Wis. Adm. Code, and stated below.

Goals of the Organic Stability Plan

1. A monthly average total methane plus carbon dioxide gas production rate less than or equal to 5% of the maximum monthly average total gas production rate observed during the life of the facility, or less than 7.5 cubic feet of total gas per year for each cubic yard of waste in the facility.

2. A steady downward trend in the rate of total methane plus carbon dioxide gas production.

3. Production of total methane plus carbon dioxide gas cumulatively representing 75% or greater of the projected total gas production of the landfilled waste.

4. Reduction of the time necessary to reach landfill organic stability to 40 years or less after site closing.

Adams County's approach to decrease the time required for the landfill to reach organic stability primarily includes increasing the moisture content in the waste mass by recirculating leachate to increase the waste degradation rate. Other measures already being performed include: efficient placement and compaction of MSW; use of on-site sandy soils for daily and intermediate cover that does not impede the vertical movement of liquids like leachate or precipitation; recirculate leachate in Phases 3 through 6; efficient operation of the landfill gas collection system; and, continue to promote resource recovery efforts within the landfill service area and to consider alternative management of yard waste and construction and demolition (C & D) wood waste.

Increasing the moisture content is the primary strategy to reduce the amount of time required to reach organic stability. Increasing the moisture content may increase the rate of waste degradation, which will reduce the amount of non-degraded organic material in the landfill at the end of the owner financial post-closure period (40 years after closure). The moisture content will be increased with leachate recirculation as discussed above.

Monitoring and Evaluation

Implementation of the organic stability plan will be monitored and evaluated for effectiveness.. Specifically, the evaluation involves assessing the waste stream composition using the department's 24 waste categories and comparing changes year to year; estimating types and percentage of incoming organic waste constituents to compare changes over time, and identifying other management options for specific organic wastes to reduce the organic load coming to the landfill. In addition, it includes evaluating the US EPA Landfill Gas Emissions Model (LandGEM) and the monitoring data collected in operating the active landfill gas extraction and treatment system for gas collected in Phases 5 and 6. The model may be recalibrated and adjusted to remain representative of the landfill's biodegradation.

Contingency Plan

The contingency plan will need to be implemented if monitoring and evaluation of the organic stability plan indicate the facility is unlikely to achieve the goals outlined in s. NR 514.07(9)(c), Wis. Adm. Code, and stated above. Adams County may implement the following measures if evaluations of the landfill organic stability plan efforts indicate that the goals are not being attained:

- Increase leachate addition to the waste mass
- Evaluate and modify other leachate recirculation methods
- Further diversion of organic waste components from landfill disposal
- Other innovative approaches to reduce the amount of organic wastes being disposed

Reporting
Annual progress reports will be prepared as required by s. NR 514.07(9)(d), Wis. Adm. Code. Each annual report will include an evaluation of whether changes are needed in the plan to correct problems or improve results. Adams County may update the contingency plan at this time also. Adams County may submit the annual organic stability report as part of the landfill annual report required by the attached approval.

Every five (5) years, Adams County will examine progress against the approved plan to evaluate the likelihood that the plan will enable the facility to reach the goals listed above and determine whether the contingency plan will be implemented. A report describing the evaluation and determination will be submitted to the department as part of the annual report for that year. The department may require implementation of the contingency plan if its review finds that the progress the landfill has made is significantly different than the approved plan.

ENVIRONMENTAL MONITORING

GENERAL: Environmental and performance monitoring will extend through the period of active site operation and perpetual long-term care. The approved environmental monitoring schedule for the facility will remain in effect until such time as the department changes or amends this schedule through a plan modification. Tables 1 through 5 in Attachment #1 specify the environmental monitoring program for the landfill. Monitoring data will be reported to the Department electronically in a format acceptable to the Department, as specified in s. NR 507.26(3), Wis. Adm. Code, unless otherwise specified. Alternate Concentration Limits (ACLs) and Preventive Action Limits (PALs) are established in the Plan of Operation approval (see Tables 6 and 7 in Attachment #2).

The plan of operation included a request for an exemption to the requirements to monitor leachate quality on a quarterly basis for certain parameters during leachate recirculation. Quarterly leachate monitoring will be required in accordance with the attached approval.

INSPECTION OF EROSION CONTROL MEASURES: The infiltration basins and storm water control ditches and pipes will be observed by the landfill operator at least quarterly and after heavy precipitation or melting/runoff events in accordance with the storm water pollution prevention plan (SWPPP). Inspection of best management practices (BMP) during construction where soil disturbance occurs will be performed weekly and within 24 hours after a rainfall event of 0.5-inches or greater.

CLOSURE AND LONG-TERM CARE COSTS

Adams County will be perpetually responsible for the long-term care of this landfill. Proof of owner financial responsibility is required for a period of 40 years after final closure. Actions to be taken during closure and long-term care, along with the associated cost estimates, are provided in Attachment #3, Tables 8 and 9 of the plan of operation approval. Closure costs reflect the most expensive area to close, which includes closing Phases 3 through5 and constructing final cover totaling about 12 acres. The closure cost includes the installation of a multi-layered composite cap and a vertical gas extraction system. The composite cap requires the placement of a grading layer, clay layer, a 40 mil LLDPE geomembrane, a drainage layer, a rooting layer, and topsoil, pursuant to ss. NR 504.07 and NR 516.06, Wis. Adm. Code. The cost estimates assume use of the Adams County owned properties for soil borrow sources for the clay and rooting zone layers and local borrow sources not County owned for the drainage layer, pipe bedding, and topsoil. Long-term care costs reflect estimated yearly expenses for: groundwater, surface water, gas, and leachate monitoring; leachate collection and treatment; gas extraction system operation and maintenance; site maintenance; site inspections; and, erosion repairs. All costs are based in 2018 dollar unit prices. Adams County proposes to use an interest bearing account to provide proof of financial responsibility for closure and long-term care costs.

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION APPROVAL FOR THE ADAMS COUNTY SANITARY LANDFILL HORIZONTAL EXPANSION (LICENSE #3150)

FINDINGS OF FACT

The Department of Natural Resources (department) finds that:

1. Adams County Solid Waste Department (hereafter referred to as Adams County) owns and operates a non-hazardous solid waste disposal facility (Adams County Landfill) located in the NE ¼ of Section 13, Town 18 North, Range 5 East in Adams County, Wisconsin. The license number for the Adams County Landfill is 3150 and the facility identification number (FID) is 701040560.

2. Adams County has proposed a contiguous expansion of the Adams County Landfill consisting of a vertical overlay on the existing landfill and a horizontal expansion to the east. The expansion is referred to as the Adams County Sanitary Landfill Horizontal Expansion (expansion). The expansion is also located in the NE ¼ of Section 13, Town 18 North, Range 5 East in Adams County, Wisconsin.

3. Adams County proposed an approximate 10-acre clay and soil borrow site to supply clay and other soils for the expansion. The clay and soil borrow site is located in the NW ¼ of the SW ¼ of Section 12, T18N, R5E in Adams County and extends into the SW ¼ of the NE ¼ of the SW ¼ of Section 12, T18N, R5E.

4. On April 11, 2018, the department issued a determination of site feasibility for the expansion.

5. On September 5, 2018, Ayres Associates (Ayres), on behalf of Adams County, submitted to the department a report and engineering plans entitled, "Plan of Operation, Horizontal Expansion, Adams County Sanitary Landfill, License #3150, FID 701040560", dated August 2018. The department received the review fee of $7700 for the plan of operation on September 24, 2018.

6. On December 14, 2018, the department issued a completeness determination for the plan of operation for the expansion.

7. The information submitted in connection with the plan of operation review includes the following:

   a. A report entitled "Plan of Operation, Horizontal Expansion, Adams County Sanitary Landfill, License #3150, FID 701040560" and 26 plan sheets, and an electronic copy on a compact disc (CD), prepared by Ayres and dated August 2018. The submittal was received by the department on September 5, 2018.

   b. Two bound reports with attachments (Addendum 1) entitled, "Response to Completeness Determination of the Plan of Operation Report, Horizontal Expansion, Adams County Sanitary Landfill", four revised plan sheets, and an electronic copy on a CD, prepared by

Ayres and dated November 12, 2018. The submittal was received by the department on November 15, 2018 in response to a department request for additional information dated October 5, 2018.

c. A report and attachments, titled "Request for Information for the Plan of Operation for the Horizontal Expansion of Adams County Sanitary Landfill (license 3150)", ten revised engineering plan sheets (including one deleted plan sheet), and an electronic copy on a CD, prepared by Ayres and dated January 11, 2019. The submittal was received by the department on January 17, 2019 in response to a department request for additional information dated December 20, 2018.

d. A February 4, 2019 electronic mail correspondence (e-mail) from Michael Leopold, Ayres, to the department regarding the financial responsibility analysis section (section 8.7) of the plan of operation.

e. A February 5, 2019 e-mail from Michael Leopold, Ayres, to the department with updated closure cost estimates.

f. A February 5, 2019 e-mail from Michael Leopold, Ayres, to the department regarding the proposed north and south infiltration basins.

8. Additional documents considered in the review of the plan of operation include the following:

a. The department's feasibility determination dated April 11, 2018.

b. The department's files for the Adams County Landfill, License #3150.

c. Groundwater monitoring data for the proposed facility in the department's Groundwater and Environmental Monitoring System (GEMS).

d. The department's Tier 2 industrial facilities storm water general permits WI-S067857-4 and WI-0059153-3, and air pollution control operation permit no. 701040560-S02.

e. The department's guidance document titled "Alternate Daily Cover for Municipal Solid Waste Landfills", dated 2014 (Pub-WA 1699).

f. The department's technical guidance document titled "How to calculate PALs and ACLs for Solid Waste Facilities, PUB-WA 1105 2007".

9. Additional facts considered in review of the plan of operation include:

a. Adams County requested an exemption to the requirements of s. NR 507.215 (3), Wis. Adm. Code, to monitor leachate characteristics semiannually instead of quarterly during leachate recirculation. The exemption was not approved based on the following:

i. Adams County has not recirculated to date; therefore, leachate data does not exist to demonstrate leachate quality characteristics and trends during leachate recirculation.

ii. Leachate is expected to be higher strength during recirculation since the average leachate generation with the landfill during recirculation is estimated to be 50% of the sum of the infiltration passing into the waste from precipitation and the recirculation quantity during the time period.

iii. The allowable leachate recirculation rate is 2,740 gallons per acre day, which is a volume that may affect waste decomposition and chemical changes to the waste and leachate.

iv. Adams County may request an exemption at a later date after collecting and evaluating site specific data during leachate recirculation for a period of time.

b. Adams County currently does not use alternative daily cover materials; however, a table within the special waste plan identifies alternate daily cover as the end use for several various special wastes. Only petroleum contaminated soils are approved for use as alternate daily cover based on the following:

i. Section NR 506.055(1), Wis. Adm. Code, requires an owner or operator seeking approval to use alternate daily cover materials to submit certain information to the department.

ii. The required information was not submitted for various special wastes and an exemption to this code requirement was not granted in prior approvals.

iii. Petroleum contaminated soils was approved for use as alternative daily cover in the May 7, 1995 modification to the plan of operation approval and alternative testing was proposed in the special waste plan.

iv. Adams County may submit a plan modification request for approval of additional alternative daily cover materials in accordance with s. NR 506.055(1), Wis. Adm. Code, when further information or waste materials become available.

10. Before the department may approve an alternative concentration limit (ACL), the department must first grant an exemption to the groundwater standard established in ch. NR 140, Wis. Adm. Code, for the respective groundwater monitoring point and parameter. The April 11, 2018 Determination of Site Feasibility for the Adams County Landfill granted an exemption to the groundwater standard for lead established in ch. NR 140, Wis. Adm. Code, for monitoring well MW-30.

11. As a clarification to finding of fact 26a in the department's April 11, 2018 feasibility determination, at this time there is no evidence that the lead concentrations observed in well MW-30 are from the existing active landfill. The lead was detected in only three (3) of the eight (8) baseline sample results and has not been detected in other monitoring wells at the site.

12. Condition 18 from the department's May 7, 1995 plan of operation modification approval which approves calculated PALs remains in effect.

13. In the August 2018 Plan of Operation Report and the November 12, 2018 Response to Completeness Determination of the Plan of Operations Report, Adams County proposed preventative action limits (PALs) and ACLs for parameters at wells MW-1 through MW-31.

14. In order to check Adams County's proposed PAL and ACLs, the department calculated PALs and ACLs for those parameters and wells for which ch. NR 140 groundwater exemptions have been granted and for which Adams County submitted proposed PALs and ACLs. The department's approved PALs and ACLs are located in Tables 6 and 7 in Attachment #2.

15. The ch. NR 140 groundwater PALs for indicator parameters and the NR 140 groundwater ACLs established in this approval are based on at least eight (8) sample results for each substance at each groundwater monitoring point.

16. The PALs for indicator parameters established in this approval are equal to the mean background water quality plus three 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.

17. The ACLs established in this approval are equal to the mean background water quality plus two standard deviations in accordance with department's Solid Waste Technical Guidance for PAL/ACL Calculations (guidance document WA 1105, 2007).

18. The calculated PALs were rounded up to two significant figures and calculated ACLs were rounded up in accordance with department's Solid Waste Technical Guidance for PAL/ACL Calculations (guidance document WA 1105, 2007).

19. The April 11, 2018 feasibility determination granted code exemptions for the proposed Adams County Landfill Horizontal Expansion. The exemptions granted in the April 11, 2018 feasibility determination apply to the plan of operation.

20. Neither the applicant, nor any person owning a 10% or greater legal or equitable interest in the applicant, or the assets of the applicant:

    a. Is in noncompliance with a plan approval or order issued by the department for a solid or hazardous waste facility in Wisconsin.

    b. Owns or previously owned a 10% or greater legal or equitable interest in a person, or in the assets of a person, who is not in compliance with a plan approval or order issued by the department for a solid or hazardous waste facility in Wisconsin.

21. The department has complied with the requirements of ch. NR 150, Wis. Adm. Code, and s. 1.11, Stats., and has adopted all practical means to avoid or minimize environmental harm consistent with social, economic and other essential considerations.

22. If the special conditions set forth below are complied with, the proposal will meet the requirements of chs. NR 500 to 538, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The department has authority under s. 289.30, Stats., to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chs. NR 500 to NR 538, Wis. Adm. Code.

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

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

4. The conditions of approval set forth below are needed to ensure compliance with chs. NR 500 to NR 538, Wis. Adm. Code.

5. The department may grant exemptions to groundwater standards in ch. NR 140, Wis. Adm. Code, only when the criteria in ss. NR 140.28(3) or NR 140.28(4), Wis. Adm. Code, are satisfied.

6. In accordance with the foregoing, the department has the authority under ch. 289, Stats., to issue the following conditional approval.

CONDITIONAL PLAN OF OPERATION APPROVAL

The department hereby approves the plan of operation for the Adams County Sanitary Landfill Horizontal Expansion, subject to compliance with chs. NR 500 to NR 538, Wis. Adm. Code, and the following conditions:

GENERAL

1. The total design capacity of this expansion (combined refuse, daily and intermediate cover volume) shall not exceed 548,200 cubic yards. The total design capacity of the entire landfill (Phases 1 through 6) shall not exceed 1,248,000 cubic yards.

2. All aspects of construction and operation of the landfill shall be performed in accordance with the plan of operation, the requirements of chs. NR 500 to NR 538, Wis. Adm. Code, and the conditions of this approval. In the case of any discrepancies between the approval conditions and the plan of operation and their associated plan sheets, the approval conditions shall take precedence.

3. Any proposed changes to the plan or this approval shall be presented to the department in writing. If the changes are compatible with the desired performance of this landfill, as determined by the department, an addendum will be added to this approval indicating acceptance of those changes. Written department approval is necessary prior to implementing any changes in accordance with s. NR 514.04(6), Wis. Adm. Code, with the exception of minor field modifications that are documented as deviations in accordance with s. NR 516.04(3)(d), Wis. Adm. Code. All field modifications shall be discussed with the department prior to implementation. Other minor changes may be handled as expedited plan modifications under s. NR 514.09, Wis. Adm. Code, as appropriate.

4. A copy of the plan of operation, accompanying plan sheets, plan modifications, and this approval and any addenda shall be retained at the landfill office at all times and shall be available for reference by the personnel responsible for proper operation of this facility. Persons responsible for facility construction, operation, and closure shall be informed of the conditions required in this approval.

DESIGN

5. The final leachate collection tank system design details and specifications shall be provided in the Phase 5 liner construction documentation report.

CONSTRUCTION

6. Adams County shall notify the department's waste management engineer assigned to this site a minimum of one week prior to beginning each of the construction events listed below for each phase of construction for the purpose of allowing the department to inspect the work. A fee shall be paid to the department for each inspection performed in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation review fee is submitted to the department.

Liner Construction

a. Subbase grade excavation and storm water controls
b. Storm water infiltration basin construction
c. Clay placement
d. Geomembrane deployment and seaming
e. Sump construction/sideslope riser and leachate collection vault installation
f. Leachate collection pipe installation
g. Drainage blanket placement
h. Electrical resistivity leak location survey and/or repairs
i. Initial leachate collection line jetting / leachate forcemain pressure test

Final Cover Construction

j. Clay layer placement and storm water controls
k. Geomembrane cap installation/seaming
l. Drainage layer installation
m. Rooting zone and topsoil placement

Gas System Construction Events

n. Gas extraction well placement
o. Gas header pipe installation

Clay Borrow

p. Excavation of each approved off-site clay borrow site
q. Reclamation of each approved off-site clay borrow site

Leachate Tank System Installation

r. Leachate loadout and secondary spill collection sump construction
s. Tank installation
t. Tank abandonment or excavation at the end of its service life

7. If compacted clay liner or layer construction begins but is not completed prior to December 31st, Adams County shall submit a plan for protection of the constructed portion of the clay liner or

layer and subsequent confirmation sampling for the department's written approval. The confirmation sampling shall be performed to demonstrate the clay still meets the minimum performance requirements of s. NR 504.06(2), Wis. Adm. Code, following the freeze thaw cycle.

This condition supersedes conditions 15 of the department's May 7, 1995 conditional plan of operation approval modification.

8. Presence of a qualified geologist, soil scientist, soil engineer or soil technician at the clay borrow site is required at all times when clay is removed from an approved off-site source. This person(s) shall certify, in writing, they were present at the clay borrow site at all times clay soils were removed and that the material removed was acceptable pursuant to s. NR 504.06, Wis. Adm. Code, and conditions of approval.

OPERATIONS

General

9. All soil stockpiles or other areas of bare earth associated with Adams County Landfill which are not anticipated to be used within six (6) months shall be stabilized by seeding or other means.

10. Adams County shall routinely remove spilled or discharged leachate or other materials in the leachate loadout sump to prevent overflow out of the leachate loadout sump.

11. All pumps and flow recording devices shall be maintained to ensure that leachate is pumped out of the landfill as required and the reported flows are accurate.

12. In case of a leachate extraction pump malfunction, the pump shall be made operational or replaced in a timely manner to maintain less than one-foot of leachate head on the liner.

13. All electric motors shall be operated and maintained so as to prevent overheating, especially in the leachate sumps.

14. The detention and infiltration basins shall be inspected after each major storm event of 2.5-inches of rain or more in a 24-hour period and at a minimum on a semiannual basis. If the infiltration basins do not drain down within 24 hours after two consecutive rainstorm events, Adams County shall conduct maintenance on the infiltration basin(s) to restore infiltrative capacity.

15. In addition to the storm water related provisions of the plan of operation and the storm water inspection requirements of this approval, the following activities shall be performed at the landfill to demonstrate compliance with ch. NR 216, Wis. Adm. Code, regarding storm water management at the landfill facility. Results shall be included in the annual assessment report.

    a. Conduct and document an annual facility site compliance inspection adequate to verify that the site drainage conditions and potential pollution sources identified in the plan of operation remain accurate, and that the best management practices prescribed in the plan of operation are being implemented, properly operated, and adequately maintained.

    b. Conduct annual visual inspections of each basin when storm water is discharging into the basin. The inspections shall include observations of color, odor, turbidity, floating solids, foam, oil sheen and other obvious indicators of storm water pollution. Documentation of

the inspections shall include the inspection date, inspection personnel, visual quality of the storm water, and probable sources of any storm water contamination.

16. Adams County shall not accept dredge material containing metals or PCBs unless written approval is provided by the department.

17. Any active vertical gas extraction well experiencing leachate head levels covering 50 percent or more of the screened interval shall be re-measured within 90 days of the initial measurement. Leachate extraction equipment shall be installed within 180 days after confirmation of the liquid level in any vertical gas extraction well that exhibits leachate head levels covering 50 percent or more of the screened interval during two consecutive monitoring periods. Alternatively, an assessment documenting the system's ability to control gas surface emissions in the area of the gas well with high liquids may be submitted in the next annual report. Unless the department specifies in writing, after having reviewed the assessment that a replacement well is not necessary, the gas extraction well or wells shall be replaced. The department may require installation of leachate extraction equipment in wells that exhibit leachate head levels covering less than 50 percent of the open screened interval if, in the department's opinion, dewatering is necessary to maintain an effective gas extraction system or if it is determined that the head levels are a result of actual leachate head levels in that location of the landfill.

18. The department shall be informed of all landfill fires that require assistance from a fire department to contain the fire within two days of contacting the fire department, and briefly summarized in the annual report.

19. Final cover placement may be delayed up to two years after attaining maximum waste filling grades in each phase of closure provided that the requirements of s. NR 514.07(3), Wis. Adm. Code are met.

20. The leachate recirculation rate shall be limited to 2,746 gallons per acre per day within Phases 3 through 6 of Adams County Landfill.

    This condition supersedes conditions 3 and 4 of the department's March 15, 2017 conditional plan of operation approval modification.

21. The following conditions have been rescinded: Conditions 4, 4c., 5, 6, 7, and 20 of the May 7, 1995 modification to the plan of operation approval; Conditions 7, 8, 9, 12, and 13 of the August 11, 1992 modification to the plan of operation approval; and Conditions 3, 4, and 5 of the May 18, 1988 plan of operation approval.

Alternate Daily Cover (ADC)

22. Alternate daily cover material shall not be used as daily cover on exterior side slopes or at final grades and shall not contain free liquids.

23. Adams County shall remove any daily cover and alternate daily cover from the daily operational disposal area that would create a barrier to the movement of leachate and landfill gas.

24. Only petroleum contaminated soils are approved for use as alternate daily cover in accordance with the special waste plan. Adams County shall request specific approval for additional alternate daily covers in accordance with s. NR 506.055(1), Wis. Adm. Code.

25. Environmental fees shall be paid for the disposal of any solid waste that is approved for use as an ADC or other reuse within the landfill and not used for that purpose on-site.

Leachate Recirculation

26. Adams County shall receive written approval from the department prior to the use of rapid infiltration surface trenches for leachate recirculation.

Environmental Monitoring

27. Adams County shall perform environmental monitoring during both the active life and post-closure care in accordance with Attachment #1: Environmental Monitoring Tables 1 through 5. The subtitle D wells are listed in Table 1. This condition supersedes the following previous conditions of approval for the landfill:

    a. Condition 17 of the May 7, 1995 Modification to the Plan of Operation Approval;
    b. Condition 13 of the August 11, 1992 Modification to the Plan of Operation Approval, and;
    c. Conditions 13 and 14 of the May 18, 1998 Plan of Operation Approval.

28. The ch. NR 140, Wis. Adm. Code, Preventative Action Limits (PALs) and Alternative Concentration Limits (ACLs) for the groundwater monitoring points shall be those listed in Attachment #2: Tables 6 and 7.

29. For all future new or replacement groundwater monitoring devices located greater than 10 feet from the original well or screened in a different vertical interval and for each of the groundwater monitoring points listed in the attached Tables 6 and 7, which indicate that baseline groundwater data is needed or that the well needs to be installed, Adams County shall collect baseline groundwater data in accordance with ch. NR 507, Wis. Adm. Code. Adams County may then request groundwater NR 140 exemptions where needed and propose PALs and ACLs for specific wells and parameters in accordance with Department's Solid Waste Technical Guidance for PAL/ACL Calculations. Submittal of the requested groundwater exemptions and proposed PALs and ACLs shall be done within two years from the date of well construction for the respective well. Chapter NR 520, Wis. Adm. Code, plan review fees shall apply to each submittal containing the requested exemptions and proposed PALs and ACLs for new PALs or ACLs. If Adams County finds that a correction needs to be made to an approved PAL or ACL because of an error, then Adams County may inform the department in writing and the department will make any needed corrections as the department determines through a plan modification approval. In such cases that a plan modification approval is issued to correct an error, the department may waive the review fee.

30. Leachate recirculation monitoring shall be performed in accordance with s. NR 507.215, Wis. Adm. Code, during leachate recirculation.

31. Gas probe GP4 shall be installed when either Phase 5 or Phase 6 liner is constructed, or prior, and the well installation log shall be included in the construction documentation report for the phase in which the gas probe was installed.

Inspection and Reporting

32. Annual reports shall be prepared for leachate recirculation and organic stability in accordance with the respective plans and the requirements of s. NR 506.135(5), and ss. NR 514.07(9)(d) and (e), Wis. Adm. Code, respectively. These annual reports shall be submitted with the landfill's annual report by April 1st of each year.

33. Annual Reporting. Adams County shall submit the landfill's annual report to the department's assigned waste management engineer no later than April 1st of each year. The annual report shall summarize the following activities from the previous calendar year:

a. Special waste disposal activities:

i. The total volume for each special waste category accepted for disposal.
ii. A list of all special wastes that have been approved for disposal.
iii. A list of wastes that were reviewed and not approved for disposal.
iv. A list of each waste and volumes used as alternate daily cover (ADC) or other reuse within the landfill.
v. Any problems encountered during the calendar year with the disposal of special wastes.

b. Leachate collection line cleaning, repair, and video camera inspection (when performed).

c. Leachate and gas condensate forcemain pressure testing results if performed in the previous year.

d. Leachate recirculation monitoring data collected during the year in accordance with s. NR 507.215, Wis. Adm. Code. The report may refer to specific data which is submitted to the department in electronic format for upload into GEMS, instead of providing duplicative data.

e. Inspection of the leachate tank system and the tank loadout station onsite and a summary of repairs made or planned.

f. Evaluation of the performance of the gas extraction and treatment system and its operation, maintenance, and repair.

g. Assessment of the final cover conditions and documentation of repairs and maintenance.

h. Assessment of erosion control and surface stabilization measures on the final cover and drainage features beyond the limits of filling, including any proposed corrective measures for vegetation or other erosion control features including but not limited to the soil stockpiles onsite. Assessment of landfill settlement monitoring data. Inspection of detention and infiltration basins.

i. Summary of the previous year's environmental monitoring point construction and abandonment activities, if any, and use of the department's groundwater monitoring well information form.

j. Summary of landfill fire incidents including but not limited to those requiring containment by a local or regional fire department.

k. The annual report shall summarize the complaint log maintained for the previous year; the nature of the complaints and the responses, if warranted, and summarize documented dust or odor control measures noted by personnel in the Odor Control Plan (Appendix P, attachment 2 of the plan of operation).

l. The annual report may briefly reference and summarize other reports such as the department's annual air management report. It shall also identify problems, successful or failed responses to problems in operating the landfill, and actual and proposed significant changes to landfill operations.

FINANCIAL RESPONSIBILITY AND LONG-TERM CARE

34. Revised proof of financial responsibility for closure and long-term care shall be established, in accordance with ch. NR 520, Wis. Adm. Code, within 60 days of the date of this approval. The proof of financial responsibility shall be established based upon the approved closure and long-term care costs contained in the Attachment #3, Tables #8 and #9.

This condition supersedes condition 16 of the department's March 15, 2017 conditional plan of operation approval modification.

35. The owner shall perform site maintenance, monitoring, and any necessary remedial activities, unless otherwise approved by the department in writing.

36. The owner shall continue to collect and treat leachate and landfill gas as they are produced unless approved by the department in writing.

37. Vegetative cover shall be maintained on the final cover to prevent erosion. The owner shall mow the final cover vegetation as needed to prevent the growth of tall and woody vegetation.

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 that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review department decisions must be filed.

To seek judicial review of the department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a 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: February 14, 2019

DEPARTMENT OF NATURAL RESOURCES
For the Secretary,

Cynthia Moore
Waste and Materials Management Program Supervisor
South Central Region

Eric Syftestad
Eric Syftestad, P.E., CHMM
Waste Management Engineer
South Central Region

Adam Hogan
Hydrogeologist
South Central Region

Attachment #1 for the Adams County Landfill Expansion Plan of Operation
License # 3150
Environmental Monitoring Tables

Table 1
Detection Groundwater Monitoring NR 507 Wells

Wells	DNR ID#	WUWN	Comment[1]	Sampling & Reporting[2] Frequency	Parameter Codes	Parameters
Non-Subtitle D Wells						
Annual VOCs						
MW-1	1	DM435		Sample Semiannually March and September	72020	Elevation, Groundwater (feet above mean sea level)
MW-1P	2	DM436			00001	Odor
MW-2	3	DM437			00002	Color
MW-2P	4	DM438			00003	Turbidity
MW-3	5	DM439	to be abandoned		00010	Temperature, of water taken in field °C
MW-3P	6	DM440	to be abandoned		00094	Field Conductivity @ 25° C(umho/cm)
MW-6	7	DM441			00400	Field pH (standard units)
MW-6P	8	DM442			00941	Chloride, filtered (mg/L)
MW-7	9	DM443			00946	Sulfate, filtered (mg/L)
MW-7P	10	DM444			22413	Total Hardness, filtered (mg/L)
MW-9	12	DM446			39036	Alkalinity, filtered (mg/L)
MW-17P	15	DM449	to be abandoned			
MW-18P	17	DM451				
MW-19	18	DM452				
MW-19P	19	DM453				
MW-20	40	EI302				
MW-21	41	EI303				
MW-22	42	EI304		Sample Annually March	VOCs (ug/L) Using EPA Solid Waste Method 8260 (NR 507, appendix III)	
MW-29	49	VP147				
MW-30P	51	VP145				
MW-31	52	VP146				
Subtitle D Wells						
Semiannual VOCs						
MW-7	9	DM443		Sample Semiannually March and September	72020	Elevation, Groundwater (feet above mean sea level)
MW-16	13	DM447			00001	Odor
MW-17	14	DM448	to be abandoned		00002	Color
MW-18	16	DM450			00003	Turbidity
MW-30	50	VP144			00010	Temperature, of water taken in field °C
					00094	Field Conductivity @ 25° C(umho/cm)
					00400	Field pH (standard units)
					00941	Chloride, filtered (mg/L)
					00946	Sulfate, filtered (mg/L)
					22413	Total Hardness, filtered (mg/L)
					39036	Alkalinity, filtered (mg/L)
						VOCs (ug/L) Using EPA Solid Waste Method 8260 (NR 507, appendix III)
Groundwater Elevation Only						
MW-25	45	GN076		Sample Semiannually March and September	72020	Elevation, Groundwater (feet above mean sea level)
MW-26	46	GN077				
MW-27	47	GN078				
MW-28	48	GN079				

1. Monitoring Points that are abandoned are no longer monitored.
2. In accordance with s. NR 507.26 (3), Wis. Adm. Code, data shall be submitted within 60 days after the end of the sampling period, unless otherwise specified.
Trip Blank (999) and/or Field Blank (997) data must also be submitted electronically.

Table 2a
Leachate Characteristic Monitoring

Monitoring Pt.	DNR ID#	Comment[1]	Sampling & Reporting[2] Frequency	Parameter Codes	Parameters
Leachate Tank Pump Man Hole	35		Sample/Record Total Volumes Monthly Report Semiannually March and September	00032 99723	Leachate Volume Pumped (1000s of gallons) Leachate Volume Recirculated (1000s of gallons)
			Sample Quarterly March, June, September, December	00094 00310 00340 00400 00410 00610 00900	Field Conductivity @ 25oC (umho/cm) BOD (5 day @ 20°C (mg/L) COD, unfiltered (mg/L) Field pH, (standard units) Alkalinity, total as CaCO3 (mg/L) Nitrogen, Ammonia, total (mg/L as N) Hardness, total (mg/L as CaCO3)
			Sample Semiannually March and September	00150 00625 00929 00940 00945 01027 01051 01055 71900 74010	Suspended Solids, total (mg/l) Nitrogen, Kjeldahl, total (mg/L as N) Sodium, total (mg/L) Chloride, total (mg/L) Sulfate, total (mg/L) Cadmium, total (ug/l) Lead, total (mg/L) Manganese, total (mg/L) Mercury, total (mg/L) Iron, total (mg/L)
					VOCs (ug/L) Using EPA Solid Waste Method 8260 (NR 507, appendix III)
			Sample Annually March		Semi-volatiles, using EPA Method SW-8270 (NR 507, appendix IV)

1. Monitoring Points that are abandoned are no longer monitored.
2. In accordance with s. NR 507.26 (3), Wis. Adm. Code, data shall be submitted within 60 days after the end of the sampling period, unless otherwise specified.

Table 2b

Leachate Headlevel and Volume Monitoring

Monitoring Pt.	DNR ID#	Comment[1]	Sampling & Reporting[2] Frequency	Parameter Codes	Parameters
LHW-5	24		Sample Monthly Report Semiannually	00031	Depth of Leachate from top of liquid level to bottom in feet
LHW-6	25			99423	Elevation, Leachate Head feet above mean sea level
LHW-7	26				
LHW-8	27				
LHW-9		to be constructed			
LHW-9A		to be constructed			
LHW-10		to be constructed			
LHW-10A		to be constructed			
		Extraction Vault/Manhole	Sample Monthly Report Semiannually	00032	Leachate Volume Pumped
LV3		Phase 3 manhole		99723	Leachate Volume Recirculated
LV4		Phase 4 manhole			
LV5		vault to be constructed			
LV6		vault to be constructed			

1. Monitoring Points that are abandoned are no longer monitored.
2. In accordance with s. NR 507.26 (3), Wis. Adm. Code, data shall be submitted within 60 days after the end of the sampling period, unless otherwise specified.
3. Phases 1 and 2 leachate collection drains by gravity into the (underground) leachate tank. Phases 3 - 6 are forcemains to the tank.

Table 3a
Landfill Gas Extraction

Gas Extraction Well - DNR ID #						Sampling & Reporting[3] Frequency	Parameter Codes	Parameters
Monitoring Pt	ID#	Comment[1]	Monitoring Pt	ID#	Comment[1]			
GEW-1	601					Sample Monthly Report Semiannually March and September	46382	Header Pressure (inches of water column)
GEW-2	603						46385	Well Head Pressure (inches of water column)
GEW-3	605						99098	Gas Flow Rate (cfm)
GEW-4		2					46388	Gas Temperature (^{0} F)
GEW-5		2					46387	Valve Opening (% open)
GEW-6		2					85547	Percent Methane, by volume
GEW-7		2					85550	Percent Oxygen, by volume
GEW-8		2					85544	Percent Carbon Dioxide (CO_2), by volume
GEW-9		2					99848	Percent Balance Gas, by volume
GEW-10		2				Sample Annually March	00031	Depth of Leachate from top of liquid level to bottom in feet
GEW-11		2						
GEW-12		2						
GEW-13		2						
GEW-14		2						
GEW-15		2						
Gas Blower								
Blower	650					Sample Monthly Report Semiannually	46382	Header Pressure (inches of water column)
							98927	Gas Extracted, Total Monthly Volume (1000 cu. Ft. /month)
							99098	Gas Flow Rate (scfm)
							46388	Gas Temperature (^{0} F)
							85547	Percent Methane, by volume
							85550	Percent Oxygen, by volume
							85544	Percent Carbon Dioxide (CO_2), by volume
							99848	Percent Balance Gas, by volume
						Sample Annually March Report Annually		VOCs using USEPA Method TO-15 or TO-14A[4]
							99423	Sulfate, total reduced

1. Monitoring Points that are abandoned are no longer monitored.

2. To be constructed.

3. In accordance with s. NR 507.26 (3), Wis. Adm. Code, data shall be submitted within 60 days after the end of the sampling period, unless otherwise specified.

4. Refer to department guidance *Volatile Organic Compound Parameters for Landfill Gas Monitoring at Municipal Solid Waste Landfills* (PUB-WA 1701), dated August 1, 2014.

Attachment #1 for the Adams County Landfill Expansion Plan of Operation
License # 3150
Environmental Monitoring Tables

Table 3b
Landfill Gas Monitoring Probes

Monitoring Point - DNR ID #			Sampling & Reporting[2, 3.] Frequency	Parameter Codes	Parameters
Landfill Gas Monitoring Probes					
Monitoring Pt	**ID#**	**Comment[1.]**			
GP-1	36		Sample Quarterly March, June, September & December	85547	Percent Methane, by volume
GP-2	37			85550	Percent Oxygen, by volume
GP-3	38				
GP-4	39	to be constructed			
Site Conditions					
Site Conditions			Record quarterly at same time as blower Report Semiannually	00021	Ambient Air Temperature (^{0} F)
				00025	Barometric Pressure (mm of Hg)
				46381	Trend in Barometric Pressure
				00007	Ground Conditions 1=frozen, 2=wet, 3=dry

1. Monitoring Points that are abandoned are no longer monitored.
2. In accordance with s. NR 507.26 (3), Wis. Adm. Code, data shall be submitted within 60 days after the end of the sampling period, unless otherwise specified.
3. Immediate notification may be necessary under NR 507.22(1)(c) Wis. Adm. Code.

Table 4
Lysimeter and Surface Water Monitoring

Monitoring Pt.	DNR ID #	Comments	Monitoring Pt.	DNR ID #	Comments	Sampling & Reporting[2] Frequency	Parameter Codes	Parameters
Lysimeters								
CLR-1	30					Sample Monthly Report Semiannually	74064	Lysimeter discharge volume pumped (gal)
CLR-2	31							
						Sample Semiannually March and September	72020	Elevation, Groundwater (feet above mean sea level)
							00001	Odor
							00002	Color
							00003	Turbidity
							00094	Field Conductivity @ 25^0 C(umho/cm)
							00340	COD, Unfiltered
							00400	Field pH (standard units)
							00410	Alkalinity, total as CaCO3 (mg/L)
							00625	Nitrogen, Kjeldahl, total (mg/L as N)
							00900	Hardness, total (mg/L as CaCO3)
							00929	Sodium, total (mg/L)
							00940	Chloride (mg/L)
							00945	Sulfate, total (mg/L)
						Sample Annually March		VOCs (ug/L) Using EPA Solid Waste Methods 8260 (NR 507, appendix III)
Sedimentation Basins								
SW-1, North Infiltration Basin						Inspect Quarterly March, June, September, and December (report in annual report)		Visual inspection for: Odor, Turbidity, Floating Solids, Foam, Oil Sheen[3]
SW-2, South Infiltration Basin								
SW-3, West Sed. Basin								

1. Monitoring Points that are abandoned are no longer monitored.
2. In accordance with s. NR 507.26 (3), Wis. Adm. Code, data shall be submitted within 60 days after the end of the sampling period, unless otherwise specified.
3. See Storm Water Pollution Prevention Plan.

Attachment #1 for the Adams County Landfill Expansion Plan of Operation
License # 3150
Environmental Monitoring Tables

Table 5			
Settlement Monitoring			
Monitoring Point	**Sampling & Reporting[2] Frequency**	**Parameter Codes**	**Parameters**
Survey Final Cover at Grid Stations	Measure Annually June Until 5 years after closure; then every 5 years Report in Annual Report	99422	Elevation, Ground Surface feet above mean sea level

Attachment #2 for the Adams County Horizontal Expansion Plan of Operation,
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PAL and ACL Tables
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Table 6 Groundwater Indicator Parameter Preventative Action Limits (PALs)

Wells	DNR ID#	WUWN	Abandoned or to be Abandoned	Alkalinity (mg/L) GEMS ID#: 39036	Hardness (mg/L) GEMS ID#: 22413	Specific Conductance (umhos/cm) GEMS ID#: 00094	Comments
NR 140 Wells							
MW-1	1	DM435		290	310	590	Approved in the May 7, 1995 Plan Modification Approval
MW-1P	2	DM436		220	300	610	Approved in the May 7, 1995 Plan Modification Approval
MW-2	3	DM437		240	350	480	Approved in the May 7, 1995 Plan Modification Approval
MW-2P	4	DM438		220	310	440	Approved in the May 7, 1995 Plan Modification Approval
MW-3	5	DM439	to be abandoned	290	390	590	Approved in the May 7, 1995 Plan Modification Approval
MW-3P	6	DM440	to be abandoned	230	320	450	Approved in the May 7, 1995 Plan Modification Approval
MW-6	7	DM441		230	270	470	Approved in the May 7, 1995 Plan Modification Approval
MW-6P	8	DM442		290	380	580	Approved in the May 7, 1995 Plan Modification Approval
MW-7P	10	DM444		250	290	490	Approved in the May 7, 1995 Plan Modification Approval
MW-9	12	DM446		330	340	560	Approved in 2019 Plan of Operation Horizontal Expansion*
MW-17P	15	DM449	to be abandoned	250	290	370	Approved in the May 7, 1995 Plan Modification Approval
MW-18P	17	DM451		260	300	500	Approved in the May 7, 1995 Plan Modification Approval
MW-19	18	DM452		300	340	590	Approved in the May 7, 1995 Plan Modification Approval
MW-19P	19	DM453		240	320	460	Approved in the May 7, 1995 Plan Modification Approval
MW-20	40	EI302		290	390	590	Approved in the May 7, 1995 Plan Modification Approval
MW-21	41	EI303		290	390	590	Approved in the May 7, 1995 Plan Modification Approval
MW-22	42	EI304		290	390	590	Approved in the May 7, 1995 Plan Modification Approval
MW-29	49	VP147		300	280	470	Approved in 2019 Plan of Operation Horizontal Expansion
MW-30P	51	VP145		220	220	370	Approved in 2019 Plan of Operation Horizontal Expansion
MW-31	52	VP146		390	360	570	Approved in 2019 Plan of Operation Horizontal Expansion
MW-7	9	DM443		290	370	560	Approved in the May 7, 1995 Plan Modification Approval
MW-16	13	DM447		320	360	590	Approved in the May 7, 1995 Plan Modification Approval
MW-17	14	DM448	to be abandoned	250	370	490	Approved in the May 7, 1995 Plan Modification Approval
MW-18	16	DM450		340	420	650	Approved in the May 7, 1995 Plan Modification Approval
MW-30	50	VP144		210	200	350	Approved in 2019 Plan of Operation Horizontal Expansion

Subtitle D wells are in bold

* Based on data with appropriate quality assurance and quality control flags from before filling begins in phase 3 south (11/1/2005 liner documentation submittal)

Attachment #2 for the Adams County Horizontal Expansion Plan of Operation,
License #: 3150
PAL and ACL Tables
February 2019 - page 2 of 2

Table 7				
Groundwater Alternative Concentration Limits (ACLs)				
Wells	**DNR ID#**	**WUWN**	**Lead** **GEMS ID#:01049**	**Comments**
NR 140 Wells				
MW-30	50	VP144	4.4 ug/L	Approved in 2018 Plan of Operation Horizontal Expansion

Subtitle D wells are in bold

Attachment #3: Cost Estimates

Table 8: Closure Cost Estimates for Financial Responsibility for the Adams County Landfill Plan of Operation Approval (Lic#3150), February 14, 2019

Final Cover Component	Unit	Unit Cost	Quantity	Cost
Mobilization	Lump sum (LS)	$30,000	1	$30,000
Silt Fence	Linear feet (LF)	$1.50	2000	$3000
Site Preparation	LS	$20,000	1	$20,000
Gas Extraction Wells	Vertical Feet (VF)	$120	400	$48,000
6-inch HDPE Gas Pipe	LF	$30	3700	$111,000
Gas Well Head	Each	$500	9	$4500
Waste Grading	LS	$30,000	1	$30,000
Grading layer (6 inches thick)	CY	$1.50	10,300	$15,450
Clay Cap Soil Layer (24 inches thick, placement and hauling)	CY	$7.00	40,900	$286,300
40-mil Textured LLDPE Geomembrane	SF	$0.50	552,000	$276,000
Pipe Boots	Each	$250	18	$4500
Granular Drainage Layer (12 inches thick, on-site)	CY	$4.00	20,500	$82,000
Perforated Storm Water Drainage Pipe	LF	$15	2,200	$33,000
Non-Perforated Storm Water Drainage Pipe	LF	$22	220	$4840
Rooting zone (18 inches thick, on-site)	Sq. yard (SY)	$4.50	30,700	$138,150
Topsoil (6 inches thick, on-site)	SY	$1.50	10,300	$15,450
Final Cap & Site Restoration (Seed, fertilize, mulch)	Acre	$2500	12.3	$30,750
Clay Borrow Grading For Restoration	Hour	$250	60	$15,000
Clay Borrow Restoration (Seed, fertilize, mulch)	Acre	$2500	5	$12,500
			Final Cover Construction Subtotal Cost:	**$1,160,440**
Engineering Fees				
Engineering and Documentation Cost (15% of total)	LS	NA	1	$174,066
			SUBTOTAL (Construction & Engineering):	$1,334,506
			10% Contingency	$133,451
			TOTAL COST:	**$1,468,000**

Notes:

(1) Costs are in 2018 dollars

(2) Costs are based on data provided by Adams County.

(3) Quantities shown are for the closure of phases 3 through 5 final cover, encompassing 12.3 acres.

Attachment #3: Cost Estimates

Table 9: Long-Term Care Cost Estimates for Financial Responsibility for the Adams County Landfill Plan of Operation Approval (Lic#3150), February 14, 2019

Major Cost Item	Unit	Unit Cost [1]	Quantity [2]	Average Cost Per Year
Site Inspection and Repair				**$ 6,590**
Site Inspection (quarterly for 5 years, semi-annually for 35 years) ($600/event)	LS	$1,000.00	1	$1,000.00
Land surface repair (annually for first 10 years, $2500/repair)	ACRE	$1,500.00	0.44	$660.00
Lawn mowing (annually)	HR	$65.00	22	$1,430.00
Road plowing/Road grading	LS	$1,000.00	1	$1,000.00
Drainage ditch cleaning (8 hours @ $100/hr)	HR	$250.00	8	$2,000.00
Settlement Survey	LS	$2,500.00	0.2	$500.00
Leachate Management System				**$ 22,970**
Leachate collection line cleaning	LS	$2,500.00	1	$2,500.00
Leachate collection line tv inspection (every 5 years)	LS	$4,000.00	0.2	$800.00
Leachate transport (assumed 592,200 gallons/year, 1 hr/load)	HR	$140.00	99	$13,860.00
Leachate treatment [3]	GAL	$0.00554	592,194	$3,280.75
Leachate tank and appurtenance replacement (1 replacement during long term care)	EACH	$40,000.00	0.025	$1,000.00
Leachate loadout pump replacement (2 pumps over 40 years)	LS	$9,000.00	0.05	$450.00
Leachate sideslope riser pump replacement (1 pump every 10 years)	LS	$3,800.00	0.1	$380.00
Leachate system operation and maintenance (Pumps, Vaults, Manholes, Tank, Electricity-10 hp @ 200 GPM, $0.11 kw-hr)	LS	$700.00	1	$700.00
Gas Extraction System				**$ 8,500**
Gas well replacement	0.1	LS	$10,000.00	$1,000.00
Operation and maintenance [4]	1	LS	$2,000.00	$2,000.00
Electricity (7.5 hp @ $0.11/kw-hr)	1	LS	$5,500.00	$5,500.00
Environmental Monitoring Costs				**$ 23,375**
Groundwater, leachate, gas probes monitoring and laboratory analysis	1	LS	$18,675.00	$18,675.00
Gas extraction well monitoring	12	Days	$200.00	$2,400.00
Gas monitoring (surface emissions monitoring)	LS	$1,500.00	1	$1,500.00
Gas probe replacement (1 every 10 years)	0.1	LS	$2,000.00	$200.00
Groundwater monitoring well replacement (1 every 5 years)	0.2	LS	$3,000.00	$600.00
Reporting Costs				**$ 2,500**
Annual Reporting	LS	$2,500.00	1	$2,500.00
Long-Term Care Subtotal				**$ 63,935**
Contingency (20%)				**$ 12,787**
Contingency Equipment Repair/Replacement	10% LTC	$6,393.58	1	$6,393.58
General Engineering Services Fees	10% LTC	$6,393.58	1	$6,393.58
Annual Long-Term Care Costs Total				**$ 76,723**
40-year Long-Term Care Cost				**$ 3,068,900**

Notes:

[1] Unit Costs are based on 2018 dollars and costs from comparable facility.

[2] Quantities are based on an annual basis.

[3] See leachate generation calculations; quantity based on post-closure leachate generation rates.

[4] Total of wells, flare and blower

SUMMARY OF APPROVAL CONDITIONS
PLAN OF OPERATION
HORIZONTAL EXPANSION
ADAMS COUNTY SANITARY LANDFILL

License No. 3150

Cond. No.	DESCRIPTION	Condition Type	Status As Of 2/14/2019	Comment
April 11, 2018 Determination of Site Feasibility, Adams County Landfill Horizontal Expansion				
See Section 2.4 of Feasibility Report				
March 15, 2017 Conditional Plan of Operation Approval Modification for Leachate Recirculation at the Adams County Landfill, Town of Strongs Prairie, Adams County, Wisconsin, License No. 3150				
1	The department may require that leachate re-circulation cease at any time if the Department believes that it is causing operational or environmental problems.	General	Remain Active	
2	When applying leachate on the surface of the waste, a berm of sufficient size to control leachate movement shall be constructed on the down slope side of the working face. When applying leachate to the working face, a minimum setback distance of 50 feet from the perimeter side slopes shall be maintained. Leachate applied to the working face will not begin until a minimum of twenty vertical feet of wate has been placed.	Operational	Remain Active	
3	The leachate application rate shall be limited to 2060 gpad.	Operational	Superceded	Leachate application rate has been revised per the updated leachate recirculation plan which incorporates the Expansion. Refer to leachate recirculation plan of Appendix P.
4	Leachate recirculation shall only be applied to wastes in Phases 3 and 4 of the Adams County Sanitary Landfil.	Operational	Superceded	Leachate recirculation may be applied to Phases 3, 4, 5, and 6.
5	In accordance with design requirements in s. NR 504.06, Wis. Adm. Code, the average head level on the composite liner shall not exceed one foot. All leacahte re-circulation activities will cease when the head levels on the landfill's liner exceed one foot.	Operational	Remain Active	
December 29, 2016, Adams Co R&R Eliminate COD from GW Monitoring, Lic #3150 (email approval)				
No Conditions				
November 22, 2016, Conditional Approval of the Construction Documentation for the Phase 1 and 2 Final Cover and Gas Collection System at the Adams County Landfill, Town of Strongs Prairie, Adams County Wisconsin, License No. 3150				
1	Payment of invoice #4406-11095 for the department's three additional construction inspections of the Phase 1 & 2 final cap and gas system construction shall be submitted to the Department within 30 days of receipt.	Administrative	Completed	
2	Inspection of the Phase 1 & 2 final cap shall be performed after major storm events and repairs made as necessary.	Monitoring	Remain Active	
June 7, 2016 Low Hazard Waste Grant of Exemption for Use of Processed Container Glass				
1	This grant of exemption shall be effective until five years from the date of issuance. The department may extend this grant of exemption beyond that date and may modify the conditions below or impose new conditions if justified by experience or feedback from operation of the glass recycling program prior to that date.	General	Remain Active	
2	Uses of the processed glass are limited to those itemized in this grant of exemption and the processed glass for each use must meet the industry standards for that end use.	General	Remain Active	
3	A new application shall be submitted for uses not identified on this grant of exemption	General	Remain Active	
4	An annual report shall be prepared and copies submitted no later than April 1 of each calendar year. In cases where the grantee is also a DNR certified MRF under NR 544.16, Wis. Adm. Code, the annual report will be inlcuded as part of the MRF annual self-certification report. The report shall include: a. the amount provided for recycling in tons (preferably) or in cubic yards, b. a description of how the material was used, and c. a description of any problems encountered during the operation of the glass recycling program.	Reporting	Remain Active	
5	Processed glass used for the purposes designated under this grant of exemption may not contain more than 5% by weight of non-glass material.	Operational	Remain Active	
August 4, 2015, Conditional Approval of the Construction Documentation for South Half of Phase 4, Liner and Leachate Collection System Adams County Landfill, Town of Strongs Prairie, Adams County Wisconsin, License No. 3150				
1	A minimum of four feet of waste shall be placed on the base and the bottom 10 feet of the sideslope of the south half of the Phase 4 liner by December 1, 2016.	Operational	Completed	
2	No sharp construction debris or fine material, such as shingles, shall be placed in the initial lifts.	Operational	Completed	
3	The leachate collection lines shall be flushed as part of every liner construction event with documentation submitted to the Department within 30 days of completions.	Operational	Completed	

SUMMARY OF APPROVAL CONDITIONS
PLAN OF OPERATION
HORIZONTAL EXPANSION
ADAMS COUNTY SANITARY LANDFILL

4	The Department's invoice 4406-10739 for $4300 shall be submitted to the Department within 30 days of receipt.	Administrative	Completed	
October 1, 2013 Conditional Plan Modification to the Plan of Operation Approval for the Adams County Sanitary Landfill, License #3150, Town of Strongs Prairie, Adams County, Wisconsin - Special Waste Acceptance Plan				
1	Payment for invoice #4406-10205 for $1650 shall be submitted to the Department within 30 days of receipt.	Administrative	Completed	
2	Written Department approval shall be obtained prior to accepting waste with rapid oxidizing potential.	Operational	Remain Active	
April 8, 2013, Modification to the Plan of Operation Approval for the Adams County Sanitary Landfill, License #3150, Adams County Wisconsin - Gas System Design Modifications				
1	Payment of invoice No. 4406-10082 for $1650 shall be made to the Department within 30 days of receipt.	Administrative	Completed	
2	A bird protection device shall be added to the top of the flare.	Construction	Completed	
3	Warning ribbon shall be buried above the gas lines where they are not location within the landfill's footprint.	Construction	Remain Active	
4	Stainless steel clamps shall be used for the GCL secondary containment system.	Construction	Remain Active	
5	The flare shall be sized/designed to operate for variable flow conditions including low flow.	Construction	Completed	
6	A roof or other weatherproof structure shall be installed over the sections of the flare system that can be degraded by weathering.	Construction	Completed	
7	Where the gas lateral pipe penetrates the cap, the bentonite plug as shown on Detail 1 of plan sheet five shall be adequately mixed with dry sand.	Construction	Remain Active	
February 7, 2012 Conditional Approval of the Construction Documentation for North Half of Phase 4, Liner and Leachate Collection System				
1	A minimum of four feet of waste shall be placed on the base and the bottom 10 feet of the sideslope of the north half of the Phase 4 liner by December 1, 2012.	Operational	Completed	
2	No sharp construction debris or fine material, such as shingles, shall be placed in the initial lifts.	Operational	Completed	
3	The leachate collection lines shall be flushed as part of every liner construction event.	Operational	Completed	
4	Documentation for the installation of the control pump and sideslope riser pump for the leachate collection system shall be submitted to the Department within 15 days of installation.	Construction	Completed	
5	Invoice #4406-9684 for $3300 shall be submitted to the Department within 30 days of receipt.	Administrative	Completed	
December 5, 2011 Conditional Modification to the Plan of Operation Approval for the Adams County Landfill, License #3150 - Use of Crushed Glass				
1	Payment of invoice No. 8940 shall be made to the Department within 30 days from the date of this approval.	Administrative	Completed	
August 5, 2009 Modification to the Plan of Operation Approval for the Adams County Sanitary Landfill, License #3150 - Revised Long Term Care Costs				
No Conditions				
March 27, 2009 Conditional Modification to the Plan of Operation Approval for the Adams County Landfill, License #3150 - Use of Crushed Glass in Phase 4 Subbase				
1	Payment of invoice No. 8940 shall be made to the Department within 30 days from the date of this approval.	Administrative	Completed	
December 19, 2007 Modification to the Plan of Operation Approval for the Adams County Sanitary Landfill, License #3150 - Revised Long Term Care Costs				
No Conditions				
December 7, 2005 Construction Documentation Approval for South Half Phase 3 Liner for the Adams County Sanitary Landfill, License #3150				
1	A minimum of four feet of waste shall be placed on the base and the bottom 10 feet of the sideslope of the south half of the Phase 3 liner by December 1, 2006.	Operational	Completed	
2	No sharp construction debris or fine material, such as shingles, shall be placed in the initial lifts.	Operational	Completed	
3	The leachate collection lines shall be flushed as part of every liner construction event.	Construction	Completed	
June 18, 2004 Conditional Construction Documentation Approval for Closure of the Small Demolition Waste Landfill, Adams County Landfill, Town of Strongs Prairie, Adams County				
1	Eroded and unvegetated areas of the cap shall be inspected, repaired and maintained.	Long Term Care	Remain Active	
2	Areas of the cap that settle differentially and prevent positive drainage shall have additional grading and topsoil placed to allow surface water to runoff the site. The minimum approved cap dimensions shall not be undercut when making the repairs.	Long Term Care	Remain Active	
September 9, 2003 Revised Long Term Cost Approval				
No Conditions				
March 13, 2001 Construction Documentation Approval North Half Phase 3 Liner				

SUMMARY OF APPROVAL CONDITIONS
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1	A minimum of four feet of waste shall be placed on the base and the bottom 10 feet of the sideslope of the north half of the Phase 4 liner by December 1, 2001.	Operational	Completed	
2	No sharp construction debris or fine material, such as shingles, shall be placed in the initial lifts.	Operational	Completed	
3	The leachate collection lines shall be flushed as part of every liner construction event.	Operational	Completed	
4	Payment of the $3000 review fee, which includes a $1000 plan review fee and $2000 for four construction inspections, shall be submitted to the Department within 30 days from the date of invoice.	Administrative	Completed	
	August 27, 1999 Conditional Modification to the Plan of Operation Approval for the Adams County Landfill, License #3150			
1	A minimum of four feet of waste shall be placed in the new landfill cell by December of 2000.	Operational	Completed	
2	The leachate collection lines shall be flushed as part of the construction for each new cell.	Operational	Completed	
3	Construction documentation of the new cell shall be submitted to the Department within 90 days of completion of the new cell.	Construction	Remain Active	
4	Where manholes are used in the new cell all pick or lift holes shall be permanently sealed after installation.	Construction	Remain Active	
5	Section NR 504.05(3)(h), Wis. Adm. Code, and associated sand thicknesses shall be carefully observed prior to any vehicular traffic driving on top of the liner.	Construction	Comparable Code	NR 504.06(3)(h)
	July 7, 1995 Yard Waste Composite Site Approval			
1	The Adams County Resource Recovery Facility shall operate the site in accordance with the plan of operation dated June 29, 1995, not to exceed a capacity of 10,000 cu. Yds. On site at any time.	General	Comparable Code	NR 502.12(6)
2	The site is located on a rather flat area but if necessary, must be graded to prevent the ponding of snowmelt, rainfall, or leachate around the compost piles.	Construction	Remain Active	
3	Yard waste will be brought to the site by citizens of Adams County who will debag their yard waste. Any waste generated from the compost operation will be disposed of at the Adams County Landfill.	Operational	Remain Active	
4	The yard waste shall be piled and turned as often as necessary, possibly once per week, to stimulate decomposition.	Operational	Remain Active	
5	No manure, food wastes, or any wastes which could be considered putrescible may be added to the compost pile.	Operational	Remain Active	Unless a Source Separated Compostable Material Facility License is obtained
	May 7, 1995 Modification to the Plan of Operation Approval - for Compliance with Subtitle D Requirements at the Adams County Landfill, License #3150			
1	A preconstruction report shall be submitted to the Department for review at least two weeks prior to the preconstruction meeting for each segment of the composite liner and cap. At a minimum, two copies shall be provided to the central office in Madison and one copy shall be provided to the Wisconsin Rapids Area Office. The report shall include:	Construction	Comparable Code	NR 516.05(5)
1a	A schedule for the entire construction project including the preconstruction meeting date, the submittal date for the construction documentation report, and the date by which the construction area will be needed for waste placement (for liner construction).	Construction	Comparable Code	NR 516.05(5)
1b	Any proposed revision to the approved design including detailed diagrams incorporating all changes. A summary of any proposed revisions to the quality assurance manual submitted with the plan modification report, other than those required by the Department in this approval.	Construction	Comparable Code	NR 516.05(5)
1c	Identification of the manufacturer of the geomembrane, manufacturer qualifications and technical specifications of the resin and polymer selected, and results of the manufacturer's quality control tests for the selected geomembrane (if available at the time of report submittal). Identificatoin of the fabricator of geotextiles and other geosynthetics used in site construction, technical specifications of the products and materials to be used and methods used to bond materials together.	Construction	Comparable Code	NR 516.05(5)
1d	Identification of the installation contractor, contractor qualifications, specific on-site supervisory staff, and seamer experience with the specific type of geomembrane being installed. The report shall include a quality control plan that the installation contractor will follow for the installation of the geosynthetics. The report shall describe contractor specific: geomembrane handling procedures; welding and testing equipment; attachment methods; panel overlaps; patching, seam, and wrinkle repair procedures; use of trial seams; use of nondestructive and destructive tests and test frequency; and acceptable limits on subgrade and weather conditions.	Construction	Comparable Code	NR 516.05(5)

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1e	Identificatoin of the quality assurance consultant indicating specific on-site staff and a summary of their qualifications and experience with the specific type of geomembrane being installed. The report shall include a copy of the construction quality assurance plan to be used during documentation of the construction including forms which will be used. The report shall describe the specific equipment, test methods and tes frequency to be used by the quality assurance consultant and the laboratory to be used to test geomembrane samples.	Construction	Comparable Code	NR 516.05(5)
1f	Source and construction of specialy connections between the geomembrane component and any penetrations. The report shall identify methods to test the integrity of seams and connections to penetrations of the geomembrane.	Construction	Comparable Code	NR 516.05(5)
1g	Documentation from the geotextile manufacturer that all geotextile which will be in direct contact with the geomembrane has been certified to be needle free.	Construction	Comparable Code	NR 516.05(5)
1h	A proposed method of removing coarse gravel and cobbles on the surface of the soil below the geomembrane, a construction method to assure a smooth surface prior to geomembrane placement, and a documentation method to record the elimination of unacceptable material on the surface below the geomembrane.	Construction	Comparable Code	NR 516.05(5)
1i	A panel layout pattern for the geomembrane placement.	Construction	Comparable Code	NR 516.05(5)
2	A preconstruction meeting shall be schedule prior to the initiation of the geomembrane installation of each segment of the liner and the final cover system. The meeting shall be used to clarify or confirm design changes, acceptability of selected construction materials, construction concepts or practices, and requirements of this approval and any subsequent modifications. At a minimum, the meeting shall include the following personnel: the construction project manager, engineering design consultant, the geomembrane installer, the earthwork contractor, the quality assurance personnel and appropriate Department district and central office staff.	Construction	Comparable Code	NR 516.05(4)
3	In addition to the construction inspections required by the plan of operation approval, additional construction inspections will be performed at this facility during each of the construction events listed below for each phase of liner and final cover construction. The Department's environmental engineer assigned to this facility shall be notified a minimum of one week prior to beginning of each construction event for the purpose of allowing the Departmemt to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with NR 520 Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation is submitted to the Department for review.	Construction	Comparable Code	NR 516.04(6)
3a	Geomembrane installation.	Construction	Comparable Code	NR 516.04(6)
3b	Placement of drainage layer over the geomembrane	Construction	Comparable Code	NR 516.04(6)
4	The construction of the geomembrane component of the composite liner and composite cap shall comply with the proposed quality assurance manual included in Appendix E of the plan modification report dated August 1994 and the following requirements. Any modifications to the approved plan must be approved by the Department prior implementing the change.	Construction	Rescinded	Construction of geomembrane shall comply with the quality assurance plan of Appendix E of this Plan of Operation
4a	The geomembrane installation quality assurance consultant shall be an independent party not affiliated with the geomembrane manufacturer or installer. The quality assurance consultant shall have at least one million square installation experience with the type of geomembrane being installed.	Construction	Comparable Code	NR 516.04(2)(b)
4b	The geomembrane panels shall be installed parallel to all slopes in excess of 10%, providing alignment of the seams in a direction along and not across the slopes.	Construction	Comparable Code	NR 504.06(3)(c)
4c	Department approval shall be obtained prior to geomembrane installation for ambient temperatures below 32° F.	Construction	Rescinded	Construction of geomembrane shall comply with the quality assurance plan of Appendix E of this Plan of Operation
4d	Installed geomembrane shall be covered with earthern material within 30 days of completing quality control and quality assurance testing of the installation.	Construction	Remain Active	

5	The placement of soil materials on the geomembrane/geotextile surface of the liner and the cap shall conform with the proposal submitted in the quality assurance manual included in Appendix E of the plan modification report (page 18 - 20) dated August 1994. In addition to the requirements in Appendix E, guidance to machine operators placing drainage material on the geosythetic surfaces shall be provided by the use of an observer with an unobstructed view of the advancing lift of soil. Also, efforts shall be made to place the soil over the geomembrane during the coolest part of the day to minimize the development of wrinkles in the geomembrane.	Construction	Rescinded	Construction of geomembrane shall comply with the quality assurance plan of Appendix E this Plan of Operation. NR 504.06(3)(g)
6	The drainage layer over the base liner system shall include a minimum 8 oz/yd^2 non-woven geotextile which has been certified to be needle free placed directly over the geomembrane and a minimum of 18 inch thick sand layer.	Construction	Rescinded	Geotextile shall be a 12 oz/CY non-woven material and drainage layer shall be a minimum 12-inches thick.
7	The drain layer in the final cover shall be terminated for a 10-foot radius around penetrations of the final cover structure, including gas extraction well risers, leachate headwell risers, and cleanout pipe risers. The sand drainage material shall be replaced with the rooting zone soil around the geomembrane penetrations.	Construction	Rescinded	Eliminate requirement. Capping layers will remain consistent around final cap penetrations.
8	A registered professional engineer or a qualified technician who is directly supervised by a professional engineer shall be continuously present and performing their assigned quality assurance duties throughout the construction event for which a documentation report is required to be submitted. The personnel performing quality assurance for geomembrane installation shall not be affiliated with the geomembrane fabricator or installer.	Construction	Comparable Code	NR 516.04(2)(a)
9	Conformance testing shall be conducted on geomembrane material delivered on site and used in construction of the liner and final cover. Sampling and testing shall be performed by quality assurance consultant or their laboratory. Conformance testing data shall be included in the construction documentation report. At a minimum the testing shall inlcude the following:	Construction	Comparable Code	NR 516.07(2). Conformance (or acceptance testing) shall also follow CQA Plan of Appendix E
9a	Geomembrane thickness shall be tested at the rate of a minimum of 5 areas measured per roll.	Construction	Comparable Code	NR 516.07(2)(a)1. Conformance (or acceptance testing) shall also follow CQA Plan of Appendix E
9b	Geomembrane tensile properties (strength and elongation in yield and break) shall be tested at a minimum of one test per 40,000 ft^2 of geomembrane installed and a minimum of one test on rolls from each batch of resin used to manufacture rolls delivered on site.	Construction	Comparable Code	NR 516.07(2)(a)2. Conformance (or acceptance testing) shall also follow CQA Plan of Appendix E
9c	Geomembrane density and melt index of the polymer shall be tested at a rate of one test per 40,000 ft^2 of geomembrane installed and a minimum of one test on rolls from each batch of resin used to manufacture rolls delivered on site.	Construction	Comparable Code	NR 516.07(2)(a)3. Conformance (or acceptance testing) shall also follow CQA Plan of Appendix E
9d	Geomembrane environmental stress cracking resistance documentation shall be provided which shows that the manufacturer performed a minimum of one test for each batch of resin used to manufacture rolls delivered on site.	Construction	Comparable Code	NR 516.07(2)(a)4. Except for LLDPE geomembrane. Environmental stress cracking resistance no longer applicable for LLDPE.
10	Pre-qualification tests for each geomembrane fusion welding machine shall be conducted a minimum of 2 pre-qualification seams run per welding machine at the start-up of each day by each seaming technician performing geomembrane welding, with additional test runs following work interruptions, weather changes or as directed by the quality assurance engineer or qualifed technician. Extrusion welding machine performancce shall be verified a minimum of two test per seam per machine at the start-up each day with additional test runs as directed by the quality assurance engineer or qualified technician. Four samples from each test seam shall be immediately tested with a tensiometer in the field for peel and two samples in shear. Both tracks of the dual wedge welds shall be peel tested if the welding machine provides sufficient overlap. The testing shall be ovserved by the quality assurance personnel. Test results shall be collated for documentation along with notes on date and time, ambient temperature, technician, seaming machine, and machine settings. The test results shall be submitted with the construction documentation report.	Construction	Comparable Code	NR 516.07(2)4(b). Geomembrane installation and testing shall also follow CQA Plan of Appendix E
11	Documentation of all seams and connections shall be peformed on the geomembrane as stated below. The results of all testing shall be included in the construction documentation report.	Construction	Comparable Code	NR 516.07(2)(c)Geomembrane installation and testing shall also follow CQA Plan of Appendix E
11a	Nondestructive field seam testing shall be performed on all seams of geomembrane attached by welding to other geomembrane sheets, plastic plates and pipe penetrations. Every seam and patch shall be visually inspected by the quality assurance personnel.	Construction	Comparable Code	NR 516.07(2)(c1)Geomembrane installation and testing shall also follow CQA Plan of Appendix E

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11b	Destructive field and laboratory seam test samples shall be taken at a rate of one sample per 500 feet of seam accomplished, unless another frequency is approved by the Department. The quality assurance person shall determine the location for destructive samples to be taken. Areas suspected of imperfect welding should be chosen for destructive sample location. Destructive seam test samples shall be tested under the same protocol as the welding machine test seams. The field testing shall be conducted or observed by the quality assurance personnel.	Construction	Comparable Code	NR 516.07(2)(c2)Geomembrane installation and testing shall also follow CQA Plan of Appendix E
11c	A destructive sample shall be taken from at least one end of each fusion weld greater than 100 feet long and tested for field shear and peel. The testing shall be conducted or observed by the quality assurance personnel.	Construction	Comparable Code	NR 516.07(2)(c3)Geomembrane installation and testing shall also follow CQA Plan of Appendix E
11d	Field shear and peel tests of geomembrane seams shall be performed using standardized specimen sizes in tensile testing machines. The tensile testing machine shall be equipped with electrically controlled and smoothly moving jaw separation apparatus, capable of adjustments and defined settings for jaw separation rate, and capable of displaying jaw separation rates and tensile loadings exerted on the geomembrane samples. Tensile testing machines shall be accompanied by documentation for calibration conducted within three month of the start of geomembrane installation.	Construction	Comparable Code	NR 516.07(2)(c4)Geomembrane installation and testing shall also follow CQA Plan of Appendix E
11e	Geomembrane boots attached to leachate pipes exiting the landfill liner shall be leak tested following construction by submerging the entire boot/pipe connection underwater for at least 24 hours and measuring the water level. The boot shall be repaired and the leak test repeated if any drop in the water level is measured. Other methods for insuring the integrity of the boot/pipe connection may be used, provided they are approved by the Department.	Construction	Comparable Code	NR 504.06(5)h and NR 504.06(5)(j)
12	Daily inspector's summary reports shall be prepared by the quality assurance personnel for each day that installation of geomembrane is either attempted or accomplished. The reports shall describe practices employed for clay liner and cap preparation and acceptance before membrane installations. Outline drawings on 8.5" x 11" paper shall be prepared as necessary to record the construction events. These reports shall be appended to the construction documentation report and shall include the following information:	Construction	Comparable Code	NR 516.05(2)(e and NR 516.06(2)(e
12a	Identification and location of geomembrane panels placed. Amount of geomembrane placed. Changes from the fabrication plan shall be noted.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12b	Methods and procedural steps taken prior to field seaming of panels.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12c	Identification, location, and length, of field seams completed.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12d	Location and results of nondestructive seam testing.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12e	Sample locations and results of the destructive seam testing.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12f	Location of wrinkles large enough to double over that were cut out and patched.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12g	Location of repairs made and results of the nondestructive testing of these repairs.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12h	Amount and location of geotextile placed.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12i	Procedures for placement of the sand drainage layer over the geomembrane.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
12j	Weather conditions and constraints.	Construction	Comparable Code	NR 516.05(2)(e) Geomembrane installation and testing shall also follow CQA Plan of Appendix E
13	A certification section shall be included at the immediate beginning of any construction documentation report prepared for the construction or closure of a portion of the landfill and shall include the following:	Construction	Comparable Code	NR 516.04(3)
13a	The seal of all registered professional engineers who either performed quality assurance work on the project or supervised qualifed technicians who did so.	Construction	Comparable Code	NR 516.04(3)(a)

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13b	A table clearly identifying each registered professional engineer and qualified technician who performed quality assurance during the construction and a list of their job experiences related to the type of work they performed on this project; which aspects of construction each person provided on site quality assurance for; the number of days each was present at the landfill; and the total hours each spent at the site. The table shall also clearly identify the registered professional engineer supervising each qualified technician.	Construction	Comparable Code	NR 516.04(3)(b)
13c	A second table identifying who prepared each portion of the construction documentation report including both narrative and plan sheets.	Construction	Comparable Code	NR 516.04(3)(c)
13d	Separate signed statements by both the professional engineer(s) and qualified technician(s) identified in b. above certifying that the construction, for each item identified below, was accomplished in conformance with the approved plans and all applicable administrative code requirements. All deviations shall be explicitly noted and discussed including any changes in materials. Each statement shall also clearly identify what personal observations, knowledge or other information their certification is based on.	Construction	Comparable Code	NR 516.04(3)(d)
13d(1)	The clay component of a liner or cap. The statement shall specifically address:	Construction	Comparable Code	NR 516.04(3)(d)1
13d(1)(a)	The quality of clay material used and the methods utilized in its placement.	Construction	Comparable Code	NR 516.04(3)(d)1a
13d(1)(b)	All connections with previoulsy placed clay layers.	Construction	Comparable Code	NR 516.04(3)(d)1b
13d(1)c	Preparation of leachate collection trenches, gas header trenches and any pipe penetrations through the clay component.	Construction	Comparable Code	NR 516.04(3)(d)1c
13d(1)(d)	Preparation of the upper portions of the clay component of a composite-lined or composite-capped landfill for installation of the geomembrane, including smoothness of the surface, removal of rocks and other foreign objects, and repair of the clay surface due to rain, rutting, or other damage.	Construction	Comparable Code	NR 516.04(3)(d)1d
13d(1)e	Placement of soil materials over the composite liner or composite capping layer.	Construction	Comparable Code	NR 516.04(3)(d)1e
13d(2)	All geomembranes, grids, fabrics, nets and appurtenances. The statement shall specifically address:	Construction	Comparable Code	NR 516.04(3)(d)2
13d(2)(a)	Connections will all previously placed geosynthetics.	Construction	Comparable Code	NR 516.04(3)(d)2a
13d(2)(b)	Placement of geomembrane in collection trenches and other irregularly shaped areas, and placement around leachate collection pipe, gas extraction wells, and other penetrations of the liner and cap.	Construction	Comparable Code	NR 516.04(3)(d)2b
13d(2)c	Connections of geomembrane to any penetrations of the composite liner or composite capping layer.	Construction	Comparable Code	NR 516.04(3)(d)2c
13d(2)(d)	The size and extent of wrinkles which developed in the geomembrane and how they were dealt with.	Construction	Comparable Code	NR 516.04(3)(d)2d
13d(3)	All elements of the construction relating to leachate or surface water routing, collection, storage and transportation, as well as the gas extraction system. The statement shall include but not be limited to: construction of leachate collection and transfer lines, all liner penetrations, collection takns, manholes, lysimeters, gas extraction system construction, and leachate headwells.	Construction	Comparable Code	NR 516.04(3)(d)3
14	The construction documentatoin report for each segment of the liner and final cover shall include the following additional information:	Construction	Comparable Code	NR 516.05(2) and NR 516.06(2)
14a	Identification of all contractors and subcontractors involved with the construction and their specific duties.	Construction	Comparable Code	NR 516.05(2) and NR 516.06(2)
14b	Identification of the sources and product specifications for manufacturered items used in site construction, such as pipe boots. This shall include the identification of all solvents and other sealants used in construction.	Construction	Comparable Code	NR 516.05(2) and NR 516.06(2)
14c	Documentation of the thicknesses of the drainage layer and the rooting zone layer for the final cover on a maximum 100-foot grid. Identify the methods used to document the thickness of all soil material placed above the geomembrane for both the liner and the cap.	Construction	Comparable Code	NR 516.05(2)(b) and NR 516.06(2)(b)

14d	A narrative summarizing the results of all test performed on the geomembrane, including the tests that have been performed by the resin supplier, manufacturer, installer and quality assurance consultant. The narrative shall include identification of the geomembrane and geotextile suppliers/manufacturers, material specifications of the installed geosynthetics, attachment and welding methods used on the project. The report shall include the qualifications and names and experience of the installers of the materials used in the construction and seams that are representative of the installed geomembrane shall be included with the report. An analysis of all geomembrane tests shall be presented. All raw data from geomembrane testing shall be appended to the report in table formats.	Construction	Comparable Code	NR 516.05(2)(b) and NR 516.06(2)(b)
14e	Plan sheets documenting the location and designation of all geomembrane panels and seams, geomembrane patches and seam repairs, and geomembrane destructive samples. Seams shall be designated as either fusion of extrusion welded. All seams and panels shall be identified on the plan sheets with appropriate identification codes.	Construction	Comparable Code	NR 516.05(1) and NR 516.06(1)
14f	Plan view drawings and details documenting the drainage layer and subsurface water collection and transfer system within the final cover, including the slope on all piping.	Construction	Comparable Code	NR 516.05(1)(b) and NR 516.06(1)(c)
14g	Detailed drawings/photographs documenting the following:	Construction	Comparable Code	NR 516.05 and NR 516.06
14g(1)	Geomembrane and geotextile trenches.	Construction	Comparable Code	NR 516.05 and NR 516.06
14g(2)	Splicing and joining methods between similar and dissimilar materials such as soil to soil, membrane to membrane, PVC and HDPE pipe to geomembrane and tie-ins to previously installed sections of the composite liner and cap.	Construction	Comparable Code	NR 516.05 and NR 516.06
14g(3)	Protection of the edge of the geomembrane liner and cap for future connections.	Construction	Comparable Code	NR 516.05 and NR 516.06
14g(4)	Methods used for placement of the soil components of the liner and cap, including equipment specifications.	Construction	Comparable Code	NR 516.05 and NR 516.06
15	For areas of the final cover where a part or all of the clay cap has been placed and a winter season elapses prior to placement of the geomembrane portion of the composite cap, the clay cap shall be redocumented just prior to geomembrane placement as follows. First, any overlying soil above the clay and vegetation shall be completely removed including all roots. Then the upper 12 inches of the in-place clay cap shall be re-tested for dry density and moisture content on a 50-foot grid pattern. Provided the compaction standard of 90% or greater modified proctor density is satisified, at a minimum the upper 6 inches, of the clay cap shall be scarified, re-compacted and tested to meet a minimum 90% modified proctor density prior to placement of the additional clay or the geomembrane. If density re-tests on the upper 12 inches of clay do not meet the compactions standard, the entire 12 inch thickness of clay shall be removed in the area of the failed test, and the lower 12 inches of clay shall be re-tested for dry density and moisture content. Provided the compaction standard is met on the lower 12 inches of clay, the first 12 inches of clay shall be re-compacted to a minimum 90% modified proctor density in 6 inch lifts. If the lower 12 inches of clay do not meet the compaction standard, the entire clay cap in the area of the failed test shall be re-compacted and retested. The depth of the clay cap shall be re-documented on a 100-foot grid pattern following completion of the density re-tests.	Construction	Superseded	
16	The closure cost for this facility have been revised to $1,166,450 and the long term care cost have been revised to $71,600 per year. The figures are in 1994 dollars and a breakdown of the costs are located in appendices J and K of the August 1994 plan modification report and in an addendum to the report dated January 3, 1995. The long term care period has been increased to 40 years.	Operational	Superseded	See closure & long term care costs, tables 8 and 9, Plan of Operation approval
17	Adams County shall perform monitoring in accordance with this condition until otherwise approved in writing by the Department. All data shall be submitted either on the appropriate Department forms or on diskette. *(Refer to approval document for parameters and monitoring points)*	Monitoring	Superseded	
18	The following preventive action limits shall apply at the designated wells. *(See approval for PALs listed)*	Monitoring	Remain Active	
19	Within 120 days of the date of this approval, Adams County shall submit the following:			
19a	Geologic cross sections constructed through all borings at the site including those for abandoned borings and wells and the monitoring wells installed to monitor the demolition landfill and the recycling facility. The cross section shall contain the information outlined in NR 512.13(2), Wis. Adm. Code.	Documentation	Completed	Submitted in Adams County June 2017 Feasibility; Sheets 4-17.

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19b	A completed well information form and boring logs for monitoring wells MW-25, 26, 27, and 28.	Documentation	Completed	Submitted in Adams County June 2017 Feasibility; Appendix G
20	Petroleum contaminated soil proposed for use as daily cover at the landfill shall be characterized under the direction of the Department's Leaking Underground Storage Tank (LUST) program or as follows: sampled at a rate of one composite sample per 600 cubic yards of soil with a minimum of one sample per source, the samples shall be analyzed in accordance with Attachment A. Petroleum contaminated soil used for daily cover shall comply with the contamination limits listed in Attachment A.	Operational	Rescinded	Contaminated soil may continue to be used as alternate daily cover. Required testing for acceptance of contaminated soil shall follow the requirements of the special waste acceptance plan of Appendix N.
21	The volume of petroleum contaminated soil used as daily cover at the landfill shall be included in the annual report.	Documentation	Remain Active	
	October 18, 1994 Facility Construction Documentation Approval, Phase II Increment B at the Adams County Landfill, License #3150			
	No Conditions			
	April 9, 1993 Facility Construction Documentation Approval, Phase II Increment A at the Adams County Landfill, License #3150			
1	Prior to placing waste in Phase II - Increment A, documentation of the leachate line cleaning in Phase II - Increment A and documentation of the clay berm removal between Phase I and Phase II - Increment A along with sand blanket placement in this area shall be submitted to and approved by the Department.	Construction	Completed	
2	An extension shall be installed on the newly installed leachate line shut off valve within the manhole, in order that the valve can be operated from the ground surface following removal of the manhole cover. Directions shall be placed on the valve handle which indicate the open and close positions for the valve. Documentation of the valve extension placement shall be submitted to the Department by June 30, 1993 along with documentation of the link seal placement on the secondary pipe existing the clean-out manhole.	Construction	Completed	
3	The upper 12 inches of the in-place clay liner in Phase II-Increment B shall be re-tested for dry density and moisture content on a 50 foot grid pattern. Provided the compaction standard of 90% or greater modified proctor density is satisfied, the upper 6 inches of the clay liner shall be scarified and recompacted to a minimum 90% modified proctor density prior to placement of additional clay. If any of ther density re-tests on the upper 12 inches of clay do not meet the compaction standard, the entire 12 inch thickness of clay shall be removed in the area of the failed test, and the second 12 inches of clay shall be re-tested for dry density and moisture content. Provided the compaction standard is met on the second 12 inches of clay, the first 12 inces of clay shall be recompacted to a minimum 90% modified proctor density in 6 inch lifts. If the second 12 inches of clay do not meet the compaction standard, the recompaction procedure required for the first 12 inches of clay shall be repeated until a depth is reach at which the compaction standard is met.	Construction	Completed	
4	Prior to placing waste in Phase II - Increment B, a report shall be submitted to and formally approved by the Department. The report shall include the following information:	Documentation	Completed	
4a	Results of the density testing on the clay liner rquired by the previous condition.	Documentation	Completed	
4b	Documentation of the remainder of the clay liner placement, sand blanket placement, and leachate collection pipe placement as required by NR 516, Wis. Adm. Code.	Documentation	Completed	
4c	Documentation of the clay berm removal between Phase I and Phase II - Increment B, and placement of the sand blanket in this area.	Documentation	Completed	
4d	Documentation of the seed, fertilizer, and mulch placement over all areas disturbed by the Phase II construction.	Documentation	Completed	
	August 11, 1992 Modification to the Plan of Operation Approval, Active Gas Extraction System			
1	All excavated waste shall be properly disposed of in a Department approved landfill.	Construction	Remain Active	
2	All areas of the landfill underlain by waste where final cover is removed shall have the final cover properly replaced with the approved final cover material.	Construction	Remain Acitve	Gas extraction system components will be installed prior to final cover installation. However, should this situation ever occur, final cover layers would be properly replaced.
3	Testing shall be performed on all replaced final cover in accordance with NR 516.05(1), Wis. Adm. Code.	Construction	Comparable Code	See response to Condition 2 above. If this situation occurred, testing would follow applicable requirements of NR 516.07.
4	All piping outside the waste limits which will transfer condensate shall meet the requirements of NR 504.05(6)(k), Wis. Adm. Code. If double piping is used, the annular space between pipes shall be open to the down slope manhole.	Design	Comparable Code	NR 504.08(2)(L)
5	The gas collection system design shall include the ability to measure gas flow rates at the building inlet and also indpendently measure gas flow rates throughout the gas collection system.	Design	Comparable Code	NR 504.08

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6	The bentonite seals within the gas extraction well boreholes shall be saturated immediately following placement of bentonite.	Construction	Remain Active	
7	A minimum six inch thick bentonite seal shall be placed around all gas system cleanout pipes where the pipe exists the top of the clay cap layer.	Design	Rescinded	This condition was prior to Subtitle D requirements, therefore any penetrations through the final cover shall follow NR 504.07(5)(C)
8	The granular material placed directly above the washed stone in the gas well boreholes shall be sized to reduce the potential for migration of fines from the granular material into the washed stone.	Design	Rescinded	See Drawings for detail of gas extraction well construction. A geotextile layer will be placed between the washed stone and borehole seal interface to prevent migration of fines.
9	Insulation shall be provided for the gas pipe between the gas well head and the ground surface if freezing of liquid occurs in the pipe.	Design	Rescinded	The portion of the gas well above the final cover will be designed to allow any condensate generated to drain into the gas header piping or back into the vertical well. Landfill gas is typically warm, which will aid in freeze prevention.
10	The Department's environmental engineer assigned to this project shall be contacted a minimum of one week prior to beginning each of the construction events listed below for each portion of the gas system, for the purpose of allowing the Department to observe the work. A fee shall be paid to the Department for each required inspection in accordance with the rules in effect at the time of the inspection. The inspection fee shall be submitted to the Department along with the construction documentation report.	Construction	Comparable Code	NR 516.04(6)
10a	Drilling of the borehole for the gas extraction wells	Construction	Comparable Code	NR 516.04(6)
10b	Installation of the gas header piping	Construction	Comparable Code	NR 516.04(6)
10c	Installation of the driplegs	Construction	Comparable Code	NR 516.04(6)
10d	Repair of the final cover	Construction	Comparable Code	NR 516.04(6)
11	A construction documentation report shall be prepared and submitted for Department review within 60 days of construction completion of each portion of the gas system. The report shall include the following information:	Documentation	Remain Active	NR 516
11a	Plan view(s) utilizing a two foot contour interval showing the location of all items constructed with spot elevation shown for the actual grades implemented.	Documentation	Comparable Code	NR 516.06(1)(a)
11b	Plan views of the gas transfer piping layout showing the slope on all piping. Invert elevation shall be provided at each well and at all changes in slope.	Documentation	Comparable Code	NR 516.06(1)(e)
11c	Plan views of condensate transfer piping layout showing the slope on all piping. Invert elevation shall be provided along the condensate collection pipe and at all manhole inlet and outlet locations.	Documentation	Comparable Code	NR 516.06(1)(e)
11d	A series of 35 mm photographs documenting all aspects of construction.	Documentation	Comparable Code	NR 516.06(2)(g)
11e	Details of the typical extraction well, gas and condensate piping, driplegs, manholes and other construction details.	Documentation	Comparable Code	NR 516.06(1)(g)
11f	A comprehensive narrative explaining how construction of the project was accomplished along with a discussion of any problems encountered and the measures taken to resolve these problems.	Documentation	Comparable Code	NR 516.06(2)
11g	A summary of the appearance of refuse withdrawn during the drilling of the boreholes (dry, damp, wet, saturated), temperatures within the borings, liquid elevation if any encountered, and the presence of sludges or other waste that may reduce the effectiveness of the extraction wells.	Documentation	Remain Active	
11h	A table or well log showing as constructed well information including; well location, surface elevation and depth of the borehole; elevation and length of solid and perforated piping, elevation and length of the washed stone; elevation and length of the granular material backfill; and elevation and length of bentonite seals.	Documentation	Comparable Code	NR 516.06(2)(d)
11i	Results of any pipe pressure testing and explanation of any failed test, the repairs completed and re-test results.	Documentation	Remain Active	
11j	Documentation of equipment calibration and system start-up activities.	Documentation	Completed	
11k	Documentation of repair work necessary to restore the cap and complete closure of the landfill including all test result. A detail of the methods used to key the repaired portion of the clay cap to the existing cap shall be included.	Documentation	Remain Active	Gas extraction system components will be installed prior to final cover installation. However, should this situation ever occur, final cover layers would be properly replaced.
12	A system start-up, operations, maintenance, adjustment and troubleshooting manual shall be submitted for Departmental review with the final construction documentation report. The manual shall include the following information;	Documentation	Rescinded	Flare and blower O&M shall follow the manufacturer's supplied manual.
12a	Start up procedures, shut down procedures, emergency responses, loss of power procedures and notification procedures.	Documentation	Rescinded	Flare and blower O&M shall follow the manufacturer's supplied manual.
12b	A program for equipment inspection, calibration and maintenance.	Documentation	Rescinded	Flare and blower O&M shall follow the manufacturer's supplied manual.
12c	A program for system malfunction reporting.	Documentation	Rescinded	Flare and blower O&M shall follow the manufacturer's supplied manual.

12d	Necessary operating staffing, skills, equipment and back-up provisions needed.	Documentation	Rescinded	Flare and blower O&M shall follow the manufacturer's supplied manual.
12e	A proposal for assessing the effectiveness of the system once installed.	Documentation	Rescinded	Flare and blower O&M shall follow the manufacturer's supplied manual.
12f	A proposal for inspecting and cleaning polyethylene piping, driplegs, and the condensate pump as necessary.	Documentation	Rescinded	See this Plan of Operation
13	The following monitoring shall be performed on the gas extraction system. (see approval for list of parameters and frequency)	Monitoring	Superseded	
	January 4, 1991 Asbestos Plan Modification Approval to Accept and Dispose of Asbestos Waste			
1	Asbestos disposal shall be conducted in accordance with the following:			
1a	Unless an alternative handling procedure is approved by the Department, asbestos shall be disposed of at the base of the active working face, or other facility designated asbestos disposal area. A specific disposal trench shall be excavated into existing refuse. Asbestos shall be placed into the excavated trench and shall immediately be covered with a minimum of 3 feet of waste or soil prior to compaction.	Operational	Comparable Code	NR 506.10(2)(a)
1b	The location of asbestos disposal areas may not coincide with previous asbestos disposal areas or proposed future landfill construction.	Operational	Comparable Code	NR 506.10(2)(c)
1c	All applicable safety measures required by Chs NR 400 to 499, and EPA and OSHA, specifically, those requirements dealing with the safety of personnel working with asbestos, shall be followed.	Operational	Remain Active	
2	Asbestos shall not be baled under any circumstances.	Operational	Remain Active	
3	Asbestos waste shall not be disposed of within ten feet of the liner or sidewalls to protect the integrity of the liner and drainage blanket.	Operational	Remain Active	
4	Accurate records of the location and quantity of asbestos waste disposed in each trench, shall be maintained. The edges of the trench shall be documented within 3 feet using the grid pattern and elevations established on construction plans for the facility. Other methods of documentation may be approved by the Department.	Operational	Comparable Code	NR 516.10(2)(b)
	October 2, 1990 Phase I Increment B Construction Documentation Approval			
	No Conditions			
	December 4, 1989 Phase I Increment A Construction Documentation Approval			
1	The PVC monitoring riser adjacent to the storage tank shall be checked on a monthly basis for liquid accumulation. If liquid is detected in the monitoring riser, the Department shall be notified, and a plan of action to correct the problems shall be established. Results of the monitoring shall be submitted to the Department on a quarterly basis with the Turn Around Documents (TADs).	Operational	Remain Active	
2	The sedimentation basin shall be cleaned out on a periodic basis. A maxiumum of 2 feet of sediment shall be allowed to accumulate in the basin prior to cleaning.	Operational	Remain Active	
3	The temporary berm separating increments A and B in Phase I shall be removed prior to waste disposal in Increment B.	Construction	Completed	
4	The upper 12 inches of the in-place clay liner in Increment B and under the temporary clay berm shall be re-tested for dry density and moisture content on a 100 foot grid pattern. Provided the compaction standard of 90% or greater modified proctor density is satisfied, the upper 6 inches of the clay liner shall be scarified and recompacted to a minimum 90% modified proctor density prior to placement of additional clay. If any of ther density re-tests on the upper 12 inches of clay do not meet the compaction standard, the entire 12 inch thickness of clay shall be removed in the area of the failed test, and the second 12 inches of clay shall be re-tested for dry density and moisture content. Provided the compaction standard is met on the second 12 inches of clay, the first 12 inces of clay shall be recompacted to a minimum 90% modified proctor density in 6 inch lifts. If the second 12 inches of clay do not meet the compaction standard, the recompaction procedure required for the first 12 inches of clay shall be repeated until a depth is reached at which the compaction standard is met. Dry density, moisture content and percent compaction shall be determined on a 100-foot grid pattern for each one foot thickness or less of recompacted clay.	Construction	Completed	
5	Prior to placing waste south of station 118+06N a report shall be submitted to and approved by the Department. The report shall contain the following:	Documentation	Completed	
5a	Base grade survey documentation of Increment B including the area under the temporary clay berm, following the recompaction of the upper portion of the clay liner.	Documentation	Completed	

SUMMARY OF APPROVAL CONDITIONS
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5b	Results of the dry density testing required by condition 4 above.	Documentation	Completed	
5c	Sand blanket and leachate collection pipe construction documentation for increment B as required by NR 516, Wis. Adm. Code.	Documentation	Completed	
5d	Seed, fertilizer, and mulch placement documentation over all areas disturbed by construction	Documentation	Completed	
5e	Paving documentation for the first 300 feet of the access road.	Documentation	Completed	
	March 6, 1990 Construction Documentation Approval - Adams County Small Demolition Facility			
1	A $150.00 plan review fee be submitted by April 20, 1990.	Administrative	Completed	
	November 21, 1989 Plan Modification Approval - Disposal of Starch and Ink Solids (Alar)			
1	If changes in the production process of the generator occur which may produce a change in the physical or chemical characteristics of the waste, the waste shall be retested as required by NR 506.09 Wis. Adm. Code to determine if the waste is acceptable for disposal at the landfill. All test results shall be submitted to the Department	Operational	Remain Active	
2	The actual tonnage of starch and ink solids from the Castle Rock Container Company disposed of at the landfill shall be reported to the Department on an annual basis.	Operational	Remain Active	
	May 18, 1988 Plan of Operations Approval, Proposed Adams County Sanitary Landfill			
1	All site construction, operation, monitoring, documentation, and modification shall be conducted in accordance with the plan of operation report and engineering drawings, the Chapert NR 500 series of the Wis. Admin. Code, and the conditions of approval in this document. In all the cases of any discrepancies, the Code shall take precedence. In the case of discrepancies between the conditions of approval and the report, the conditions of approval shall take precedence.	Construction & Operations	Remain Active	
2	The design capacity of this facility is limited to a total of 700,000 cubic yards of combined refuse, daily and intermediate cover materials as proposed in the operating plan report.	Operation and Design	Remain Active	For existing landfill until Horizontal Expansion is approved
3	Within 30 days of the date of this approval, Adams County shall provide the Department written notification of the wastewater treatment facility that the County is negotiating a leachate treatment agreement with. Upon receipt of written Department approval of the acceptability of the identified facility for treatment, and prior to the licensure of the facility for operation, the County shall provide the Department a copy of the signed final agreeement.	Operational	Rescinded	See Appendix O
4	The permanent survey control monument that is proposed to be located at approximate station 94+30N:114+10E shall be relocated to approximate station 111+00N:116+00E.	Construction	Rescinded	Survey control is as shown on Plan Sheets 2 and 3
5	A corrugated metal culvert shall be provided at the point where the temporary access road for disposal within each phase of facility development crosses the drainage swale that is located at the perimeter of the waste disposal limits. These culverts, and all other culverts used to drain surface water away from the designed disposal limits shall be at least 24 inces in diameter.	Operational	Rescinded	Culverts will be installed as needed for temporary access roads to the active filling area. Culverts will be installed as shown on Plan Sheet 13
6	The design of the leachate loadout piping that is presented in detail 4/22 of the operating plan proposal shall include a vacuum relief fitting at the highest point of the ductile iron discharge pipe.	Design	Remain Active	
7	The design of an active gas extraction system shall be prepared, and submitted to the Department for review prior to the application for facility licensure. In designing this system, the 9 passive gas vents and their proposed schedule of monitoring shall be deleted from the proposed design. The active extraction system shall provide for the effective control of all hazardous air emissions from sequentially closed disposal areas of the facility. Air emissions shall be controlled according to the requirements of Chapter NR 504.05(7) and (8).	Design	Completed	
8	All construction and documentation of all phases of development and closure of this facility shall be completed in compliance with the specific requiremetns of Chapter NR 516 Wis. Admin Code.	Construction	Remain Active	
9	The County shall advise the Department's area investigator and plan review staffs a minimum of 1 week prior to the start of each of the construction sequences noted below. This notification is required for each of the 5 phases of facility construction and closure. These notices shall be provided to allow the Department's representatives to inspect the work as it proceeds. The County shall remit a fee to the Department for each inspection in accordance with the regulatory code that is in effect at the time of the inspection. The fee for the inspections shall be submitted to the Department along with the documentation report and fee submittal for the inspected unit of facility construction.	Construction	Comparable Code	NR 516.04(6)

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9a	Subbase grading completion, prior to the start of liner system and basin lysimeter system installation.	Construction	Comparable Code	NR 516.04(6)
9b	Basin lysimeter system installation, prior to the backfilling of the collection basin(s).	Construction	Comparable Code	NR 516.04(6)
9c	Clay liner construction.	Construction	Comparable Code	NR 516.04(6)
9d	Leachate holding tank installation.	Construction	Comparable Code	NR 516.04(6)
9e	Leachate collection system installation inclusive of trench excavation, pipe installation, and drainage blanket placement.	Construction	Comparable Code	NR 516.04(6)
9f	Leachate headwell installation.	Construction	Comparable Code	NR 516.04(6)
9g	Final cover system construction.	Construction	Comparable Code	NR 516.04(6)
10	This disposal facility is hereby approved for the disposal of asbestos containing wastes provided that the specific provisions of NR 506.10 Wis. Admin. Code are followed. All other site operations shall be conducted in accordance with the requirements of Chapter NR 506 Wis. Admin. Code.	Operational	Remain Active	
11	Four additional rounds of background groundwater quality monitoring shall be completed for the monitoring wells at this facility. The monitoring shall be performed at monthly intervals and the results of the monitoring shall be submitted to the Department for review as part of the Phase 1 construction documentation report. The need for the monitoring shall be evaluated for all the parameters listed in Table 2-1 of the operating plan report. This monitoring shall be conducted for those wells and parameters for which either of the 2 following criteria apply: (1) the average concentration of the first 4 rounds exceeds the Preventive Action Limit for the parameter or (2) the concentration during any of the initial 4 rounds of monitoring exceeds the Enforcement Standard. For purposes of calculating the average, a value of 1/2 of the detection limit shall be used for all rounds of sampling where the constituent was not detected. The data from all background analyses performed at the facility shall be presented to the Department in tabular format including the calculated average value for the total 8 rounds of monitoring.	Monitoring	Completed	
12	Because of the detection of various chemicals during the initial 2 rounds of background sampling, condition 27.B.1(c and d) of the Department's Feasibility Determination for this facility, dated June 18 1987 requires that 2 additional rounds of volatile organic compound monitoring be completed for wells MW-1, MW-2, MW-3, MW-3P, MW-6, MW-6P, MW-7. This monitoring shall be completed at minimum monthly intervals. The results of the monitoring shall be tabulated and submitted to the Department for review along with the Phase 1 construction documentation report. This monitoring shall be conducted in accordance with the requirements of Chapter NR 508.14(3) Wis. Admin. Code.	Monitoring	Completed	Sampled in July and August 1988
13	A volatile organic compound (VOC) scan shall be added to the schedule of leachate quality parameters that are required to be monitored annually at this facility.	Monitoring	Superseded	
14	The volume of the leachate removed from the leachate holding tank shall be measured and recorded in a permanent record that shall be maintained at the landfill office. The extracted volume shall be totaled monthly and reported to the Department on the Turn Around Documents that will be supplied by the Department for this purpose.	Monitoring	Superseded	
15	The proof of responsibility for closure of the largest phase of facility operation shall be recalculated and presented to the Department for review prior to licensing the facility operation. This revised estimate shall include the cost of the installation of the active gas control system required by condition 7 of this approval. As affected by thsi modification in the cost of facility closure, the value of contingency cost estimate shall be increased accordingly.	Financial Responsibility	Completed	See Worst Case Closure Opinion of Probable Cost in this Plan of Operation
16	The proof of responsibility for long term care shall be recalculated and presented to the Department for review prior to licensing the facility for operation. This revised estimate shall include the cost of the operation of the active gas control system required by condition 7 of this approval. Additionally, the actual cost of post closure leachate treatment, as determined by the costs established by the required leachate treatment contract, shall be used for estimating this value. As affected by these changes in the cost of facility post closure care, the value of the contingency cost estimate shall be increased accordingly.	Financial Responsibility	Completed	See Long Term Care Opinion of Probable Cost in this Plan of Operation

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April 14, 2023

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Adams County
SW/Correspondence

Mr. Charlie Kuhn
Adams County Solid Waste Department
1420 State Highway 21
Friendship, Wisconsin 53934

Subject: Incompleteness Determination for the Feasibility Report for the Proposed Adams County Sanitary Landfill Vertical Expansion (License #3150)

Dear Mr. Kuhn:

The Department of Natural Resources (department) has reviewed for completeness the report entitled "Feasibility Report, Vertical Expansion, Adams County Sanitary Landfill" dated February 7, 2023. The feasibility report was prepared by Ayres Associates (Ayres) on behalf of Adams County. The department received the report on February 13, 2023. Based on the report review, the department has determined that the feasibility report does not contain the minimum information required by ch. NR 512, Wis. Adm. Code. Therefore, the report is not complete.

In your response, please include the information described below as an addendum to the feasibility report. This information is intended for use by the public as well as the department in reviewing the proposed project. Be sure to provide a copy of all information submitted to the department to each recipient of the feasibility report as required by s. 289.23 (4), Wis. Stats.

The following information must be provided in order for the department to issue a determination that the feasibility report is complete:

1. **Noncompliance with plans or orders [s. 289.34, Wis. Stats. and s. NR 512.19, Wis. Adm. Code]**: Provide a list identifying all other Wisconsin solid or hazardous waste facilities for which Adams County is named in, or solid or hazardous waste facilities which are owned by Adams County. Also provide a statement indicating whether the Adams County facilities are in compliance with all plan approvals and orders relating to all identified facilities. Section 1.1.1 of the feasibility report indicates Adams County owns a materials recovery facility (MRF) and a construction and demolition (C&D) landfill, and Section 12.7 of the feasibility report indicates Adams County operates a compost facility.

2. **General Submittal Requirements [s. NR 500.05, Wis. Adm. Code]:**

   a. Section NR 500.05(2), Wis. Adm. Code: Provide a cover letter detailing the desired department action or response.

   b. Section NR 500.05(4)(a), Wis. Adm. Code: Provide plan sheets under the seal of a licensed professional engineer and professional geologist.

c. Sections NR 500.05(6) and NR 500.05(6)(c), Wis. Adm. Code: Provide a revised well location figure (Figure 5) that depicts the correct location of the high capacity, non-potable well (WUWN K0311) and the private well south of the landfill office (WUWN AJ514). The figure appears to depict a private well located within 1,200 feet of the limits of waste, however, Section 7.1.5 of the feasibility report indicates there are no private wells within 1,200 feet of the limits of waste. Additionally, the figure should be revised so that it contains a legend for all symbols. The hollow circles and solid squares on the figure are not included in the legend.

d. Section NR 500.05(6)(c), Wis. Adm. Code:

i. Provide numbered figures. The individual PDF titles of the figures in the electronic version of the submittal are numbered but the figures themselves do not have numbers indicating which figure is which.

ii. Provide a revised existing conditions plan sheet (Plan Sheet 2) that contains a legend entry indicating what "LM" defines. The force main near the north side of Phases 1-4 has various points marked "LM-" that are not defined in the legend.

iii. Provide a revised existing conditions plan sheet (Plan Sheet 2) that contains a legend entry indicating what "CLR-" defines. There are two areas marked "CLR-" on the north side of Phases 1 and 2 that are not defined in the legend.

3. **Soil Borrow Sources [s. NR 504.075 and NR 512.15(2), Wis. Adm. Code]:** Provide the following information for the proposed soil borrow source.

a. Section NR 504.075, Wis. Adm. Code: Clarify if the proposed soil borrow source described in Section 9.1 would be used for soil barrier layer material and if the soil from the proposed soil borrow source would meet the requirements of s. NR 504.07(4)(a), Wis. Adm. Code. Section 8.5 of the feasibility report indicates the proposed vertical expansion's final cover would consist of a GCL and two feet of compact general fill soil. Two feet of general fill soil would not meet the requirements of s. NR 504.07(4)(a), Wis. Adm. Code.

b. Section NR 504.075(4)(a), Wis. Adm. Code: Provide narrative detailing the requirements of this code section.

c. Section NR 504.075(4)(b), Wis. Adm. Code: Provide narrative and plan sheets detailing the requirements of this code section.

d. Section NR 504.075(5)(b) and (d), Wis. Adm. Code: Provide the laboratory data for the remaining test pits. Appendix Q includes grain size analyses to 0.002 mm particle size for 2 samples from test pits 1-10, however the narrative of the feasibility report states that 17 test pits were completed.

e. Section NR 504.075(5)(d), Wis. Adm. Code: Provide all required testing for the soil borrow source from this code section.

f. Section NR 504.075(6), Wis. Adm. Code: Provide narrative and plan sheets detailing the requirements of this code section.

g. Section NR 504.075(7), Wis. Adm. Code: Provide narrative and plan sheets detailing the requirements of this code section if the intent is to use soil from the soil borrow source as soil barrier layer in final cover construction.

h. Section NR 504.075(9), Wis. Adm. Code: Provide additional narrative on how the requirements of this code section are met.

i. Section NR 504.075(10), Wis. Adm. Code: Provide a copy of the county non-metallic mining reclamation plan and its related county approval. The plan is referenced in Section 9.1 of the feasibility report but is not included.

j. Section NR 512.15(2), Wis. Adm. Code: Clarify if the proposed soil borrow source is needed for final cover construction in the proposed vertical expansion's first phase.

k. Clarify what is the solid line oriented north-south that divides the soil borrow source on plan sheets 1-3 in Appendix R.

l. Clarify what "protective cover soils" are as described in Section 9.0 of the feasibility report and what they would be used for.

4. **General Submittal Requirements [s. NR 512.05, Wis. Adm. Code]:** Provide the following in an addendum:

a. The missing information from Appendix H. The electronic feasibility submittal contains a PDF (titled "2017-2021") that doesn't appear to be in Appendix H of the physical submittal.

b. Table 11-3. The electronic feasibility submittal pdf that combines all portions of the report into a single PDF doesn't contain Table 11-3.

5. **General Facility Information [s. NR 512.07, Wis. Adm. Code]:**

a. Provide the design capacity and anticipated site life of the proposed vertical expansion without the existing landfill.

b. Provide the total design capacity and anticipated site life of the proposed vertical expansion with the existing landfill.

6. **Alternative Geotechnical Investigation Program [s. NR 512.085, Wis. Adm. Code]:**

a. Provide a copy of the accepted alternative geotechnical investigation program (AGIP) as it was submitted to the department in October 2022. The department's January 10, 2023, acceptance letter of the proposed AGIP requested this information be included in the feasibility report.

b. Provide a discussion regarding sampling procedures and the validity of groundwater data collected from wells with submerged screens in the feasibility report. The department's January 10, 2023, acceptance letter of the proposed AGIP requested this information be included in the feasibility report.

c. Provide documentation/discussion that indicates a search for missing forms was conducted within the 1986 feasibility report, the plan of operation report that followed and subsequent liner

construction documentation reports. The department's January 10, 2023, acceptance letter of the proposed AGIP requested this information be included in the feasibility report. The AGIP included information regarding well completion forms, boring log abandonment forms and well information forms that had not been located, particularly for the older borings and wells.

7. **Data Presentation [s. NR 512.11(1), Wis. Adm. Code]:** Provide a revised existing conditions plan sheet (Plan Sheet 2) that depicts all the water supply wells with 1,500 feet of the limits of waste. Based on the well locations figure (Figure 5), there may be two water supply wells within 1,500 feet of the limits of waste.

8. **Waste and Leachate Characterization [s. NR 512.12, Wis. Adm. Code]:**

   a. Section NR 512.12(2), Wis. Adm. code: Provide actual field leachate data from the existing landfill. No leachate data is provided in the feasibility report. .

   b. Section NR 512.12(3), Wis. Adm. Code: Provide a revised Table 6-1 that includes maximum leachate generation rates with Phase 2 as partially open (similar to Table 3-3 in Appendix N) and Phase 6 constructed. Additionally, Section 6.2 of the feasibility report states the existing 30,000-gallon leachate storage tank meets the requirements of s. NR 504.06(5)(o) Wis. Adm. Code; however, applying the maximum leachate generation rate (7,674 gallon per day) over a 4-day period results in an amount greater than 30,000-gallons.

   c. Provide a revised table from Section 6.1 of the feasibility report. The tonnages provided in the Section 6.1 table don't appear to accurately reflect the amount of waste accepted at the existing landfill since 2019 as shown in Table 11-2.

9. **Existing Facility Performance [s. NR 512.13(4), Wis. Adm. Code]:**

   a. Provide a discussion on the compliance status of the existing landfill.

   b. Provide a revised Section 7.2.4 that discusses volatile organic compound (VOC) detections for acetone (3/4/2020) and toluene (3/2/2021) at MW-1, and chloromethane (3/3/2021) at MW-31.

   c. Clarify why a discussion is provided in Section 7.2.4 for indicator parameter PAL exceedances at MW-22 but not for the other wells with indicator parameter PAL exceedances as indicated in the Section 7.3.1 tables. Provide a discussion on those respective exceedances at the associated wells.

   d. Clarify how leachate head measurements are being performed and reported. It's not clear how a range of values for leachate depth such as 0 ft to 45.3 ft at head well LH-5 or 0 ft to 23 ft at head well LH-7 could be reported (as identified in Section 7.3.3. and Table 6-2) and still meet the leachate head requirement of s. NR 504.06(1)(a), Wis. Adm. Code.

   e. Clarify if MW-30 is an approved Subtitle D well. Section 8.7.1 of the feasibility report states that MW-7, MW-16, and MW-18 are the existing Subtitle D wells for the site.

   f. Clarify why preventive action limits (PALs) have not been calculated for well MW-9.

g. Provide a revised Table 6-5 from Appendix K that includes the preventive action limits (PALs) for wells MW-29, MW-30, MW-30P, and MW-31 that were approved in the department's February 14, 2019, plan of operation approval. The revised table should also indicate the PALs for those wells have been approved and are no longer waiting to be approved.

10. **Proposed Preliminary Design [s. NR 512.14, Wis. Adm. Code]:**

a. Sections NR 512.13(3), NR 512.14(1)(a), and NR 512.16(2)(a), Wis. Adm. Code: Provide a revised materials balance calculation that specifies the types and quantities of soils needed to construct the final cap of the proposed vertical expansion. Also provide the specific types and quantities of soils available in the existing soil borrow source, the proposed soil borrow source, and the Phase 6 subbase excavation. It is not clear what types (clay, soil barrier layer material, topsoil, etc.) and quantities of soil are needed and how much material is available in each soil borrow source.

b. Section NR 512.14(1)(b), Wis. Adm. Code: Provide leachate pipe strength calculations for the existing leachate collection lines below the proposed vertical expansion.

c. Section NR 512.14(1)(c), Wis. Adm. Code: Provide a discussion on when Phase 6 will be constructed. Construction of Phase 6 is not discussed in the report, and the cap phasing plan sheet does not depict Phase 6 as being constructed.

d. Section NR 512.14(1)(d), Wis. Adm. Code: Provide a sampling plan for all monitoring devices in accordance with s. NR 507.16, Wis. Adm. Code.

e. Section NR 512.14(2)(a), Wis. Adm. Code: Verify that the entire leachate collection system and stormwater control features are depicted and defined on the existing conditions plan sheet (Plan Sheet 2).

f. Clarify whether the proposed vertical expansion overlays Phase 6. The plan sheets depict the proposed vertical expansion overlaying Phases 2-6, but the majority of the feasibility report states the expansion would overlay Phases 2-5.

g. Clarify the following statement in Section 6.2 of the feasibility report: "Phase 6 has not yet been constructed but will be as part of the vertical expansion."

h. Clarify the following statement in Section 8.3.4 of the feasibility report: "Drainage layer material within the proposed expansion will consist of material that has a hydraulic conductivity of at least 1 cm/s. A more permeable drainage media will better aid in preventing trapped areas of leachate." It is not clear if this statement is describing the liner below the proposed vertical expansion or material that would be added to the proposed vertical expansion.

i. Clarify why the department's May 17, 1995, plan of operation approval modification is discussed in Section 8.7.1 of the feasibility report but the department's February 14, 2019, plan of operation approval is not discussed.

j. Clarify why a leachate treatment agreement with the city of Elroy is included in Appendix N but not discussed elsewhere in the feasibility report.

k. Provide a discussion on the liner construction of Phases 3, 4, and 5, to show the liner meets the requirements of s. 504.095(1)(a), Wis. Adm. Code. Sections 1.1.2 and 8.3.4 of the feasibility report

state that leachate recirculation would occur in the proposed vertical expansion over Phases 3, 4, and 5.

11. **Environmental Review [s. NR 512.16, Wis. Adm. Code]:**

a. Section NR 512.16(2)(d), Wis. Adm. Code:

i. Provide a discussion of all emissions and discharges such as dust, engine exhaust, odors, noise, gases, leachate, storm water and collected groundwater associated with closure and post-closure of the proposed vertical expansion.

ii. Provide a discussion on emissions and discharges that may be expected from removal of Phase 2 final cover. There are potential emissions and discharges associated with final cover removal and exposure of older waste from Phase 2.

iii. Provide a discussion on emissions and discharges that may be expected from the flare.

b. Section NR 512.16(2)(f), Wis. Adm. Code: Provide a soils map that includes the area near the proposed vertical expansion and the proposed soil borrow area.

c. Section NR 512.16(3)(b), Wis. Adm. Code: Provide a description of the dominant aquatic and terrestrial plant and animal species and habitats found in the area near the proposed vertical expansion and soil borrow area that may be affected.

d. Sections NR 512.16(3)(e) and NR 512.16(4)(e), Wis. Adm. Code: Clarify if any prime agricultural lands are located near the proposed vertical expansion and soil borrow area that may be affected by the proposed vertical expansion. Based on a web search, it appears a portion of the proposed soil borrow area is mapped as Delton sand, 0 to 2 percent slopes, which is classified as prime farmland. If this is the case, provide a discussion of the probable adverse and beneficial impacts.

e. Section NR 512.16(4), Wis. Adm. Code: Provide a discussion of the probable impacts the proposed vertical expansion may have to nearby residents and the surrounding area, such as air quality, windblown debris, dust, visual impacts, noise, and other emissions and discharges. Greater emphasis should be given to the fact that, if the proposed vertical expansion is approved, waste would be placed to a higher elevation, and this may result in impacts beyond those from the existing landfill. This includes potential impacts from removal of Phase 2 final cover.

f. Section NR 512.16(4)(f), Wis. Adm. Code: Provide a discussion on any loss of agricultural land and displacement of wildlife associated with the proposed vertical expansion and soil borrow area. Section 9.1 of the feasibility report indicates the proposed soil borrow area consists primarily of agricultural land, but the probable loss of agricultural land is not discussed as an environmental consequence. The regional and project location figures indicate a portion of the soil borrow area consists of woodland, but the probable displacement of wildlife is not discussed as an environmental consequence.

g. Clarify the following statement in Section 10.2.1 of the feasibility report: “Granular fill used in the liner leachate collection system will be obtained from an offsite source.” The proposed vertical expansion doesn’t involve a horizontal component of design or construction.

h. Clarify the following statement in Section 10.2.6 of the feasibility report: "The expansion will continue to use the three existing infiltration basins which were sized to meet the requirements of NR 151." The existing conditions plan sheet (Plan Sheet 2) depicts two basins: a detention pond west of Phase 1 and an infiltration pond north of Phase 5.

i. Clarify the following statement in Section 10.3.1 of the feasibility report: "Large trees surrounding the Landfill, as well as the Landfill lying approximately 0.6 miles north of State Highway 21, will provide 10 from most vantage points." There appears to be a typo in the sentence.

j. Provide additional discussion in Section 10.3.5 of the feasibility report on air quality that may be affected by the proposed vertical expansion. The section states that air quality is expected to remain comparable to current conditions and the existing active gas system would be utilized to control emissions of hazardous air contaminants, but it is not clear what current conditions are or what hazardous air contaminants are being generated by the existing landfill.

k. Clarify the year the existing landfill is expected to reach capacity, and the approximate year the existing landfill would reach capacity with the addition of the proposed vertical expansion. The projected years provided in Section 10.5 are not the same as provided elsewhere in the feasibility report (for example, Section 1.1.1).

12. **Need and Design Capacity [s. NR 512.17, Wis. Adm. Code]:**

a. Provide a revised Table 11-1 that addresses the following:

i. Clarify the correct title of the third column. The column title indicates the column's values are July 2022 estimated site capacities, but the values appear to be January 2022 estimated site capacities based on the 2021 tonnage report. Also, footnote number 4 references a June 2021 estimate site capacity.

ii. Revise the January 2022 estimated site capacity for the Adams County Sanitary Landfill. The 2021 tonnage report indicates the January 2022 estimated site capacity for the Adams County Sanitary Landfill is 498,538 cubic yards (cy). To keep the needs calculations consistent, each landfill's estimated site capacity should be taken from the 2021 tonnage report; the site capacity of the Adams County Sanitary Landfill shouldn't be based off a July 2022 survey when the other landfill capacities are estimated capacities as of January 2022.

iii. Clarify why the pending expansion capacities of the Monroe County landfill and the Dane County landfill are included in the table but do not appear to be included in the available service area capacity calculation. Per s. 289.28(1)(c)3, Wis. Stats., this information should be included in the calculation. These expansions were not discussed in Section 11.4.3 of the feasibility report either but must be.

iv. Revise the estimated 2021 population of shared counties served for the Cranberry Creek, Valley Trail, and Dane County landfills, and the estimated 2021 population of all counties served for the Cranberry Creek and Valley Trail landfills using the 2021 population values provided in Table 11-1A. Also revise subsequent calculations affected by these revisions, such as the population weighted service area overlap percentage and available landfill capacity for the Adams County service area. Using the service areas provided in Section 11.2.2 of the feasibility report, the 2021 population values provided in Table 11-1A, and the other Table 11-

1 revisions addressed above, the department calculates 1,611,182 cy of available landfill capacity for the Adams County service area as of January 2022.

b. Verify that the growth rate over the last five years in Table 11-2 is calculated correctly. The department calculates about a 14% growth rate over the last five years. Adjust the anticipated annual growth rate if necessary.

c. Clarify how the annual growth rates are being calculated in Table 11-4, including the total annual growth rate. Revise Table 11-4 and the population growth rate value in Tables 11-6 and 11-7 if necessary.

d. Provide a revised Table 11-5 that addresses the following:

i. The available waste disposal capacity in 2022 should be revised to reflect the January 2022 capacity estimate from the 2021 tonnage report. Beginning row one (year 2022) with mid-year capacity estimate is not appropriate when an annual volume of waste is being subtracted from that capacity estimate.

ii. The annual volume of waste accepted in 2023 should reflect the average estimated volume consumed over the last three years (2020-2022), as shown in Table 11-2 and described in Section 11.5 of the feasibility report. The anticipated annual growth rate should be factored into the volume of waste accepted in 2023 as well. For example, the 2023 annual volume of waste accepted = 58, 856 cy * 1.08 = 63,564 cy. The annual volume of waste accepted in each subsequent year should then be calculated off this amount.

iii. The available waste disposal capacity for each year (other than 2022) should be calculated by subtracting the previous year's annual volume of waste accepted from the same year's available waste disposal capacity. For example, the 2023 available waste disposal capacity = 2022 available waste disposal capacity (498,538 cy) – 2022 annual volume of waste accepted (63,526 cy) = 435,012 cy. This method should also be used to calculate the available waste disposal capacity in the expansion only column (other than the initial value of 224,000 cy).

iv. Revise the annual waste growth, if necessary, based on revisions to Table 11-2 described above.

e. Clarify why the anticipated annual waste growth rate is 8% in Tables 11-2 and 11-5, but Sections 11.3.1 and 11.5 of the feasibility report indicate an annual waste growth rate of 2% was used.

f. Verify that Table 11-6 and 11-7 begin with the correct year. Based on the 2021 tonnage report, Table 11-1 indicates the 1,829,697-cy available service area capacity is accurate as of January 2022. Revise Table 11-6 and 11-7 if necessary.

g. Provide any other revisions to Tables 11-1 through 11-7 or related discussion in the feasibility report affected by the above items.

h. Provide the correct link to the tipping fee pdf referenced in Section 11.2.1 of the feasibility report. The current link does not work.

The following comments relate to site feasibility or the proposed preliminary design, construction or operation of the proposed vertical expansion. These items are not needed by the department to make a completeness determination; however, they should be addressed with your response to the completeness items above.

1. Please be aware, revisions/amendments to the Storm Water Pollution Prevention Plan (SWPPP) may be necessary for the proposed vertical expansion and soil borrow area. Please contact the Storm Water Program.

2. Please be aware, a new air permit and/or permit revision from the air management program is necessary for the proposed vertical expansion. Please contact the Air Management Program.

3. The proposed southeast infiltration basin is located adjacent to well MW-31 and the potential effects of the infiltration on the monitoring results are not known. If grades are changed, it may be necessary to extend the well and casing (and resurvey the elevations to allow for accurate groundwater monitoring).

4. The Village of Plover leachate agreement included in Appendix N runs through May 2023. Please provide an update on whether this agreement is being renewed and, if so, what the status is.

5. Gas probe GP-4 is not located on the Monitoring plan sheet (Plan Sheet 25). GP-4 would need to be depicted on the long-term care plan sheet required in the plan of operation.

This incompleteness determination is not a denial of your proposal, but merely indicates that additional information is needed to continue the review. Submittal of this information does not ensure a favorable determination, nor does it preclude the department from requiring additional information if continued review indicates it is needed. Upon receipt of the additional information, the department has 60 days to determine whether or not the feasibility report is complete. Please be aware if additional review indicates the feasibility report is twice incomplete, the department may require an additional plan review fee as specified in ch. NR 520, Wis. Adm. Code, Table 3 (Note 1).

Please do not hesitate to contact Tyler Sullivan, Hydrogeologist at 608-516-3962 or tyler.sullivan@wisconsin.gov or Colin Maus, Waste Management Engineer at 608-516-2462 or colin.maus@wisconsin.gov, if you have any questions about this letter.

Sincerely,

Bridget Kelly
Waste and Materials Management Program Supervisor
South Central Region

cc: Greg Aldrian – Ayres Associates (e-copy)
Logan Seipel – Ayres Associates (e-copy)
Joseph Lourigan – DNR/WA (e-copy)
Tyler Sullivan – DNR/WA (e-copy)
Colin Maus – DNR/WA (e-copy)

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg, WI 53711

Tony Evers, Governor

Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

March 22, 2024

FID# 701040560
Adams County
SW/ Approvals

Mr. Kevin Peterson
Adams County Landfill & Recycling Center
1420 State Highway 13
Friendship, WI 53934

Subject: Construction Documentation Approval for Phase 6 Liner, Adams County Sanitary Landfill, License # 3150

Dear Mr. Peterson:

The Department of Natural Resources (department) has reviewed and approves the construction documentation report submitted for Phase 6 liner for the Adams County Sanitary Landfill. Please include the attached approval in the written record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The Phase 6 liner report documents the construction of approximately 4.6 acres of composite liner and leachate collection system and the perimeter gas system. The composite liner and leachate collection system consists of the following components:

- 4-foot compacted clay liner
- 60-mil HDPE geomembrane
- 12-oz. geotextile fabric
- 1-foot-thick washed stone granular drainage layer
- Leachate collection trench consisting of the same washed stone and 6-inch diameter Sch. 80 PVC pipe
- A leachate collection sump and cleanouts

Two leachate head wells (LH-10 and LH-10A) were also installed. An electric leak location survey was performed by CQM Inc on October 14, 2023. One defect was located and repaired. The leachate collection piping system was cleaned and televised by Aqualis, on October 19, 2023.

The construction of the Phase 6 cell added additional open acreage to the landfill footprint, which subsequently increases the leachate generation rate. According to NR 504.06(5)(o), Wis. Adm. Code, leachate tanks need to be designed to contain the volume of leachate generated by the landfill over a 4-day period. The existing 30,000-gallon underground storage tank could not provide the necessary storage to comply with NR 504.06(5)(o), Wis. Adm. Code. As such, a 35,000-gallon leachate storage tank (aboveground) was installed as part of the leachate collection system.

Please keep in mind that this approval does not relieve you of obligations to meet all other applicable federal, state, and local permits or regulatory requirements. If you have questions regarding this approval, please contact Colin Maus at (608) 658-4252 or Colin.Maus@wisconsin.gov.

Sincerely,

Bridget Kelly
Waste and Materials Management Program Supervisor
South Central Region

Cc: Logan Seipel – Ayres Associates Inc (e-copy)
Joe Lourigan – DNR/WA (e-copy)
Tess Brester – DNR/WA (e-copy)
Tyler Sullivan – DNR/WA (e-copy)

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL FOR PHASE 6 OF THE ADAMS COUNTY SANITARY LANDFILL, LICENSE #3150

FINDINGS OF FACT

The Department of Natural Resources (department) finds that:

1. Adams County Solid Waste Department (Adams County) owns and operates a solid waste disposal facility located in the NE ¼ of Section 13, T18N, R5E, Town of Strongs Prairie, Adams County, Wisconsin.

2. A conditional plan of operation approval was issued by the department for the facility on May 18, 1988, and February 14, 2019.

3. On February 21, 2024, Ayres Associates, on behalf of Adams County, submitted construction documentation required by NR 516, Wis. Adm. Code. The correct review fee of $1,100 and construction inspection fee of $2,200 (4 inspections at $550) were received by the department on March 4, 2024.

4. The information submitted as construction documentation includes the following:

    a. A report entitled "Construction Documentation Report, Phase 6 Liner, Adams County Sanitary Landfill, Adams County, Wisconsin" and associated drawings dated February 21, 2024, and received by the Department on February 21, 2024.

5. Additional documents considered in connection with the review of the construction documentation include the following:

    a. A report prepared by Ayres Associates on behalf of Adams County entitled “Preconstruction Report, Phase 6 Liner Construction, Adams County Landfill (License #3150), FID # 701040560, Adams County, Wisconsin” and associated plan sheets dated August 21, 2023, and received by the department August 30, 2023.

    b. The departments June 21, 2023, plan of operation modification approval for Phase 6 construction.

    c. The department’s inspection reports for inspections of Phase 6 conducted on July 13, 2023, October 26, 2023, December 7, 2023, and January 11, 2024.

    d. The departments February 14, 2019, conditional plan of operation approval for the vertical and horizontal expansion.

    e. Department files for the Adams County Sanitary Landfill (License #3150).

CONCLUSIONS OF LAW

1. The department has authority under s. 289.31(3), Wis. Stats., and ch. NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. In accordance with the foregoing, the department has the authority to issue the following construction documentation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The department hereby approves the construction documentation for Phase 6 of the Adams County Sanitary Landfill, subject to compliance with chs. NR 500-538, Wis. Adm. Code.

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.

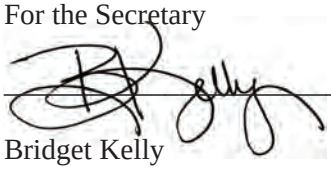
NOTICE OF APPEAL RIGHTS

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, Wis. 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: March 22, 2024

DEPARTMENT OF NATURAL RESOURCES
For the Secretary



Bridget Kelly
Waste & Materials Management Program Supervisor
South Central Region

Colin Maus
Waste Management Engineer
South Central Region

From: Maus, Colin J - DNR
To: Thomas, Jalen
Cc: Ruben Cuarenta; Daigle, Teri; Clark, Aden; Peotter, Ben
Subject: RE: Clarification on WDNR Incompleteness Item 4a – Appendix H for Adam County Feasibility Report
Date: Friday, June 27, 2025 12:01:25 PM
Attachments: image001.png
image002.png
image003.png
image004.png

Good afternoon,

Below is me passing along the response I received from our Hydro team.

It's been a couple years so my memory is a little fuzzy, but the "Appendix H" item I called out because that entire pdf, "2017-2021", was included in the e-submittal but appeared to be missing from the physical submittal. The two submittals should have identical information.

The second question I will follow up with them on.

I do also know that our requirements for feasibility are changing with the code revisions coming down the pipeline for vertical only expansions so that may affect this depending on the time table and how new code would interact with a mid-siting document like this.

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Colin Maus, P.E.
Phone: (608) 516 2462
colin.maus@wisconsin.gov

From: Thomas, Jalen <Jalen.Thomas@tetratech.com>
Sent: Friday, June 27, 2025 11:50 AM
To: Maus, Colin J - DNR <colin.maus@wisconsin.gov>
Cc: Ruben Cuarenta <Ruben.Cuarenta@co.adams.wi.us>; Daigle, Teri <Teri.Daigle@tetratech.com>; Clark, Aden <ADEN.CLARK@tetratech.com>; Peotter, Ben <BEN.PEOTTER@tetratech.com>
Subject: RE: Clarification on WDNR Incompleteness Item 4a – Appendix H for Adam County Feasibility Report

safe.

Good morning, Colin –

Have you had an opportunity to review our previous question? We look forward to your response.

Kind Regards,

Jalen Thomas | Project Manager | Solid Waste East
Work **+1 (630) 410-7225** | Mobile **+1 (608) 630-4850** | jalen.thomas@tetratech.com

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---

From: Thomas, Jalen <Jalen.Thomas@tetratech.com>
Sent: Tuesday, June 24, 2025 8:09 AM
To: Maus, Colin J - DNR <colin.maus@wisconsin.gov>
Cc: Ruben Cuarenta <Ruben.Cuarenta@co.adams.wi.us>; Daigle, Teri <Teri.Daigle@tetratech.com>; Clark, Aden <ADEN.CLARK@tetratech.com>; Peotter, Ben <BEN.PEOTTER@tetratech.com>
Subject: RE: Clarification on WDNR Incompleteness Item 4a – Appendix H for Adam County Feasibility Report

Thank you. I look forward to hearing from you.

Kind Regards,

Jalen Thomas | Project Manager | Solid Waste East
Work **+1 (630) 410-7225** | Mobile **+1 (608) 630-4850** | jalen.thomas@tetratech.com

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---

From: Maus, Colin J - DNR <colin.maus@wisconsin.gov>
Sent: Tuesday, June 24, 2025 7:52 AM
To: Thomas, Jalen <Jalen.Thomas@tetratech.com>
Cc: Ruben Cuarenta <Ruben.Cuarenta@co.adams.wi.us>; Daigle, Teri <Teri.Daigle@tetratech.com>; Clark, Aden <ADEN.CLARK@tetratech.com>; Peotter, Ben <BEN.PEOTTER@tetratech.com>

Subject: RE: Clarification on WDNR Incompleteness Item 4a – Appendix H for Adam County Feasibility Report

Good morning,

Thanks for the call.

I will take a look into this but could take a few days to answer as I will need to read back up on the letter myself.

Regards,

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Colin Maus, P.E.
Phone: (608) 516 2462
colin.maus@wisconsin.gov

From: Thomas, Jalen <Jalen.Thomas@tetratech.com>
Sent: Monday, June 23, 2025 12:28 PM
To: Maus, Colin J - DNR <colin.maus@wisconsin.gov>
Cc: Ruben Cuarenta <Ruben.Cuarenta@co.adams.wi.us>; Daigle, Teri <Teri.Daigle@tetratech.com>; Clark, Aden <ADEN.CLARK@tetratech.com>; Peotter, Ben <BEN.PEOTTER@tetratech.com>
Subject: Clarification on WDNR Incompleteness Item 4a – Appendix H for Adam County Feasibility Report

Hi Colin,

Thank you for your call earlier today. I wanted to follow up with a summary of the question I raised during our conversation regarding WDNR Incompleteness Item 4a from the Adam County Feasibility Incompleteness Letter dated April 14, 2024.

The WDNR noted missing information in Appendix H (Groundwater Laboratory Results & Field Forms) of the Vertical Expansion Feasibility Report. Specifically, the comment stated: “The electronic submittal includes a PDF titled ‘2017-2021’ that does not appear in Appendix H of

the physical submittal." Appendix H contains groundwater lab results and field forms, but it is unclear exactly what the WDNR is referencing with this PDF—whether it is a lab report, a summary table, or something else. Could you please clarify what the WDNR is requesting?

Additionally, based on our experience, feasibility reports usually include only baseline lab reports related to the well drilling for that expansion. The proposed project is a vertical expansion over a previously permitted landfill footprint. Appendix H contains baseline lab reports and results from the 2019 expansion well drilling. Could you please confirm if these analytical results need to be included in the feasibility submittal? For horizontal expansions, this documentation is standard. However, since this is a vertical expansion, we want to be sure about the WDNR's expectations.

Please respond when you have a moment to review the incompleteness letter upon your return to the office.

Thanks again for your assistance.

Kind Regards,

Jalen Thomas | Project Manager | Solid Waste East
Work **+1 (630) 410-7225** | Mobile **+1 (608) 630-4850** | jalen.thomas@tetratech.com

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From: Rogers, Drae A - DNR
To: Thomas, Jalen
Cc: Maus, Colin J - DNR; Ruben Cuarenta; Daigle, Teri; Clark, Aden; Peotter, Ben
Subject: Baseline Lab Reports - Adams County (3150) Feasibility
Date: Tuesday, July 8, 2025 8:05:06 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png

Hi Jalen,

I am writing to follow up on the second question in your email dated June 23.

Since it would be a vertical only expansion, I would not anticipate any new baseline data to be included in the feasibility report. If there are any "new" NR 140 standard exceedances or any ACL exceedances in reported GW data, the feasibility report should explain the cause and significance of these exceedances and assess landfill performance, as well as the need for a response action to those exceedances.

I will be the hydrogeologist reviewing the feasibility report, so please reach out to me if you have any additional questions.

Best,
Drae

Drae Rogers
Hydrogeologist – Waste and Materials Management
Wisconsin Department of Natural Resources
Phone: (920) 461-0291
drae.rogers@wisconsin.gov

dnr.wi.gov
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State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg, WI 53711

Tony Evers, Governor
Karen Hyun, Ph.D., Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

July 17, 2025

FID # 701040560
Adams County
SW/Approval

Mr. Ruben Cuarenta
Adams County Landfill & Recycling Center
1420 State Highway 13
Friendship, WI 53934

Subject: No Objection to Expedited Plan Modification for Phasing Plan Revisions at the Adams County Sanitary Landfill, License #3150

Dear Mr. Cuarenta:

The Department of Natural Resources (department) does not object to the request dated June 17, 2025, to adjust the phasing plan. Based on the information provided, the department has determined that the proposal poses low risk to human health and the environment. Please include this letter in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The department received the request from Tetra Tech on June 17, 2025. The expedited plan modification was requested under s. NR 514.09(1)(a)6, Wis. Adm. Code, regarding adjustments to the phasing plan.

Final cover over liner Phases 3, 4, 5, and 6 will be completed in three stages, generally proceeding from West to East. The first stage involves installing final cover on the northern and southern slopes of liner Phases 3 and 4 (scheduled to be completed in 2027). The second stage includes covering the top deck of the liner, Phases 3 and 4. The final stage consists of covering the waste in liner Phases 5 and 6. The below table documents the size of each closure and the approximate year of construction.

Closure Phase	Closure Acreage	Proposed Year
Phase 1 & 2	5.75	2016 - Complete
Phases 3 & 4 Slopes	3.3	2027
Phases 3 & 4 Top	4.8	2032
Phases 5 & 6	8.1	2036

This plan modification does not change the worse case closure costs or the worse case closure area (current area).

This letter is based on the information available to the department as of the date of this letter. If additional information, project changes or other circumstances indicate a possible need to modify the approved plan, 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.

If you have any questions regarding this letter, you may contact Colin Maus at (608) 516 2462 or email colin.maus@wisconsin.gov.

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, Wis. 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.

Sincerely,

Bridget Kelly
Waste and Materials Management Program Supervisor
South Central Region

cc: Jalen Thomas – Tetra Tech (e-copy)
Ben Peotter – Tetra Tech (e-copy)
Tess Brester – DNR/WA (e-copy)
Colin Maus – DNR/WA (e-copy)
Tyler Sullivan – DNR/WA (e-copy)