APPENDIX A
WDNR NR 504 AND NR 512 COMPLETENESS CHECKLISTS

WDNR NR 504 Design and Construction Criteria Completeness Checklist

WDNR NR 512 Feasibility Report Completeness Checklist

WDNR NR 504 Design and Construction Criteria Completeness Checklist

Design and Construction Criteria Completeness Checklist
Chapter NR 504, Wis. Adm. Code

Revised August 2018

Waste & Materials Management
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Instructions: This checklist is intended for use by department staff for the review of landfill plan of operation and feasibility reports to determine completeness. The checklist may also be used by applicants and submitted with a landfill plan of operation or feasibility report to facilitate department review. Refer to applicable statues and codes for exact requirements.

General Information

Facility Name: Advanced Disposal Seven Mile Creek Landfill License/Monitoring # 3097

Facility Type: Solid Waste Landfill > 500.000 Cubic Yards

Initial Submittal: Date Received: ____/____/____ Completeness Due: ____/____/____ DNR Response: ____/____/____ (Complete: __ yes __ no)

Addendum # __ Date Received: ____/____/____ Completeness Due: ____/____/____ DNR Response: ____/____/____ (Complete: __ yes __ no)

Addendum # __ Date Received: ____/____/____ Completeness Due: ____/____/____ DNR Response: ____/____/____ (Complete: __ yes __ no)

Proposed Waste Types: Non-hazardous MSW, Industrial Solid Waste, C&D Waste, and Special Waste

Proposed Total Design Capacity: 4,130,000 Cubic Yards (including daily and intermediate covers)

DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 504.04(3) LOCATIONAL CRITERIA. Are the proposed limits of filling within:					
(a) 1,000 feet of any navigable lake, pond or flowage not including landfill drainage or sedimentation control structures? __ yes _X_ no __ If yes, was an exemption requested?	X			Sections 7.1.1, 10.1.5.1, Appendix B, Figure 1-1, Plan Sheet 3	Also provided on Figure 4 of ISR
(b) 300 feet of any navigable river or stream? __ yes _X_ no __ If yes, was an exemption requested?	X			Sections 7.1.2, 10.1.5.1, Appendix B, Plan Sheet 3	Also provided on Figure 4 of ISR

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(c) A 100-year flood plain? __ yes _X_ no __ If yes, was an exemption requested?	X			Sections 7.1.3, 10.1.5.1, Appendix B	Also provided on Figure 4 of ISR
(d) 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or any public park or state natural area? __ yes _X_ no _*_ If yes, was a line of site study provided showing that the landfill would not be visible from the road, park or natural area through the use of screening and/or, _*_ was an exemption requested? Note: If waste may be visible for periods of time even with the use of screening, then an exemption should be requested.	X			Sections 1.3.2, 1.4.2, 4.4, 7.1.4, 10.1.5.1, 10.3.5, 10.4.5 and Appendix B	* Line of Sight study was updated from 2014 FR for Sector 2 landfill per ISR Opinion Letter. A previously granted exemption is requested.
(e) 10,000 of the end of an airport runway designed or planned to be designed and used by turbojet aircraft or within 5,000 feet of any airport runway designed for and used by piston type aircraft? __ yes _X_ no Is FAA notification required? __ yes _X_ no Note: If the proposed limits of waste filling would be within 5 miles of the end of the runway of any airport used by turbojet or piston type aircraft, the applicant must provide notice to both the Federal Aviation Administration (FAA) and the affected airport. The report should contain all correspondence related to the notices including any determinations made by the FAA.	X			Sections 1.4.2, 4.4.1, 7.1.5, 10.1.5.1, Figure 4-4, Appendix B	
(f) 1,200 feet of any water supply well (i.e. public, private, irrigation or stock water supply wells)? _X_ yes __ no _X_ was an exemption requested? If yes, have the following been provided for each identified well? _X_ well location _X_ former and present well owner _X_ well driller _X_ well construction log Note: Exemptions may not be granted if the above information is not provided.	X			Sections 1.3, 1.4, 7.1.6, 10.1.5.1, Table 7-1, Plan Sheet 3, Appendices B, C and D	
(g) 200 feet of a fault that has had displacement in Holocene time? __ yes _X_ no __ If yes, was an exemption requested?	X			Sections 7.1.7, 10.1.5.1, Appendix B	
(h) Seismic impact zones? __ yes _X_ no __ If yes, was an exemption requested?	X			Sections 7.1.8, 10.1.5.1, Appendix B	
(i) Unstable areas? __ yes _X_ no __ If yes, was an exemption requested?	X			Sections 7.1.9, 10.1.5.1, Appendix B	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 504.04(4) PERFORMANCE STANDARDS. Will the proposed landfill cause the following:					
(a) A significant adverse impact on wetlands? __ yes __X__ no Has a practicable alternatives analysis and a wetland functional values analysis been completed in accordance with ch. NR 103, if a wetland will be affected by the proposed landfill or any noncommercial soil borrow source activity? Note: See Waste & Materials Management Program guidance for application of NR 103 and a wetland permit may be needed per s. 281.36, Stats.	X			Sections 7.2.1, 10.1.5.2, 10.2.2.2, Appendix B and Plan Sheet 3	
(b) A take of an endangered or threatened species in accordance with s. 29.604, Stats? __ yes __X__ no	X			Sections 1.4.2, 4.4, 7.2.2, 10.1.5.2, 10.3.2, 10.4.2, Appendix B	
(c) A detrimental effect on any surface water? __ yes __X__ no Note: Exemptions are not granted.	X			Sections 7.2.3, 10.1.5.2, and 10.2.2.2	
(d) A detrimental effect on groundwater quality or will cause or exacerbate an attainment or exceedance of any preventive action limit or enforcement standard at a point of standards application as defined in ch. NR 140? __ yes __X__ no __X__ Has an exemption been requested to the groundwater standards in accordance with ss. NR 507.29 and NR 140.28, Wis. Adm. Code? If an exemption is required, does the feasibility report include: __X__ A list of the specific wells and parameters for which an exemption is being requested. __X__ A discussion of how the criteria listed in s. NR 140.28(2), (3) and (4) are met.	X			Sections 1.3, 7.2.4, 7.5.3, 7.5.4, 10.1.5.2, 10.2.2.1, Table R-1 in Appendix R	
(e) The migration and concentration of explosive gases in excess of 25% of the lower explosive limit for such gases at any time? __yes __X__ no	X			Sections 7.2.5 and 10.2.4	
(f) The emission of any hazardous air contaminant exceeding the limitations for those substances contained in s. NR 445.04 or 445.05? __ yes __X__ no	X			Sections 7.2.6 and 10.2.4	
NR 504.05 GENERAL DESIGN AND CONSTRUCTION CRITERIA.					
(1) Is the landfill designed in substantial conformance with the design criteria in ss. NR 504.06 to 504.09?	X			Sections 6.3, 8.1 - 8.11	
(2) Is supporting justification included for any differences from ss. NR 504.06 to 504.09?	X			Sections 1.3, 8.1 - 8.11	
(3) Is the proposed operating life of the landfill between 10 and 15 years?	X			Section 11.5	
If the proposed life is not between 10-15 years is the facility exempted in s. 289.28(2), Stats. or the expansion of an existing facility?	X			Tables 11-1 to 11-9	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 504.06 MINIMUM DESIGN AND CONSTRUCTION CRITERIA FOR LANDFILL LINERS AND LEACHATE COLLECTION SYSTEMS.					
(1) GENERAL.					
(a) If the landfill is proposed to accept municipal solid waste does the design incorporate a composite liner and a leachate collection system capable of limiting the average leachate head on the composite liner to 1 foot or less during operation and after closure of the landfill?	X			Sections 8.4 and 8.5	
Does the composite liner consist of the following: X An upper geomembrane component with nominal 60-mil minimum thickness X A lower component of 4 foot minimum compacted clay meeting NR 504.06(2)(a)	X			Section 8.4	
(2) COMPOSITE OR CLAY LINED LANDFILLS. Does the composite liner or clay liner design meet the following requirements:					Design of the liner system will be included in the P.O.O
(a) Will all clay used in liner construction meet the following specifications: X A minimum of 50% by weight passing 200 sieve X A saturated hydraulic conductivity of $1x10^{-7}$ cm/sec or less X An average liquid limit of 25 or greater with no values less than 20 X An average plasticity index of 12 or greater with no values less than 10	X			Section 8.4	
(b) Is there at least a 10 foot separation between the seasonal high groundwater table and the bottom of the clay liner component? Note: For zone of saturation landfills select NA.	X			Section 8.4	
(c) Is there at least a 10 foot separation between the bedrock surface and the bottom of the clay liner component?	X			Section 8.4	
(d) Is there a minimum 2% liner surface slope toward the leachate collection system?	X			Section 8.4	
(e) Is there a minimum 4 foot thick clay component of a composite liner or a minimum 5 foot clay liner thickness?	X			Section 8.4	
(f) 1. Are the clay layers proposed to be constructed in the following manner: X Lift heights no greater than 6 inches after compaction X Footed compaction equipment having feet at least as long as the loose lift height X Disking or mechanical processing of clay to break up clods and adjust moisture X Clod size no greater than 4 inches X All compaction equipment to have a minimum static weight of 30,000 pounds X Alternative procedures or equipment proposed	X			Section 8.4	
2. A sufficient number of equipment passes to ensure complete remolding of clay?	X			Section 8.4	
3. Is clay compaction proposed to be 90% modified Proctor density at 2% wet of the optimum or 95% standard Proctor density at wet of the optimum moisture content? Alternately, the line of optimums method may be used.	X			Section 8.4	
(g) Are interior sidewall slopes at a maximum of 3H:1V or at a minimum of 5H:1V?	X			Section 8.4	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(h) Are clay components of the liner in adjacent phases keyed together?	X			Section 8.4	
Is the keying accomplished by excavating a minimum of 4 steps with a total width of spliced area measuring at least 15 feet?	X			Section 8.4	
(3) COMPOSITE-LINED LANDFILLS. If the landfill is composite lined, are the following requirements specified in the plan of operation:					
(a) Is the geomembrane specifically formulated for waste containment purposes?	X			Section 8.4	
Is the nominal geomembrane thickness 60 mil or greater with no thickness below minimum industry accepted manufacturing tolerances?	X			Section 8.4	
(b) Is there geomembrane protection along areas of traffic or concentrated activity such as sumps, sideslope risers and entry ramps?	X			Section 8.4	
(c) For slopes in excess of 10%, will geomembrane panels be installed with panel seams perpendicular to the contour lines of the slope?	X			Section 8.4	
(d) Prior to geomembrane placement, will the clay surface be prepared as follows: _X_ Rolling and grading of clay surface to remove irregularities, protrusions, loose soil and abrupt changes in grade, _X_ Free of stone, grading stakes, construction debris and contain no areas softened by high water content _X_ Sufficiently dry and dense clay surface such that the construction equipment will not create ruts _X_ Depressions and large cracks filled with tamped clay	X			Section 8.4	
(e) Will the geomembranes be welded as follows: _X_ Geomembrane panels welded by double-tracked, fusion welding machines for all linear seams, _X_ Fusion welding of corners, butt seams and long repairs where possible, _X_ Extrusion or fusion welding for all other repairs, detail work and patches, _X_ Request for Department approval for other welding methods.	X			Section 8.4	
(f) Will geomembrane components in adjacent phases be welded together to form a continuous geomembrane surface?	X			Section 8.4	
Will the liner extended beyond the proposed edge of waste at a phase junction be protected from traffic and weather?	X			Section 8.4	
(g) Will wrinkles which are taller than they are wide be smoothed or cut out prior to covering with soil?	X			Section 8.4	
Will guidance be provided to machine operators placing soil on geomembrane by the use of an observer with an unobstructed view of the advancing lift of soil.	X			Section 8.4	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(h) Are the following minimum soil thickness on geomembrane proposed before vehicular traffic may occur: X 1 foot for vehicles with ground pressure less than 5 pounds per square inch, X 2 feet for other vehicles equipped with tracks and floatation tires, X 3 feet or more for trucks or wheeled hauling equipment.	X			Section 8.4	
(i) In order to lessen desiccation effects, will the landfill base and the lower 10 feet of the sideslope be covered with a drainage blanket within 30 days after completing quality control and quality assurance testing?	X			Section 8.4	
Will the remaining sideslope be covered with either drainage material or geotextile to prevent damage to the geomembrane?	X			Section 8.4	
(j) Will placement of soil over the geomembrane be performed during cooler temperature periods to the extent possible using methods which minimize wrinkling?	X			Section 8.4	
(k) Will anchor trenches be designed and constructed around the landfill to secure the permanent edges of the geomembrane?	X			Section 8.4	
Will geomembrane be seamed completely to the edge of the panel end to minimize potential of tear propagation?	X			Section 8.4	
(4) ZONE-OF-SATURATION LANDFILLS. Landfills with proposed base grades below the groundwater table must meet the following:					
(a) Is the landfill located in a fine-grained soil environment?			X		
(b) Does the landfill meet the requirements of sub. (2)(a), (d), (e), (f), (g) and (h) and the requirements under sub. (3), if the landfill will accept municipal solid waste?			X		
(c) Has an analysis been performed on the effect which groundwater may have on uplift of the liner and the short and long-term stability of the geomembrane component?			X		
Does the analysis evaluate the effect of an underdrain or other dewatering system?			X		
(d) Have borings, backhoe pits or other means of exposing the subsurface soils been proposed on a 100-foot grid to a minimum 5 foot depth below the subbase grades of the liner?			X		
Are all granular or silty soils detected within this 5 foot depth proposed to be removed?			X		
(5) LEACHATE COLLECTION SYSTEMS. The leachate collection system must incorporate the following design features:					Design of the LCS will be included in the P.O.O
(a) Does the leachate collection system design include the following features: X A leachate collection system included in each horizontal phase, X Leachate routed to the landfill perimeter in the most direct manner possible, X Limit average leachate head on the liner to 1 foot or less, X Limit maximum leachate flow distance to the perforated collection pipe to 130 feet.	X			Section 8.5	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(b) Is the slope on the leachate collection pipe a minimum of 0.5%?	X			Section 8.5	
(c) Is the minimum diameter of all leachate collection pipes 6 inches?	X			Section 8.5	
Are all collection pipes proposed to be Schedule 80 PVC pipe or an approved substitute?	X			Section 8.5	
(cm) Are the proposed pipe fittings for use with PVC and HDPE pipe secured to the leachate collection pipe as follows: X PVC fittings and pipe solvent-welded X HDPE fittings and pipe fusion welded	X			Section 8.5	
(d) Do the leachate collection trenches conform to the following: X Rectangular leachate collection trenches for clay liners X V-trenches with a maximum 18 inches depth and 3H: 1V sideslope for composite liners X V-trenches smooth-drum rolled prior to placement of the membrane	X			Section 8.5	
(dm) X Is a geotextile with a weight of 12 oz/yd^2 used to line the trench base and sidewalls and is it placed directly over the geomembrane X Does the design show that the geotextile does not overlap across the top of the trench. X Are the geotextile specifications, including manufacturer's data for grab and puncture strength, used to demonstrate the resistance to damage from the aggregate to be placed over the geotextile?	X			Section 8.5	
(e) Does the leachate collection pipe trench backfill conform to the following: X Uniformity coefficient of less than 4, X Maximum particle diameter of 1 ½ inches, X Maximum of 5% passing the number 4 sieve, X Rounded to subangular gravel, X Minimum 4 inches bedding depth before installation of leachate pipe, X Minimum 6 inches of granular material above the pipe, and an additional 12 inches of material mounded above the trench, X Graded soil filter or geotextile to minimize migration of drainage blanket into the trench, in cases where particle size of the bedding is significantly less than the collection trench bedding X No use of limestone and dolomite as trench backfill. X If limestone and dolomite are proposed for use as trench backfill, does the plan of operation address that there is no other suitable material reasonably available?	X			Section 8.5	
(f) Have the sand and gravel sizes and geotextile and pipe openings been analyzed for the control of piping of soil materials and have the materials been chosen to achieve a stable and self-filtering structure under all conditions of leachate flow?	X			Section 8.5	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(g) Do leachate collection lines have cleanout access on both ends of pipes?	X			Section 8.5	
Does each leachate collection line have a maximum distance of 1,200 feet from the end of one cleanout to the toe of the opposite slope?	X			Section 8.5	
(h) Are there no vertical liner penetrations due to leachate lines, manholes and other engineering structures?	X			Section 8.5	
For clay lined landfills, are liner penetrations limited to leachate transfer lines in the horizontal direction only? For composite lined landfills, are there no liner perforations?	X			Section 8.5	
(i) Is a 4'x4', 5 foot thick, anti-seep collar placed around any leachate transfer line penetrating the clay liner?	X			Section 8.5	
(j) Is the composite lined landfill designed with a sump and sideslope riser meeting the following requirements: _X_ 1. Sump volume and pump capacity sized to accommodate an annual leachate collection rate of 6 inches taking into account the potential for solids to build up over time. _X_ 2. Sump base protected with polyethylene plate or other acceptable means and placed prior to sideslope riser and backfill installation. _X_ 3. Leachate discharge pipe between the sideslope riser and the tank installed with valves to prevent backflow into the waste disposal area. _X_ 4. Sideslope riser pipe has a minimum diameter of 18 inches and geometry at the junction of the sump and sidewall to assure passage of the pump and hardware and assure correct positioning of the intake of the pump. _X_ 5. The area of the sump and depth of gravel fill are sized to allow remedial installation of access and hardware for removal of leachate if the sideslope riser and pump system fail.	X			Section 8.5	
(k) Are gravity lines transporting leachate out of the landfill constructed with valves for flow control, and are the valves compatible with the leachate and operable from the ground surface?	X			Section 8.5	
(l) Are all leachate lines located outside the landfill double-cased or in an approved secondary containment?	X			Section 8.5	
Are all leachate transfer lines proposed to be pressure tested prior to use?	X			Section 8.5	
Is the upslope end of secondary pipe sealed and the downslope end open to drain into the manhole?	X			Section 8.5	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(m) Are all leachate transfer lines, manholes, lift stations and other structures outside the waste limits designed to meet the following: _X_ Designed as shallow as practical, and as far from the waste limits as possible so repair of these devices would not infringe on the landfill cover or liner systems _X_ Constructed above the seasonal high groundwater table. __ If not constructed above the water table, is it not technically feasible to do so and does the design meet the requirements of (l) above.	X			Section 8.5	
(n) Are leachate collection tanks and manholes designed with the following: _X_ Secondary containment to prevent leachate discharge to ground and surface water _X_ Means to monitor the tank or manholes for leaks within the secondary containment __ If no, is an alternative method proposed?	X			Section 8.5	
(o) Are the leachate tanks designed to: _X_ Contain leachate volume generated over a 4 day period, _X_ Withstand the soil and liquid loads encountered during installation and use _X_ Follow the consultant and manufacturer installation instructions.	X			Section 8.5	
(p) Does the leachate loadout station design contain the following: _X_ Measures to prevent accidental leachate discharge at the loadout from entering ground or surface water, _X_ A loadout station paved and sloped to a catch basin to direct all spills to a catch basin.	X			Section 8.5	
(q) Are leachate and gas system manholes and enclosures vented and do they have controlled access?	X			Section 8.5	
For landfills designed with active extraction, are manholes and enclosures designed to minimize air intrusion?	X			Section 8.5	
(r) Are all pumps, valves and meters designed to be controlled and operated from ground surface?	X			Section 8.5	
(s) Are all leachate and groundwater collection systems designed to monitor the liquid volume removed?	X			Section 8.5	
(t) Is there a minimum one foot thick granular drainage blanket placed on top of the geomembrane for a composite liner or on top of the clay component of a clay liner which contains the following elements: _X_ no more than 5% passing 200 sieve _X_ If the granular layer contains gravel greater than ¼ “, a certified needle free minimum 12 oz/yd^2 nonwoven geotextile below the drainage blanket	X			Section 8.5	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(tm) _X_ Hydraulic conductivity (at anticipated field density) equal to or greater than 1 cm/sec for sites that accept any amount of MSW or $1x10^{-2}$ cm/sec for landfills that do not accept MSW _X_ Was the gradation of the drainage blanket (and associated hydraulic conductivity) selected to maintain the maximum head in the drain within the drain thickness?	X			Section 8.5	
(u) If the major horizontal clay lined phase is above the saturated zone, is each phase designed with collection basin lysimeter (except for composite lined landfills)?			X		
(6) ADDITIONAL REQUIREMENTS FOR LANDFILLS WITH EXTENDED COLLECTION LINES. Landfills with leachate collection lines that exceed 1,200 feet and will accept MSW must meet the following:					
(a) Do any leachate collection lines exceed 1,200 feet when measured from the end of each cleanout to the toe of the opposite slope? Will the landfill accept MSW? If no, check NA for (b) through (f) below.	X				
(b) Is the maximum length of each leachate collection line 2,000 feet or less from the access point at one end to the toe of the opposite slope?	X			Section 8	
(c) Is the slope on the leachate collection pipe a minimum of 0.5% after accounting for primary and secondary settlement of the subgrade? Note: The minimum design slope is selected following computation of 100% of the primary and secondary consolidation settlement beneath the facility, which includes, as applicable, in-situ soil, added geologic material structural fill material, and compacted clay liner. Secondary settlement shall be calculated using a 100-year timeframe.	X			Section 8	
(d) Is the pipe bedding material composed of course, uniform gravel with hydraulic conductivity greater than or equal 1 cm/sec? Note: This requirement is in addition to meeting the other requirements of s. NR 504.06(5)(e).	X			Section 8	
(e) Has the maximum anticipated construction, operation and post-closure overburden loads over the leachate collection piping been calculated and used in selecting pipe material and wall thickness? __ Were the calculations based on a 6 inch pipe diameter and appropriate in-field consolidated density?	X			Section 8	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(f) Have all components of the leachate collection system incorporated the following design features: __ prefabricated or smooth sweep bends with a minimum radius of 10 pipe diameters __ pipe alignments that minimize horizontal and vertical alignment changes for the entire pipe length __ elimination or minimization of obstructions which impose drag on pipe cleaning jetter hose or nozzles			X		
(7) COMPOSITE-LINED LANDFILLS USING GCLs.					
Is GCL proposed for use in a composite liner? If no, indicated NA for the following and (a) – (c).			X		
Does the landfill accept only non MSW waste? Or if it accepts MSW will the GCL be placed over the 4 foot clay liner? If yes to either, the design must meet the requirements of (a) – (c). If no to both, then GCL may not be used as proposed.			X		
(a) Has the hydraulic performance of the GCL been assessed by use of compatibility testing?			X		
(b) Does the GCL meet the specifications of NR 504.07(4)(a)1 to 11?			X		
(c) Is the GCL underlain by a soil barrier layer a minimum 2 feet thick and meets the specifications of NR 504.07 (4)(a) 12. To 17.			X		
NR 504.07 MINIMUM DESIGN AND CONSTRUCTION CRITERIA FOR FINAL COVER SYSTEMS.					Design of the final cover system will be included in the P.O.O
(1) GENERAL.					
(a) Is the final cover system designed to? _X_ Minimize leachate generation by limiting the amount of percolation through the cap _X_ Reduce landfill maintenance by design of compatible surface slopes and vegetation _X_ Account for differential settlement and other stresses on the capping layer _X_ Minimize freeze-thaw effects and desiccation of clay capping layer _X_ Provide for removal of leachate and venting of gas from landfills accepting wastes with high moisture content or that which is readily biodegradable	X			Section 8.7	
(b) Does the final cover system meet the requirements of subs. (2) to (9) below unless it is established (to the satisfaction of the department) that portions of final cover system are not needed based on proposed waste type and design?	X			Section 8.7	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
Is the geomembrane component included in the final cover design unless this is proposed to be an exclusively high volume industrial, or other landfill that does not accept municipal solid waste and is not composite lined?	X			Section 8.7	
(c) If the landfill is designed with a composite liner, is it also designed with a final cover system meeting subs. (2) to (9) below?	X			Section 8.7	
(d) Does the landfill accept papermill sludge or other industrial solid wastes with high water contents and low strength? Will the strength of the waste prohibit the type of cover system specified in this section (subs. (2) to (9))? If yes, an alternate final cover system may be proposed.			X		
(2) GRADING LAYER.					
If this is a municipal solid waste landfill, does the design include a 6 inch grading layer above the final waste elevation?	X			Section 8.7	
(3) SUPPORT LAYER AND LOW-STRENGTH WASTES.					
If the landfill accepts industrial wastes with high water content and low strength, does the design include a support layer for stabilization, reinforcement and removal of leachate and gas?			X		
(4) CLAY CAPPING LAYER.					
X Does the landfill design include a two foot clay cap that meets the specification of NR 504.06(2)(a) listed below? X A minimum of 50% by weight passing 200 sieve X A saturated hydraulic conductivity of $1x10^{-7}$ cm/sec or less X An average liquid limit of 25 or greater with no values less than 20 X An average plasticity index of 12 or greater with no values less than 10 X Will the clay capping layer be constructed according to NR 504.06(2)(f)?	X			Section 8.7	Both options being taken into consideration and will be further discussed in P.O.O
(a) If the two foot clay cap is replaced with a GCL and 2 foot soil barrier layer, does it meet the following: X 1. GCL consist of a layer of bentonite clay between 2 geotextiles X 2. GCL will be covered with a geomembrane the same day it is placed and in dry conditions X 3. GCL will be installed in a relaxed condition, free of tension or stress X 4. Adjoining panels of GCL have a minimum 6 inches overlap on longitudinal seams and a minimum 20 inches of overlap on panel end seams X 5. Irregular shapes, cuts or tears in the GCL are covered with a GCL patch with a minimum 12 inch overlap X 6. A seal of loose bentonite granules will be placed in seam overlaps at a minimum rate of 1 quarter pound per linear foot of seam for all seams	X			Section 8.7	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
_X_ 7. Loose bentonite or bentonite amended soil will be placed at all patches and penetrations _X_ 8. GCL panels are certified needle-free through magnetic and metal detection tests _X_ 9. GCL will be placed in direct contact with a soil barrier layer _X_ 10. Vehicle traffic on subgrade of GCL and on GCL will be restricted to minimum weight and number of machines to deploy GCL and geomembrane; vehicles operated to minimize damage to subgrade, GCL and geomembrane; deployment methods selected to prevent tearing or coming out of fibers of the GCL _X_ 11. Soil cover placement over the geosynthetics will be completed in the same construction season as the geosynthetic construction _X_ 12. Soil barrier layer will consist of fine-grained soil or a well graded sandy soil with fines, meeting USCS soil types ML, CL, CH, SM, or SC or dual -symbols classifications of these soils, with 25% by weight passing P200 sieve; upper one foot will have maximum particle size of 2 inches and lower one foot will have maximum particle size of 4 inches _X_ 13. Soil barrier layer will be compacted in lift heights of no greater than 12 inches after compaction using footed compaction equipment with feet at least 6 inches long; each lift will be disked to break up clods; clods no greater than 4 inches _X_ 14. Soil barrier layer will be compacted to ensure complete remolding of soil with equipment having a minimum static weight of 30,000 pounds _X_ 15. Soil barrier layer will be compacted to 90% modified or 95% standard Proctor density or greater at a moisture content at or wet of optimum _X_ 16. Each lift of will be keyed into clay or soil barrier layer soils in adjacent phases to form a continuous seal; steps will be a minimum width of 2 feet and there will be a minimum of 2 steps _X_ 17. The surface of the top lift will be graded or compacted to be smooth and firm and will be inspected for removal of course grave, cobbles and debris prior to placement of GCL	X			Section 8.7	
(b) For industrial waste landfills that predominantly accept compressible wastes or wastes with high water contents and low strength, will the landfill be replacing the clay layer with a GCL overlying a minimum one foot sand layer? If yes, will the gradation of the sand layer be a uniform sand selected to vent gas, drain leachate and provide hydration water to the GCL?			X		

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(c) For industrial waste landfills that predominantly accept ash, will the landfill be replacing the clay layer with a GCL overlying a minimum two feet soil barrier layer? If yes, will the soil barrier layer meet the requirement of (a)13 to 17 above and will the upper foot of soil barrier layer meet the requirements of (a)12 above? Note: The lower foot shall be designed to provide a capillary break between the ash and the upper one foot of soil barrier layer.			X		
(d) If the lower one foot of the clay layer is replaced with a one foot of foundry green sand system sand, will the sand meet the following: X Bentonite content of greater than 6% X Liquid limit of greater than 20 X Plasticity index of greater than 6 X Hydraulic conductivity of less than $1X10^{-7}$ cm/sec X Compaction of 90% modified or 95% standard Proctor density or greater at a moisture content at or wet of optimum	X			Section 8.7	Option will be included in P.O.O
(5) GEOMEMBRANE LAYER.					
If a geomembrane layer is proposed, does it meet the requirements of NR 504.06(3)(c) to (j) and the following:	X			Section 8.7	
(a) Nominal geomembrane thickness 40 mils or greater, and no thickness measurements below accepted industry tolerance	X			Section 8.7	
(b) Geomembrane installed in direct contact with the clay capping surface	X			Section 8.7	
(c) Geomembrane penetrations fitted with prefabricated collar or a plate welded at the angle of final cover slope, which allows for differential settlement of waste without damage to the membrane seal	X			Section 8.7	
(6) DRAINAGE ROOTING ZONE LAYER. Does the design include a drainage and rooting zone layer over the geomembrane or the clay cap, which meets the following requirements:					
X A minimum thickness of 2.5 feet and is not densely compacted	X			Section 8.7	
(a) Drainage layer is designed to be placed immediately above the capping layer and consists of a 1 foot sand layer with a min. hydraulic conductivity of $1x10^{-3}$ cm/sec., or a geosynthetic drain layer of equivalent or greater transmissivity Note: The design shall include an analysis which demonstrates whether the maximum head in the drain layer will be confined within the thickness of the drain. Drain calculations shall include infiltration rates based on saturated characteristics of the topsoil and rooting zone and a hydraulic gradient of one through the topsoil and rooting zone.	X			Section 8.7	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(b) A perimeter drain pipe at the low end of all final cover sideslopes with the following design elements: _X_ Drain pipe surrounded by a minimum of 6 inches of gravel or sand having a minimum hydraulic conductivity of $1x10^{-2}$ cm/sec _X_ Drain pipe sloped to outlets spaced 200 feet apart unless different spacing is supported by modeling	X			Section 8.7	
(7) TOPSOIL.					
_X_ Is a minimum of 6 inches of topsoil included over the cover layer? _X_ Is fertilizer and lime addition proposed per section 630, WDOT or other spec.?	X			Section 8.7	
(8) REVEGETATION.					
_X_ Is seed type and fertilizer based upon type and quality of topsoil, and compatibility with the native vegetation and final use? _X_ Is seed mix and application rates per section 630 WDOT specifications unless the department approved different seed mix and application rates? _X_ Are fertilizer and mulch application rates specified?	X			Section 8.7	
(9) FINAL USE.					
(a) Is final use compatible with the final cover system?	X			Section 8.14	
(b) Are the following activities prohibited when landfill is no longer in operation? _X_ Use of waste disposal area for agricultural purposes _X_ Establishment or construction of any buildings over the waste disposal areas _X_ Excavation of final cover or any waste materials	X			Section 8.14	
NR 504.075 SOIL BORROW SOURCES.					
(1) GENERAL.					
Is the soil borrow source being developed for the purpose of construction, operating or closing a landfill? If yes, this section applies. Note: Written approval from the department shall be obtained prior to initiating soil borrow activities at any borrow source subject to these requirements.			X		No new soil borrow source
(2) EXEMPTIONS. The following activities are exempt from the requirements of this section:					
(a) __ The production of processed aggregate products. __ Excavation of soils from construction projects off of the landfill property and not being used for compacted clay liner or capping layer, soil barrier layer, leachate collection layer or final cover drain layer?			X		
(b) Is the soil borrow source within the proposed or approved limits of filling for a landfill? If yes, then the landfill is not subject to the requirements of subs. (3) and (4)(b).			X		

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(3) INITIAL SITE INSPECTION.					
Does the report include a copy of the department's initial site inspection for each proposed borrow source?			X		
(4) LOCATIONAL INFORMATION.					
(a) Does the submittal describe the following: __Total acreage __ Ownership __ Location (¼-¼ section) __ Present land use __ Transportation routes __ Any access restrictions __ Travel distance to and from landfill			X		
(b) Does the submittal include the following: __ Surface water drainage patterns __ Significant hydrologic features (surface waters, springs, drainage divides and wetlands) __ Areas of special natural resource interest (critical habitat or state/local natural areas) __ Historical/archaeological areas within and adjacent to proposed limits of excavation			X		
(5) FIELD AND LABORATORY INVESTIGATIONS FOR CLAY BORROW SOURCES AND SOIL BARRIER LAYER SOURCES.					
Does the submittal for soil borrow sources include field and laboratory investigations to define the physical characteristics of any clay borrow source or soil barrier layer source designated to be used for a liner or final cover?			X		
Has an alternate geotechnical investigation program been approved by the department in writing prior to the field and laboratory investigation? __ yes __ no If yes, does the report include a copy of and justification for any approved alternative geotechnical investigation program? Note: An alternative geotechnical investigation program may be submitted in cases where previous information exists regarding the proposed soil borrow source.			X		

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(a) Have the required number of test pits or borings been completed on a uniform grid pattern across the proposed borrow source(s)? __ 10 test pits/borings for the first 5 or less acres __ 1 additional test pit/boring for each additional 3 or less acres __ Proposed acreage of proposed borrow source(s) __ Number of test pits/borings required __ Number of test pits/borings made __ Have logs identifying geologic origin, testing results, USCS classification, and visual description of each major soil unit encountered also been included?			X		
(b) Does the report include Atterberg limits and grain size analyses to 0.002 mm particle size for 2 samples from each test pit/boring?			X		
(c) Does the report include the relationship of water content to dry density using either the modified or standard Proctor method (curves must be developed with a minimum of 5 points) for 1 sample from each major soil unit and no fewer than 3 samples for uniform clay deposits?			X		
(d) Does the report include laboratory hydraulic conductivity test results for each sample used to develop the Proctor curves?			X		
(6) STOCKPILING.					
Does the report include discussion of segregating stockpiled soils by USCS soil type, soil gradation, Atterberg limits and compaction specifications? Note: Stockpiling of soils obtained from clay borrow sources and soil barrier layer sources for landfill liner of final cover construction shall be conducted in an organized manner that minimizes mixing of dissimilar soil types. Soils from differing sources may not be commingled unless soil properties are similar.			X		
(7) DATA PRESENTATION FOR ALL CLAY BORROW SOURCES AND SOIL BARRIER LAYER SOURCES. Does the submittal for soil borrow sources for clay and soil barrier layers include the following?					
(a) Calculated volume of soil needed and the volume of acceptable soil available			X		
(b) Property boundaries and test pit/boring locations on a topographic map (scale: 1" = 500') that extends a minimum of 500 feet beyond the proposed borrow source			X		
(c) Isopach map showing thickness of acceptable soil			X		
(d) Description of methods for separating acceptable soil from unacceptable soil			X		
(e) Proposal for maintaining drainage and sedimentation control			X		
(f) All data from the testing program			X		
(8) DATA PRESENTATION FOR OTHER BORROW SOURCES. Does the submittal for soil borrow sources other than those used for clay and soil barrier layers include the following?					

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(a) Property boundaries shown on a topographic map (scale: 1" = 500') that extends a minimum of 500 feet beyond the proposed borrow source			X		
(b) Proposal for drainage and sedimentation control			X		
(9) STORMWATER MANAGEMENT.					
Does the submittal for a soil borrow source include a stormwater management plan that complies with the requirements of s. NR 504.09(1)(a) to (f) and (h) to (j), unless the borrow source is subject ot other permits with equivalent authority and requirements, such as a stormwater discharge permit or non-metallic mining reclamation permit?			X		
(10) RECLAMATION OR BORROW SITES.					
(a) Does the report include reclamation plans for borrow sources on the landfill property that include the following: __ post-mining land use that is integrated with the existing and proposed drainage __ surface water discharge requirements __ grades and final use of the landfill Is the reclamation plan consistent with NR 135.06 to 135.12?			X		
(b) For soil borrow areas not on landfill property, is the reclamation plan consistent with NR 135? If required, has a reclamation plan been submitted and a nonmetallic mining reclamation permit been received from the appropriate regulatory authority?			X		
(11) OTHER REQUIRMENTS.					
(a) If the proposed clay borrow source(s) contains less than a five foot, but greater than 2 foot uniform clay thickness, does the report contain a construction methodology and documentation procedure to ensure the liner meets the soil index property requirements of s. NR 504.06(2)(a)?			X		
(b) Does the report include a description of measures to be taken to comply with wetlands protection requirements, runoff and sediment controls and surface water discharge permit requirements and to minimize effects on areas of special natural resource interest and historical or archaeological areas within and adjacent to the proposed limits of excavation?			X		
NR 504.08 MINIMUM DESIGN AND CONSTRUCTION CRITERIA FOR LANDFILL GAS EXTRACTION SYSTEMS.					Design of the landfill gas system will be included in the P.O.O
(1) GENERAL.					
If the landfill has the potential to generate landfill gas, is the landfill designed to prevent the migration of explosive gases generated by the waste?	X			Section 8.6	
(2) ACTIVE GAS EXTRACTION AND TREATMENT. Does landfill design include an active gas recovery system which includes the following features:					

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(a) Vertical gas extraction wells with a maximum 150 foot radius of influence per well with lesser radii of influence on wells near the perimeter Note: The radii of influence of adjacent wells shall overlap. Alternate well spacings may be proposed if site specific data is obtained through performance of pump tests.	X			Section 8.6	
(b) Vertical gas extraction wells extending to 10 feet above the leachate collection system, and installed in 36 inch diameter boreholes Note: An exemption may be proposed to allow for placement of gas extraction wells closer to the leachate collection system.	X			Section 8.6	
(c) The pipe in the boreholes are a minimum 6 inch diameter, Schedule 80 PVC or an approved equal	X			Section 8.6	
(d) The lower 2/3 to 3/4 of the pipe in the borehole is slotted or perforated pipe	X			Section 8.6	
(e) Backfill around slotted pipe is one inch to 1 ½ inch washed stone and the top 10 feet of the borehole is sealed	X			Section 8.6	
(f) Each gas extraction well has a flow control valve and sampling port	X			Section 8.6	
(g) The header system is looped to allow alternate flow paths for the gas	X			Section 8.6	
(h) A minimum slope of 2% for header pipes over the waste	X			Section 8.6	
(i) Polyethylene is used for the header and lateral pipes	X			Section 8.6	
(j) The blower, header and laterals are sized such that a minimum vacuum of 10 inches of water column is available at the well furthest from the blower	X			Section 8.6	
(k) A drip leg or equivalent is installed immediately before the blower while preserving suction at the wells under maximum operating vacuum	X			Section 8.6	
(l) All condensate and gas transfer piping outside waste limits are encased in 2 feet of clay, double-cased pipe or another approved secondary containment If the piping is not encased is the proposed system designed with multiple drip legs within the landfill where the bulk of the condensate has been removed?	X			Section 8.6	
(m) The system has the ability to collect and treat all condensate, measure volumes and collect samples	X			Section 8.6	
(n) A flare designed to meet the requirements of ch. NR 445	X			Section 8.6	
(3) GAS MONITORING WELLS.					
X Does the design provide at least one gas monitoring well on each side of the landfill? X Will the wells be constructed per NR 507.11?	X			Section 8.6	
(4) PASSIVE GAS EXTRACTION SYSTEMS. If the landfill accepts only industrial waste with the potential to generate gas and which does not use an active gas extraction system, is a passive gas venting system proposed which includes the following:					

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
__ A design that allows gas venting from the entire landfill surface? __ An analysis to determine vent trench spacing for an effective system and to ensure compliance with ch. NR 445 limits for hazardous air contaminants __ A continuous 1 foot layer of granular soil placed under the capping layer with a minimum hydraulic conductivity of $1x10^{-3}$ cm/sec Note: This layer may be part of the support layer required in s. NR 504.07(3). __ A series of flexible, perforated pipes connected to a series of outlets			X		
NR 504.09 STORM WATER MANAGEMENT AND MISCELLANEOUS DESIGN AND CONSTRUCTION CRITERIA FOR LANDFILLS.					Surface Water Management and design calculations will be completed
(1) STORM WATER MANAGEMENT.					during the P.O.O.
(a) Are drainage ditches, structures and sedimentation basins proposed to be constructed during the initial stages of site construction to control runoff and limit entrained sediment from reaching surface water bodies?	X			Section 8.10	
(b) Are the following concepts incorporated in the design of the temporary and permanent erosion and sediment control measures: _X_ Scheduling of grading and construction to minimize soil exposure _X_ Retention of existing vegetation whenever feasible _X_ Seeding and mulching of disturbed areas _X_ Diversion of runoff away from disturbed and active fill areas _X_ Minimization of runoff velocities _X_ Designing drainageways and outlets to handle concentrated and increased flows _X_ Trapping of sediment on-site _X_ Inspection and maintenance of runoff control structures Note: The applicant should submit a copy of the facility's storm water pollution prevention plan (SWPPP) with the plan of operation. The SWPPP may address the items listed above, in addition to storm water or surface water monitoring for the facility.	X			Section 8.10	
(c) Are the calculations required in pars. (d), (e) and (f) performed for the period in the landfill's development where the surface conditions and contributing acreage would result in the greatest runoff volume?	X			Section 8.10	
(d) Are all temporary and permanent storm water control structures designed to accommodate peak flow rates from a 25 year, time of concentration storm event?	X			Section 8.10	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(e) Are the storm water management features designed to accommodate the following: _X_ Temporary and permanent sediment controls are designed to settle the 0.015mm particle size for all storms up to and including the 25 year, 6 hour event? _X_ The sedimentation basin surface area is based upon the average rainfall intensity over the 25 year, 6 hour event? _X_ The principal spillway and outlet protection for the sedimentation basin is designed to pass a 25 year, time of concentration storm event? _X_ The emergency spillway for the sedimentation basin is designed to pass a 100 year, time of concentration event? _X_ The sedimentation basin dewatering structure is designed to drain the basin in less than 3 days _X_ A design analysis documenting compliance with the above is included	X			Section 8.10	
(f) Is storm water diverted from active fill and borrow areas to sediment control structures?	X			Section 8.10	
(g) Are the containment berms around active fill areas designed to comply with the following: _X_ Control and collect runoff from a 25 year-24 hour storm event _X_ Containment analysis is based upon the volume of liquid generated from areas with exposed waste and areas with daily cover _X_ Storm water in contact with active fill areas will be treated as leachate	X			Section 8.10	
(h) Are storm water drainage ditches, structures and sedimentation basins designed to discharge along the existing drainage patterns capable of accepting anticipated flow volume?	X			Section 8.10	
(i) Has an analysis been performed to determine the amount and velocity of runoff prior to landfill development and to document compliance with above requirement?	X			Section 8.10	
(j) Does storm water diversion and construction at the landfill minimize impacts on adjacent property?	X			Section 8.10	
(j) Do storm water management features comply with other applicable requirements such as those of, but not limited to, ch. NR 103 and ch. 30, Stats., permits? Note: The design should also comply with NR 151 storm water requirements.	X			Section 8.10	
(2) MISCELLANEOUS.					Miscellaneous construction and
(a) Is a method of controlling any dust or windblown debris included in the design?	X			Section 8.11.3	operation design will be completed
(b) Is access restricted through fencing, natural barriers or other methods?	X			Section 8.11.2	during the P.O.O.
(c) Are all access roads, including those in the active area, designed for all weather operation?	X			Section 8.11	
(d) Are all access roads used by highway vehicles designed with less than 10% grade?	X			Section 8.11	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
Is the intersection of the landfill access road with an existing highway designed with sufficient sight distance and minimize traffic interference?	X			Section 8.11.2	
(e) intentionally left blank					
(f) Is a minimum 100 foot separation distance between the fill limits and the adjacent property line, and a minimum 50 foot distance from landfill excavation or berm and the adjacent property line maintained (excluding storm waste diversion structures)?	X			Section 8.11.2	
(g) Is the landfill designed such that final waste grades are reached as soon as possible and open refuse filling area is minimized?	X			Sections 8.11.3 and 8.11.4	
(h) Are the final slopes designed to be no less than 5% and no greater than 4H:1V, except for papermill sludge sites which may have a max.6H:1V final slope for papermill and wastewater treatment sludge landfills?	X			Section 8.7	
(i) Are a minimum of 2 leachate headwells proposed per major horizontal phase?	X			Section 8.12.2	
(j) Is a weight scale supplied (if proposed as a municipal solid waste landfill)?	X			Section 8.11.2	
(k) Is the landfill designed with properly protected, permanent horizontal and vertical control benchmarks, and are the elevations tied to USGS datum and horizontal control referenced to property boundary?	X			Section 8.12.7	
NR 504.095 DESIGN CRITERIA FOR LANDFILLS THAT RECIRCULATE LEACHATE.					
(1) GENERAL. Leachate recirculation systems shall be designed to meet the following requirements:					Recirculation of leachate analysis and calculations will be completed during the P.O.O.
(a) Is the MSW landfill designed with a composite liner and leachate collection system meeting the requirements of NR 504.06? If no, leachate recirculation may not be approved.	X			Section 8.5	
(b) Is the leachate recirculation limited to areas of the landfill where the leachate collection drainage blanket has a hydraulic conductivity of 1cm/sec or greater? Note: The department may approve leachate recirculation in existing cells with lower permeability leachate collection blankets, provided that the operator can demonstrate that the maximum leachate head on the liner can be maintained at less than 12 inches and that the recorded leachate head has not exceeded 12 inches in the past.	X			Section 8.5	
(c) Is the leachate recirculation limited to areas of the landfill which are connected to the active gas extraction systems where the system is cabpable of collecting the additional gas expected? Note: Active gas extraction shall commence in those areas no later than the initiation of leachate recirculation.	X			Section 8.5	
(d) Is the leachate recirculation distribution system more than 100 lateral feet from the exterior sideslope final grades?	X			Section 8.5	
(e) Will there be a minimum depth of 20 feet of waste maintained between the landfill base and the lowest point of leachate distribution?	X			Section 8.5	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(f) Do the operating controls and instructions for leachate recirculation address the following: __ All weather and seasons of operation __ Cessation of leachate recirculation upon discovery of seeps, excessive pressures within the waste mass, saturated conditions within the waste mass, inadequate shear strength of the waste mass or other conditions indicative of instability?	X			Section 8.5	
(2) SURFACE APPLICATION.					
(a) Is the leachate distribution system designed so no leachate is introduce into the waste in a manner that causes ponding or surface runoff of leachate (No open surface trenches or ponds)?	X			Section 8.5	
(b) Is the leachate distribution system designed to minimize evaporation of the leachate and volatilization of compounds in leachate?	X			Section 8.5	
(3) VERTICAL DISTRIBUTION SYSTEMS.					
(a) Are the wells designed for leachate recirculation and gas extraction?	X			Section 8.5	
(b) Is the well spacing based on the leachate flow rates, pumping characteristics, permeability of the waste mass, and ability of the waste to accept liquid without being pressurized?	X			Section 8.5	
(c) Are the leachate distribution wells designed with a surface seal to control odors and landfill gas?	X			Section 8.5	
(d) Are the pumping pressures and pumping intervals for the wells designed to prevent surface emergence of leachate?	X			Section 8.5	
(e) Is the leachate distribution system designed to achieve a uniform distribution of leachate throughout the zone of influence of the wells?	X			Section 8.5	
(f) Are the leachate distribution wells designed to also extract landfill gas?	X			Section 8.5	
(4) HORIZONTAL DISTRIBUTION SYSTEMS.					
(a) Is the leachate distribution piping designed to distribute leachate consistently along its length?	X			Section 8.5	
(b) Is the distribution system designed with a permeable bedding material capable of rapidly dissipating recirculated leachate into the waste mass?	X			Section 8.5	
(c) Is the distribution system designed with bedding material capable of maintaining its structure and characteristics during the expected operation life of the system?	X			Section 8.5	
(d) Is the distribution system designed to operate with specific distribution periods with landfill gas extracted in the interval between those distribution periods and to minimize uncontrolled landfill gas emissions?	X			Section 8.5	
(e) Are the pumping pressures and pumping intervals for the wells designed to prevent surface emergence of leachate?	X			Section 8.5	

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 504.10 ALTERNATIVE DESIGN CRITERIA FOR LANDFILLS ACCEPTING HIGH VOLUME INDUSTRIAL WASTES.					
This section applies only to landfills designed primarily for high volume industrial waste, wood residue and minor amounts of other waste as approved by the Department. This section applies to all new landfills and to the expansion of existing landfills for which the plan of operation was approved after February 1, 1988.					
(1) GENERAL.					
(a) Has the landfill been designed to either meet the requirements of NR 504.05 to 504.09 or has an alternative design been proposed which meets the following provisions?			X		
(b) Note: If the applicant does not completed construction of the first major phase of the landfill within 2 years from the date of the plan of operation approval, the applicant shall reapply for approval to construct. The department may require additional conditions or approval and require redesign of the landfill in accordance with state-of-the-art design criteria.			X		
(c) Does municipal waste which is generated by the process, such as manufacturing process packaging not exceed 10% by weight? Note: If yes, then the landfill may not be subject of the design requirements of s. NR 504.05(1). Household and plant waste not generated as a direct result of the manufacturing process such as office and cafeteria waste, may not be disposed of in a landfill which does not meet the requirements of s. NR 504.05(1).			X		
(2) DESIGN CAPACITY.					
Does the design capacity meet NR 504.05(3)?			X		
(3) DESIGN CRITERIA.					
Does the feasibility study demonstrate that the alternative design adequately protects the public health, welfare and the environment, and the design meets or exceeds the NR 504.04 location and performance standards? If no, then an alternative design may not be approved. Is the alternative design supported with the following types of information:			X		
(a) Landfill characteristics including regional and specific information on land use, geology, hydrology, hydrogeology and soils			X		
(b) Waste characteristics such as quantity and physical/chemical analysis of waste and leachate			X		
(c) Analysis of any design to control geologic/hydrogeologic conditions			X		
(d) Field demonstration data			X		
(e) Design and performance data for similarly designed and constructed landfills			X		
(f) Accepted scientific or engineering analysis or field studies, field plots, research, manufacturer's data or demonstrations			X		

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DESIGN & CONSTRUCTION CRITERIA REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 504.11 MINIMUM DESIGN AND CONSTRUCTION CRITERIA FOR LANDFILLS ACCEPTING RESIDUE PRODUCED BY BURNING MUNICIPAL SOLID WASTE.					
(1) APPLICABILITY. This section applies to landfills designed for residue produced by the burning of municipal solid waste as approved by the department. This section applies to all new and existing landfills.					
(2) LANDFILL DESIGN CRITERIA FOR RESIDUE PRODUCED BY BURNING MUNICIPAL SOLID WASTE.					
(a) If the landfill has proposed to accept municipal solid waste combustor residue that tests below the NR 502.13(6)(g) limits, is it a composite lined monofill cell which follows the following criteria:			X		
__ Does the composite liner consist of a minimum 60 mil geomembrane overlying a minimum 4 foot thick compacted clay liner meeting NR 504.06 specifications?			X		
__ Is the monocell designed to separately sample and collect leachate from residue areas?			X		
__ If an alternate design is proposed, such as a double liner, does the design provide equivalent protection?			X		
(b) If the landfill is proposed to accept municipal solid waste combustor residue that tests above the limits in NR 502.13(6)(g), does the landfill design include a double composite lined monofill cell which meets the following criteria:			X		
__ Is there a double composite liner with 2 separate composite liners each with a minimum 60 mil geomembrane liner overlying a minimum 4 foot compacted clay liner meeting NR 504.06 specifications?			X		
__ Is the composite liner separated by a minimum one foot (detection) layer of granular material?			X		
__ Are separate leachate collection systems designed above and between the composite liners and is separate leachate sampling and collection from the detection layer possible?			X		
(c) Note: All landfills which accept municipal solid waste combustor residue shall be approved by the department in accordance with s. NR 514.07 (5) prior to accepting each specific residue waste stream.			X		

WDNR NR 512 Feasibility Report Completeness Checklist

Feasibility Report Completeness Checklist
Chapter NR 512, Wis. Adm. Code

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Waste & Materials Management
P.O. Box 7921
Madison, WI 53707-7921

Instructions: This checklist is intended for use by department staff for the review of landfill feasibility reports to determine completeness. This checklist is intended to be used in conjunction with the Design and Construction Criteria Completeness Checklist, Chapter NR 504, Wis. Adm. Code. Applicants may complete this checklist and submit it with a landfill feasibility report to facilitate department review. Please refer to applicable statues and codes for exact requirements.

General Information

Facility Name: Advanced Disposal Seven Mile Creek Landfill

Facility Type: Solid Waste Landfill > 500,000 Cubic Yards

Proposed Waste Types: Non-hazardous MSW, Industrial Solid Waste, C&D Waste, and Special Waste

Proposed Total Design Capacity: 4,130,000 Cubic Yards (including daily and intermediate covers)

Initial Submittal:	Date Received: ____/____/____	Completeness Due: ____/____/____	DNR Response: ____/____/____	(Complete: __ yes __ no)
Addendum # __	Date Received: ____/____/____	Completeness Due: ____/____/____	DNR Response: ____/____/____	(Complete: __ yes __ no)
Addendum # __	Date Received: ____/____/____	Completeness Due: ____/____/____	DNR Response: ____/____/____	(Complete: __ yes __ no)
Addendum # __	Date Received: ____/____/____	Completeness Due: ____/____/____	DNR Response: ____/____/____	(Complete: __ yes __ no)
Addendum # __	Date Received: ____/____/____	Completeness Due: ____/____/____	DNR Response: ____/____/____	(Complete: __ yes __ no)

Has the assigned DNR hydrogeologist started to fill out a ***Feasibility Internal Procedures*** form for this project? **Y** **N**

Facility Name: Advanced Disposal Seven Mile Creek Landfill

FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 500.05 GENERAL SUBMITTAL REQUIREMENTS.					
(1) Has the adequate review fee specified in s. 520.04 been submitted?	X				Will be submitted by Advanced Disposal
(2) Has a cover letter detailing the desired action been submitted?	X			Front of Submittal	
(3) Have 5 copies (2 Regions, 3 Central Office) been submitted to the department?	X				
(4) Are the report and plan sheets submitted under the seals and certifications of a P.E. and P.G.?	X			Pg. ii	Dan Roche, P.E. John Oswald, P.G.
(5) Technical Procedures:	X			Throughout Report	
Were all test procedures specified in the report?	X				
Were all technical procedures used to investigate the facility current standard procedures?	X				
Were explanations and reasons given for deviations from the current standard procedures?	X				
(6) Do all maps, plan sheets, drawings, isometrics, cross-sections, figures, photographs and tables meet the following requirements?	X			Plan Sheets and Figures	
(a) No larger than 24 inches x 36 inches & no smaller than 8 ½ inches x 11 inches.	X				
(b) Appropriate scale to show required detail.	X				
(c) Do visuals meet the following requirements? X numbered — X legends for all symbols X referenced in the narrative — X horizontal & vertical scales X titled — X drafting and origination dates	X				
(d) Were uniform scales used?	X				Cross section vertical scales varied in order
(e) Were north arrows shown?	X				to fit information on plan sheets
(f) Was a USGS datum used as basis for all elevations?	X				
(g) Do visuals contain a survey grid based upon monuments established in the field and which is referenced to the state plane coordinates?	X				
(h) Is the original topography and a grid system shown on the plan sheets that show construction, operation and closure topography?	X				
(i) Do cross-sections meet the following requirements? X Show survey grid locations, X Reference major plan sheets, X Include a reduced diagram of plan view showing cross-section location.	X				
(7) Was a table of contents provided listing all sections of the submittal?	X			Pg. iii-xiii	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
(8) Was an appendix provided listing the following? X names of all references X all raw data, X testing and sampling procedures X calculations	X			Appendices A-V	
NR 504.04(3) LOCATIONAL CRITERIA. Does the report indicate that the proposed limits of filling are within:					
(a) 1,000 feet of any navigable lake, pond or flowage not including landfill drainage or sedimentation control structures? __ yes X no __ If yes, was an exemption requested?	X			Sections 7.1.1, 10.1.5.1, Appendix B, Figure 1-1, Plan Sheet 3	Also provided on Figure 4 of ISR
(b) 300 feet of any navigable river or stream? __ yes X no __ If yes, was an exemption requested?	X			Sections 7.1.2, 10.1.5.1, Appendix B, Plan Sheet 3	Also provided on Figure 4 of ISR
(c) A 100-year flood plain? __ yes X no __ If yes, was an exemption requested?	X			Section 7.1.3, 10.1.5.1, and Appendix B	Also provided on Figure 4 of ISR
(d) 1,000 feet of the nearest edge of the right-of-way of any state trunk highway, interstate or federal aid primary highway or any public park or state natural area? __ yes X no * If yes, was a line of site study provided showing that the landfill would not be visible from the road, park or natural area through the use of screening and/or, * was an exemption requested? Note: If waste may be visible for periods of time even with the use of screening, then an exemption should be requested.	X			Sections 1.3.2, 1.4.2, 4.4, 7.1.4, 10.1.5.1, 10.3.5, 10.4.5 and Appendix B	* Line of Sight study was updated from 2014 FR for Sector 2 landfill per ISR Opinion Letter. A previously granted exemption is requested.
(e) 10,000 of the end of an airport runway designed or planned to be designed and used by turbojet aircraft or within 5,000 feet of any airport runway designed for and used by piston type aircraft? __ yes X no Is FAA notification required? __ yes X no Note: If the proposed limits of waste filling would be within 5 miles (for expansions of an existing MSW landfill) or within 6 miles (for new MSW landfills) of the end of the runway of any airport used by turbojet or piston type aircraft, the applicant must provide notice to both the Federal Aviation Administration (FAA) and the affected airport. The report should contain all correspondence related to the notices including any determinations made by the FAA. (Ref. 49 U.S.C. § 44718(d), See FAA Advisory Circular AC 150/5200-34A, dated 1/26/2006)	X			Sections 1.4.2, 4.4.1, 7.1.5, 10.1.5.1, Appendix B, Figure 4-4	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
(f) 1,200 feet of any water supply well (i.e. public, private, irrigation or stock water supply wells)? _X_ yes __ no _X_ was an exemption requested? If yes, have the following been provided for each identified well? _X_ well location _X_ former and present well owner _X_ well driller _X_ well construction log Note: Exemptions may not be granted if the above information is not provided.	X			Sections 1.3, 1.4, 7.1.6, 10.1.5.1, Table 7-1, Plan Sheet 3, Appendices B, C and D	
(g) 200 feet of a fault that has had displacement in Holocene time? __ yes _X_ no __ If yes, was an exemption requested?	X			Section 7.1.7, 10.1.5.1, Appendix B	
(h) Seismic impact zones? __ yes _X_ no __ If yes, was an exemption requested?	X			Section 7.1.8, 10.1.5.1, Appendix B	
(i) Unstable areas? __ yes _X_ no __ If yes, was an exemption requested?	X			Section 7.1.9, 10.1.5.1, Appendix B	
NR 504.04(4) PERFORMANCE STANDARDS. Does the report indicate that the proposed landfill or any proposed noncommercial soil borrow source(s) will have:					
(a) A significant adverse impact on wetlands? __ yes _X_ no Note: If a significant adverse impact would occur to wetlands (e.g. filling or excavation) then a wetland permit would be required under s. 281.36, Stats. A wetland permit would supersede the NR 103 water quality standards for wetlands. The wetland permit application requires a practicable alternatives analysis, a wetland functional values analysis and a public comment period specific to the wetland permit application. Wetland mitigation may also be required. ___Has a wetland permit been submitted with the feasibility report or has a wetland application been submitted to the department? ___Has a wetland delineation and functional values report been submitted with the feasibility report?	X			Sections 7.2.1, 10.1.5.2, 10.2.2.2, Appendix B and Plan Sheet 3	
(b) A take of an endangered or threatened species in accordance with s. 29.604, Stats? __ yes _X_ no	X			Sections 1.4.2, 4.4, 7.2.2, 10.1.5.2, 10.3.2, 10.4.2, Appendix B	
(c) A detrimental effect on any surface water? __ yes _X_ no Note: Exemptions are not granted.	X			Sections 7.2.3, 10.1.5.2, 10.2.2.2	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
(d) A detrimental effect on groundwater quality or will cause or exacerbate an attainment or exceedance of any preventive action limit or enforcement standard at a point of standards application as defined in ch. NR 140? __ yes _X_ no _X_ Has an exemption been requested to the groundwater standards in accordance with ss. NR 507.29 and NR 140.28, Wis. Adm. Code? If an exemption is required, does the feasibility report include: _X_ A list of the specific wells and parameters for which an exemption is being requested. _X_ A discussion of how the criteria listed in s. NR 140.28(2), (3) and (4) are met.	X			Sections 1.3, 7.2.4, 7.5.3, 7.5.4, 10.1.5.2, 10.2.2.1, Table R-1 in Appendix R	
(e) The migration and concentration of explosive gases in excess of 25% of the lower explosive limit for such gases at any time? __yes _X_ no	X			Sections 7.2.5 and 10.2.4	
(f) The emission of any hazardous air contaminant exceeding the limitations for those substances contained in s. NR 445.04 or 445.05? __ yes _X_ no	X			Sections 7.2.6 and 10.2.4	
NR 512.04 INITIAL SITE REPORT.					
Has the department rendered an initial site report opinion? _X_ yes __ no Date: 1/4/2019	X			Appendix B	
Has an optional pre-feasibility report been submitted? __ yes _X_ no Date:			X		
NR 512.05 GENERAL SUBMITTAL REQUIREMENTS.					
Does the report address all of the department's review comments on the initial site report or any applicable pre-feasibility report?	X			Section 1.4	
Does the report contain justification for requests for any exemptions to the locational and performance standards listed in s. NR 504.04?	X			Section 1.3	
For an alternative design to s. NR 504.05 requirements, does the report include an analysis to predict whether the facility will meet or exceed performance standards of s. NR 504.04(4)(d) regarding groundwater quality?					
NR 512.06 PROCEDURAL REQUIREMENTS.					
(1) Local approvals: Does the report contain the following:	X			Section 2	
_X_ Documentation that each affected municipality (towns, villages, cities, and counties) has been notified and that application has been made for applicable local approvals, at least 120 days prior to submittal. Note: Act 241, effective June 18, 1998 changes the definition of affected municipalities. The new law defines affected municipality as a town, city, village or county within 1,500 feet of the facility.	X			Section 2.1 and Appendix E	

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
X A copy of all requests for the specification of applicable local approvals.	X			Section 2.1 and Appendix E	
X Responses from all affected municipalities regarding any applicable local approvals.	X			Section 2.1 and Appendix E	
X The standard municipal notice required by the waste facility siting board.	X			Section 2.4 and Appendix E	
__ Follow up applications for any applicable local approvals submitted to the clerk of the governing board of each participating municipality per s. 289.23(2), Stats.			X		
(2) Documentation of and when copies of the ISR, the ISR opinion, any applicable pre-feasibility report, and the feasibility report have been submitted to each participating municipality under s. 289.33(6)(b), Stats.		X		Section 2.2	Will be sent to WDNR when available.
NR 512.07 GENERAL FACILITY INFORMATION. Does the report include all of the following:					
X Project title	X			Section 3	
X Name, address and phone number of primary contacts, including the landfill's owner, operator and any consultants	X			Section 3	
X Present property owner	X			Section 3	
X Proposed owner and operator	X			Section 3	
X Proposed landfill location by ¼ -¼ section	X			Section 3	
X Total acreage of property	X			Section 3	
X Total acreage of proposed fill area	X			Section 3	
X Proposed design capacity	X			Section 3	
X Proposed site life in years	X			Section 3	
X Anticipated date of closure	X			Section 3	
X Municipalities and industries to be served	X			Section 3	
X Anticipated waste types and characteristics	X			Section 3	
X Anticipated volumes of each major waste stream and any seasonal fluctuations taking into account waste reduction, reuse, recycling, composting and the recovery of energy from solid waste	X			Section 3	
X Anticipated cover frequency	X			Section 3	
X Mode of operation	X			Section 3	
X Anticipated sub-base, base and final grades	X			Section 3	
X Preliminary design concepts	X			Section 3	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
NR 512.08 LAND USE INFORMATION. Does the report include a thorough discussion of any changes in land uses or zoning within one mile of the proposed limits of filling since the submittal of the ISR?					
X Does the report include a discussion of any changes in the identification of adjacent landowners discussed? Note: this information may be presented on a plat map if it accurately shows current land ownership conditions.	X			Section 4.2, Figure 4-1, and Table 4-1	
X Are any changes in zoning discussed?	X			Section 4.3 and Figure 4-2	
X Are any changes in present land uses discussed with emphasis on known recreational, historical, archaeological or state/local natural areas, county forest lands, and critical habitat?	X			Section 4.4	
X Are any changes in existing and/or proposed transportation routes and access roads, including any new weight restrictions, discussed?	X			Section 4.5	
X Does the report include any information or bird study requested by the Department or the FAA. Note: This applies only if the owner proposes to accept putrescible waste and the limits of filling are within 5 miles (for expansions) or 6 miles (for new landfills) of the end of an airport runway. [Ref. s. NR 504.04(3)(e) and 49 U.S.C. § 44718(d), See FAA Advisory Circular AC 150/5200-34A, dated 1/26/2006]	X			Section 4.4.1, and Appendix B	
NR 512.085 ALTERNATIVE GEOTECHNICAL INVESTIGATION PROGRAM.					
Has the applicant proposed an alternative geotechnical investigation program that includes the following: X Detailed description of the proposed alternative program X Detailed explanation of the rationale for the proposed differences to NR 512.09 or 512.10 X Anticipated benefits of the proposed alternative program X Is a copy of the accepted program included in the feasibility report? Note: The applicant may propose an alternative geotechnical investigation program prior to initiating the geotechnical investigations required for a feasibility report. The program may not be implemented prior to receipt of written review by the department. The formal approval of the accepted alternative geotechnical program is made in the department's feasibility determination.	X			Sections 1.3.1, 5.1, Appendices B and G	
NR 512.09 SITE-SPECIFIC GEOTECHNICAL INFORMATION.					
Has an alternate geotechnical investigation program been approved by the department in writing? X yes __ no X If yes, does the report include justification for the approved alternative geotechnical investigation program?	X			Sections 1.3, 5.1 and Appendix B	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
(1) BORINGS. Have borings been made both inside and outside the proposed limits of filling?					
(a) Have the required number of borings been completed in or within 300 feet of the proposed limits of filling? X 10 borings for the first 5 or less acres of proposed fill area X 2 additional borings for each additional 5 or less acres of proposed fill area 12.5 Proposed limits of filling in acres 14 Number of borings required 20 Number of borings made within 300 feet of proposed limits of filling	X			Section 5.2.1, Appendices B and G, Plan Sheet 3	
(b) Do all borings extend at least 25 feet below anticipated sub-base grades? Note: For borings located outside the proposed limits of filling, applicable sub-base grade is the elevation of the bottom of the proposed base liner nearest to the borehole.	X			Sections 1.3.1, 5.2.1, Table 5-2, Appendices G - H	
(c) Has 1 boring been extended at least 5 feet into bedrock, if bedrock is within 50 feet of the lowest elevation of the proposed sub-base grades? Was bedrock drilling performed in accordance with ch. NR 141 and s. NR 507.05?	X			Section 5.2.1, Table 5-2, Appendix G	
(d) Were samples collected and retained and borings logs prepared in accordance with ss. NR 507.05 and 507.14? Note: The following requirements refer to NR 507.05 and 507.14.	X			Section 1.3.1, 5.2.1, 5.2.3, Appendices H - K	
__ **Fine-grained soils:** Was continuous sampling to 25 feet below sub-base grades performed?			X		
X **Coarse-grained soils or following continuous sampling in fine-grained soils:** Were samples collected from each major soil unit and at maximum 5 foot intervals?	X			Sections 5.2.1, 5.2.3, Appendices H - K	
X **Sample at the depth of well screen:** Was a soil sample collected at the depth of the well screen of any subsequently placed monitoring well and analyzed for grain size distribution using mechanical and hydrometer methods and Atterberg limits, as appropriate for the soil type?	X			Sections 5.2.1, 5.2.3, Table 5-1, Appendices H - K	
X **Bedrock samples:** Were continuous core samples collected?	X			Sections 5.2.1, 5.2.3.1, Appendix H	
X ***Soil samples:*** Do descriptions of each major soil sample unit include? X Structure X Lenses X Mottling X Geologic origin X Voids X USCS classified X Layering	X			Section 5.2.3.1, Table 5-1, Appendix H	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
X Do descriptions of continuous bedrock core samples include? X General rock properties X Rock Quality Designation (RQD) X Fracture frequency X Percent recovery	X			Section 5.2.3.1, Appendix H	
X Does the report contain a boring log for each boring that includes the following? X Elevations of land surface and bottom of boring corrected to USGS (national geodetic survey) datum X If converted to a well, water level at the time of drilling, date of water level measurement, and a well construction diagram on the boring log	X			Appendix H	
(e) Have all borings not converted to wells been abandoned in accordance with ss. NR 507.08 and 141.25 and been documented as instructed on Department forms (3300-5B)?	X			Section 1.3, Appendix H	
(2) GROUNDWATER MONITORING WELLS.					
(a) Have the required number of ***water table observation wells*** with screens intersecting the water table been installed to adequately define the water table surface? X 5 water table observation wells for the first 5 or less acres of proposed fill area X 1 additional water table observation well for each additional 5 or less acres of proposed fill area 12.5 Proposed limits of filling in acres 7 Number of water table observation wells required 4 Number of water table observation wells installed	X			Section 5.2.2, Table 5-2, Appendix G, Plan Sheet 3	
(b) Have the required number of ***piezometers*** been installed? X 1 piezometer adjacent to a water table observation well at 2 separate locations for the first 5 or less acres of proposed fill area X 1 additional piezometer for each additional 10 or less acres of proposed fill area to create additional well nests X At least 1 well nest within the proposed limits of filling for every 20 acres of proposed fill area 12.5 Proposed limits of filling in acres 3 Number of piezometers required 2 Number of piezometers installed	X			Section 5.2.2, Table 5-2, Appendix G, Plan Sheet 3	

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(c) ***If the proposed site is in a fine-grained soil environment*** does each well nest required above in (b) consist of 3 wells (a water table observation well, a piezometer installed at or just below the proposed subbase grades and a deeper piezometer installed at least 15 feet below the bottom of the upper piezometer's well screen?			X		
(d) Are all wells located ***no more than 300 feet*** from the proposed limits of filling and are at least half of the wells located no more than 150 feet from the proposed limits of filling?	X			Section 5.1, Table 5-2, Plan Sheet 3, Figure 3 of AGIP Addendum No. 1 in Appendix G	
(e) Are all wells designed, installed, developed, documented, and sampled in accordance with ch. NR 141 and ss. NR 507.06, 507.07, 507.14 and 507.17, or have alternative methods of well design and installation been approved by the department prior to well construction?	X			Sections 5.2.2, 5.2.3, Appendices I and L	
(3) FIELD DIRECTION. Did a Professional Geologist (P.G.) or qualified technician directly supervised by a P.G. perform the following tasks?					
X Observe and direct drilling of all borings X Observe and direct installation, development and abandonment of all wells X Conduct all in-field hydraulic conductivity tests X Visually describe and classify all geologic samples	X			Report Certification, Section 5.2	
(4) LABORATORY AND FIELD ANALYSIS.					
(a) Have 5 grain-size analyses per major soil unit (mechanical & hydrometer) with USCS classifications and Atterberg limits where appropriate been provided? 3 Number of major soil units 15 Number of grain size analyses required	X			Section 5.2.3, Table 5-1, Appendix J	
(b) Have ***lab hydraulic conductivity tests*** been provided for 2 undisturbed samples from each major fine-grained soil unit?	X			Section 5.2.3, Table 5-1 and Appendix J	
(d) Have ***in-field hydraulic conductivity test*** data and results been provided for each well?	X			Section 5.2.4, Table 5-3, Appendix K	
(e) Does report include 6 monthly water level measurements for all wells?	X			Sections 5.2.5, 5.4.2, Table 5-4	
(f) Does report include 6 monthly surface water level measurements for any surface water bodies including streams, lakes, ponds, drainage ditches and wetlands located within 1,000 feet of the proposed limits of filling?	X			Sections 5.2.5, 5.2.6, Table 5-4	
(g) ***Baseline groundwater quality*** for all wells located outside the proposed limits of filling in accordance with s. NR 507.18: NOTE: If a groundwater standard is attained or exceeded in any of the 4 baseline groundwater quality sample rounds, see ss. NR 140.28 and 507.29 for exemption criteria.	X			Sections 5.1, 5.2.5, 5.4.3, Table 5-8, Table L-1 of Appendix L	

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
Note: The following requirements refer to s. NR 507.18. _X_ 4 monthly rounds for each detection monitoring parameter listed in Appendix 1, Tables 1 and 2 of ch. NR 507, as appropriate, for the particular waste types to be accepted _X_ 4 monthly rounds for Public Health and Welfare parameters listed in Appendix I, Table 3 of ch. NR 507 _X_ 2 monthly rounds for VOCs, plus 2 additional sampling rounds for any wells that have VOC concentrations above their limit of detection	X			Section 5.4.3, Table 5-8, Table L-1 of Appendix L	
(h) Has the department required other work such as groundwater modeling, pump tests, geophysical investigations, isopach maps or a fence diagram to assess the hydrogeologic conditions at the proposed facility?			X		
(5) SAMPLE RETENTION					
Have all soil and bedrock samples collected from the proposed property been retained in accordance with NR 507.05?	X			Section 5.2.1	At Cornerstone office
(6) ADDITIONAL REQUIREMENTS FOR LANDFILLS WITH EXTENDED COLLECTION LINES.					
(a) Does the landfill meet the requirements of (b) and (c) below for a facility where MSW is accepted and the leachate collection lines exceed 1,200 feet from the end of each cleanout to the toe of the opposite slope?	X				
(b) Does the report include the following: __ A minimum of one boring in the area of each proposed cell drilled to physically characterize subbase conditions for landfill foundation assessment of stability and settlement __ Borings that extend a minimum of 50 feet below the proposed subbase grades or to competent bedrock, whichever is shallower. __ Samples taken at each significant soil layer __ A minimum of one sample from each fine grained layer and from each soft or compressible coarse grained layer subjected to geotechnical testing to define parameters used in assessment of stability and settlement of the liner	X			Section 5	
(c) Does the report include the consolidation testing data include the data summarized in the major soil unit table required by NR 512.10(2)(d)?	X			Section 5 and Appendix H and J	
NR 512.10 SUBSURFACE DATA ANALYSIS.					
(1) Does the subsurface investigations presented in the report include the minimum following requirements (unless an alternative geotechnical investigation plan was accepted in writing)?					

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(2) SOIL AND BEDROCK DESCRIPTIONS.					
(a) Have grain size distributions, geologic origin, USCS classification been provided for each major soil unit?	X			Section 5.4.1, Table 5-1, Appendices H and J	
(b) Does the report describe the lateral and vertical extent of each major soil unit including descriptions of any lenses or other heterogeneities, and if bedrock was encountered by borings, the strike and dip of any rock formations?	X			Section 5.4.1, Appendix H, Plan Sheets 5 - 20	
(c) Does the report describe the presence and frequency of joints, fractures, voids, solution openings, faults or other structural features?	X			Section 5.4.1, Appendix H, Plan Sheets 5 - 20	
(d) Does the report include a table summarizing the following testing data by major soil unit? X Geologic origin X Sample ID number X Percent gravel, sand, silt and clay X Lab & field hydraulic conductivities X Statistical analyses for averaged values X Liquid limit X Plasticity index X Percent P200 content	X			Table 5-1 and Appendices H - K	
(3) HYDROGEOLOGIC PROPERTIES AND FUNCTIONS**.** Does the report discuss the following properties and functions of each saturated soil unit or rock formation?					
(a) Hydraulic conductivity	X			Section 5.4.2, Tables 5-1 and 5-3, Appendices H - K	
(a) Role as a confining unit			X		
(c) Hydraulic connections to other units	X			Section 5.3.4	
(d) Actual/potential use as a water supply unit	X			Section 5.3.4	
(e) Depth to groundwater & seasonal variations in groundwater elevations	X			Sections 5.3.4 and 5.4.2, Table 5-4, Figure 5-3	
(f) Location & extent of perched groundwater			X		
(f) Local & regional flow directions including the locations of groundwater divides	X			Sections 5.3.4 and 5.4.2	
(h) Horizontal & vertical gradients	X			Sections 5.4.2.2.4, 5.4.2.2.5, Tables 5-5 and 5-6, Appendix K	
(4) APPENDIX. Does the Appendix include the following?					

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
X All raw data X Soil boring log information forms 4400-122 X Well information forms (4400-89) X Groundwater and surface water level measurements X Monitoring well development forms (4400-113B) X Baseline groundwater quality sampling X Monitoring well construction forms (4400-113A) X Soil test results X Well/drillhole/borehole abandonment forms 3300-5B	X			Appendices H - L, Tables 5-1, 5-4 and L-1	Raw data of the water level measurements and water quality results prior to December 2018 not included - just summarized data results. Data source was from WDNR GEMS database.
NR 512.11 DATA PRESENTATION. Are the results from the subsurface investigation presented on 24" x 36" plan sheets?					
(1) EXISTING CONDITIONS PLAN SHEET. Is a detailed topographical survey of all areas within 1500 feet of the proposed limits of filling provided (minimum scale 1" = 200' with maximum 2 foot contour interval) and does it show all of the following:					
(a) 100-year floodplain area	X			Plan Sheet 3	
(b) Surface waters, including intermittent & ephemeral streams & wetlands	X			Plan Sheet 3	
(c) Residences, buildings, utility lines & other cultural features	X			Plan Sheet 3	
(d) Surrounding land uses (residential, commercial, agricultural & recreational)	X			Plan Sheet 3	
(e) Property & proposed limits of filling, including any previous fill areas	X			Plan Sheet 3	
(f) Access control including fences & gates	X			Plan Sheet 3	
(g) Water supply wells including public, private, irrigation, & stock	X			Plan Sheet 3	
(h) Boring, test pit, and well locations for the proposed landfill	X			Plan Sheet 3	
(i) Other structures including storm water control systems, agricultural drain tile systems, access & internal roads, storm & sanitary sewerage systems	X			Plan Sheet 3	
(2) GEOLOGIC CROSS-SECTIONS.					
Have geologic cross-sections been constructed as follows: X Through <u>all</u> borings, both perpendicular and parallel to the proposed landfill's baseline X For proposed contiguous expansions, through all previous borings for the existing landfill X 1 cross-section parallel to groundwater flow	X			Plan Sheets 5 - 20	Cross sections are consistent with those provided in the 2003 FR. Amended with data presented in the 2011 FR Modification. Exemption provided for 2003 FR for cross sections through each boring.
Do the geologic cross-sections include the following:					

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(a) Inferred/questionable lithostratigraphic boundaries shown with a dashed line or question mark	X			Plan Sheets 5-20	
(b) Numbers/symbols used to label each major soil unit with a key that describes each major soil unit including geologic description and origin, USCS classification and color	X			Plan Sheets 5-20	
(C) Boring logs show USCS classification, geologic origin, grain size analyses, Atterberg limits, and field hydraulic conductivities	X			Plan Sheets 5-20	
(d) X Well construction details shown to scale including well screen and filter pack length, upper and any lower seals, and stabilized water levels measured on same day X If two or more observation wells are presented, a line representing the water table surface drawn and date the measurements were taken specified in the key	X			Plan Sheets 5-20	
(3) WATER TABLE MAPS.					
X Are at least two water table maps (seasonal high & low) provided?	X			Plan Sheets 24-25	
X For a proposed contiguous expansion, do the water table maps include the observation wells and measured water table elevations for each observation well for the existing landfill?	X			Plan Sheets 24-25	
X Has a bedrock piezometric map been provided if 3 or more bedrock wells have been installed?	X			Plan Sheet 23	
(4) BEDROCK MAP.					
Has a ***bedrock contour map*** been provided if 3 or more borings have been drilled into bedrock?	X			Plan Sheet 21	
(5) FLOW NET.					
Has a ***flow net***, parallel to the direction of groundwater flow to show distribution of recharge & discharge been provided?	X			Plan Sheet 24	
NR 512.12 WASTE AND LEACHATE CHARACTERIZATION.					
(1) INDUSTRIAL WASTES**.** Have the physical & chemical characteristics of any high volume industrial waste anticipated to individually constitute more than 5% of the total proposed design capacity and leachates been analyzed and described?	X			Section 6.1.1	
(2) MUNICIPAL WASTES**.** Does the report include actual field leachate data from existing landfills of similar size, design and waste type or an estimate of the anticipated leachate strength and quality?	X			Section 6.2	
(3) LEACHATE GENERATION**.** Does the report include the estimated daily volume of leachate that will be collected for unclosed and closed areas?	X			Section 6.3	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
(a) A minimum of 6 inches per year for all unclosed areas of the proposed limits of filling for landfills with a composite liner and a minimum of 4 inches per year for landfills that do not have a composite liner?	X			Section 6.3 and Appendix P	
(b) One inch per year for all closed areas of the proposed limits of filling for landfills with a composite cap and a minimum of 3 inches per year for all closed areas that will not have a composite cap?	X			Section 6.3 and Appendix P	
NR 512.13 CONSTRAINTS ON LANDFILL DEVELOPMENT.					
(1) LOCATIONAL CRITERIA AND PERFORMANCE STANDARDS. Does the report contain a demonstration that the proposed landfill will meet the locational and performance standards in s. NR 504.04?	X			Sections 7.1 and 7.2	
(2) GEOTECHNICAL INFORMATION. Does the report contain an analysis of the following:					
X geologic X hydrogeologic X topographic X hydrologic features of the proposed property that may be favorable or unfavorable for landfill development	X			Section 7.3	
(3) CONSTRUCTION AND OPERATION. Does the report contain a discussion of the following materials and support services required for landfill construction and operation?					
X Leachate treatment alternatives X Identification and detailed evaluation of the capability of any proposed wastewater treatment plant(s) to treat the leachate X Quality & quantity of liner and cap materials X Specialized engineering structures to support landfilling activities	X			Section 7.4, Appendix S, and Table 9-1	
(4) EXISTING FACILITY PERFORMANCE. For a proposed contiguous, horizontal or vertical expansion, does the report evaluate the compliance status and performance of the existing landfill?					
(a) Does the report reference the discussion on the compliance status and performance of the existing landfill contained in any applicable pre-feasibility report and include any changes since the submittal of that report?			X		
(b) Does the report contain an exemption request under s. NR 140.28 and in accordance with s. NR 507.29 if a PAL or ES has been attained or exceeded at the site?	X			Sections 1.3 and 7.5.3	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
NR 512.14 PROPOSED PRELIMINARY DESIGN.					
(1) PRELIMINARY DESIGN REPORT.					
(a) Does the report contain preliminary materials balance calculations for the necessary volume of clay to construct the liner and final cap of the first phase of the landfill?	X			Section 8.2, Table 9-1, Appendix S	
(b) Does the report discuss proposed methods for leachate and gas control? X Leachate collection X Gas collection X Leachate containment X Gas containment X Leachate treatment X Gas treatment	X			Sections 8.5 and 8.6	
(c) Does the report discuss the proposed operating procedures, including the general filling sequence?	X			Section 8.11	
(d) Does the report include a description of the proposed monitoring programs to be implemented to meet the requirements of chs. NR 140 and 507? X Groundwater X Air X Leachate __ Unsaturated zone X Surface Water X Other monitoring X Gas X Does the report contain a sampling plan for all monitoring devices in accordance with s. NR 507.16?	X			Section 8.12 and Appendix U	
(e) X Does the report discuss the proposed methods for storm water control in accordance with ch. NR 216? X Does the report discuss visual screening?	X			Sections 8.10 and 8.13	
(f) Does the report discuss the proposed final use?	X			Section 8.14	
(2) PRELIMINARY ENGINEERING PLANS. (24" x 36" Plan Sheets w/max. 5-foot contours):					
(a) Does the report include an existing conditions map that shows the following? X Proposed access X Associated buildings X Limits of filling X Storm water diversions X Internal roads X Sedimentation basins X Load out & scale facilities X Phase of facility development X Sub-base & base grades X Slopes X Leachate collection system X Leachate storage tank X Lift station/sewer hook up	X			Plan Sheets 3, 26, 27, 29	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
(b) Does the report include geologic cross-sections plan sheet(s) that display the following information? X Present topography X Proposed final grades X Proposed sub-base grades X Liner and final cap configuration X Proposed base grades	X			Plan Sheets 5 - 20	
(c) Does the report include a plan sheet showing the proposed closure sequence and final grades?	X			Plan Sheet 29	
NR 512.15 IDENTIFICATION OF SOIL BORROW SOURCES. Note: It may be necessary to obtain federal, state and/or local permits prior to excavating soil from a borrow source near surface waters or wetlands. For example, s. 30.19(1)(c), Stats., requires a permit for grading or removing top soil from the bank of any navigable stream, lake or body of navigable water where the area exposed by such grading or removal will exceed 10,000 square feet. It is the responsibility of the applicant or property owner to request an initial site inspection in accordance with ch. NR 509 and to obtain any federal, state and/or local permits that are required.					
(1) Does the report include a copy of the department's initial site inspection evaluation letter for the proposed borrow source(s) needed to construct, operate and close the first phase of the landfill?	X			Section 9 and Appendix V	
(2) Does the report include documentation for soil borrow sources as described in NR 504.075 for the proposed soil borrow sources designated to be used in the construction, operation or closure of the first phase of the landfill? See below.	X			Section 9 and Appendix V	
NR 504.075 SOIL BORROW SOURCES.					No new soil borrow sources
(1) GENERAL.					
Is the soil borrow source being developed for the purpose of construction, operating or closing a landfill? If yes, this section applies. Note: Written approval from the department shall be obtained prior to initiating soil borrow activities at any borrow source subject to these requirements.			X		
(2) EXEMPTIONS. The following activities are exempt from the requirements of this section:					
(a) __ The production of processed aggregate products. __ Excavation of soils from construction projects off of the landfill property and not being used for compacted clay liner or capping layer, soil barrier layer, leachate collection layer or final cover drain layer?			X		
(b) Is the soil borrow source within the proposed or approved limits of filling for a landfill? If yes, then the landfill is not subject to the requirements of subs. (3) and (4)(b).			X		

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(3) INITIAL SITE INSPECTION.					
Does the report include a copy of the department's initial site inspection for each proposed borrow source?			X		
(4) LOCATIONAL INFORMATION.					
(a) Does the submittal describe the following: __Total acreage __ Ownership __ Location (¼-¼ section) __ Present land use __ Transportation routes __ Any access restrictions __ Travel distance to and from landfill			X		
(b) Does the submittal include the following: __ Surface water drainage patterns __ Significant hydrologic features (surface waters, springs, drainage divides and wetlands) __ Areas of special natural resource interest (critical habitat or state/local natural areas) __ Historical/archaeological areas within and adjacent to proposed limits of excavation			X		
(5) FIELD AND LABORATORY INVESTIGATIONS FOR CLAY BORROW SOURCES AND SOIL BARRIER LAYER SOURCES.					
Does the submittal for soil borrow sources include field and laboratory investigations to define the physical characteristics of any clay borrow source or soil barrier layer source designated to be used for a liner or final cover?			X		
Has an alternate geotechnical investigation program been approved by the department in writing prior to the field and laboratory investigation? __ yes __ no If yes, does the report include a copy of and justification for any approved alternative geotechnical investigation program? Note: An alternative geotechnical investigation program may be submitted in cases where previous information exists regarding the proposed soil borrow source.			X		

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(a) Have the required number of test pits or borings been completed on a uniform grid pattern across the proposed borrow source(s)? __ 10 test pits/borings for the first 5 or less acres __ 1 additional test pit/boring for each additional 3 or less acres __ Proposed acreage of proposed borrow source(s) __ Number of test pits/borings required __ Number of test pits/borings made __ Have logs identifying geologic origin, testing results, USCS classification, and visual description of each major soil unit encountered also been included?			X		
(b) Does the report include Atterberg limits and grain size analyses to 0.002 mm particle size for 2 samples from each test pit/boring?			X		
(c) Does the report include the relationship of water content to dry density using either the modified or standard Proctor method (curves must be developed with a minimum of 5 points) for 1 sample from each major soil unit and no fewer than 3 samples for uniform clay deposits?			X		
(d) Does the report include laboratory hydraulic conductivity test results for each sample used to develop the Proctor curves?			X		
(6) STOCKPILING.					
Does the report include discussion of segregating stockpiled soils by USCS soil type, soil gradation, Atterberg limits and compaction specifications? Note: Stockpiling of soils obtained from clay borrow sources and soil barrier layer sources for landfill liner of final cover construction shall be conducted in an organized manner that minimizes mixing of dissimilar soil types. Soils from differing sources may not be commingled unless soil properties are similar.			X		
(7) DATA PRESENTATION FOR ALL CLAY BORROW SOURCES AND SOIL BARRIER LAYER SOURCES. Does the submittal for soil borrow sources for clay and soil barrier layers include the following?					
(a) Calculated volume of soil needed and the volume of acceptable soil available			X		
(b) Property boundaries and test pit/boring locations on a topographic map (scale: 1" = 500') that extends a minimum of 500 feet beyond the proposed borrow source			X		
(c) Isopach map showing thickness of acceptable soil			X		
(d) Description of methods for separating acceptable soil from unacceptable soil			X		
(e) Proposal for maintaining drainage and sedimentation control			X		
(f) All data from the testing program			X		

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(8) DATA PRESENTATION FOR OTHER BORROW SOURCES. Does the submittal for soil borrow sources other than those used for clay and soil barrier layers include the following?					
(a) Property boundaries shown on a topographic map (scale: 1" = 500') that extends a minimum of 500 feet beyond the proposed borrow source			X		
(b) Proposal for drainage and sedimentation control			X		
(9) STORMWATER MANAGEMENT.					
Does the submittal for a soil borrow source include a stormwater management plan that complies with the requirements of s. NR 504.09(1)(a) to (f) and (h) to (j), unless the borrow source is subject to other permits with equivalent authority and requirements, such as a stormwater discharge permit or non-metallic mining reclamation permit?			X		
(10) RECLAMATION OR BORROW SITES.					
(a) Does the report include reclamation plans for borrow sources on the landfill property that include the following: __ post-mining land use that is integrated with the existing and proposed drainage __ surface water discharge requirements __ grades and final use of the landfill Is the reclamation plan consistent with NR 135.06 to 135.12?			X		
(b) For soil borrow areas not on landfill property, is the reclamation plan consistent with NR 135? If required, has a reclamation plan been submitted and a nonmetallic mining reclamation permit been received from the appropriate regulatory authority?			X		
(11) OTHER REQUIRMENTS.					
(a) If the proposed clay borrow source(s) contains less than a five foot, but greater than 2 foot uniform clay thickness, does the report contain a construction methodology and documentation procedure to ensure the liner meets the soil index property requirements of s. NR 504.06(2)(a)?			X		
(b) Does the report include a description of measures to be taken to comply with wetlands protection requirements, runoff and sediment controls and surface water discharge permit requirements and to minimize effects on areas of special natural resource interest and historical or archaeological areas within and adjacent to the proposed limits of excavation?			X		

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
NR 512.16 ENVIRONMENTAL REVIEW. To aid the department in complying with ch. NR 150, Wis. Adm. Code, the report must include an environmental analysis (EA) section. Does the EA section include the following: Note: Information provided in previous sections of the ISR, any applicable pre-feasibility report, or the feasibility report may be referenced to satisfy this section's requirements.					
(1) PROJECT SUMMARY. Does the EA section contain a Project Summary that includes the following:					
X Brief overview of the project X Listing of statutory authority X Relevant local, state and federal permits or approvals required X Need for exemptions, zoning changes & other special permits or approvals	X			Section 10.1	
(2) PROPOSED PHYSICAL CHANGES. Does the EA section contain a brief description of the proposed physical changes that includes all of the following:					
(a) Changes in terrestrial resources to include a discussion of the following: X Quantity of soil to be excavated and the lateral extent of soil removal X Quantity and source of soils designated to be used in the construction, operation or closure of the landfill X Description of all earthen modifications (such as clearing & grubbing, excavation, soil placement needed to reach the proposed sub-base grades, construction of access roads, stockpiles and storm water controls).	X			Section 10.2.1	
(b) Changes in aquatic resources including: X Potential impacts to streams, wetlands, ponds, lakes & flowages X Discharge rates and volumes under existing conditions as well as that anticipated during active operations and following closure for: X Groundwater control structures X Leachate collection systems X Storm water control structures X Information or reports on how the proposed landfill and soil borrow sources for the first phase of the proposed landfill comply with s. 30.19 Stats., and ch. NR 103.	X			Section 10.2.2	
(c) Discussion of buildings, treatment units, roads and other structures (such as sedimentation basins and fences) to be constructed including: X size of the facilities (i.e., structures) X miles of road to be constructed:	X			Section 10.2.3	

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FEASIBILITY REQUIREMENTS	COMPLETE? Y	N	NA	LOCATION	COMMENTS
(d) Emissions and discharges (such as dust, engine exhaust, odors, noise, gases, leachate, storm water and collected groundwater) associated with the following: X Landfill preparation X Closure X Construction X Post-closure X Operation	X			Section 10.2.4	
(e) Other changes anticipated with landfill development	X			Section 10.2.5	
(f) Maps, plans and other descriptive material to clarify the discussion such as but not limited to the following: __County map X Proposed service area map X USGS map __Plat map X Zoning map __County wetlands map X Soils map X Landfill development plan	X			Section 10.2.6, Figures and Plan Sheets 1 - 29	
(3) EXISTING ENVIRONMENT. Does the EA section contain a brief description of the existing environment that may be affected that includes the following:					
(a) A description of the existing physical environment including: X Regional & local topography X Geology X Surface waters & drainage features X Hydrogeologic conditions X Air quality X Wetlands X Designated soil borrow sources	X			Section 10.3.1	
(b) A description of the following: X dominant aquatic and terrestrial plant and animal species and habitats found in the area including: X Any threatened/endangered species X Amount, type & hydraulic value of wetlands	X			Section 10.3.2	
(c) Land use including dominant features and zoning in the area	X			Section 10.3.3	
(d) Social and economic conditions including any ethnic or cultural groups	X			Section 10.3.4	
(e) Other special resources such as: X Archaeological X Historical X State/local natural areas X Prime agricultural lands				Section 10.3.5	
(4) ENVIRONMENTAL CONSEQUENCES. Does the EA section contain a brief discussion of the probable adverse and beneficial impacts including primary, indirect and secondary impacts that includes the following:					

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(a) Physical impacts associated with landfill design, construction and operation, including: X Air quality X Windblown paper X Dust X Visual impacts	X			Section 10.4.1	
(b) Biological impacts including: X Destruction and creation of habitat X Alteration of the physical environment X Impacts to endangered/threatened species	X			Sections 10.4.1 and 10.4.2	
(c) Impacts on land use	X			Section 10.4.3	
(d) Social and economic impacts (such as effects on taxes, noise, traffic and roads, and consistency with local planning and zoning) to the following groups served by the landfill: X Local residents X Communities X Cultural groups X Industries	X			Section 10.4.4	
(e) Other special resources such as but not limited to: X Archaeological X Historical X State/local natural areas X Prime agricultural lands	X			Section 10.4.5	
(f) Probable adverse impacts that cannot be avoided including: X Groundwater and surface water impacts X Modifications of topography X Soil borrow source limitations on development around the landfill X Loss of agricultural or forest land X Displacement of wildlife [in and around the landfill] X Adverse aesthetic impacts for people	X			Sections 10.4.1, 10.4.2, 10.4.3, 10.4.6	
(5) ALTERNATIVES. Does the report identify, describe and discuss feasible alternatives?					
Alternatives: X Taking no action X Enlarging, reducing or modifying the project to mitigate impacts X Other landfills, locations or methods to the proposed action and their impacts	X			Section 10.5	

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
Has particular attention been given to alternatives which might avoid some or all adverse environmental impacts, including planned and existing waste reduction & recycling, incineration, solid waste disposal, and transfer facilities that may serve to handle the waste expected to be disposed of at the proposed landfill, taking into account the economics of waste collection, transportation and disposal?	X			Section 10.5	
NR 512.17 NEED AND DESIGN CAPACITY. Note: In determining the design capacity of the proposed landfill under s. 289.29(1)(d), Stats., the department considers the effect of planned and existing waste reduction and recycling activities and other existing or proposed competing solid waste facilities, regardless of whether or not the other facilities are located within the service area, as defined under s. 289.28(1), Stats., of the proposed landfill.					
Is the proposed landfill part of a prospection or mining operation or a landfill for the disposal of waste generated by a pulp or paper mill and exempt under s. 289.28(2)? __ yes _X_ no	X				
In addition to the information specified in s. 289.28(1), Stats. (below) does the report include the following: _X_ Identification of the following activities/facilities used to manage solid wastes generated within the anticipated service area of the proposed landfill: _X_ Identification of existing waste reduction/recycling activities _X_ Identification of existing solid waste facilities _X_ Remaining design capacity of each facility identified _X_ Information for the activities/facilities, identified above, for which a significant commitment or implementation or development has been made	X			Sections 11.2.2.3, 11.2.4 and Table 11-1	
289.28(1), Stats. DETERMINATION OF NEED.					
(a) An approximate service area for the proposed facility which takes into account the economics of waste collection transportation and disposal.	X			Section 11.2 and Figure 11-1	
(b) The quantity of waste suitable for disposal at the proposed facility generated within the anticipated service area.	X			Section 11.2.1 and Table 11-1	
(c) The design capacity of the following facilities located within the anticipated service area:					
1. Approved facilities, including the potential for expansion of those facilities on contiguous property owned or controlled by the applicant.	X			Section 11.2.2.3	
2. Nonapproved facilities which are environmentally sound.	X			Section 11.2.3	
3. Other proposed facilities for which feasibility reports are submitted and determined to be complete by the department.	X			Sections 11.2.2.2 and 11.4.1	
4. Facilities for the recycling of solid waste or for the recovery of resources from solid waste which are licensed by the department	X			Section 11.2.4	

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
5. Proposed facilities for the recycling of solid waste or for the recovery of resources from solid waste which have plans of operation which are approved by the department.	X			Section 11.2.4	
6. Solid waste incinerators licensed by the department.	X			Section 11.2.5	
7. Proposed solid waste incinerators which have plans of operation which are approved by the department.	X			Section 11.2.5	
(d) If the applicant is a municipality and the need for a proposed facility cannot be established under the criteria listed under (a) through (c) above, does the report demonstrate need based on the extent to which the proposed facility is needed to replace other facilities of that municipality at the time those facilities are projected to be closed in the plans of operation?			X		
289.29(1)(d), Stats. CRITERIA FOR DETERMINATION OF FEASIBILITY.					
Does the report indicate that the anticipated site life is between 10 to 15 years for a new facility or less than 15 years for an expansion? X yes __ no	X			Section 11.5	
NR 512.18 EVALUATION OF ALTERNATIVES TO LAND DISPOSAL. Does the feasibility report contain an analysis of the alternatives to land disposal of waste, including potential and existing waste reduction, reuse, recycling, composting and energy recovery initiatives and services?					
(1) ANALYSIS OF ALTERNATIVES TO LAND DISPOSAL. Does the analysis include a discussion of the trends affecting the waste stream, an estimate of the cost per ton for each alternative, when available and an evaluation of the feasibility of implementing each potential alternative?	X			Section 12.2	
(2) EVALUATION OF IMPLEMENTING ALTERNATIVES TO LAND DISPOSAL. Does the feasibility report evaluate the feasibility of implementing waste reduction initiatives and recycling services in connection with the proposed landfill and describe any waste reduction incentives and recycling services to be provided at the proposed landfill?	X			Sections 12.3 and 12.4	
NR 512.19 NONCOMPLIANCE WITH PLANS OR ORDERS					
Does the report include the following: X Identify all persons owning a 10% or greater interest in the applicant or assets of applicant X Identify other Wisconsin solid and hazardous waste facilities owned by applicants X Indicate whether all plan approvals and orders for facilities owned by applicants are being complied with	X			Section 2.5 and Appendix F	

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FEASIBILITY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
289.24(1)(c), Stats. COUNTY SOLID WASTE MANAGEMENT PLANS					
Does the feasibility report contain a description of how the proposed facility relates to any applicable county solid waste management plan approved under s. 289.10, Stats? Note: Applicants must address all DNR approved County plans within their proposed service area.	X			Section 2.3	
289.24(1)(d) ADVISORY AND PUBLIC OPINION PROCESS					
Does the feasibility report contain a description of the advisory process undertaken by the applicant prior to submittal of the feasibility report to provide information to the public and affected municipalities and to solicit public opinion on the proposed facility?	X			Section 2.4	