

MEMORANDUM

DATE: March 11, 1996
TO: Members, Assembly Natural Resources Committee
FROM: DuWayne Johnsrud, Chair
RE: rule referral

The following Rules have been referred to our committee:

Clearinghouse Rule 95-012	Relating to bird nesting and similar habitat structures in navigable waters. Submitted by Department of Natural Resources.
Clearinghouse Rule 95-188	Relating to solid waste management. Submitted by Department of Natural Resources.

Our current review period extends through April 8, 1996. Copies of each rule summary are enclosed. Please contact my office if you would like a copy of any rule.

REPORT TO LEGISLATURE

NR 500 series
Solid Waste Management

Board Order No. SW-40-95
Clearinghouse Rule No. 95-188

Statement of Need

The NR 500 series covers solid waste management activities, particularly landfill siting, design and operation. Rule changes will directly affect the operators of landfills and other solid waste management facilities; and indirectly affect industries and municipalities that generate solid waste, and engineering design/consulting firms that perform work for landfills.

The U.S. Environmental Protection Agency published solid waste management rules under Subtitle D of the Resource Conservation and Recovery Act (RCRA) on October 9, 1991. These rules set minimum national standards that all municipal solid waste disposal facilities must meet.

Wisconsin's existing solid waste regulations met the majority of the new minimum federal requirements. Those areas in which we did not meet the minimum requirements were identified in "Wisconsin's Solid Waste Management Permit Program Application For Determination of Adequacy" submitted to EPA in July 1992. EPA granted "partial" approval to Wisconsin's solid waste program on December 29, 1992. The partial approval is conditioned on revision of our statutes and rules where necessary to meet the federal minimum standards. The necessary statutory changes were enacted on March 4, 1994.

In addition to the statutory changes required by the federal Subtitle D rules, revisions to the existing solid waste rules are also necessary for other reasons. Major revisions have not been made to the NR 500 series since its promulgation in 1988. Revisions are necessary to meet state statutory changes that occurred since 1988 (e.g., the Recycling Law, Financial Responsibility, etc.), eliminate provisions which have been found to add paperwork without substantial environmental benefit, and make design and operational changes to keep pace with new and emerging technology.

The solid waste plan review and licensing fees were last revised in 1989 and current revenue has not been sufficient to cover program expenses related to inflation and salary adjustments since 1989. The Department ended the '95 fiscal year with a negative balance. The proposed package, therefore, includes a temporary license surcharge on waste tonnage accepted at landfills which will sunset 19 months after the effective date of the rule and a temporary 2 year licensing period for all solid waste facilities with the 2-year license fee collected at the beginning of the licensing period. This is an interim solution to the revenue shortfall that has been generally accepted by the technical advisory committee which will continue working with the Department during 1996 to develop a long-term solution.

Attached is a detailed analysis of the changes in the proposed rule.

Modifications as a Result of Public Hearing

Attached is a discussion of the changes made in the proposed rule.

Appearances at the Public Hearing and Their Position

November 14, 1995 - Green Bay

In support - none

In opposition - none

As interest may appear:

Henry J. Sommer, Jr., Winnebago Co. Solid Waste, 100 W. Cty. Road Y, Oshkosh, WI
Gary R. Steede, Outagamie County, 1419 Holland Road, Appleton, WI 54911
Charles J. Larscheid; Brown Co. Solid Waste Dept., 2561 S. Broadway St., Green Bay, WI 54304
Nancy C. Christenson, Outagamie Co. Solid Waste, 1419 Holland Road, Appleton, WI 54911
Jeanine Hunkele-Knapp, Outagamie Co. Recycling Coordinator, 1419 Holland Rd., Appleton, WI
Shannon Jungwirth, Going Garbage Co., 156 Country Lane, Sister Bay, WI 54234
Herb Kramer, Winnebago Co. Solid Waste, 1283 Harold Drive, Menasha, WI 54952

November 15, 1995 - Eau Claire

In support - None

In opposition:

Darryll Farmer, Eau Claire City-Co. Health Dept., 720 2nd Avenue, Eau Claire, WI 54703

As interest may appear:

Frank Lowry, 421 Frenette Drive, Chippewa Falls, WI 54729
Kjrsten Bobb, Mid-State Assoc., Inc., 1230 S. Blvd., Baraboo, WI 53913
Steve Bischoff, Ayres Assoc., 3433 Oakwood Hills Parkway, Eau Claire, WI 53702
William Barry, Ayres Assoc., Box 1590, Eau Claire, WI
John R. Toepfer, Dairyland Power Cooperative, 3200 East Ave. South, La Crosse, WI 54601
George J. Pehler, Eau Claire Co. Supv., 3528 Trimble, Eau Claire, WI 54701
Todd Andrews, Eau Claire Co. Planning, 731 Oxford Ave., Room 1510, Eau Claire, WI 54703
William Liddle, Tri-County Disposal Inc., 1439 Steeple Drive, River Falls, WI 54022
Lynda Gehler, Shared Health Services Corp., 2635 Hemstock, La Crosse, WI 54603
Janet Pavlini, Eau Claire Co. Solid Waste Mgr., 8001 Olson Dr., Eau Claire, WI 54703

November 16, 1995 - Waukesha

In support - none

In opposition - none

As interest may appear:

Wade Scheel, Walworth Co. Solid Waste Dept., W3929 County Road NN, Elkhorn, WI 53121
Peter A. Peshek, BFI, 2 E. Mifflin St., Madison, WI 53702
Bill Uffelman, BFI, 8500 Normandale Lake Blvd., #850, Bloomington, MN 55437
William Casey, Columbia Co. Solid Waste Dept., P.O. Box 370, Portage, WI 53901
Lynn Morgan, Waste Management, W124 N8925 S. Boundary Road, Menomonee Falls, WI 53051
Donald E. Matthews, Stoughton Trailers Inc., 416 S. Academy St., Stoughton, WI 53589

Response to Legislative Council Rules Clearinghouse Report

All of the comments were incorporated, except where the suggested changes would alter the intent of the rule, not be consistent with wording taken directly from other sources such as federal or other state rules, or incorporation of the suggestion would have made the rule more difficult for our customers to understand. Examples of these comments are:

1. There were a number of suggestions made in regard to the large number of definitions in the code. These definitions have been developed over the years in response to our customers request for clarity. New definitions such as "holocene" and "karst terrane" and "bird hazard" were included in response to federal requirements. Definitions that reference a Wisconsin statute are for our customer's convenience.

2. Throughout the rule there are references to requesting and receiving a variance from particular rule requirements. The basis for granting a variance is spelled out in s. NR 500.08(4), (5) and (6). For clarity reasons we have not repeated this language throughout the code.

3. The applicability section of each chapter contains a paragraph which states which activities are regulated under the wastewater rule rather than the solid waste rules. The final sentence states that treatment sludge disposal activities are regulated under the solid waste rules. This refers to disposal of sludge in a landfill and is consistent with current practices.

4. The term "in-situ" has been used in our code where it refers to requirements found in the NR 700 series. To be consistent, we have continued the use of this word rather than attempt to replace it with an English synonym.

Final Regulatory Flexibility Analysis

The Department does not believe that the proposed revisions will have a significant economic impact on a substantial number of small businesses. In general, these revisions affect municipalities and large businesses (landfills). Many of the revisions were made to exempt smaller, recycling or beneficial reuse related facilities which should have a positive economic impact on small businesses involved in this aspect of solid waste management.

A. Rule Changes Necessary To Meet Federal Minimum Requirements

This rule package proposes to make changes in 6 major areas to meet minimum federal criteria. Federal requirements are generally incorporated without modification. In a few cases they are modified to more efficiently coordinate with existing State regulations. A summary of the rule modifications that are different from the federal standards and explains the reasons for their differences is attached. Please note that many of the federal requirements are currently being followed by landfills in Wisconsin and minimum federal requirements apply only to landfills which accept municipal solid waste.

B. Rule Changes to Incorporate State Statutory Changes

This rule package incorporates statutory requirements that have been enacted since 1988. Changes to the landfill siting process involving mandatory initial site reports have been incorporated. Financial responsibility for landfill long term care has been extended to 40 years. Landfill bans involving recyclable materials have been added to the rule. Landspreading of clean wood ash for agricultural purposes has been exempted from the licensing process and is now exempt by rule. A summary of the statutory changes is attached.

C. GENERAL REVISIONS

Revising the existing rules to meet Federal and State statutory changes also provides a unique opportunity to review all provisions of the rule and look for ways to streamline the regulatory process. Changes are made to make the code easier to use for the public as well as introduce more efficiency in the way the department operates. This was accomplished in four major areas:

a) Identify and eliminate requirements which have been found to be unnecessary to protect public health and the environment such as exemptions for use of crushed glass in asphalt pavement, old railroad ties and utility poles as landscaping timbers, chipped wood and bark for trails and other landscaping purposes and wood ash for agricultural landspreading. For a more comprehensive listing, please refer to the summary of individual rule chapters provided on pages 3 through 12 of this memo.

b) Reduce the level of effort required for both the regulated community and the Department, where appropriate, without presenting a significant increase in risk to the public or the environment. Examples include combining the initial site inspection, plan review and licensing of minor solid waste facilities into one step and eliminating plan review for community yard waste composting operations. For a more comprehensive listing, please refer to the following summary of individual rule chapters.

c) Improve the organization and wording of the code to make it easier to understand and use, and

d) Add detail to the code to make it more efficient for applicants to use and the Department to implement.

There are many ways in which the code has been revised to increase its efficiency. Where possible, landfill design and construction documentation requirements are standardized to provide clear direction and consistent application for landfill owners and their engineering consultants, as well as simplify and speed up the department's plan review activities. Provisions are maintained for alternate designs to recognize unique situations and avoid stifling technological progress. Opportunities are provided for greater regulatory flexibility by subdividing facility categories to better relate the level of regulation to the risk posed by the activity and reduce over regulation.

Also, exemptions are provided for activities and wastes which do not pose a significant threat to human health and the environment.

The rule package reflect a greater emphasis on pollution prevention, to help avoid the tremendous costs of remediation that are incurred when problems are not caught and corrected at an early stage. The burden of responsibility is shifted to require greater accountability for the owner and consultant for construction and site operations. This should reduce the reliance on the department to find and correct problems and also result in a reduction in the amount of time and effort spent on enforcement problems. By placing more accountability on design professionals, we are thereby able to spend less time reviewing inadequate plan submittals. A summary of the proposed revisions to individual rule chapters is presented below.

NR 500 - GENERAL SOLID WASTE MANAGEMENT REQUIREMENTS

- A number of definitions are added to the code to clarify code requirements in the areas of groundwater sampling and testing; special wastes such as asbestos, construction and demolition, composting and recycling; and site investigation and remediation. Many of the financial responsibility definitions are eliminated due to simplifications that were made to that portion of the code.
- Changes are made to reflect our current procedure of invoicing fees.
- A requirement is added for a certification statement from professional engineers and professional geologists to be included with plan submittals. This statement is based on a statement for professional engineers incorporated into the recently promulgated NR 700 Series of codes and ch. 443, Stats.
- Exemptions are added for waste reuses which do not warrant regulation. Examples include using crushed glass in asphalt pavement, using old railroad ties and utility poles as landscaping timbers, and chipped wood and bark used for trails and other landscaping purposes.

NR 502 - SOLID WASTE STORAGE, TRANSPORTATION, TRANSFER, INCINERATION, AIR CURTAIN DESTRUCTORS, PROCESSING, WOOD BURNING, COMPOSTING AND MUNICIPAL SOLID WASTE COMBUSTORS

- This chapter is reorganized to make it easier for the public to understand and the department staff to implement. General requirements that are applicable to all facilities are placed at the beginning of the chapter to avoid repetition. Locational criteria are revised to be more consistent and reflective of the potential impacts of the activity. In most cases this results in less restrictive criteria. For many of the less complex facilities the licensing process is simplified to provide for issuance of the license at the same time that the initial site inspection is performed.
- A new section addressing yard waste composting operations is added. Under the current code these activities are included with processing facilities and the requirements are overly broad. The new section sets out good management practices for design and operation of the sites which gives clear directions to municipalities and eliminates plan review by the department for all but the largest facilities. This section also sets out exemptions for on-farm composting and provisions for establishing food waste composting sites.
- Changes are made to the municipal waste combustor section to comply with a U.S. Supreme Court decision which overturned our previous rule exempting combustor ash from hazardous waste regulations. Some provisions are also dropped that resulted in paperwork without a tangible environmental benefit. The requirement to test combustor ash for dioxins is eliminated based on an evaluation of the data received over the past three years.

- Exemptions are added for facilities which only handle used oil for recycling purposes and meet the requirements of NR 590 (used oil management standards). References are also added for activities which now fall under NR 700 (investigation and remediation of environmental contamination).

- One time disposal and small size construction and demolition landfill regulations are moved from this chapter into NR 503. These are disposal facilities and do not fit in this chapter which regulates non-landfill activities.

NR 503 - ONE TIME DISPOSAL LANDFILLS, SMALL SIZE CONSTRUCTION AND DEMOLITION LANDFILLS, AND INTERMEDIATE SIZE CONSTRUCTION AND DEMOLITION LANDFILLS

- This is a newly created chapter which combines construction and demolition (C&D) waste regulations previously found in NR 502 with a new category of C&D landfills that range in size from 50,000 to 250,000 cubic yards. This category is created to allow these mid-sized sites to be exempted from the rigorous landfill siting process while maintaining necessary environmental controls. These sites are expected to serve rural areas and demolition contractors.

- Minor revisions are made to the existing one time disposal and small C&D landfill requirements. The approval and licensing process for one time disposal sites is simplified. The rules regarding asbestos are relaxed to allow C&D landfills to accept certain types of non-friable asbestos commonly found in homes (linoleum tile, mastic, roll roofing, etc.). Waste screening plans are now required for small demolition landfills to help reduce unauthorized waste which could cause environmental problems. The groundwater monitoring requirements are standardized for small demolition landfills. All landfills in this chapter must now submit an affidavit of site registry so that this information is available for future property purchasers.

- A category of intermediate size C&D landfills is created to allow greater flexibility for communities and contractors beyond what is currently available in the small size C&D category. Landfills in this category are exempted from the siting process (public notification procedures are specified) but must follow design and operational practices which are protective of the environment. This section is developed as a "stand alone" section to make it easier for C&D landfill operators to use. Because of this approach (we tried to avoid cross referencing to other chapters as much as possible), this chapter is lengthy. This section also encourages the recycling of C&D waste but does not mandate it.

NR 504 - LANDFILL LOCATION, PERFORMANCE, DESIGN AND CONSTRUCTION CRITERIA

- The experience we have gained with clay liner and cap construction has allowed us to relax the existing clay soil specifications. The minimum clay content is eliminated. The Atterberg limits for the soils are reduced to recognize the successful use of marginal soils with improved construction techniques. An alternative specification to compaction has been developed through the University of Wisconsin - Department of Civil Engineering and is described in the code. This will allow the landfill owner/consultant greater flexibility in certifying proper liner construction. Provisions are added regarding acceptable equipment weight for constructing the clay liner to ensure that the clay is remolded and secondary permeabilities which can lead to liner leakage are eliminated.

- Details regarding geomembrane construction are added to clarify industry accepted techniques for avoiding problems with the liner. These include subsurface preparation, seam welding techniques, elimination of folds which cause membrane failure, and protection of the membrane after it has been installed.

- Many of the design features of the leachate collection system are standardized based on our experience over the last 15 years. These include pipe trench designs, secondary containment

around leachate transfer lines, the use of sideslope extraction risers at composite lined landfills, the maximum distance leachate must travel before it is collected in a pipe, and the maximum length of leachate lines based on the ability to effectively maintain them during the life of the landfill and after closure. Because of these changes computer modeling of leachate generation (water balance prediction) and liner efficiency is eliminated.

- The final cover systems are revised to allow more explicit design flexibility for low strength wastes such as paper mill sludge. The existing rooting/freeze thaw layer are modified to incorporate drainage material directly over the geomembrane to prevent slip surface failures and the total layer thickness fixed at 30 inches rather than the range of thicknesses in the present code.
- More specificity is provided for active gas extraction system design components based on our experience over the previous 7 years. This will provide designers with the basic framework parameters necessary to develop a site specific design. There are also requirements that specifically address gas condensate collection and flaring of the collected gas to meet air management regulations. Provisions are added that address passive gas venting systems for industrial landfills that did not warrant a full active system.
- Design provisions for stormwater control are expanded to meet the requirements of the NR 216 program. By incorporating these requirements into the landfill rules, the landfill owner will not be required to obtain a separate stormwater control permit. These provisions include both initial construction events and permanent erosion control measures. Some of the stormwater control measures have been added to comply with federal Subtitle D requirements.
- Other miscellaneous changes include eliminating the requirement to build screening berm around the active area of the landfill, setting a maximum outboard slope of 6:1 for low strength wastes, allowing industrial landfills to accept limited amounts of production related packaging waste without being subjected to more stringent municipal waste rules, and moving most of the municipal waste combustor ash rules to NR 502 for clarity.

NR 506 - LANDFILL OPERATIONAL CRITERIA

- A section is being added regarding procedures for the use of alternate daily cover. This is currently handled on a case by case basis and the codification will streamline this. A provision is also added to allow the department to issue generic, statewide approvals for materials demonstrated to be effective for this use.
- General operational changes include cross references to the operator certification code, erosion control maintenance procedures that meet NR 216 requirements, relaxation of the deadline by which an exposed liner must be covered before winter, and an explicit statement that landfills may only accept waste from licensed solid waste haulers or others that are exempt from the licensing requirements. The proposed rules also provide specific steps that can be taken to meet EPA's random load inspection requirement, but allows landfills to develop alternate programs if they are more appropriate.
- Special wastes are addressed in a number of ways. If the landfill owner develops a special waste plan, then pre-approval of new waste streams are required only if they will constitute a significant percentage of the total design capacity of the landfill or if they would present a significant environmental concern. This provision could significantly reduce existing paper work and delays. The asbestos regulations have been changed to more closely mirror air management regulations (and provide a smooth transition between the air and solid waste codes) and reduce current strict requirements for lower risk non-friable asbestos containing material. Provisions from NR 590 are incorporated which allow disposal of minimal quantities of oil contaminated media (oil absorbants) in landfills.

- A new section is added addressing acceptance of petroleum contaminated soil at landfills which reflects requirements contained in NR 722 (standards for selecting remedial actions) and NR 419 (control of organic compound emissions). It also restricts a landfill from accepting soil with more than 2,000 ppm of organics unless no reasonable alternative is available. This provision is intended to prevent highly contaminated soils from potentially causing problems with landfill leachate at wastewater treatment plants.
- A landfill compliance certification and audit section is included which allows the department to require landfill operators to do an annual certification of compliance with solid waste regulations and approvals. A provision is also added which specifies procedures for performing landfill audits, including information to be made available to the department following a 30 day notification. The purpose of the audit is to prevent minor problems from developing into major problems that become prohibitively expensive for the landfill owner to remediate and often lead to protracted enforcement proceedings. Periodic audits are a good business practice and serve to demonstrate to a skeptical public that landfills are operating in an environmentally sound manner.

NR 507 - ENVIRONMENTAL MONITORING FOR LANDFILLS

- This chapter is created by separating the existing NR 508 environmental monitoring requirements from the remedial action regulations. The environmental monitoring requirements are being extensively modified to comply with federal Subtitle D requirements yet provide continuity with existing monitoring plans and Wisconsin's groundwater law. The rules minimize the number of wells potentially subject to extensive federal Subtitle D assessment monitoring.
- Monitoring requirements are standardized, and tables are included to clearly delineate requirements for background and detection (routine) groundwater monitoring. Tables are also included for lysimeter and leachate monitoring. Various parameters are dropped and added to the monitoring programs to make them more reflective of contaminants of concern. For example, iron is subject to natural variation and can cause considerable paper work in following up on exceedances that are not environmentally significant. The other detection parameters have been effective in identifying groundwater contamination, so iron has been eliminated. Appendices are also being added in response to numerous questions the department receives regarding the specific list of volatile organic compounds and proper methods for testing. Several analytical methods have been added to the lists in the appendices. These methods increase the number of acceptable options and do not change previously acceptable methods.
- Regulations regarding well construction and abandonment that duplicated other codes are removed and replaced by cross references. Commonly used forms for boring logs, well construction and well abandonment, etc. are included for the benefit of owners and consultants. Specific requirements formerly in the code in narrative form are condensed onto the forms for clarity and easier use.
- The frequency of groundwater monitoring is reduced from quarterly to semi-annually. This will result in substantial cost savings without significantly reducing the effectiveness of the monitoring program.
- Electronic data submittal is required for larger landfills and encouraged for smaller landfills. This is expected to reduce current paper work and the double handling of data.

NR 508 - RESPONSES WHEN A GROUNDWATER STANDARD IS ATTAINED OR EXCEEDED

- The in-field conditions report that is required under the existing NR 508 is eliminated and replaced with cross references to NR 700 (investigation and remediation of environmental contamination) to provide a consistent response to groundwater contamination. The remainder of NR 508 consists of

requirements for complying with federal Subtitle D requirements if assessment monitoring is triggered. These provisions build in some flexibility in the parameters that are tested for and the action taken based on the type of parameters that trigger assessment monitoring.

NR 509 - INITIAL SITE REPORTS FOR LANDFILLS

- This is a new chapter created to consolidate initial site inspection requirements with a reduced scope initial site report. This chapter spells out the information needed to be submitted by the applicant regarding endangered resources, historical concerns, airports and other locational setbacks that could impact the siting of a landfill. The chapter also specifies the information needed to assess non-commercial soil borrow sources proposed for landfill construction.
- The initial site report was originally developed as a screening tool to allow an owner to receive an opinion from the department on whether a site had potential for development as a landfill before committing to the cost of a feasibility report. Many requirements originally in the feasibility report were gradually being moved into the initial site report and reducing its effectiveness as an inexpensive screening tool. The proposed revisions to this chapter significantly reduce existing requirements and thereby return this report to its original purpose.

NR 510 - PRE-FEASIBILITY REPORTS FOR LANDFILLS

- The pre-feasibility report is an optional report which is created to allow a landfill applicant to submit site specific geotechnical information to the department for an opinion on site suitability prior to committing the level of funding necessary for a full feasibility study. The level of information contained in a pre-feasibility report is similar to the currently required initial site reports which are being submitted and reviewed under the existing rules. The advantage of the pre-feasibility report option is that it allows the applicant to reduce the economic risk of proceeding directly from the reduced scope initial site report (ISR) to a feasibility report.
- The pre-feasibility report requirements are from the existing ISR requirements but are significantly reduced. These reductions include dropping preliminary design information and the preliminary needs assessment; removing requirements for information addressing bedrock texture, regional groundwater gradients, and groundwater recharge and discharge areas; a reduction in the number of borings and wells; relaxed well placement requirements outside of the proposed site footprint; and elimination of lab conductivity testing and groundwater flow cross-sections. The chapter also clarified that the performance of existing landfills proposing to expand must be evaluated and include existing site data on cross sections and topographic maps of the proposed expansion.

NR 512 - FEASIBILITY REPORTS FOR LANDFILLS

- Revisions to this chapter allow items already addressed in an initial site report to be cross referenced rather than included with the feasibility report, eliminate alternative requirements for small landfill feasibility reports, reduce the section on land use requirements, and eliminate the regional geotechnical information section since it is addressed in NR 509.
- The site specific geotechnical section is revised to reduce the number of required borings, clarify well nest requirements, eliminate laboratory testing requirements for coarse-grained soils, and limit the number of water elevation readings that must be taken.
- Requirements are eliminated for Munsell soil color identification, mixing zone calculations beneath the landfill and water balance modeling. Requirements are reduced for waste characterization, the preliminary design section, the number of plan sheets, environmental assessment information, and the recycling alternatives section. The landfill needs assessment language is reworded to make it more workable and leachate prediction calculations are standardized.

- Requirements for clay borrow source investigation and testing are significantly reduced.

NR 514 - PLAN OF OPERATION AND CLOSURE PLANS FOR LANDFILLS

- Water table contour maps are eliminated as well as the monitoring plan sheet. Closure plan requirements are severely reduced.
- Requirements for stormwater management features are included and wording requiring an explanation of the design rationale is clarified to specific features. Information necessary for evaluating proposed co-disposal of industrial and municipal waste is listed.
- A section is added to specify the submittal of geomembrane information, including design and construction features, for landfills required by federal Subtitle D to have composite liners and caps. Provisions are made for allowing a phased closure of the landfill which allows for more efficient use of construction equipment and materials, and stabilization of the site prior to installation of the final cap.
- An expedited plan modification process is included for activities which pose a low potential risk of adverse impacts on public health or the environment. This process requires notification of the proposed change to the department by the landfill owner and automatic approval of the change if the department does not object within 30 days.
- Requirements for development of a plan to handle municipal waste combustor ash are reduced.

NR 516 - LANDFILL CONSTRUCTION DOCUMENTATION

- Provisions are added to this chapter to strengthen the certification requirements and provide greater accountability for the engineering professionals that oversee site construction. Construction events are specified for which a professional engineer (PE) or a technician under a PE's direct supervision must be present. The certification section of the documentation report must be signed by all PEs who oversee site construction, with a listing of the construction events that each person was responsible for.
- The existing practice of requiring preconstruction meetings and reports for all construction that involves geomembranes is being codified. This practice has been extremely beneficial for both the landfill owner and the department in reaching agreement on the construction details prior to doing the work. It also facilitates department review of the completed construction documentation, leading to quicker turnaround of approvals when time is critical.
- The code is updated with specific requirements for geomembrane testing and documentation. These requirements are developed based on industry experience with geomembrane installation over the last 10 years and have generally been used on a case by case basis for Wisconsin landfills over the past 5 years. There is also a requirement for providing summary reports for geomembrane installation as part of the documentation report.
- Details are added specifying the documentation information necessary for gas extraction systems. By standardizing these requirements it will be clearer for the landfill owner and engineering consultant to prepare the report.

NR 518 - LANDSPREADING OF SOLID WASTE

- An exemption is added to this section which allows the landspreading of ash from burning clean wood in accordance with good agricultural practices. The exemption also allows the landspreading of ash from burning wood contaminated with adhesives, markers and other materials if the ash

quality is not significantly affected. This will allow businesses and industry which use wood as a boiler fuel to beneficially reuse the ash for its lime and potash value.

- An existing exemption for landspreading lime sludge produced as a by product of the paper making industry as a substitute for agricultural lime has been revised to include current producers of the sludge.

NR 520 - SOLID WASTE MANAGEMENT FEES AND FINANCIAL RESPONSIBILITY REQUIREMENTS

- The complicated mathematical formulas for calculating financial responsibility fund amounts are eliminated in favor of a streamlined narrative. The department has already been using a new computer spreadsheet format following this approach that is much easier to use for the landfill owners.
- A table showing closure and long term care requirements is added to provide clarity, making it easier for landfills to correctly determine which regulations applied to their landfill. This table also incorporates statutory changes and federal Subtitle D changes.
- Wording is revised which requires landfill operators to identify if they propose to use captive insurance companies (companies which are substantially owned by the landfill owner/operator) to provide proof of financial responsibility. If so, the department will ask the Office of Commissioner of Insurance to perform a financial analysis of the proposed insurer and to issue a recommendation as to their ability to provide the required coverage. The Department will enter into a memorandum of understanding (MOU) with the Office of Commissioner of Insurance to establish procedures for implementing this partnership.
- No more than \$100,000 in cash and certificates of deposit may be kept in any one financial institution in establishing financial responsibility to assure that all fund accounts are insured by the Federal Deposit Insurance Corporation.
- The license issuance procedures are modified to require a two year license period for October 1996 to September 1998, with collection of fees prior to issuing the license. A temporary license fee surcharge based on waste disposal tonnage will also be added for a eighteen month period. Both of these provisions will sunset by Sept 30, 1998. In addition, fees are established for newly created categories of landfills such as intermediate size construction and demolition waste landfills. At this time, it is our understanding that our customers recognize the need for the temporary license fee surcharge and are not opposed to it. For details, please also see section D, public hearings and comments summary under item (f).

NR 524 - TRAINING AND CERTIFICATION REQUIREMENTS FOR SOLID WASTE DISPOSAL FACILITY OPERATORS

- This chapter is revised to incorporate the new category of intermediate size construction and demolition waste landfills. It identifies this category of landfills as subject to the training and certification requirements.

NR 526 - MEDICAL WASTE MANAGEMENT

- Minor wording changes are made to clarify areas of the code which have caused confusion with the public, including the circumstances under which refrigeration is necessary for infectious waste. A discrepancy between due dates for information which is to be submitted on the same form is corrected.

NR 605 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

- The exemption from hazardous waste regulations for municipal waste combustor ash is being eliminated to comply with a US Supreme Court decision.

NR 150 - ENVIRONMENTAL ANALYSIS AND REVIEW PROCEDURES FOR DEPARTMENT ACTIONS

- Changes are made to the type listings to reflect updated cross references. The issuance of exemptions (for beneficial reuse of high volume industrial waste and low hazard waste) is changed from a Type III action (issuance of a news release or public notice) to Type IV (no action). Wording is also added clarifying the definition of a large non-landfill solid waste facility vs. a small facility.

FEDERAL SUBTITLE D REQUIREMENTS

1. Subpart A - Definitions

The following definitions are modified or created:

- Municipal Waste Landfill [currently defined in State Statutes]
- Household Waste [currently defined in other State rules]
- Uppermost Aquifer [currently defined in other State rules]
- Airport [adopt the definition used in the federal rules]
- Fault [adopt the definition used in the federal rules]
- Displacement [adopt the definition used in the federal rules]
- Holocene [adopt the definition used in the federal rules]
- Seismic Impact Zone [adopt the definition used in the federal rules]
- Maximum Horizontal Acceleration [adopt the definition used in the federal rules]
- Lithified Earth Material [adopt the definition used in the federal rules]

2. Subpart B - Locational Criteria

The following locational criteria are modified or created:

- Airport Safety [our current setback has been modified to meet the federal criteria]
- Wetlands [specifically references the NR 103 requirements]
- Fault Areas [adopt the criteria used in the federal rules]
- Seismic Impact Zone [adopt the criteria used in the federal rules]
- Unstable Areas [adopt the criteria used in the federal rules]

A provision has been added to our rules which requires existing units that violate the airport, floodplain, or unstable area criteria to close by October 9, 1996 unless a demonstration can be made that there is no available alternative capacity and that there is no immediate threat to human health and the environment. If the demonstration can be made, then we can extend the closure deadline for up to 2 years.

3. Subpart C - Operating Criteria

The following operating criteria are modified or created:

- Procedures which exclude hazardous waste from landfills, including random inspections, record keeping, training and notification, have been added to NR 506 & 514.
- Quarterly monitoring for explosive gasses has been added to NR 506, 508, and 514.
- The provisions in NR 506 which allow open burning of waste at a landfill have been eliminated.
- The provisions in NR 504 & 514 that require that runoff control structures be designed for a 10 year storm recurrence have been changed to 25 year storms for actively landfilled areas.
- The provisions in NR 506.13 which allows acceptance of liquids have been modified to prohibit large quantities of bulk liquids.
- The provisions in NR 506 which require records to be maintained at the landfill have been expanded to include federally required items.

4. Subpart D - Design

- The design standards in NR 504 have been modified to require a composite liner (the currently required 5 foot thick clay liner has been changed to 4 feet of clay and a 60 mil HDPE geomembrane) and cap for all newly constructed landfill units.

5. Subpart E - Groundwater Monitoring and Corrective Action

- The currently required groundwater monitoring parameters have been modified to include volatile organic compounds (VOCs) in the detection monitoring and provisions have been added to require specific assessment monitoring procedures if the detection monitoring identifies a problem.
- The current provisions have been modified to require that all landfills perform groundwater monitoring.

6. Subpart F - Closure and Post Closure

- The provisions of NR 520 have been amended to require financial responsibility if corrective action is required at a landfill.
- The provisions for capping in NR 504 & 514 have been modified to require a composite (clay and geomembrane) cap.
- The provisions in NR 520 have been modified to require deed notations for non-approved sites as well as approved sites.
- The provisions in NR 520 for financial responsibility have been changed to include non-approved sites.

COMPARISON OF STATE AND FEDERAL REQUIREMENTS

A. NEW RULE PROVISIONS THAT ARE MORE STRINGENT THAN MINIMUM FEDERAL STANDARDS

A Side-By-Side Comparison

Procedures for excluding the receipt of hazardous waste. Subtitle D requires that landfill owners implement a program for detecting and preventing the disposal of regulated hazardous waste and PCB containing waste. The program must include random inspections (unless the owner can demonstrate that incoming loads do not contain these wastes), records of the inspection, training of facility personnel, and notification procedures if unauthorized waste is discovered.

NR 506.16 establishes requirements for random load inspections including defining how often the inspections must be done. The information necessary for record keeping is listed. Training is cross-referenced to operator training requirements in NR 524. Notification procedures for unauthorized waste are specified including the handling of rejected waste. The rule includes all unauthorized waste, not just hazardous and PCB waste. The rule allows the owner to implement alternative procedures.

Reason for Difference: The federal requirement is vague and provides no framework to a landfill owner. NR 506 sets out clear criteria that a landfill owner can use to demonstrate that the landfill is in compliance with this provision. It also provides the flexibility for a landfill owner to develop an alternate program which better fits the situation at a particular landfill. The types of unauthorized waste that are to be identified in a random inspection include wastes that are banned from landfills by statute such as appliances, waste oil and lead acid batteries as well as wastes banned by administrative rule such as free liquid waste.

Run-on/Run-off control systems. Subtitle D requires that landfill owners design, construct and maintain a system to intercept stormwater prior to running onto the landfill and prevent waste contaminated stormwater from escaping from the landfill.

NR 504.09 and NR 506.07 contain the requirements for stormwater control system design and maintenance. These sections include provisions for compliance with NR 216 stormwater and erosion control requirements which are more explicit than the Subtitle D requirements.

Reason for Difference: By incorporating requirements necessary for a landfill to meet NR 216 requirements for stormwater and sediment control into the landfill rules, a landfill owner will not have to obtain a separate stormwater permit. This streamlining of the process allows the landfill owner to coordinate his permit requirements with a single Department contact.

Design criteria. Subtitle D sets minimum design standards for a landfill, with a composite liner consisting of a geomembrane overlying at least two feet of compacted clay meeting a 1×10^{-7} permeability specification. Subtitle D also requires that the landfill final

The existing code (NR 504) requires a landfill liner designed with a 5 foot thickness of recompacted clay meeting a 1×10^{-7} permeability specification. This requirement is being revised to 4 feet of compacted clay under a geomembrane. The final cover (cap)

Reason for difference: Extensive research at the University of Texas and University of Wisconsin has demonstrated that thin clay liners are susceptible to construction and material irregularities such that permeability requirements cannot be met. Every thin liner investigated was found to have failed. By constructing a thicker liner the potential for failure due to irregularities is significantly reduced and there is a much greater probability that permeability specifications will be met. In Wisconsin, recently constructed composite liners (geomembrane overlying 4 feet of clay) have been able to consistently meet the permeability specification. The proposed cap requirements are more specific than the general federal wording so that a landfill owner has a clear understanding of what is necessary to be in compliance.

Environmental monitoring. Detection monitoring: Subtitle D requires semi annual sampling of 15 metals and 47 volatile organic compounds (VOCs). No leachate or lysimeter monitoring is required. Assessment monitoring: requires sampling of 213 compounds in groundwater. Subtitle D requires that the sampling and analysis program include procedures and techniques for quality assurance and quality control.

NR 507 detection monitoring requires semi annual sampling of 7 inorganic parameters and 39 VOCs. Leachate and lysimeter monitoring is required. Assessment monitoring: allows the option of sampling only for compounds found in leachate or sampling for all 213 compounds. NR 507 also includes provisions for quality assurance and quality control.

Reason for Difference: The existing code calls for monitoring of leachate and lysimeters on a case by case basis. Currently landfills are monitoring a wide array of parameters. The code standardizes the monitoring programs. Sampling leachate will allow owners or operators to reduce their groundwater assessment monitoring. The reduced level of groundwater detection monitoring in the proposed state rules was acceptable to EPA based on Wisconsin's experience with groundwater monitoring and Wisconsin's use of lysimeter and leachate monitoring to supplement the groundwater monitoring information. The provisions for quality control are needed to make our rules consistent with the requirements of NR 149 and EPA-SW 846.

Financial assurance for post closure care. Subtitle D requires landfill owners to establish financial assurance for 30 years of post closure care.

NR 520 proposes a 40 year post closure care period.

The 40 year period is required by state statute [s. 144.441(2)]. The statutory change was enacted in 1989 based on a recommendation by a legislative committee on landfill siting and reaffirmed in 1991 by a Governor's committee on financial responsibility.

B. SIGNIFICANT RULE CHANGES WITH NO FEDERAL EQUIVALENT

Exemptions (yard waste, glass, wood ash, etc.)

Engineering certification

Non-disposal solid waste facilities (transfer, storage, processing, etc.)

Yard waste composting

Construction and demolition waste landfills

Clay and geomembrane design and installation specifications

Gas extraction design and installation

Leachate collection system design and installation

Landfill bans on certain recyclable material

Setbacks to water supply wells and surface water

Asbestos handling

Petroleum contaminated soil

Landfill performance evaluation

Initial site inspections

Initial site reports

Feasibility reports (needs, alternatives analysis)

Plan of operation reports

Construction documentation

Landspreading wood ash

License fees

NOTE: These rule changes are discussed in more detail in Section II. C. of the Background Memo.

STATE STATUTORY REQUIREMENTS

1. Siting Process

The following sections have been modified:

- Initial Site Reports (ISR) which were formerly optional are now mandatory [NR 509]
- Procedures for determining "completeness" of an ISR submittal have been added to the code [NR 509]

2. Financial Responsibility

- Long term care funds must be established for a 40 year time period rather than the previous options of 20 or 30 years [NR 520]
- Non-approved landfills that were previously not subject to financial responsibility requirements must now establish funds [NR 520]
- Landfill owners are now perpetually responsible for care and maintenance of their landfills and the State no longer takes over responsibility for landfills at the end of the long-term care period [NR 520]

3. Recycling Bans

- The existing code has been revised to prohibit disposal of waste oil in landfills as well as establish criteria to differentiate bulk oil from absorbed oil from spill events. [NR 506]
- The existing code has been revised to prohibit disposal of lead/acid batteries and major appliances in landfills and prohibit their burning in incinerators [NR 500, NR 502.14, & NR 506]
- The existing code has been revised to prohibit disposal of yard waste in landfills and prohibit burning of yard waste without energy recovery [NR 500, NR 502.14, & NR 506]
- The existing code has been revised to prohibit disposal of aluminum containers, corrugated paper board, foam polystyrene packaging, glass containers, magazines, newsprint, office paper, plastic containers, steel containers, bi-metal containers and tires from landfills unless they are generated by a community with an effective recycling program [NR 500 & NR 506]
- The existing code has been revised to prohibit all of the above items from incinerators unless they are generated by a community with an effective recycling program, except that tires from any source may be burned in an incinerator with energy recovery [NR 500 & NR 502.14]
- The existing code has been revised to specify criteria for material that can be accepted at a solid waste wood burning facility [NR 502]

- Provisions have been added requiring landfills to use foundry sand or automobile shredder fluff as a daily cover substitute if requested by a foundry or auto salvager [NR 506 & NR 514]

4. Wood Ash Landspreading

- Landspreading of clean wood ash has been exempted from licensing and plan review requirements and may now be landspread for agricultural purposes such as soil conditioning (lime addition) or soil fertilizer (potash). Good agricultural practices have been listed in the code [NR 518]

PUBLIC HEARINGS COMMENT SUMMARY

On November 14, 15 and 16th, public hearings on proposed revisions to the NR 500 series were held at three locations --Green Bay, Eau Claire and Waukesha. Attendance was rather limited (9, 9, and 12 people, respectively), and the comments were generally similar to those discussed with the technical advisory committee during the rule drafting process. We also received written comments from our customers-- Wisconsin Manufacturing and Commerce, Wisconsin Utilities Association, Wisconsin Paper Council, Solid Waste Association of North America, Wisconsin Counties Association, Wisconsin Counties Solid Waste Managers Association, Browning-Ferries Industries, Waste Management of Wisconsin Inc., many individual counties and several comments on the Columbia County municipal solid waste compost landspreading.

Due to the significant nature of the comments, we held meetings with specific customer interest groups and we also met with our Technical Advisory Committee 3 times during and after the public comment period to discuss the issues that were raised. As a result of these meetings, significant changes were made in key areas relating to streamlining and reducing the regulatory burden without diminishing environmental protection. We believe that all major issues have been resolved.

The most significant public comments and the Department's responses can be categorized as follows:

a) Streamlining the plan review process -- There were a number of concerns expressed regarding the Department's plan review workload and the inability under the existing rules for the landfill owner to proceed with changes in the site design or operation until approval is received from the Department. This can result in delays in implementing improvements. Although the commentators agreed that Department review of significant changes is desirable, they felt that minor changes should not receive the same level of effort. We agreed and revised the proposed rules to include an expedited plan modification process for minor changes that do not have the potential to significantly impact public health or the environment. The process includes a notification to the Department of the proposed changes and approval becomes automatic if the Department does not object. The rule specifies the general categories of plan modifications that would be appropriate for the expedited process as well as a dispute resolution process if the Department does object. The rule was also modified to allow landfill operators to begin filling operations in newly constructed phases at their own risk if the Department did not respond to the Construction Documentation report within 60 days.

b) Landfill evaluation -- A landfill evaluation section was initially proposed which would require landfill operators to do periodic formal evaluation reports of the performance of their landfills and certify compliance with solid waste regulations and approvals. The evaluation report was proposed to be done routinely every three years although the department could require more frequent evaluation reports if the landfill was having compliance problems. The purpose of the evaluation was to prevent minor problems from developing into major problems that become prohibitively expensive for the landfill owner to remediate and often lead to protracted enforcement proceedings. Periodic performance evaluations are a good business practice and serve to demonstrate to a skeptical public that landfills are operating in an environmentally sound manner. This requirement was viewed by some as creating an additional report for the landfill owner to write and the Department to review, with little practical environmental benefit. To address the concerns that were raised, the department has revised this section to eliminate the performance evaluation report and replace it with a simplified compliance certification. In addition, it sets out a clear procedure for the department to perform environmental audits at a landfill on a case by case basis. The compliance certification approach shifts the responsibility of meeting environmental standards from

the department to the owner and allows the department to focus environmental audits on problem landfills.

c) Additional flexibility for statute-mandated items -- There were many comments regarding streamlining of the landfill siting process. We were unable to implement some of the suggested revisions because the provisions were based in statute. The prominent areas that were discussed included making the initial site report voluntary rather than mandatory. This would allow a landfill owner to accept the risk of committing funds to a feasibility study for a site that may not be acceptable. Legislation that requires the Department to consider the "need" for a facility before granting an approval was also identified as no longer relevant. It was argued that free market forces were a better way of determining whether a facility was necessary. The rules have been revised to reduce the scope of the mandatory ISR and provide for a voluntary pre-feasibility report. This complies with existing statutes and addresses the concerns behind making the ISR optional. There has not been consensus within the technical advisory committee on an appropriate change regarding the needs issue. Therefore, we have made no change in this area.

d) Design and operational requirements -- There were a number of issues identified in the proposed codes, specifically with regards to the composting section, the landfill leachate collection line length, and landfill construction certification reports.

1) Composting. Significant revisions have been made to the composting code to address the comments regarding food waste composting, on-site farm composting and community yard waste composting. Based on health and nuisance concerns that were raised, we have limited the scope of proposed exemptions, required initial site inspections at most composting sites and modified some of the operational criteria. Comments from DATCP were incorporated to improve agreement between DNR and DATCP rules regarding on-site farm waste.

2) Leachate line limitation. Current rules limit the length of leachate collection lines to a distance that can be readily cleaned by available equipment. Based on problems that have been observed with leachate line cleaning operations, and concerns over the long term ability to effectively clean pipes for the life of the landfill, the 40 year long term care period and beyond, we have proposed a 1200 foot limitation. The leachate pipes are a critical design component of the landfill and must be maintained in working condition to prevent leakage through the base of the landfill. It will become more difficult to clean the pipes as they become older and the inside of the pipes become encrusted with chemical precipitates. Cleanout equipment becomes much less able to travel through the pipe as the internal friction factor increases. Because of the practical impossibility of pipe repair when buried under 100 feet or more of waste, it is imperative that the pipes can be kept in a free flowing condition. Staff do not believe that there is an acceptable safety factor when pipe lengths exceed the 1200 foot limit. Concerns have been raised that this could ultimately limit the size of a landfill, and that the current requirement should remain as it is. However, even with the 1200 foot limitation on the width of the landfill, a multi-million cubic yard design capacity can still be developed. If leachate line cleanout technology should improve to overcome the above concerns, wording is in the rule that would allow DNR to approve greater lengths.

3) Certification procedures. In an effort to streamline the solid waste management regulations, we have attempted to shift the emphasis from command and control oversight to greater responsibility on the part of the landfill owners and engineering professionals to certify proper construction. We have adopted the certification statement from the recently promulgated NR 700 Series of rules which cover report preparation and content only. We have also required that all professional engineers identify each construction event for which they are responsible, the time spent at the site performing these oversight activities, and also certify that the construction for which they provided quality assurance was accomplished in substantial conformance with the approved plans and all applicable solid waste administrative code requirements. We believe that these changes will result in greater accountability for those doing the certification and a quicker

approval turn around by DNR staff. However, a concern has been raised by the engineering community that these changes may affect their liability insurance. To address this concern, we have added the following statement in this proposed code provision: "This certification does not imply a guarantee or warranty of performance". We have also included the language "to the best of their knowledge, information and belief" to the certification statement.

e) Captive insurance companies -- A number of commentors representing municipal governments recommended prohibiting the use of captive insurance companies for establishing financial responsibility. Other commentors representing commercial waste companies felt that captive insurance companies should be allowed. It is our understanding that several states currently do not allow the use of captive insurance companies for establishing financial responsibility. We have consulted the Office of Commissioner of Insurance which has recommended the following wording: "The department shall ask the insurance commissioner to provide a financial analysis of the insurer including a recommendation as to the insurer's ability to provide the required coverage". The Department will enter into a memorandum of understanding (MOU) with the Office of Commissioner of Insurance to establish procedures for implementing this partnership.

f) Program revenue -- The solid waste management program has a revenue shortfall. The Department is given the statutory authority to adopt by rule a graduated schedule of reasonable license and review fees to be charged for solid waste license and review activities. The fees have not changed since 1989 and are inadequate to cover the increased cost of Department operations. The proposed rule revisions include a temporary license fee surcharge which was supported by the majority of the Technical Advisory Committee members. A number of options have been proposed to our Technical Advisory Committee, but consensus could not be reached on the structure or level of fees for a long term basis. The advisory committee, therefore, recommended a short term fee structure that would cover the next two years and then sunset by September 30, 1998. The intent of this approach would be to provide a stable funding source over the next two years and avoid program disruptions while a more long term solution could be developed.

The hearing comments were mixed on this issue. The counties, Solid Waste Association of North America and the commercial landfill owners supported the temporary fee increase grudgingly but wanted additional streamlining, and the industrial landfill owners and Wisconsin Manufacturing and Commerce wanted additional justification before they could consider supporting the proposed fee increase. We held three Technical Advisory Committee meetings, in October in December and in January to resolve this situation. In addition, we held meetings with individual customer groups (Wisconsin Manufacturing and Commerce, Wisconsin Utilities Association, Wisconsin Paper Council, Solid Waste Association of North America, Wisconsin Counties Association, Wisconsin Counties Solid Waste Managers Association and waste management industry designees - Browning-Ferries Industries and Waste Management of Wisconsin, Inc.) to listen to our customers and make additional changes to streamline the siting process without impacting public health and the environment. It is our understanding (from the customers' comments we received at these meetings) that our customers are now satisfied with the proposed additional changes and will not oppose the temporary license fee surcharge.

g) Misunderstanding the proposal -- The counties and municipalities who own landfills misunderstood a statement in the fiscal note that the Department was assessing the temporary fees only on the publicly owned facilities. This is not correct. The proposal is to assess the temporary fee to all landfills -- private, public, municipal and industrial facilities.

h) Clarification in the code language -- Columbia County was concerned that NR 518, the landspreading code might inadvertently restrict landspreading of composted municipal solid waste and asked that we exempt municipal solid waste compost from certain sections of that code. There were many letters from the county residents suggesting this change. Rule language is added to clarify and strengthen the department's ability to grant exemptions to specific sections of the

landspreading codes in keeping with the exemptions that have currently been granted to Columbia County.

i) Wood Ash Landspreading -- The wood ash landspreading exemption was modified to cover a greater range of materials being burned. We will be meeting with interested parties to develop a guidance package for use by ash producers and farmers which incorporates the landspreading exemption requirements, a comprehensive general exemption for storage and transportation of the ash, best management practices for handling the ash, and testing procedures to be followed based on the fuel characterization.