Minnesota Pollution Control Agency

Demolition Landfill Guidance

Water/Solid Waste #5.04, August 2005

Solid Waste Program

Contents

Background

The State Solid Waste Rules allow the Minnesota Pollution Control Agency (MPCA) Commissioner considerable discretion to set site evaluation, design, monitoring, and operational requirements for demolition landfills. The exercise of this discretion has resulted in a lack of consistency in the way that the MPCA has applied these requirements to demolition landfills throughout the state.

Ground water monitoring requirements have become an emerging issue with regard to assessing impacts from demolition landfills. Historically, the hypothesis in the professional arena has been that only inert materials are deposited at demolition landfills; thus, there is no impact to ground water quality, and therefore no need for ground water monitoring.

In 2003, the MPCA decided to test this hypothesis by evaluating the limited amount of ground water monitoring data from demolition landfills. The results of this evaluation indicated that some demolition landfills do impact ground water quality. Therefore, a more thorough approach is needed relative to hydrogeologic evaluations, and in determining groundwater monitoring requirements when siting and managing demolition landfills.

Purpose

This guidance is intended to provide improved consistency and predictability in how the MPCA, counties, facility owners, and facility operators manage demolition landfills under the existing solid waste management rules in the following areas:

- locating the facility;
- developing initial site evaluation information;
- determining facility classification;
- identification of an acceptable waste list;
- appropriate waste-sceening procedures;
- contents of an Industrial Solid Waste Management Plan;
- need for ground water monitoring; and,
- liner requirements.

This guidance will be applied to all new and existing demolition landfills in accordance with the implementation plan included in appendix C.

Location Standards

The single most effective action that owners/operators of demolition landfills can take is to locate demolition landfills in areas that will inherently protect ground water and surface water from the

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risks of contamination. Prohibited locations which must be avoided include active karst topography, flood plains and other areas likely to result in groundwater contamination. The following are the basic landfill location standards that apply to demolition landfills:

Minn. R. 7035.2555 LOCATION STANDARDS, provides the following location restrictions on all solid waste management facilities.

Subpart 1. ***Floodplains.*** *An owner or operator may not locate a new solid waste management facility in a floodplain.*

Subp. 2. ***Other location standards****. An owner or operator may not establish or construct a solid waste management facility in the following areas:*

A. within a shoreland or wild and scenic river land use district governed by chapters 6105 and 6120;

B. within a wetland; or

C. within a location where emissions of air pollutants would violate the ambient air quality standards in chapters 7005, 7007, 7009, 7011, 7017, 7019, and 7028 and parts 7023.0100 to 7023.0120.

In addition, Minn. R. 7035.2825 provides the following location restrictions on permitted demolition debris land disposal facilities.

Subp. 7. ***Location standards for permitted facilities.*** *The owner or operator of a permitted demolition debris land disposal facility must not locate the facility on a site:*

A. with active karst features including sinkholes, disappearing streams, and caves; or

B. where the topography, geology, or soil is inadequate for protection of ground or surface water.

To better determine what is meant by "floodplain," reference should be made to the 100-year floodplain as shown on maps provided by the Federal Emergency Management Act (FEMA). Other setback distances that are applied to landfill siting based on the above rule references are 1,000 feet from a lake and 300 feet from a river, stream or creek.

Because the Solid Waste Rules prohibit the placement of demolition landfills in areas that would result in groundwater contamination, an existing permitted landfill that does not meet the location standards above will not be re-permitted. The owner/operator may request a variance to these location standards under the process outlined in Minn. R. 7000.7000. If a variance is requested, MPCA staff will consult with the commissioner as to whether the request is appropriate and will discuss the need for additional site investigation, monitoring, and/or environmentally protective measures based on the specific site circumstances.

Facility Classification

One of the bigger problems with the current demolition landfill rules is that they are open ended and leave a great deal of facility requirements to Commissioner discretion. This does not work well to promote consistency in management requirements given the many variables and permutations that exist between publicly owned and privately owned, large operations and small operations, metro sites and rural sites, etc. Therefore, several meetings were held in June and August of 2005 to discuss an appropriate approach to take with demolition landfills. It was agreed that a three-class system approach to demolition landfills was warranted. Based on these meetings and subsequent discussions, the following classification system for demolition landfills was developed.

Demolition Landfills	Class I	Class II	Class III
Site Evaluation	All sites will need to conduct a site evaluation to verify that location standards are met, soils are evaluated, depth to the water table is identified, and groundwater flow direction is defined (See Site Evaluation section.).		
Acceptable Wastes	Acceptable C&D Waste List (See list in Acceptable Waste section.)	Acceptable C&D Waste List + Incidental nonrecyclable packaging consisting of paper, cardboard and plastic + Demo-like industrial wastes comprised of wood, concrete, porcelain fixtures, shingles, or window glass	All C&D wastes + Most industrial wastes
Waste Screening	Stringent screening is required.	Screening is required.	Screening is required.
Industrial Solid Waste Management Plan (ISWMP) Contents	Describe screening procedures, address asbestos-containing materials (ACM) if applicable.	Describe screening procedures and identify additional C&D wastes and specific demo-like industrial wastes to be accepted; address ACM if applicable. Develop waste acceptance criteria.	Describe screening procedures and identify additional C&D wastes and specific industrial wastes to be accepted; address ACM if applicable. Develop waste acceptance criteria.
Groundwater Monitoring	Determined by decision matrix in the Groundwater Monitoring section.	Yes	Yes
Liner	No	Determined by decision matrix in the Liner section.	Yes
Reclassification	NA	If the facility takes more than 50% industrial waste based on annual gate receipts, it should be reclassified as an industrial landfill.	

Site Evaluation

When permitting or re-permitting a demolition landfill, specific tasks associated with a site evaluation must be completed to determine whether the site meets the location standards. The site evaluation will more precisely identify potential risks, as well as help identify the need for long-term ground water monitoring. If an owner/operator is applying for the re-issuance of an existing permit,

all the information specified below must be on record or must be established prior to permit re-issuance.

The permit application shall include:

- verification that the site meets the location standards;
- sufficient documentation to establish the separation distance between the lowest fill elevation and the water table;
- sufficient information to establish groundwater flow direction; and
- a description of the on-site soils.

Site-specific conditions may be defined through the use of existing soil borings, test pits, or any other MPCA-approved method. The level of detail will be dictated by the geologic complexity of the site.

For re-permitting of existing facilities and the permitting of new facilities, the need for a hydrogeologic evaluation will be based upon the data submitted in the Site Evaluation Report. The number of borings in the hydrogeologic evaluation should be sufficient to enable interpretations that reasonably anticipate groundwater flow and pollutant migration.

Acceptable Waste

Minn. R. 7035.0300 provides the following definitions:

Subp. 30. ***Demolition debris.*** *"Demolition debris" means solid waste resulting from the demolition of buildings, roads, and other structures including concrete, brick, bituminous concrete, untreated wood, masonry, glass, trees, rock, and plastic building parts. Demolition debris does not include asbestos wastes.*

Subp. 31. ***Demolition debris land disposal facility.*** *"Demolition debris land disposal facility" means a site used to dispose of demolition debris.*

Minn. Stat. 115A.03 provides the following definition:

Subd. 7. ***Construction debris.*** *"Construction debris" means waste building materials, packaging, and rubble resulting from construction, remodeling, repair, and demolition of buildings and roads.*

As can be seen by these definitions, demolition debris is a much smaller subset of the larger overarching category of construction debris. Therefore, the demolition debris land disposal facility rules were written to address the proper disposal of this smaller universe of waste. This is verified by the discussion in the Statement of Need and Reasonableness (SONAR) for Minn. R. 7035.0300, subp. 30, *"In the past, unusable construction materials were included in the definition of demolition debris. Construction materials are waste supplies resulting from the construction, remodeling, and repair of buildings and roads. This material will consist of waste paints, building putty, packaging, sealants, oils, etc. This definition is needed to clarify that construction waste is not considered to be demolition debris and must be handled differently."*

This separation of construction debris and demolition debris has been an issue between the MPCA and facility owners/operators. Strict adherence and enforcement of these rules in the acceptance of waste at demolition debris land disposal facilities has not been consistently implemented by MPCA staff. Owners/operators have expressed their concern regarding the ability to identify the origin of materials. For example, how can one tell by looking at a 2x4 whether it is coming from the demolition of a structure as compared to the construction or remodeling of a structure, or, for that matter, from an industry, such as a cabinetmaker or mobile home manufacturer? This has led to the evolution of a much broader interpretation by staff and owner/operators as to what constitutes acceptable waste for disposal at demolition landfills. During the

last rule revision effort, the rule advisory committee came to consensus on a revised definition for "construction and demolition (C&D) debris" which included lists of materials as being acceptable as well as unacceptable for disposal at demolition debris land disposal facilities.

For the purpose of implementation of this guidance, **"construction and demolition (C&D) debris"** means materials resulting from the alteration, construction, destruction, rehabilitation, or repair of physical structures, such as houses, buildings, industrial or commercial facilities, and roadways. This definition also includes wastes generated from land-clearing activities.

The MPCA has developed a list of C&D wastes that may be accepted by any demolition landfill which is referred to as the "Acceptable C&D Waste List":

Acceptable C&D Waste List

- Bituminous concrete (includes asphalt pavement and blacktop)
- Concrete (including rerod)
- Stone
- Uncontaminated soil
- Masonry (bricks, stucco and plaster)
- Untreated wood (including painted, stained and/or varnished dimensional lumber, pallets, tree stumps, grubbing, root balls, particle board, plywood, fencing and dock materials)
- Siding (Includes vinyl, masonite, untreated wood, aluminum and steel.)
- Wall coverings
- Electrical wiring and components
- Roofing materials
- Duct work
- Wall board, sheet rock
- Built-in cabinetry
- Plumbing fixtures
- Affixed carpet and padding
- Ceramic items
- Conduit and pipes
- Glass (limited to window and door glass from buildings and structures)
- Insulation (Includes fiberglass, mineral wool, cellulose, polystyrene and newspaper.)
- Plastic building parts
- Sheathing
- Molded fiberglass
- Rubber
- Drain tile
- Recognizable portions of burned structures
- Metal
- Ceiling tile
- Wood and vinyl flooring
- Asbestos-containing materials (pursuant to an approved ISWMP)

Class I demolition landfills will be limited to taking only those C&D wastes listed above.

Class II demolition landfills may take the C&D wastes listed above, incidental nonrecyclable packaging consisting of paper, cardboard and plastic, and limited demo-like industrial waste. Demo-like industrial waste accepted by Class II demolition landfills is limited in composition to wood, concrete, porcelain fixtures, shingles or window glass. These additional waste types need to be identified in the facility's ISWMP.

Class III demolition landfills may accept all C&D wastes and most industrial wastes as defined by the facility's ISWMP.

Waste Screening

All owners/operators need to establish a waste screening area where incoming loads would first be dumped and sorted through to remove unacceptable materials prior to pushing the waste into the working

face. Most Class I demolition landfills will not have groundwater monitoring. Therefore, waste screening and sorting at Class I demolition landfills will be paramount to ensuring that only acceptable materials are disposed in them. Groundwater monitoring will be conducted at all Class II demolition landfills; however, liners will not be required for most of these facilities. Therefore, waste screening is also an important feature for Class II and III demolition landfills.

Best management practices for waste screening procedures are provided in appendix B.

Industrial Solid Waste Management Plan

All owners/operators need to submit an Industrial Solid Waste Management Plan (ISWMP) pursuant to 7035.2535 subp 5. If a demolition landfill is accepting anything other than those wastes identified in the Acceptable C&D Waste List, the owner/operator needs to specifically identify those wastes in the landfill's ISWMP as required by Minn. R. 7035.2535, subp. 5. Item A(2) of this subpart requires the ISWMP to include, but not be limited to, *a procedure for evaluating waste characteristics, including the specific analyses that may be required for specific wastes, and the criteria used to determine when analyses are necessary, the frequency of testing, and analytical methods to be used.*

The frequency and number of samples required will depend on the variability of the waste proposed for acceptance. For a new facility, the testing should be completed before the waste is accepted so that these characteristics may be factored into the design and monitoring requirements for the facility. For existing facilities, waste must be evaluated prior to acceptance and at regular intervals throughout the life of the facility, but at least during each re-permitting event, to determine the need for changes in the facility's design or monitoring requirements. It may be necessary to establish a compliance schedule for existing facilities for conducting an analysis of wastes currently accepted at the facility.

The ISWMP shall include waste-acceptance criteria and procedures for rejecting waste that does not meet the acceptance criteria. Each facility is responsible for determining its own waste-acceptance criteria. For MSW landfills, which are required to have composite liners, the acceptance criterion is that the waste passes the Toxicity Characteristic Leach Procedure (TCLP) test (i.e., that it not be a hazardous waste). Since most of our demolition landfills do not have liners, simply testing to determine whether a waste is hazardous or not does not provide adequate protection of the environment. Therefore, the TCLP would not be an appropriate acceptance criterion to be used. In the past, facilities have proposed many different acceptance criteria for use in their ISWMPs. Here are a few examples of the acceptance criteria that have been approved previously:

- 50% (or some other fraction) of the hazardous waste limits based on either TCLP or Synthetic Precipitation Leach Procedure (SPLP) testing;
- 10 times (or some other multiplier) of the drinking water standards [Health Risk Limit (HRL) or Maximum Contaminant Level (MCL)];
- Soil Reference Value (SRV) – residential or industrial; and,
- Soil Leaching Value (SLV) – residential or industrial.

The proposed waste acceptance criteria must be justified by the permitee, to verify that the site is adequately designed, located and monitored to accept the wastes proposed for disposal. If the best available information and data indicate that the facility is not protective of the environment, given the proposed waste-acceptance criteria, the facility may be required to either lower its proposed waste-acceptance criteria or change the facility design to ensure protection of the environment. This decision will be made on a case-by-case basis using the best available data and information. Input parameters would be included in

the permit application along with the results of the modeling.

If during the life of the facility, a new industry moves into the area and asks a landfill to accept its wastes, the following decision matrix should help the landfill decide whether it may take the waste.

Industrial Solid Waste Matrix		Is the waste identified in the facility's ISWMP as an acceptable material?	
		Yes	No
Do test results of the waste indicate that it will meet the acceptance criteria identified in the facility's ISWMP?	Yes	OK to accept waste.	If facility would like to accept waste, a revised ISWMP* must be submitted to the MPCA for review and approval prior to acceptance. Otherwise, DO NOT ACCEPT WASTE.
	No	DO NOT ACCEPT WASTE.	DO NOT ACCEPT WASTE.

*The MPCA will provide templates and forms to ease the process of writing and modifying ISWMPs.

Groundwater Monitoring

Based on the limited amount of groundwater-monitoring data collected from demolition landfills, it has been noted that some demolition landfills do impact groundwater quality. Based on discussions with stakeholders, it was agreed that facilities that accept only those materials identified on the Acceptable C&D Waste List risk to the environment may be minimal. However, there may be risk factors that would trigger the need for groundwater monitoring at these facilities. Facilities that accept wastes beyond the Acceptable C&D Waste List pose a greater threat to the environment. Therefore, all Class II and III landfills should conduct groundwater monitoring. For Class I landfills, the decision matrix above should be used to determine whether groundwater monitoring may be required. This matrix was developed utilizing the MPCA Tier II Soil Leach Value (SLV) model. The permittee may propose an alternative model. Input parameters would be included in the permit application along with the results of the modeling.

Groundwater Monitoring Decision Matrix*		Soil Type		
		Clay	Silt	Sand
Depth to Water Table	5 feet or more	No	Yes or provide justification	Yes or provide justification
	At least 10 feet	No	No	Yes or provide justification

*This matrix was developed using the MPCA Tier II SLV model.

Many models exist for determining the fate of contaminants in a groundwater-flow regime. The facility owner/operator shall be responsible for selecting a model to use. Input data for the model must be identified with proper site-specific justification provided for the values selected. A facility's owner/operator is encouraged to work closely with the MPCA hydrogeologist assigned to the site when selecting a groundwater model and in identifying input data for the model.

To initiate a consistent approach to groundwater monitoring, the following criteria should be used to establish an effective groundwater-monitoring program at a demolition landfill.

Ground Water Monitoring Network

1. A minimum of 3 piezometers and/or groundwater-monitoring wells must be installed to establish groundwater flow direction. The piezometers must be triangulated around the existing or proposed site and surveyed to a relative datum.

2. Groundwater-flow direction will be established by monitoring groundwater-level measurements on a semi-monthly basis (twice each month) for a one- to three-month period depending on site-specific hydrogeology. The number of measurements required may be changed based on local hydrogeologic conditions.
3. Based on the groundwater-flow direction established above, a minimum of three monitoring wells must be installed, one up-gradient and two down-gradient of the existing or proposed location. Additional wells may be required, depending on the location of human and/or environmental receptors relative to the landfill.
4. Down-gradient wells should be placed within the property boundary, but not farther than 200 feet from the edge of the waste fill area.
5. Wells should be screened in the water table as dictated by site-specific conditions.

Monitoring Frequency

1. Routine sampling, limited to spring, summer and fall events, shall take place for a minimum of three years. This sampling is in addition to the required baseline sampling.
2. Monitoring parameters for this time period shall include the Parameter Lists identified in appendix A.
3. After the initial three-year time period, the permittee may request a modification to both the monitoring frequency and the parameter list.

Liners

Class I landfills will not have liners.

All Class III landfills should have liners.

For Class II landfills, the following decision matrix should be used to determine whether a liner may be required.

Liner Decision Matrix		Soil Type		
		Clay	Silt	Sand
Depth to Water Table	5 feet or more	No	Run model.	Yes
	At least 10 feet	No	Run model.	Run model

Many models exist for evaluating the need for a landfill to have a liner. The facility owner/operator is responsible for selecting a model to use.

The U.S. Environmental Protection Agency Industrial Waste Management Evaluation Model (IWEM) may be used to determine whether a liner is needed. The MPCA has prepared a fact sheet, *Guidance of Industrial Waste Management Evaluation Model (IWEM),* that describes how to use this model. The guidance will be posted soon on the MPCA's Web page. The permittee may propose an alternative model. Input parameters would be included in the permit application along with the results of the modeling.

If modeling indicates the need to install a liner, the MPCA has *prepared Guidance for Liner Design for Demolition Debris or Industrial Solid Waste Landfills* for reference in designing liner systems.

Limited Availability Landfills

The MPCA acknowledges that some demolition landfills accept an extremely small quantity of waste on an annual basis. These Class I facilities are located in remote areas and exist solely to provide a service to the community so as to avoid or eliminate illegal dumping. As such, additional environmental-protective measures, such as groundwater monitoring or liners, may be too expensive to allow these landfills to operate. The MPCA will make every attempt to ensure that these factors are considered when determining the need for additional environmental-protective measures at these sites.

Contact Information

For more information on demolition landfills, the first point of contact should be the MPCA solid waste engineer assigned to the region in which your facility is located:

MPCA Office	Engineer, Phone No.
Duluth:	Brett Ballavance, (218) 723-4837
Brainerd:	Dan Vleck, (218) 855-5007
Detroit Lakes:	Kathy Holland-Hanson, (218) 846-0470
Marshall/Willmar	Tony Bello, (651) 296-7272
Rochester	Sherri Nachtigal, (507) 280-2997
Twin Cities Metro	Mike Lynn, (651) 296-8584 Geoff Strack, (651) 296-7716

The engineer should be able to identify the appropriate hydrogeologist assigned to your site.

Stakeholders List

The MPCA thanks the representatives from the following stakeholders for their participation in developing this guidance document:

BFI
Crow Wing County
Dem-Con Landfill
Grinning Bear Demolition Landfill
Hubbard County
Lake County
McLeod County
Minnesota Office of Environmental Assistance
National Solid Wastes Management Association
Olmsted County
Ottertail County
ProSource Technologies
Rock County
RW Beck
Sherburne County
SKB Environmental
St Louis County
Todd County
Veit Companies
Waste Management Inc.
Western Stearns Demolition Landfill

Appendix A

Parameter Lists for Sampling of Ground Water Monitoring Network

MDH 468 List

Analytes

1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethane
1,1-Dichloroethylene (Vinylidene chloride)
1,1-Dichloropropene
1,2-Dichloroethylene (trans)
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromoethane (Ethylene dibromide or EDB)
1,2-Dichlorobenzene (orth-)
1,2-Dichloroethane
1,2-Dichloroethylene (cis-)
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene (meta-)
1,3-Dichloropropane
1,3-Dichloropropene (cis + trans)
1,4-Dichlorobenzene (para-)
2,2-Dichloropropane
2-Chlorotoluene (ortho-)
4-Chlorotoluene (para-)
Acetone
Allyl chloride (3 chloropropene)
Benzene
Bromobenzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dichlorobromomethane)
Bromoform
Bromomethane (Methyl bromide)
Carbon tetrachloride
Chlorobenzene (monochlorobenzene)
Chlorodibromomethane (Dibromochloromethane)
Chloroethane
Chloroform
Chloromethane (Methyl chloride)
Cumene (Isopropylbenzene)
Dibromochloropropane (DBCP)
Dibromomethane (Methylene bromide)
Dichlorodifluoromethane
Dichlorofluoromethane
Dichloromethane (Methylene chloride)
Ethyl benzene
Ethyl ether
Hexachlorobutadiene
Methyl ethyl ketone (MEK)
Methyl isobutyl ketone (4-Methyl-2-pentanone)
Methyl tertiary-butyl ether (MTBE)
Naphthalene
n-Butyl benzene
n-Propyl benzene
p-Isopropyltoluene
sec-Butyl benzene
Styrene
tert-Butyl benzene
Tetrachloroethylene (Perchloroethylene)
Tetrahydrofuran
Toluene
Trichloroethylene (TCE)
Trichlorofluoromethane
Vinyl chloride (chloroethene)
Xylenes (mixture of o, m, p)

Inorganics

Alkalinity, total as calcium carbonate
Ammonia Nitrogen

(continued on next page)

Inorganics (cont.)

Arsenic, dissolved
Barium, dissolved
Boron, dissolved
Cadmium, dissolved
Chloride
Chromium, total dissolved
Copper, dissolved
Iron, dissolved
Lead, dissolved
Manganese, dissolved
Mercury, dissolved
Nitrate + Nitrite, as N
Sodium, dissolved
Sulfate
Suspended Solids, total
Appearance (b);
Dissolved Oxygen, field
pH (a)
Specific Conductance (a)
Temperature (a)
Turbidity, field
Water Elevation (c)

(a) Two measurements: in field, immediately after obtaining sample, and in laboratory.

(b) Visual observation in field and laboratory, noting conditions, such as the following, if present: color, cloudiness, floating films, other liquid or gas phases, odor.

(c) As measured in field before pumping or bailing.

Appendix B

Best Management Practices for Waste-screening Procedures

Loads containing only acceptable material (see above list) may be deposited directly into the tipping area. Any load containing other materials or unacceptable materials or industrial waste must first be dumped in a Waste Screening Area (WSA) to remove unacceptable materials prior to pushing the waste into the working face.

- Ideally, the operator should pre-inspect each dumpster before it enters the WSA. Dumpsters that contain unacceptable materials should be diverted to another waste facility authorized to accept those materials, or the dumpsters should be dumped in the WSA for the removal of unacceptable material.
- The WSA does not need to be in a fixed location, but can be moved as the site is developed. The WSA should be located within 50 feet of the active working face.
- The operator must separate the WSA from the active working face. This may be accomplished by using physical barriers, such as logs, chains or cones. The operator is responsible for properly delineating and maintaining the two dumping areas as the working face moves.
- The operator shall not place more waste in the WSA than can be managed in a working day.
- The operator shall inspect and remove unacceptable material from waste dumped in the WSA and move the inspected and cleaned waste to the tipping area of the landfill on a weekly basis.
- Upon discovery, unacceptable wastes must be removed from the loads and stored appropriately. The unacceptable wastes must then be transferred to an appropriate disposal facility as needed.

Appendix C

Implementation Plan

This appendix serves as the implementation plan (plan) for the demolition landfill guidance document (guidance). The plan explains that the guidance applies to proposed, new facilities as well as to existing facilities. This document will be used to guide the MPCA decision making process. Occasionally decisions will be made that fall outside of the general guidelines described in this document. This level of flexibility is necessary to effectively make decisions for the wide variety of situations that exist across the state. Groundwater data will be tracked to increase knowledge of how demolition landfills affect the environment, and a biennial groundwater report will be produced which will summarize groundwater monitoring information.

PROPOSED FACILITIES - For proposed facilities, the guidance document will be used to help determine the facility classification (Class I, II, or III) and subsequently the need for monitoring. Initially, for new, proposed facilities, a site evaluation will be done which will determine the site suitability as it relates to location standards. The site evaluation will also identify site soil conditions, water table and general hydrogeology of the area. The extent of the hydrogeologic investigation will largely be dictated by the materials expected to be disposed of at the site.

EXISTING FACILITIES - Existing facilities will be reviewed per the guidance document as their current permits expire. Similar to what is done for proposed facilities, existing facilities will be evaluated in terms of location standards, depth to ground water, soil types, types of waste received, nearby receptors, etc.; and will be assigned a facility classification for the purpose of evaluating the need for groundwater monitoring.

If a currently operating facility does not meet location standards as set out by rule, a variance from the rule will be necessary from the MPCA prior to re-permitting. For facilities that may wish to change their operations before their current permit expiration date, Industrial Solid Waste Management Plan (ISWMP) templates will be available from the MPCA. A permit modification could be done after receipt of the new ISWMP, which, if approved, would allow the facilities to receive other waste types.

MPCA HYDROLOGIST AND ENGINEERING FORUMS - In most cases, proposed and existing sites will be peer reviewed at MPCA hydrologist forums. The purpose of the forums will be to discuss site conditions, facility classification, and unique site features that may create special concerns, past decisions on similar sites, etc. The forum process will help ensure that evaluations are done in a more consistent manner. The engineering staff hold similar forums at which technical issues related to solid waste permits are discussed, in order to help set more consistent permit conditions on a statewide basis.

ELECTRONIC DATA - Groundwater monitoring data will be submitted electronically. The MPCA intends to make these data available to owners and operators through the MPCA's Web site at a future date. This will enable owners and operators to easily track and view the data.

GROUNDWATER STATUS REPORT - As the amount of data from groundwater wells at demolition landfill increases, the MPCA will provide a biennial report summarizing the information and noting any trends, etc. The report will be made available to all demolition landfill owners and operators.

TRAINING – The MPCA will incorporate the relevant portions of this document into the Demolition Landfill Operator Certification Training.

ISWMP TEMPLATES – The MPCA will create and distribute templates for a Class I and Class II Demolition Landfill ISWMP. An ISWMP modification form letter will also be created to simplify the ISWMP modification process.