

Guidance for Siting, Design, and Operations of Non- Hazardous Solid Waste Impoundments in Idaho



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1 Introduction

Pumpable waste is defined in Idaho law as “[w]astes, including non-domestic septage, sludge, wastewater and non-municipal solid wastes, which are pumped from a holding area or container into a watertight tank truck or equivalent and transported for processing or disposal.” See IDAPA 58.01.06.005.32. All pumpable waste is industrial wastewater, as that term is defined in the Wastewater Rules, IDAPA 58.01.16.010.30, but only industrial wastewater that is pumped for transport off site is pumpable waste.

Pumpable wastes that do not pass the “paint filter test” as set out in EPA Method 9095B may not be introduced to traditional municipal or non-municipal landfills because the liquid component of the waste is likely to add to leachate volume, which can increase the risk of groundwater contamination. Pumpable wastes have traditionally been taken to publicly owned treatment works (POTWs) for disposal. Pumpable wastes that meet a POTW’s acceptance criteria can still legally be disposed of in this manner. Generators and/or transporters of pumpable wastes should contact their local POTWs to determine if this option is available.

The relative simplicity and low operating costs of surface impoundments make them an attractive technology for the handling, storing, processing, treating through aeration, equalizing, neutralizing, solidifying, and/or disposing of pumpable wastes. The management and/or disposal of pumpable wastes in a properly located, constructed, maintained, and operated surface impoundment can be an effective and environmentally sound waste management practice.

The impoundment of pumpable waste considered to be solid waste by regulation, and not otherwise regulated under a discharge or land application permit, is regulated under the Solid Waste Management Rules, IDAPA 58.01.06 (the “Solid Waste Rules”). In this guidance the Idaho Department of Environmental Quality (DEQ) refers to an impoundment facility regulated under the Rules as a “Nonhazardous Solid Waste Impoundment,” or “NSWI”. A NSWI is an impoundment facility receiving pumpable waste where: (1) the waste does not pass the paint filter test prior to placement in the impoundment unit, and (2) operations are not otherwise regulated under a discharge or land application permit.” NSWIs may be stand-alone, or may be co-located at an approved landfill or other permitted solid waste facility. Facilities engaged in food processing or other manufacturing or industrial activities that manage their liquid waste stream(s) onsite are not managing pumpable wastes as that term is defined, and are generally not regulated as NSWIs. Furthermore, these facilities often are regulated under their discharge permit(s) or wastewater reuse permit(s).

The scope of this guidance does not include the construction or operation of facilities accepting municipal wastewater and industrial wastewater under a pre-treatment program, as those terms are defined in the Wastewater Rules, IDAPA 58.01.16, or facilities accepting hazardous waste other than Very Small Quantity Generator (VSQG) waste.

1.1 Roles and Responsibilities

Facility owners/operators, local governments, local public health districts, and DEQ each have roles and responsibilities related to non-hazardous solid waste impoundments. The following is a discussion on each group's general role and responsibility. DEQ and local public health district jurisdictional maps can be found in Appendix A.

1.1.1 Non-Hazardous Solid Waste Impoundment Owner/Operator Roles and Responsibilities

Under IDAPA 58.01.06, non-hazardous solid waste impoundment owners/operators are generally required to provide safe liquid waste treatment, processing, and disposal at a facility sited, designed, operated, closed, and maintained after closure in accordance with the "Solid Waste Management Rules" and the facility's site approval, design plan, operating plan, and closure/post-closure plans. It is the responsibility of the owner/operator to submit required documents to DEQ and/or the local public health district regarding the facility's site approval, facility design, operating plan, and closure/post-closure plan. If there is an expansion or change in site operations, the owner/operator may be required to submit revised documents for approval. For example, if a facility decides to accept waste not already covered in approved site documents (site approval, site design, and operating plan), the owner/operator should provide revised documents for approval prior to accepting such waste.

1.1.2 Local Government Roles and Responsibilities

Within the state of Idaho it is the duty of the county commissioners of each county to acquire sites or facilities, and maintain and operate solid waste disposal systems. (*Idaho Code §31-4403*). The counties may meet this obligation by owning and/or operating disposal systems themselves or by ensuring services are available through contracts, franchise agreements, or by other means. Some counties elect to own and/or operate NSWIs alongside a MSWLF so that bulk liquids and traditional solid waste can be managed at the same approved landfill site.

Counties and municipalities are also responsible for siting decisions relating to NSWIs arising out of their zoning and land use authorities. These authorities can extend into facility operations as well.

1.1.3 Local Public Health District Roles and Responsibilities

By Memorandum of Understanding (MOU) with the seven local public health districts, DEQ has delegated the authority to review and approve operating plans to the districts for Tier II and Tier III facilities. The MOU also provides the districts with authority over the review and approval of facility closure/post-closure plans, annual inspections, and co-authority over enforcement activities at all non-municipal solid waste facilities. See the MOU at <http://www.deq.idaho.gov/media/60177724/mou-deq-phds.pdf>.

The local public health districts and DEQ work together in performing regulatory oversight of solid waste facilities, including reviewing and commenting on submittals provided by facilities. For example, the districts provide courtesy reviews and submit comments to DEQ on site approval applications and design plans; DEQ incorporates or otherwise accounts for district

comments in their response to the facility. Likewise, DEQ provides courtesy reviews and submits comments to the districts on operating plans and closure/post-closure plans; the districts incorporate or otherwise account for DEQ comments in their response to the facility. Specifically for operating plans, the local public health districts and DEQ will ensure that information provided in the operating plans, including but not limited to the types of waste accepted, are consistent with the approved site application and approved facility design.

While the preceding paragraph accurately outlines the respective roles and responsibility of the local public health districts and DEQ as set forth in the 2013 MOU, DEQ expects to play a more central role in the oversight of NSWIs as compared to other types of solid waste facilities since DEQ staff has more direct knowledge and expertise relating to liquid waste management and disposal.

1.1.4 DEQ Roles and Responsibilities

In very general terms, DEQ reviews and approves the siting and design aspects of non-municipal solid waste facilities in Idaho, and the districts oversee their operations and closure/post-closure care. This arrangement is described more fully in the MOU between DEQ and the districts. Still, primary authority over solid waste facilities in Idaho, including NSWIs, remains with DEQ, and as stated above, DEQ expects to play a more central role in the oversight of NSWIs as compared to other types of solid waste facilities.

2 Idaho's Tiered Solid Waste Facility Classification

By definition, solid waste incorporates a wide range of waste streams with varying characteristics. To address the many different characteristics, Idaho's "Solid Waste Management Rules" (IDAPA 58.01.06) regulate solid waste facilities based on a tiered classification system. Each of the three facility tier classifications considers the volume and/or potential for harm to human health and the environment from the waste being managed. Facility owners/operators managing larger volumes of waste and/or waste types with a greater potential for harm to human health and the environment must demonstrate a higher level of protection when proposing site, design, operating, and closure features for a facility.

While IDAPA 58.01.06 provides a tier classification of "below regulatory concern" (BRC), this tier classification does not apply to facilities receiving pumpable waste. Tier I facilities may accept pumpable waste, but the cumulative volume of all waste at the site at any one time must be less than or equal to 200 cubic yards, or approximately 40,000 gallons. If an impoundment facility is proposing to meet the Tier 1 requirements please contact DEQ prior to construction to discuss whether the Tier I designation is appropriate.

Tier II facilities cannot accept very small quantity generator (VSQG) (formally called conditionally exempt small quantity generator) hazardous waste, or materials with a high human pathogenic potential. They also cannot manage solid waste in a manner or volume that will form toxic leachate or gas, or manage solid waste in a manner or volume that is likely to pose a substantial risk to human health or the environment. Tier II facilities are required to obtain site and design approval from DEQ and operating and closure/post-closure plan approval from the

local public health district. Requirements for Tier II facilities are contained in IDAPA 58.01.06.012.

Appropriately sited, designed, and operated Tier III facilities can accept VSQG hazardous waste as well as materials with a high human pathogenic potential. They can also manage waste that will form toxic leachate or gas, as well as those likely to pose a substantial risk to human health or the environment. IDAPA 58.01.06.009.04 authorizes DEQ to make that determination. The management of bulk liquid waste is generally considered by DEQ to pose a substantial risk to human health and the environment and, therefore, NSWIs are categorized as Tier III facilities.

Unless a facility obtains a variance from specific requirements, Tier III facilities are required to be designed and constructed with a liner, leachate collection system, air emission controls, and a ground water monitoring system. Requirements for Tier III facilities are contained in IDAPA 58.01.06.013. The leachate collection system requirement is inapplicable to NSWI facilities since all waste managed is liquid. The air emission control system requirement has limited applicability, similar to composting sites, but may apply depending on waste types managed, design features, and operational factors.

2.1 Site Specific Classification

A NSWI facility owner or operator may request to be regulated pursuant to the requirements of a lower classification by submitting information demonstrating a “Site Specific Classification” is appropriate. This procedure, and the information required to establish a site specific classification, may be found in IDAPA 58.01.06.009.06. In general terms, the liquid nature of the waste must be fully accounted for in the siting, design, and operation of the facility. In order to successfully establish that a lower tier designation is appropriate, an owner or operator should adequately address the following utilizing a combination of measures in the siting application, design of the facility, and the operating plan:

- The transport of potential contaminants through soils;
- The prevention of soil and groundwater contamination;
- The detection of soil and groundwater contamination;
- The inherent difficulties in recognizing hazardous constituents in liquids without costly analytical testing; and
- The concentration of contaminants within impoundments due to evaporation.

It will be necessary for applicants to present sufficient information to establish a site specific classification, including design and operational information, during the siting application process and prior to a siting decision by DEQ. The waste types and volumes that will be managed at the facility play a key role in evaluating a request for a site specific classification.

2.2 NSWIs, Multiple Impoundments, and MSWLFs

Some nonhazardous solid waste impoundments are co-located with other impoundments, other Tier I, Tier II, or Tier III solid waste operations, or municipal solid waste landfills. DEQ regulates Tier I, II, and III facilities under the solid waste rules, and municipal solid waste landfills under the Solid Waste Facilities Act. Both the Act and the Rules require DEQ to review the appropriateness of the proposed site and a site approval, often referred to as a “site

certification.” The appropriate Tier classification for a site is based on all solid waste operations occurring within the site certified area. For example, a 100,000 gallon Nonhazardous Solid Waste Impoundment managing a pumpable waste with minimal environmental or human health concern may be approved as a Tier II facility. However, a facility with fifteen 1,000,000 gallon NSWIs handling the same type of waste may be considered a Tier III facility if, due to the total volume of waste being managed at the site, it is determined that the facility poses a substantial risk to human health or the environment.

When a site approval application for a new solid waste facility is being prepared for submission to DEQ, the applicant should take great care to foresee and account for all future, planned solid waste operations and waste types, and have the site reviewed based on all future, planned operations and waste types. By doing so, your site will be reviewed and approved at the appropriate, future Tier classification, ensuring that all operations you eventually intend to carry out at the site can be accommodated.

When an existing facility seeks to expand, DEQ will review the site certification to identify what operations and waste types the site was certified for. If the site certification does not account for the expansion operations or waste types, DEQ may request additional information or modeling from the applicant in order to supplement the site certification information on file, and to ensure that the site can accommodate the expansion. While the addition of more protective design and/or operational measures will qualify most sites for reasonable facility expansions, it is conceivable that in some cases, expansion plans may have to be curtailed to account for site limitations.

So long as a municipal solid waste landfill site was originally approved to accommodate for leachate management systems and the landfill has physical space for the addition of a NSWI operation within their site certified area, DEQ will still require all necessary design elements to adequately protect soils and groundwater, but will not require a new site certification. In cases where a municipal landfill was approved without considerations for leachate or other liquid waste management, DEQ may request a comprehensive review of the site characteristics prior to approving the addition of a NSWI within the site certified area. Adding a NSWI outside a site certified area is considered a lateral expansion or a separate NSWI facility requiring a new site certification.

3 NSWI Facility Siting

Siting a NSWI can be one of the more difficult tasks for owners/operators. In addition to State of Idaho requirements, local governments have planning and zoning requirements that may require a conditional use permit and/or zoning requirements for solid waste management sites. Early discussions with all regulatory agencies can help reduce the time required to gain approval. Conducting a site tour with local and state agencies may help identify potential issues early in the approval process.

Neighbors may oppose a proposed NSWI for fear that the facility will reduce their property values or reduce the enjoyment of their property due to odors, dust, vehicle traffic, and vectors such as flies, birds, and rodents. Surrounding property owners may also be concerned that the NSWI will impact ground water used for drinking water. Many times, neighbor opposition can

be addressed by informing them early in the process and holding meetings with neighbors to discuss the proposed facility.

The Tier III siting requirements contained in IDAPA 58.01.06 are considered the minimum criteria to protect human health and the environment. Facility owners/operators need to consider these criteria when evaluating potential sites and developing the facility's design and operating plan. It is important to understand the site, design, operations, and closure are all integral to the protection of human health and the environment. Federal criteria for classification of solid waste disposal facilities and practices are set forth in 40 CFR 257.3. Solid waste facilities or practices violating criteria established in 40 CFR 257 are considered open dumps and may be subject to citizen lawsuits as provided for under federal law in the *Solid Waste Disposal Act of 1965*, [42 USCA §§6901 to 6992K](#).

Note that where a NSWI facility is co-located with a municipal solid waste landfill, certain siting requirements applicable to the landfill may differ from the siting requirements in the Solid Waste Rules. For example, the property line setback requirement applicable to MSWLFs is 200 feet while the setback requirement for Tier III facilities under the Solid Waste Rules is 100 feet. In instances where both sets of requirements can be met DEQ will request that facilities meet both requirements. In instances where there is a more stringent and a less stringent requirement, DEQ will expect facilities to meet the more stringent requirement. In instances where a facility cannot identify the more stringent requirement please consult with DEQ to determine the appropriate course of action.

The following sections summarize the siting criteria contained in IDAPA 58.01.06 that are applicable to Tier III NSWIs. Additional information is requested in the NSWI site approval application that will facilitate the application review process and assist DEQ in providing early input on whether the applicant's proposal will meet the necessary requirements. The site approval application resembles a combination solid waste facility siting application and a wastewater preliminary engineering report (PER). Calculations establishing facility management capacity and volume acceptance capacity are necessary to ensure the facility is designed accordingly, the facility understands its waste volume limitations, and that all waste accepted at the facility is accounted for.

As with all solid waste facility applications, DEQ offers applicants a pre-application conference to discuss approval procedures, application contents, timetables for application processing, and siting requirements. It is highly recommended that applicants be familiar with the Rules and engage with DEQ at least 6-12 months prior to the anticipated submission of a NSWI siting application. Anyone completing a site approval application should read the siting criteria contained in the rules prior to completing the application. In addition to completing an application, all siting criteria will need supporting documentation to demonstrate compliance. If a facility intends to apply for a site-specific classification, it will be necessary to present design and operational information to DEQ prior to the siting determination. Applications are required to be signed and stamped by a qualified professional such as a professional engineer or professional geologist registered in the State of Idaho. Requirements for Tier III solid waste facilities are contained in IDAPA 58.01.06.13. A site plan approval checklist with specific rule citations is included in Appendix C. The NSWI site approval application is available at

3.1 Floodplain Restriction

Owners/operators may not locate solid waste facilities within a 100-year floodplain if the facility will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in a washout of the solid waste so as to pose a hazard to human health and the environment. Owners/operators proposing to locate a NSWI in a 100-year floodplain must ensure the site application specifically addresses how the facility will not restrict the 100-year flood, reduce temporary water storage capacity of the floodplain, or result in a washout of solid waste. All site approval applications must contain a [Federal Emergency Management Agency \(FEMA\) map](#) with the facility identified or a site evaluation report and a letter of conformation stamped by a registered professional engineer or registered professional geologist registered in the State of Idaho. Floodplain restrictions applicable to Tier III solid waste facilities are contained in 58.01.06.013.01.a.

3.2 Endangered or Threatened Species Restriction

To address potential impacts to endangered and/or threatened species, owners/operators proposing to locate or laterally expand a NSWI must obtain a determination from the United States Fish and Wildlife Service, the Idaho Office of Species Conservation, or the Idaho Department of Fish and Game. If a determination is made that the proposed site may impact endangered and/or threatened species, the owner/operator may be required to conduct a survey of the proposed site to determine if endangered and/or threatened species are on site or if the site contains critical habitat for the species. If the site contains endangered and/or threatened species or critical habitat, the owner/operator may need to undertake steps to address impacts to those species. Endangered and/or threatened species restrictions applicable to Tier III solid waste facilities are contained in 58.01.06.013.01.b.

3.3 Surface Water Restrictions

Solid waste impoundment facilities can impact streams, rivers, lakes, and reservoirs if siting, design, operations, and closure are not adequately considered. Pumpable waste may be released from impoundments during storm events and system failures.” Adequate stormwater controls and site grading can minimize overtopping and system failures, and prevent pumpable waste from washing into surface waters.

To address impacts to surface waters, site applications of proposed facilities or lateral expansions need to include a scaled map(s) that indicates surface waters in the vicinity. Design plans must include stormwater control features and demonstrate those features are adequate to control a 24-hour, 25-year storm event at a minimum. While the 24-hour, 25-year storm event is the minimum design requirement, each facility’s stormwater control system may be designed on site-specific meteorological conditions. The operating plan must discuss how the stormwater control features will be maintained to function as designed. This may include semiannual inspections of the stormwater control system and maintenance activities by facility staff as needed.

Owners/operators may also contact EPA to determine if a National Pollutant Discharge Elimination System (NPDES) permit is required. Requirements for surface water restrictions in Tier III solid waste facilities are contained in IDAPA 58.01.06.013.01.c.

3.4 Park, Scenic, or Natural Use Restriction

To reduce potential impacts to visitors of national or state parks and scenic or natural use areas, the “Solid Waste Management Rules” require a 1,000-foot separation distance between the active portion of the facility and the boundary of any state or national park or land reserved or withdrawn for scenic or natural use, including, but not limited to, wild and scenic areas, national monuments, wilderness areas, historic sites, recreation areas, preserves, and scenic trails. Site approval applications for proposed facilities and lateral expansions must contain a scaled map depicting the facility and any park, scenic, or natural use area within a 1,000-foot radius of the proposed facility. Park, scenic, or natural use restrictions applicable to Tier III solid waste management facilities are contained in IDAPA 58.01.06.013.01.g.

3.5 Wetlands

Owners/operators need to ensure that their proposed facility or lateral expansion will not impact wetlands during facility construction and operation. For facilities sited within a wetland area, owners/operators may need to obtain permits from the US Army Corps of Engineers. Additional design requirements may apply to facilities located in wetland areas to address high water table and/or unstable areas. Documentation included with the site approval application should include a copy of the applicable National Wetlands Inventory map and letters from the US Army Corps of Engineers or the Natural Resources Conservation Service providing wetlands determination. Requirements for wetlands restrictions in Tier III solid waste facilities are contained in IDAPA 58.01.06.013.13.a.

3.6 Ground Water

Ground water is a valuable resource for Idaho. Approximately 95% of Idaho citizens get their drinking water from ground water. In addition, agricultural irrigation accounts for 60% of the total ground water withdraw in Idaho. See DEQ’s *Ground Water in Idaho* webpage at www.deq.idaho.gov/water-quality/ground-water. Protecting ground water should be a high priority for all Idahoans. Once waste is disposed in an unlined impoundment, it becomes very difficult to determine whether or when contaminants are impacting ground water. Areas across the state have relatively shallow ground water and/or geology such as fractured basalt or sandy soil that may allow contaminants to migrate to ground water.

Idaho’s *Ground Water Rule* (IDAPA 58.01.11) defines three aquifer categories in Idaho; sensitive resource, general resource, and other resource. Sensitive resource aquifers receive the strongest level of protection. Stricter standards may apply to activities over a sensitive resource aquifer to ensure ground water is protected. Currently, the Spokane Valley-Rathdrum Prairie Aquifer is the only designated sensitive resource aquifer in Idaho.

Unless equally protective design and operational measures are put in place as part of a site-specific Tier II classification determination, pumpable waste is required to be managed in lined impoundments. While impoundment liners are costly, remediating ground water impacted by liquid waste can be significantly more expensive. Ground water restrictions applicable to Tier III solid waste management facilities are contained in IDAPA 58.01.06.013.01.d.

3.7 Geologic Restrictions

Fault areas, seismic impact zones, and other unstable natural or man-made features may impact the facility's site and design elements that are intended to protect human health and the environment. A site evaluation of a proposed facility or lateral expansion for these factors should be conducted by a qualified professional registered in the State of Idaho to determine if potential geologic issues exist with the site. Geologic restrictions applicable to Tier III solid waste management facilities are contained in IDAPA 58.01.06.013.01.e.

3.8 Property Line Restriction

The intent of the 100-foot setback from the active portion of the facility to the property line is to provide a physical separation from facility activities to surrounding neighbors. Even well-run facilities can produce some dust, odor, noise, and vectors. By providing this setback, the impact to neighbors can be reduced thereby reducing conflicts with surrounding property owners/users. Property line restrictions applicable to Tier III solid waste management facilities are contained in IDAPA 58.01.06.013.01.f. As noted previously in this guidance, municipal solid waste landfills have a 200-foot setback requirement. NSWIs co-located at a MSWLF should meet the more stringent 200-foot setback requirement since the NSWI is considered an active solid waste management unit.

3.9 Site Map

In addition to the site criteria identified above, a site approval application must include a scaled map(s) indicating the following:

- Highways, roads, and adjacent communities
- Property boundaries
- Total acreage of the site (indicate only the area to be used for waste management activities)
- Off-site and on-site access roads and service roads
- Type(s) of land use adjacent to the facility and a description of all facilities on the site
- All water courses, ponds, lakes, reservoirs, canals, irrigation systems, and existing water supplies within 0.25 miles of the proposed facility property lines. Existing water supplies include known public and private wells, springs, and surface water intakes used as public or private drinking water systems
- High-tension power line right-of-way, fuel transmission pipeline rights-of-way, and proposed and existing utilities
- Proposed and existing fencing
- Proposed and existing structures at the facility and within 500 feet of the facility boundary, including location of employee buildings and scales (if provided)
- Direction of prevailing winds

Site map requirements applicable to Tier III solid waste management facilities are contained in IDAPA 58.01.06.013.02.

3.10 Local Government Permitting

Proposed NSWI owners/operators should discuss their facility plans with county or city government early in the planning process to determine if separate local government approval is required. If the proposed facility site needs to be rezoned and/or granted a special use permit, this may delay construction and operation. Local government approvals are separate from DEQ's approval process under the "Solid Waste Management Rules." Approval by one entity does not obligate another entity to approve a project.

4 NSWI Facility Design

Design document submissions for NSWI facilities shall comply with and thereby satisfy the substantive requirements of both IDAPA 58.01.16.401, applicable to nonmunicipal (or "industrial") wastewater treatment or disposal facilities, and the applicable design requirements in the Solid Waste Rules. Facilities receiving pumpable waste must submit a NSWI design approval application under the Solid Waste Rules. This submission will also meet the "Plans and Specifications" submission requirement in IDAPA 58.01.16.401, Wastewater Rules. In addition to site selection, facility design provides human health and environmental protection from the liquid wastes that are managed at the facility. Design elements should consider both site conditions and the characteristics of the waste to be disposed at the facility.

Unlike operational activities, certain design elements such as a liners and leak detection systems are best installed prior to the placement of any liquid waste. Liners and leak detection systems are an added cost but, in most cases, are required to minimize and identify waste infiltration to groundwater. Ground water remediation and/or closure of a facility can be much more costly than a liner, leak detection system, and ground water monitoring. Known design costs can be calculated into fees imposed on customers and spread over the life of the facility. Unknown costs such as ground water remediation and closure are difficult to estimate. In the event of facility closure, money still must be spent on cleanup and closure/post-closure, yet no revenue is generated to offset these costs. Initial decisions on siting and design may also limit future changes in operation, such as expansion of the waste types accepted, if it is determined based on modeling or other methods, that the facility cannot accommodate the change and continue to protect human health and the environment.

Some operational information will be needed in order to properly evaluate facility design. NSWI facilities will need to submit information discussing the facility's operational design and capacity including a description of the waste types to be accepted and projected daily and annual waste acceptance volumes. Water balance calculations for each impoundment will be expected when evaporation is relied upon to reduce volume. Calculations establishing overall facility management capacity and volume acceptance capacity are necessary to ensure the facility is designed accordingly, the facility understands its waste volume limitations, and that all waste accepted at the facility is accounted for. More extensive operational information may be required at the time of site and/or design review if applying for a site-specific Tier II classification.

Compatibility of the waste types to be accepted, and management of incompatible wastes, should be analyzed by a qualified professional, and that analysis should be provided to DEQ. A

compatibility analysis should address the creation of hazardous materials or conditions, the creation of nuisance conditions such as odor, the ability of waste mixtures to be processed or treated as intended, and the effect of materials on the condition of the liner and other impoundment or waste management systems.

The Solid Waste Management Rules require owners/operators to submit facility design changes to DEQ for approval in advance. This includes structure modifications, physical changes to impoundments, changes to stormwater controls, and any other physical modification to the facility. Owners/operators are encouraged to contact DEQ if there is any question of whether a design modification application is required. Tier III solid waste management facility design requirements are contained in IDAPA 58.01.06.013.c and d, and are further identified and described below. A NSWI design plan approval checklist with specific rule citations is included in Appendix D. The NSWI design approval application is available at:

4.1 Design Application Map Elements

Design applications for proposed Tier III NSWI facilities or lateral expansions will need to include a map containing the following information.

4.1.1 Surface Water and Erosion Control System

The map will need to identify both stormwater run-on and stormwater run-off control systems including any ditches, berms, check dams, ponds, and other measures/features used for stormwater control. Stormwater control systems should also include calculations demonstrating the system will manage, at a minimum, the 24-hour, 25-year storm event. Temporary control measures should also be included in the design plan. Exact locations of temporary control measures would not be needed, but discussions on when the control measures will be used and the purpose of each temporary control measure should be included. Any time stormwater control design changes are anticipated, updated design plans must be submitted to DEQ for review and approval prior to implementing the design changes. Updated facility maps must also be included with the operating plan.

4.1.2 Proposed Impoundment and Waste Management Area(s)

Identify all proposed short- and long-term liquid waste management areas and impoundments, including but not limited to areas where liquid wastes will be initially received, evaluated, stored, and/or processed, any waste separation or bulking areas, and any sludge storage areas. All proposed waste management areas to be developed on the proposed site must be identified on a map. Information on proposed waste management areas should include the specific type(s) of waste to be managed in each area or impoundment, as well as dimensions for each area or impoundment.

4.1.3 Location of any Non-waste Staging Areas

Staging areas for any bulking materials should be identified. The bulking materials to be used should be identified, along with associated stormwater control systems.

4.1.4 Design Topography after Facility Closure

The owner/operator will include the elevations expected after facility closure, or a narrative description of the facility's topography after facility closure. Closure design should consider surrounding topography and future land use of the property. A closure/post-closure plan must be submitted to the local public health district prior to closure/post-closure activities.

Owners/operators should become familiar with the specific closure/post-closure requirements in the "Solid Waste Management Rules." Closure/post-closure guidance will be addressed in a separate DEQ guidance document.

4.1.5 Soil and Water Table Test Boring Holes, Wells, or Excavations

New and lateral expansion facility owners/operators must conduct site/geotechnical investigations to determine the underlying geology and depth to the highest known ground water table. These investigations can be completed using a variety of equipment that provides reliable information on the site characteristics. Locations of any subsurface investigations should be carefully documented and provided on a map. Investigations should concentrate in the area where the impoundment(s) are located. Site conditions such as soil type and depth to bedrock and/or ground water can vary across a site. New NSWI facilities will need to complete a site investigation as part of the site approval process. Owners/operators may use existing data if the data represents geology and ground water under the area proposed for lateral expansion. If current data does not represent conditions under the area of the lateral expansion, additional investigation will need to be completed prior to lateral expansion approval.

4.1.6 Proposed Expansion

In addition to the location of impoundments and waste management areas proposed for active use, the map(s) must include information on how future impoundments and waste management areas will be laid out and how the owner/operator plans to develop each additional unit.

4.1.7 Topography

Map(s) should include contour lines at 5-foot intervals within the operating area and 10-foot intervals to the facility boundary.

4.1.8 Building and Construction Design Blueprints

NSWI facility owners/operators will need to include design plans/blueprints for all proposed structures and buildings at the facility. After construction an owner/operator is required to submit an accurate set of record or "as-built" plans, or an equivalent statement stating that design plans accurately depict the constructed facility. This submission also meets the record plans submission requirement in the Wastewater Rules.

4.2 Design and Construction Elements

NSWI facilities are expected to install, monitor, and maintain a leak detection system (in lieu of a leachate management system), liner, air emission control system, and ground water monitoring system. Owners/operators must demonstrate that the proposed systems will be constructed, monitored, and maintained in accordance with any manufacturer recommendations and that the systems provide adequate protection to human health and the environment. Requirements for the design and construction elements for Tier III solid waste management facilities are contained in IDAPA 58.01.06.013.13.c.

4.2.1 Leak Detection System

In classifying solid waste management facilities, IDAPA 58.01.06.009.04 lists “leachate collection system” as a required aspect of a Tier III facility. However, DEQ has determined that the leachate collection system requirement, as it pertains to NSWI facilities, is satisfied by installing, monitoring, and maintaining a leak detection system, since the primary waste at a NSWI facility is liquid and in an impoundment. A leak detection system may include a double-liner design, or may be satisfied in some cases through additional operating criteria such as regular liner inspections and seepage testing. Most NSWI facilities utilize a combination of leak detection design and operational measures to ensure impoundment performance.

4.2.2 Liner

Non-hazardous solid waste impoundments are expected to install a liner (IDAPA 58.01.06.009.04). Liner design plans must prevent ground or surface water contamination and account for the types of wastes handled. Liner designs are to be provided to DEQ for approval, and submissions should include information on the type of liner to be installed, liner compatibility with the proposed waste(s) to be managed, quality assurance/quality control (QA/QC) practices to ensure the liner is installed to maintain liner integrity, and a demonstration that the liner will prevent downward migration of liquid waste and/or gas to the upper most water-bearing zone. The facility operating plan should include a procedure to gauge liner integrity at regular intervals, as well as after sludge removal and other activities that may damage the liner.

4.2.3 Air Emission Control System

The Rules require Tier III solid waste facilities to install air emission control systems (IDAPA 58.01.06.009.04). This requirement may have limited applicability at some NSWI facilities, depending on waste types managed, design features, and operational factors. A narrative explanation of why this requirement is inapplicable can be included in a facility’s design plan for DEQ review. When this requirement is applicable, facilities must provide air emission control system design plans to DEQ. The design plans should indicate the location of monitoring devices based on site-specific conditions and ensure that air emissions will not exceed 25% of the lower explosive limit for gases in facility structures and not exceed the lower explosive limit at the property boundary. All NSWI facilities will be expected to fully address odor management in the facility operating plan. This should include waste segregation where applicable, waste compatibility analysis and other odor prevention strategies, as well as a response plan when odor incidents occur.

4.2.4 Ground Water Monitoring

Installing a ground water monitoring system including a sufficient number of upgradient and downgradient wells provides an early warning system should liquid waste reach ground water passing under a facility. Owners/operators who install ground water monitoring systems also demonstrate to neighbors that the facility understands the importance of ground water and provides a level of confidence to downgradient users that ground water is not impacted. Tier III solid waste facilities are required to install ground water monitoring systems and must submit design plans identifying the location of proposed wells at the point of compliance, soil types at the site, depth to ground water, and ground water flow direction. If an applicant is requesting a site specific classification as a Tier II facility, other design and operational measures will be required to be put in place that will be equally protective. Depending on site-specific and other factors, a combination of liner, leak detection systems, and/or seepage testing may be determined to be equally protective.

If ground water monitoring is required, the owner/operator shall submit a copy of the geologic log and record of well construction to DEQ for each well within 30 days of well completion. A ground water monitoring plan must also be submitted and approved by DEQ indicating monitoring frequency (quarterly unless otherwise approved by DEQ), constituents to be monitored, and QA/QC sampling procedures. The monitoring plan will be integrated into the facility operating plan.

4.2.5 Sludge Management

Most NSWI facilities are expected to generate sludge and facility design should accommodate for all sludge management activities that will be required, including any sludge drying facilities, solidification operations, and storage. Design/site plans should include the location of all sludge management areas. The facility's operating plan should address in detail the operation of these sludge management facilities, including sampling protocols, storage timeframes, and disposal methods or locations. The requirements in IDAPA 58.01.16.650 may apply to the sludge generated at NSWIs and facility design should accommodate these requirements.

4.3 Design Submission and Review Process

Because pumpable waste is also considered to be non-municipal or "industrial" wastewater under the Wastewater Rules, DEQ expects design application submissions for NSWIs to meet the substantive requirements of the Wastewater Rules, IDAPA 58.01.16.401, as well as the Solid Waste Management Rules. As with all solid waste facility applications, DEQ offers applicants a pre-application conference to discuss approval procedures, application contents, timetables for application processing, and design requirements. It is highly recommended that applicants engage with DEQ at least 6-12 months prior to the anticipated submission of a NSWI design application. The design approval application for NSWI facilities should be prepared by or under the supervision of an Idaho Licensed professional engineer and shall bear the imprint of the engineer's seal. Once submitted, the application review timeframes and procedures in the Solid Waste Rules apply, including the public notice requirement in IDAPA 58.01.06.032.03.b.

Construction may begin once design approval from DEQ has been received. Construction should be observed by a licensed professional engineer or by someone under a licensed engineer's supervision. Record or "as-built" plans must be submitted under a licensed engineer's seal as set out in IDAPA 58.01.16.401.04. Changes to facility design require updates to the facility's record plans. For instance, this includes any change to the location of waste handling areas, sludge management areas, and bulking material storage areas. The facility record needs to reflect all these design and operational changes so that, in the event of a release, remediation activities can be effectively employed. This is important during the operational life of the facility as well as during and after facility closure.

5 Impoundment Facility Operations

The daily operation of a NSWI facility has a significant effect on whether the facility is protecting human health and the environment. A poorly operated facility can negate the effort that went into properly siting and designing it.

NSWI facilities are required to develop an operating plan, which is reviewed and approved by the local public health district. See the glossary for discussion of the term "operating plan." Once approved, Idaho regulations require NSWIs to have the approved operating plan on site, and the health districts expect the facility to be operated in accordance with the plan. Facilities should seek health district approval to update their operating plan prior to making any operational changes. An operating plan serves several purposes, but its primary usefulness is as a reference guide or facility manual for staff. New employees can become familiar with nearly all aspects of the facility by reviewing a well prepared and up-to-date operating plan. The plan can also be used by staff when unusual or emergency situations arise or if unfamiliar waste types are encountered. While an operating plan cannot be written to address every possible situation, it should be written so that most foreseeable situations are addressed. In the event that a situation arises that is not specifically covered in the operating plan, the plan should include the contact information for a senior decision-maker that staff can contact.

The following is a discussion of solid waste facility operating requirements detailed in IDAPA 58.01.06.013. Note that municipal solid waste landfills regulated under the Solid Waste Facilities Act are expected to integrate their NSWI operations into their overall facility operating plan. Specific rule citations and an operating plan approval checklist for NSWI facilities are included in Appendix E.

As noted above, a revised operating plan is required to be provided to the local public health district for review and approval whenever there are changes to facility operations, including but not limited to changes to the waste types accepted at the facility, a change in the types of wastes mixed or consolidated, changes in waste monitoring and measurement, changes to waste placement, changes to where waste is taken or stored during periods when the impoundment(s) are inaccessible, and changes to the maintenance or operation of leak detection and other environmental monitoring and control systems. Some changes will also require submission of a design modification application to the DEQ.

5.1 Waste Acceptance at NSWI Facilities

NSWI facilities can be authorized to accept a broad range of liquid waste types so long as the facility is sited and designed appropriately, and their operating plan authorizes the acceptance of those waste types. All waste types that will be managed at the facility need to be adequately identified in the facility operating plan. The most important type of waste that cannot be accepted at NSWI facilities is regulated hazardous waste. This includes EPA listed waste as well as characteristic hazardous wastes which are ignitable, corrosive, reactive, or toxic.

One of the major regulatory challenges for solid waste facilities that manage bulk liquids is to design and implement a procedure to reliably detect and prevent acceptance of regulated hazardous waste. Only permitted hazardous waste Treatment, Storage and Disposal (TSD) facilities are authorized to accept hazardous waste. See Idaho Code §39-4408. It is important to understand that acceptance of hazardous waste at a facility not permitted as a TSD is illegal regardless of what the generator's accompanying paperwork says. That is why a NSWI facility's acceptance procedure is so important. Acceptance of hazardous waste without a TSD permit, even inadvertently, would potentially subject a facility to significant enforcement penalties and clean-up costs. *Knowingly* accepting hazardous waste can subject a facility to criminal penalties and large fines. See Idaho Code §39-4415. While it is the waste generator's obligation under the law to properly characterize their waste as hazardous or non-hazardous, it is the NSWI facility's obligation to avoid accepting hazardous waste – to avoid becoming an illegal TSD facility.

The facility operating plan is expected to describe the waste acceptance process, how the facility will address waste compatibility, if applicable, and where within the facility each waste type will be transported and managed after acceptance.

5.1.1 Written Waste Acceptance Policies

NSWI facilities are expected to develop waste acceptance policies for the waste types that they accept. Written waste acceptance policies provide an effective means to communicate facility expectations and requirements to customers, provide assurance to regulators that the facility is properly overseeing what materials are entering their facility, and, finally, robust waste acceptance policies reduce risk and potential liability for the facility itself. These policies should be made available to customers and should inform them of (1) the required waste content parameters and (2) the information that is required to accompany each type of waste. Waste acceptance policies may be for individual types of waste or for broad categories of waste. DEQ encourages facilities to develop and implement waste acceptance policies that require submission of analytical test results for some or all loads of certain waste types, including but not limited to:

- **Any waste where the generator does not have control over, or full knowledge of its content.** An example is waste from a 24-hour, unstaffed car wash sump. There is little or no oversight of the entry of wastewater and other materials to these sumps. As a result, the generator does not have the requisite knowledge of its content to provide reliable information without obtaining analytical test results.

- **Any waste that was generated from an unknown process or location.** NSWI facilities need to be made aware of the source of the waste and the process that generated it. Without this information facilities have no means by which to measure the accuracy of the generator's statements relating to the content of their waste. Information verification reduces risk and potential facility liability, and it also provides regulators with assurances that the facility is only accepting materials it was sited and designed to manage.

Managing pumpable waste involves many inherent risks. When a generator does not provide, and a facility does not require, analytical test results in the circumstances described above, the facility is taking on an even greater risk, and an avoidable one, that the material contains unknown and possibly hazardous or incompatible constituents.

Some example waste acceptance policies are included in Appendix B of this guidance for reference. Robust, well designed waste acceptance policies can be developed for each type of waste accepted at a facility, or for categories of waste. In either case, it is recommended that they be prepared with the assistance of a technical professional familiar with waste compatibility issues and the waste or industrial processes involved.

When NSWIs and their technical consultants develop a waste acceptance policy, one of the threshold questions is whether the facility should accept that particular type of waste (1) without any analytical data, (2) with analytical data on an initial load and some number of subsequent loads on a scheduled basis, or (3) with analytical data on each load. Many factors will need to be accounted for in making these policy decisions, including the design of the facility, the training and experience of waste screening employees, and other facility-wide policies that may be in place like frequent sample collection and random confirmation testing. For example, a Tier III facility with state-of-the-art liners, leak detections systems and groundwater monitoring may choose to collect samples of every incoming load of waste, store them for 6 months, and publicize that it randomly tests 3% of accepted loads to confirm their content.

All waste acceptance policies should require customers to update waste/process paperwork when any changes occur to the process that generates the waste. For example a longstanding customer with a truck washing operation that only washes on-road dairy vehicles delivers wash area sump waste to a NSWI under a waste acceptance policy that does not require submission of analytical test results. If that washing operation begins to wash vehicles used to clean up and carry solvent spill material, the waste acceptance policy should require the customer to update their waste/process paperwork so that the determination to accept the waste without analytical data may be revisited.

5.1.2 Catalogue of Other Waste Acceptance Safeguards and Procedures

All Solid waste facilities are expected to fully address waste acceptance criteria, policies, and procedures in the facility operating plan. Facilities must demonstrate that (1) the facility has a program in place to identify and exclude hazardous waste, and (2) the facility is only accepting waste types that it was sited and designed to manage. A facility's most effective safeguard is to require customers to follow well developed waste acceptance policies. Some additional management practices and safeguards also play an important role. These include the following:

- **Training:** No policy or paperwork can be successful without alert and properly trained staff. Staff can identify problems and incomplete, suspect and even fraudulent paperwork. All staff involved in the acceptance of waste should be adequately trained to implement waste acceptance procedures, identify the waste types that the facility operating plan allows the facility to accept, monitor for waste types that are hazardous and cannot be accepted, and request more information when a waste is presented at the facility that requires more information before it can be accepted. Training of facility staff is your best defense against inadvertent acceptance of hazardous waste and the consequences that follow. A thorough and regularly scheduled training protocol should be set out in the facility operating plan, and training should consist of industry-standard off-site courses and certifications when available.
- **Waste Profile:** NSWI facilities may develop a “waste profile” for each waste from each customer, including separate profiles for different sites generating the same waste, if appropriate. The waste profile should include the generator’s waste characterization as well as information about the process that generated the waste, the location of generation, information about the generator, and any other information required to determine waste compatibility. The full waste profile can be kept on-site to pre-qualify the acceptance of certain types of waste under specified conditions. Waste profiles should be updated on a regular basis as well as when any of the information on the profile changes. A sample waste profile form is attached in Appendix XXX.
- **Waste Rejection or Segregation:** The waste profile or other required paperwork accompanying each waste shipment should adequately identify the waste type and properly characterize the waste as nonhazardous. Trained staff should scrutinize the paperwork to identify incomplete and inconsistent information. Facilities are encouraged to identify and differentiate high-risk waste types, and subject those to closer scrutiny. This heightened scrutiny can be integrated into a more stringent waste acceptance policy. Wastes not meeting the applicable waste acceptance policy should be rejected or segregated from other wastes until confirmation sampling results are obtained. Confirmation sampling is discussed in more detail in the next section. Operating plans must discuss monitoring and handling procedures for unauthorized waste. Facilities may be designed with holding areas in order to properly segregate waste while waiting for sampling results.
- **Screening and Logging Incoming Waste:** Gate attendants should conduct a visual inspection of every load that enters the facility and scrutinize the waste profile or other paperwork accompanying every load. Measuring incoming loads either by weight or volume can assist with facility planning. Monitoring incoming waste and recording this information on a daily log can assist with future waste acceptance decisions, assess remaining capacity, and determine future design capacity needs. A record of all rejected loads should be maintained in the facility record that documents the contents of the load, the reason the waste was rejected, driver’s name, vehicle license number, and any other pertinent information. Identify problem customers and prohibit their access to the site. Report fraudulent behavior to DEQ.

- **Random Load Inspections:** All loads should be subject to random load inspections. For liquid wastes managed at NSWIs, facilities should consider collecting samples from every load for all waste types other than those deemed low-risk. A percentage of these samples, along with samples from high-risk waste types and suspect wastes, should be subjected to confirmation testing. Confirmation testing and sampling is discussed in more detail in the next section. Sampling every load and randomly subjecting loads to confirmation testing tells customers that they may be caught if they misrepresent the delivered waste, even if they are not caught immediately.
- **Contract Liability:** It is good practice to hold the haulers and generators contractually responsible for wastes delivered to the facility and to ensure that the waste is not hazardous. Holding both hauler and generator jointly liable for any hazardous wastes that are discovered after acceptance, and for any costs borne by the facility in managing and removing that hazardous waste, can reduce owner/operator exposure to the inherent risks associated with managing liquid waste. Note however that a facility owner/operator may not eliminate legal responsibility for cleanup and/or penalties through contractual arrangements.
- **Licensed Haulers:** The various health districts issue licenses to haulers of domestic septage. A facility may choose to accept waste only from these licensed haulers, regardless of the waste type being hauled.
- **Customer Education Materials:** Customers who are not typically considered to be industrial manufacturers or processors may have limited knowledge of their responsibilities under RCRA to properly characterize their waste, or the methods that may be required. Both transporters and facilities play an important role in educating these customers. DEQ can partner with facilities in the development and dissemination of educational materials to assist specific sectors of the public.
- **pH Testing:** The acceptable pH range is between 2.0 and 12.5. Waste with a pH range outside of these parameters is considered hazardous and cannot be accepted at a NSWI. Some POTWs have required pH testing of all incoming pumpable wastes, both as a hazardous waste screening measure and as a limited confirmation that the waste is what the generator presents it to be for compatibility purposes.

Over time, the consistent application of the practices listed above will help in managing the facility, reduce liability, protect facility workers, and maintain the environmental integrity of the site.

5.1.3 Waste Sampling Procedures

A generator's evaluation of whether a waste is hazardous, a transporter's decision on whether to accept a load for transport, and a NSWI's decision to accept and manage a load of pumpable waste may be based on incorrect information if sampling is not performed properly. Proper techniques, as found in 40 CFR Part 136, must be used for sample collection, preservation, storage, and analysis if reliable results are expected to be obtained. NSWI facilities may use the information in this section when designing their own protocol for sample collection, storage, and testing. Facilities may also utilize the information in this section to educate transporters and customers on how to design their own protocols.

There are two basic types of samples: grab samples and composite samples. For sampling pumpable waste, both grab and composite samples are collected manually. The decision to utilize grab or composite sampling depends on several key factors including:

- Composition of the waste that is being received
- Pollutants to be analyzed
- Physical setup of the receiving station
- Purpose of the sample
- How well mixed the load is

5.1.3.1 Grab Sampling

A grab sample is a single discreet sample collected over a short period of time without regard to the waste stream flow. Grab samples are useful in taking a “snapshot” of a discharge and can provide information on the extreme pollutant concentrations of a load, whereas composite sampling may mask the extreme pollutant levels. Grab samples may be used if both flow and pollutant concentrations or loadings are constant and should only be employed if the waste contained in a pumper’s truck is homogeneous. Grab sampling is used when collecting composite samples is not appropriate. For example, grab sampling is necessary for such parameters as pH, oil and grease, temperature, total phenol, cyanide, sulfides, and volatile organics.

5.1.3.2 Composite Sampling

Composite samples measure the average amount of pollutants discharged by a waste hauler during the entire discharge period. A composite sample is a mixed or combined sample that is formed by combining a series of individual and discrete grab samples collected over a period of time or representing more than one specific location or depth. Composite sampling of pumpable waste consists of collecting time-proportional samples at specified intervals during a discharge. For a non-homogeneous discharge, wastes are stratified in the hauler’s tank and the effluent quality will vary over the discharge period. For this situation, the composite sample collected over the discharge period would be most appropriate. Grab samples should be taken at least three times during the discharge and then composited: once at the onset of the discharge, where a higher concentration of solids are likely to occur, once in the middle of the discharge, and once at the end of the discharge where light oils are most likely to appear.

5.1.3.3 Sampling Frequency

DEQ recommends that every NSWI include some form of confirmation sampling in their suite of waste acceptance safeguards, and establishing frequency is an important aspect of any confirmation sampling program. In addition, each waste acceptance policy may set out the required frequency of sampling required of the customer. NSWIs should consider a number of issues when establishing a customer’s required sampling frequency, including:

- Frequency necessary to obtain data representative of the nature and volume of the hauled waste
- Frequency necessary to deter unscrupulous haulers from delivering and discharging incompatible wastes
- Actual (or potential) impact of the hauled waste on the operation of the NSWI, compatibility with other wastes, and sludge disposal practices

- The hauled waste source and the types and concentrations of pollutants contained in the waste
- Regulatory requirements of any permits, local ordinances, facility policies, and federal regulations
- Seasonal variations in the volume and makeup of hauled waste
- Trends in delivery times
- Compliance history of the waste hauler

NSWIs should establish a base sampling frequency for each waste type or each category of waste, and increase or decrease the frequency on a case-by-case basis using the factors discussed above. A base sampling program for pumpable waste may include:

- Visual observation and recording of any unusual odors, color, or other characteristics;
- Monitoring of pH; and
- Collection of a grab or composite sample of the hauled waste (for later analysis if necessary).

While an effective deterrent, sampling alone may not provide complete protection from incompatible loads, as it can provide information only if analyzed. NSWI operators may find the need to perform a quick analysis of a load before discharging to the impoundment system for any number of pre-determined or suspect parameters. Analyzing for pH is perhaps the most effective way to discover incompatible loads, and can be performed rapidly, without great cost to the NSWI or the waste hauler.

Two sampling programs are described below that categorize accepted wastes very broadly - domestic septage and everything else. These examples are offered for their simplicity and not as a suggested way to categorize waste:

Example 1: Comprehensive sampling and analysis of all non-domestic hauled waste and periodic sampling and analysis of domestic septage—All hauled wastes of nondomestic origin are sampled and analyzed and every tenth load of domestic septage received from each hauler is sampled and analyzed.

Example 2: Comprehensive sampling of all hauled wastes and periodic or random analysis of the collected samples—A sample is collected from each hauled waste load. These samples are preserved and stored and a portion of the samples are analyzed. Each hauler knows that all of his loads will be sampled but does not know which of his loads will be analyzed. In addition, if a disruption in facility operations occurs, the stored samples can be used to determine the exact makeup of the load which caused (or is suspected of causing) the disruption. If several loads were received, the stored samples of all these loads can be analyzed to assist in identifying the waste hauler and waste load that may have caused the disruption.

Example 3: Random sampling and analysis—Sample collection and analysis are conducted on a random basis. For example, the NSWI randomly selects a day to conduct sampling and all waste loads that are received that day are sampled and analyzed, or the NSWI may collect and analyze samples every day but randomly selects the loads to be sampled and analyzed (i.e., every fifth truck or seven random samples per day).

5.1.3.4 Testing Parameters

The purpose of generator-required waste characterization in RCRA is limited to determining whether the waste is hazardous. However, depending on how wastes are managed at the facility, additional analysis to determine compatibility with other wastes may be necessary. Whether a customer or a NSWI facility performs the analytical testing for a particular waste type, DEQ suggests that the initial waste characterization take place over a series of waste loads, or if there are seasonal variations to the waste, over a period of several months to more than a year. Pollutants of concern identified during characterization should be used to establish the parameters for a routine monitoring program, as discussed above.

A customer's routine monitoring data, if available, may be useful to identify potential waste constituents. Metals typically identified at *highest* average levels in pumpable waste may include iron, zinc, copper, lead, chromium, and manganese. The most *frequently* identified metals may be copper, nickel, chromium, and lead. Organics likely identified at highest average levels may be acetone, isopropyl alcohol, methyl alcohol, and methyl ethyl ketone. In general, NSWIs should anticipate that pumpable waste may contain relatively high levels of heavy metals and organic solvents. However, the type and level of pollutant present will vary depending on the type of waste (e.g., domestic septage, landfill leachate, groundwater remediation site waste, industrial wastes) and site-specific factors. NSWIs should periodically sample loads of certain waste types to determine if there are site specific pollutant concentrations and loadings for those metals listed above, as well as for common organic solvents (especially ketones and alcohols) and any other identified pollutants of concern.

5.2 Common Waste Types and Categories

A number of common waste types and categories are described below, along with some suggested waste acceptance criteria that are aimed at protecting NSWI facilities from inadvertent acceptance of hazardous waste. Certain pumpable wastes are more susceptible to containing hazardous waste than others. Those waste types require additional safeguards be put in place prior to acceptance. If a facility proposes to describe wastes they plan to accept using general category descriptions, each category should be sufficiently described so that DEQ can identify whether a particular waste type can be accepted at the facility.

Accepting a waste type that was not identified in the siting or design of the facility, or accepting a waste not identified in the facility operating plan, can lead to enforcement actions and/or major process upsets at the facility. Accepting a new waste type is never an ad-hoc decision made at the facility when presented by a customer.

5.2.1 Grease Trap Waste

Grease trap waste typically originates from a plumbing device (grease trap, grease interceptor, grease recovery, device or grease converter) designed to intercept the majority of greases and solids before they enter a POTW. The content of grease trap waste originating from a restaurant or food service location is generally well known and it is usually appropriate for a generator to rely on "acceptable knowledge" for this type of waste when performing their waste characterization required under RCRA. However general safeguards should be included in the

operating plan of the facility accepting the waste, and these measures should be made known to the facility's customers in a written policy.

5.2.2 Production Water and Other Wastes from Oil and Gas Operations

While these wastes are generally exempted from the management and disposal requirements applicable to hazardous waste, they remain regulated as solid waste and may still contain hazardous constituents that may require costly remediation if managed poorly. Also, hazardous constituents may concentrate in sludge generated at the facility. These factors should be considered when deciding whether to accept one or more of these wastes and when siting and designing a NSWI facility. Waste acceptance policies should require initial waste characterization through the submission of analytical test results for each production site since geology can affect what types of fluid are used in the process. Waste compatibility and hazardous waste generation in sludge at the NSWI facility are the factors driving DEQ's recommendation.

5.2.3 Waste from a Controlled Sump or Source

Sumps and other sources of liquid and semi-liquid waste which can be accessed only by the party controlling and utilizing the sump or source can produce wastes with consistent content. When a source produces consistent content it may be appropriate for a NSWI facility to rely on a generator's waste characterization that utilizes acceptable knowledge." However, other factors may need to be considered, such as whether the process or activities that contributed content to the sump or source has changed. Typically with these types of wastes a NSWI facility may initially require analytical testing to confirm the waste from a particular source is non-hazardous prior to acceptance, and to analyze compatibility. Following development of a source profile and submission of the initial analytical results, confirmation sampling can be required at regular intervals, typically on an annual basis or biannual basis. Note that multiple source locations at a single facility may require separate source profiles in order to track each source independently.

A sample Source Profile Form as well as a sample Controlled Sump or Source Pumpable Waste Policy can be found in Appendix B.

5.2.4 Waste from an Uncontrolled Sump or Source

Sumps and other sources of liquid and semi-liquid waste which can be accessed by the public can have unpredictable content. Stormwater drains and 24-hour unmanned carwash sumps, for instance, provide an attractive means by which to dispose of unwanted and sometimes hazardous materials. Many POTWs no longer accept waste from these types of sources because of their unpredictable content, or because of specific instances of hazardous waste entering the wastewater facility from such sources. Any facility accepting waste from these types of sources should put stringent safeguards in place in order to protect the facility from inadvertent acceptance of regulated hazardous waste. It is inappropriate, in most cases, for generators of waste from these uncontrolled sumps and other sources to rely on "process knowledge" when making their waste determination required under RCRA. Facilities accepting these wastes and relying on – process knowledge are putting their facility in a position of financial and regulatory risk.

The most protective approach for facilities accepting waste from uncontrolled sumps and other sources is to require analytical testing of every shipment or load. A sample Uncontrolled Sump or Source Pumpable Waste Policy can be found in Appendix B.

5.2.5 Leachate from Waste Disposal Sites

Landfill leachate has historically been sent to POTWs for disposal but NSWIs may provide an attractive alternative. NSWIs should engage a technical consultant to determine if landfill leachate should be accepted and to develop a waste acceptance policy. Research is available on typical leachate content, but each landfill will generate leachate with its own characteristics, and even at the same landfill the content of leachate may change significantly over time. Customer submission of analytical testing results to the NSWI on a frequent basis is recommended, both to establish it as nonhazardous and for compatibility analysis.

5.2.6 Fuel Contaminated Wastewater

A NSWI facility's primary concern is likely to be this waste's ignitability and compatibility with other wastes. Since each load of fuel contaminated wastewater is likely to have different concentrations, analytical test results for each load may assist in compatibility determinations and waste management decisions.

5.2.7 Concrete Hydro-demolition and Hydro-jetting Wastewater

Concrete hydro-demolition waste may include excess concrete debris, dewatered tank precipitate, and hydro-demolition water. A generator may be required to treat hydro-demolition water to neutralize pH prior to transport to a NSWI for disposal. At a minimum, DEQ recommends that NSWIs make customers aware that the facility will perform routine confirmation sampling on this type of waste.

Hydro-jetting with uncontaminated source water of uncontaminated soil does not create a regulated solid waste. This material would be considered inert under the solid waste rules and does not require disposal at an authorized solid waste facility. Note that, due to the potential for high levels of total suspended solids, the discharge of this material to or near surface waters may be problematic. DEQ's surface water program can provide direction on how and where this material can be discharged. If either the source water or the soil is contaminated, a generator should analyze the waste and have a qualified professional review the results in order to determine how it may be disposed.

5.2.8 Groundwater Remediation Wastewater

Similarly, load of groundwater remediation wastewater will have its unique pollutant concentrations. The particular constituents will also vary depending on the remediation project. Analytical test results for each load may assist in compatibility determinations and waste management decisions.

5.2.9 Wastewater from Cleanups and Emergencies

Each load of wastewater from a cleanup or an emergency situation will be unique. Analytical test results will assist Analytical test results for each load may assist in compatibility determinations and waste management decisions.

5.2.10 Domestic Septage

Septage is a general term for the contents removed from septic tanks, portable toilets, privy vaults, wastewater holding tanks, type III marine sanitation devices, recreational vehicle holding tanks, very small wastewater treatment plants, or semipublic facilities (e.g., schools, motels, mobile home parks, campgrounds, and small commercial endeavors) receiving wastewater strictly from domestic sources, a constituent of which is nearly always, or potentially, human waste. The term “nondomestic septage” is avoided in this guidance due to its imprecise and inconsistent use. The terms “septage” or “domestic septage” are used to refer to the liquid and semi-liquid waste from residences or facilities with waste characteristics similar to residential sources like schools, motels, campgrounds, and office buildings.

Domestic septage that is kept separate from other types of liquid waste has more options when it comes to disposal, and it is regulated under the Rules Governing the Cleaning of Septic Tanks (IDAPA 58.01.15). See <https://www.deq.idaho.gov/water-quality/wastewater/septic-systems/septic-tank-pumping-and-septage-disposal/>. In most cases, after domestic septage is comingled with other types of liquid waste it is then regulated under the Solid Waste Management Rules. Comingling wastes containing domestic septage with other waste types is not recommended since the comingled waste can pose challenges at NSWI facilities. More discussion is available in the Waste Mixture and Compatibility section of this guidance.

Wastes accepted at NSWI facilities as domestic septage that have not been mixed or combined with other types of waste do not pose a high risk of containing hazardous waste, and the general safeguards applicable to all wastes can be applied. Staff should remain vigilant and scrutinize loads and paperwork for inconsistencies that can reveal issues. IDAPA 58.01.15 states that a site may be approved by DEQ to accept domestic septage for drying “in a location and by a method” approved by DEQ. See IDAPA 58.01.15.003.03.d. A NSWI that has an approved site, design, and operating plan that includes the acceptance of domestic septage meets the requirements in the Rules Governing the Cleaning of Septic Tanks. Note that those rules also require haulers of this material to be licensed.

5.2.11 VSQG Waste

As a Tier III solid waste facility, a NSWI can accept Very Small Quantity Generator (VSQG) waste if it is approved as part of its siting, design, and operations plan. Acceptance of this type of waste may be contingent on site conditions, or require additional design features and operational safeguards. While VSQGs are relieved of many of the onerous requirements found in RCRA, the waste itself poses the same risk to human health and the environment that it would pose from a larger generator, especially if wastes are collected and consolidated into larger quantities.

Certain VSQG wastes may be more likely to affect liner integrity. Facilities should carefully evaluate how a VSQG waste may affect facility equipment and materials during the design of the facility.

Sludge removed from a nonhazardous solid waste impoundment is considered a new point of generation and requires the NSWI facility to analyze the content of the sludge to determine if it is hazardous waste. If a facility is accepting VSQG waste, the sludge may be more likely to concentrate constituents and test as hazardous. This may require the NSWI to be considered a “Small Quantity Generator” of hazardous waste, or even a “Large Quantity Generator,” both of which require additional and specific waste management practices. Sludge that is determined to be hazardous waste requires proper disposal at a permitted TSD.

5.2.12 Receiving Mixed Waste Loads

Waste haulers should be familiar with your NSWI’s waste acceptance policies and only mix wastes from generators if the policy allows it. The mixture of domestic septage with other pumpable wastes, for instance, may cause the waste to be rejected at the NSWI facility if it requires segregation of domestic septage for storage and treatment. Similarly, a load of controlled source waste mixed with one uncontrolled source may lead to rejection, depending on the NSWI facility’s waste acceptance policy for uncontrolled sources.

5.2.13 Prohibited Waste

NSWI facilities may not accept regulated hazardous waste, municipal wastewater, or waste types not identified in the facility operating plan. Facilities should make public a list of waste types not accepted at the facility so that customers and potential customers are made fully aware of these facility limitations.

5.3 Signs

Signage at each entrance to a NSWI facility is required and informs customers of the name of the facility, hours of operation, waste types accepted, and an emergency contact. Signs should be easily readable by those entering the facility and lettering should be large enough to be seen from a reasonable distance. Poorly located signs or too small of print can lead to misunderstandings with customers and additional work for the staff. Additional information such as fees, prior notification for special wastes, and other information can help educate NSWI customers. Requirements for signage at Tier III solid waste management facilities are contained in IDAPA 58.01.06.013.03.b.

While not required by the “Solid Waste Management Rules,” signs *within* the facility can help direct customers to specific areas such as those designated for specific types of waste. The sign should clearly list specific waste types that may be placed or are not allowed to be placed in the designated area.

5.4 Speculative Accumulation

Speculative accumulation is prohibited at solid waste facilities. Idaho's *Solid Waste Management Rules* define speculative accumulation as "stock piles of materials or recyclables to be processed for reuse or disposal when fifty percent (50%) of the material is not reused or disposed by the end of the following calendar year after the date of first receipt by the facility, and which may create a nuisance or public health impact" (IDAPA 58.01.06.005.45). As an example, if a facility started stockpiling a material on January 2, 2014, and accumulated 300 cubic yards of the material, the facility would have until December 31, 2015, to dispose or reuse at least 150 cubic yards of the material. For NSWIs, the speculative accumulation prohibition may apply to stockpiles of sludge or solidified material awaiting reuse or disposal.

Stockpiling and any recycling or reuse of material should be adequately described in the facility's operating plan. DEQ supports legitimate efforts to recycle or reuse materials, and will provide assistance to facilities entertaining recycle and reuse options.

5.5 Communications

Operating plans should identify communication equipment available onsite and emergency response notification. Communication requirements for Tier III facilities are contained in IDAPA 58.01.06.013.03.e. Additional discussion on communications is provided in section 5.6.

5.6 Fire Prevention and Control

Tier III owners/operators are required to include fire prevention and control measures in their operating plans. Fires can occur for a variety of reasons. Spontaneous combustion of organic materials, incompatible wastes, equipment exhaust systems contacting combustible waste, or dry vegetation are all potential causes of fires. Owners/operators need to be prepared by having a plan to deal with fires. In addition, staff should understand the waste types accepted at the facility and have adequate firefighting equipment and knowledge of when to fight fires and when to contact the local fire department. Operating plans should contain emergency contact information, and emergency contact information should be posted beside or programmed into the land-line telephones. If personnel are provided cell phones, emergency contact information should be programmed into cell phones. Fire Prevention and Control requirements for Tier III facilities are contained in IDAPA 58.01.06.013.03.f.

5.7 Facility Access

To prevent uncontrolled dumping, vandalism, and liability from injury, all facility owner/operators need to secure their sites when staff are not on duty by using adequate fencing and/or natural features. Natural features may include large water bodies, rugged terrain, or other similar features that limit vehicle and foot traffic from entering the facility. Entrances should be controlled with gates that are locked when staff is not present. Facility access requirements for Tier III facilities are contained in IDAPA 58.01.06.013.03.g.

5.8 Odor and Nuisance Control

All owners/operators must control for nuisances. Nuisance issues are one of the public's primary concerns surrounding solid waste sites. Odor, vectors (e.g., flies and rodents), and visibly blowing waste are a few of the nuisance conditions that can occur at solid waste facilities. Effectively managing incoming waste, understanding how wastes break down in impoundments, and accounting for compatibility issues in advance can help reduce odor and other nuisance issues. An operating plan must detail how odor and other nuisance conditions will be prevented, and identify contingency measures to be implemented should odor or other nuisance conditions arise. Nuisance control requirements for Tier III facilities are contained in IDAPA 58.01.06.013.03.i.

5.9 Sludge Management

A facility operating plan should address the generation of sludge at the NSWI, sludge removal process and frequency, liner inspections after sludge removal, sludge management after removal, and sludge disposal location. Note that the frequency of sludge removal may affect your generator status (Very Small, Small, or Large) if your sludge tests as hazardous. The requirements in IDAPA 58.01.16.650 may apply to the sludge generated at NSWIs and facility operations should address these requirements.

5.10 Bird Hazards to Aircraft

All Tier III solid waste facilities located within 10,000 feet of any airport runway used by turbojet aircraft or 5,000 feet of any airport used by piston-type aircraft must ensure waste is managed to not attract birds and not increase the likelihood of bird/aircraft collisions. In 2013, 10 bird/aircraft collisions were reported in Idaho, with half of these collisions resulting in \$50,000 or greater damage to the aircraft. Facility owners/operators should continue to evaluate waste types accepted at their facility to ensure birds do not become a hazard to aircraft. Requirements for preventing bird hazards to aircraft for Tier III solid waste facilities are contained in IDAPA 58.01.06.013.03.j.

5.11 Stormwater Run-on and Run-off Control

NSWI owners/operators need to prevent stormwater and/or snowmelt from running into facility impoundments. Stormwater run-on and run-off controls apply to sludge management areas as well as impoundments. Stormwater and/or snowmelt that has contacted waste must be managed as waste. Requirements for Tier III stormwater run-on and run-off controls are contained in IDAPA 58.01.06.013.03.l.

Stormwater run-on and run-off control should include stormwater best management practices (BMPs), stormwater control system maintenance, and monitoring of the stormwater control system to ensure the system is functioning as designed. Discussion on stormwater control system BMPs, maintenance, and monitoring should be included in the facility's operating plan. Any time stormwater control design change is anticipated, updated design plans shall be submitted to DEQ for review and approval prior to implementing design changes. Updated facility maps shall

also be included with the operating plan and submitted to the local public health district for review and approval. For more information on stormwater BMPs, see DEQ's and EPA's stormwater webpages:

- DEQ's Stormwater in Idaho webpage:
www.deq.idaho.gov/water-quality/wastewater/stormwater
- EPA's *Storm Water Program* (IPDES scheduled to begin storm water permitting in 2021)
<https://www.epa.gov/npdes/npdes-stormwater-program>

5.12 Compatibility: Mixing and Consolidating Wastes On-Site

NSWIs are encouraged to keep waste types segregated whenever possible. When waste types are proposed to be mixed with one another in a single impoundment, a qualified professional should review the compatibility of the wastes prior to the wastes being mixed. The review should consider, at a minimum, any effect on waste treatment, generation of odors, the creation of chemical reactions, and effect on liner integrity. If a facility plans to mix wastes as a standard practice, a waste compatibility analysis addressing the proposed management practice(s) should be provided as part of facility siting and design review.

5.13 Temporary Storage of Waste

Temporary storage of any liquid or semi-liquid waste in a manner not approved in the design of the facility or in the facility operating plan requires prior approval from the local public health district. Temporary storage will only be approved for emergency short-term use. Unless it is the result of a declared emergency, lack of facility capacity is not considered an emergency.

5.14 Employee Training

While not included in the "Solid Waste Management Rules," employee training is an integral part of every facility's successful operation. Educate staff on the facility's operating plan, policies, regulations, and guidance pertaining to the waste types accepted and managed, and on potential environmental impacts and liability issues resulting from improper waste management. Develop and implement a comprehensive training program to help staff identify prohibited waste types, scrutinize paperwork, and enforce site restrictions. Facility employees should also receive health and safety training as it pertains to their jobs and activities around the facility. A copy of any training, whether on-site or off-site, should be retained in the employee's file to help demonstrate the employee's competency and the frequency of training. Regular, periodic employee training will not only result in a safe, well-run facility but may also reduce insurance costs and lost work time from injuries and accidents.

5.15 Worker Safety

While not included in the "Solid Waste Management Rules," worker safety training is highly recommended. DEQ may consider certain types of training, such as that involving the identification of hazardous waste, to be crucial part of operations that affects design considerations. NSWI workers face many safety issues during their workday, including exposure

to different wastes, operation of heavy equipment, and in some cases drowning. Facility management should provide the safest working conditions possible. Not every hazard will be mitigated, but training staff on the dangers associated with their job, providing clear traffic routes to and from impoundments, and providing the necessary personal protective equipment to on-site workers will help reduce accidents at the site and decrease insurance costs.

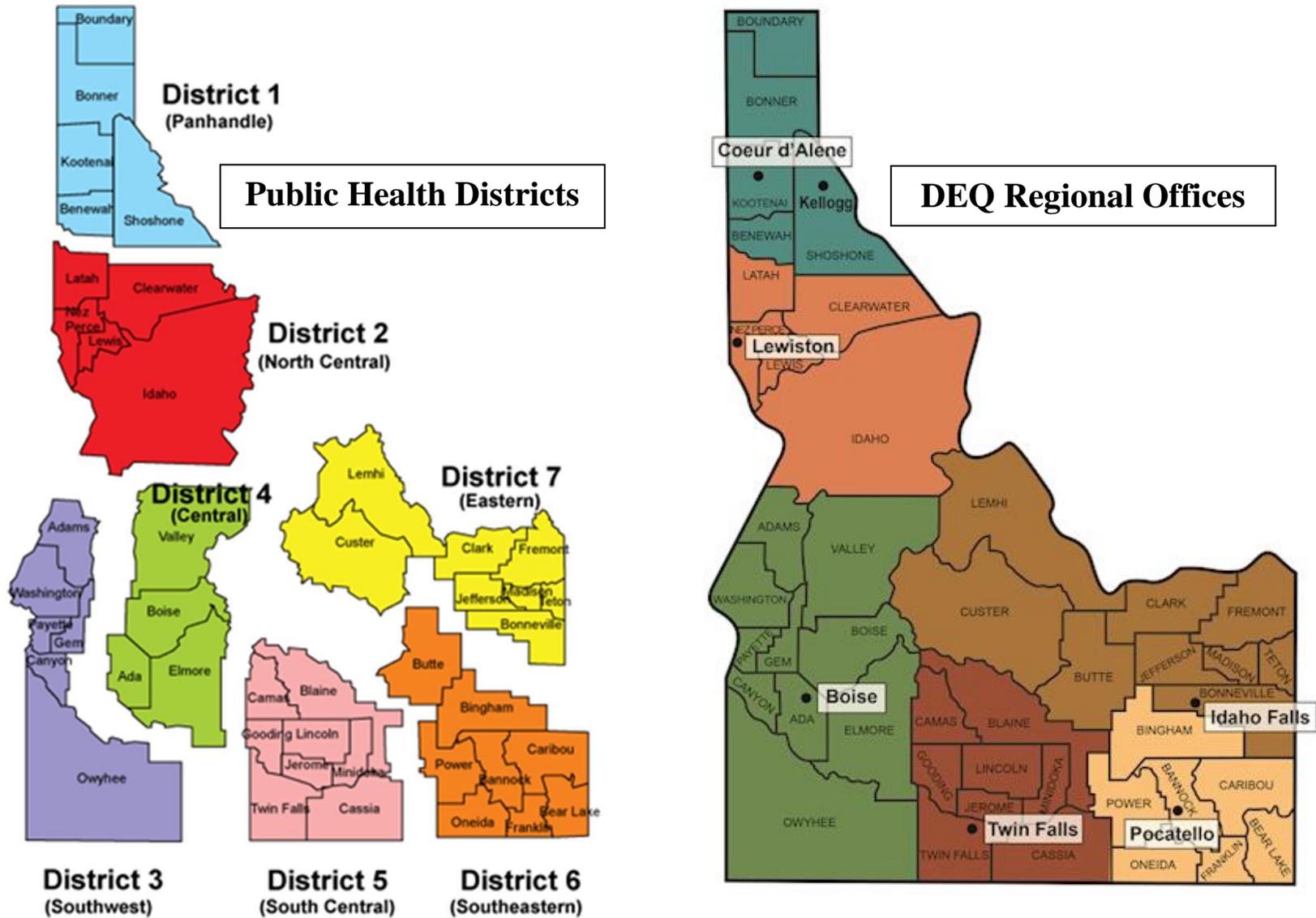
5.16 Documentation

All Tier III solid waste facility owners/operators are required to maintain certain documents on-site. All approved plans such as the facility operating plan, ground water monitoring plan, air emissions monitoring plan, and closure/post-closure plan must be retained on site. Other documentation such as daily logs demonstrating volumes and types of waste, employee training records, random load inspection forms, rejected load logs, and other similar documents should also be maintained on site.

6 Glossary

Add content

Appendix A. Jurisdictional Maps of Health Districts, DEQ Regions, and Counties



Appendix B. NSWI Facility – Sample Waste Profile Form and Waste Acceptance Policies

Appendix C. NSWI Facility - Site Approval Checklist

Appendix D. NSWI Facility - Design Plan Approval Checklist

Appendix E. NSWI Facility - Operating Plan Approval Checklist

