

APPENDIX C

Facility Operating Protocols



DECANT FACILITY PROTOCOLS

These protocols for operating stormwater decant facilities are designed to guide the operations of new and existing decant facilities. They were developed by ROADMAP (the NPDES Regional Operations and Maintenance Program group) with a grant from the Washington State Department of Ecology (Ecology). Many of the protocols apply to all decant facilities while some are intended primarily for facilities that accept generated materials, such as stormwater liquids/solids and street sweepings, from other municipalities or private haulers.

These protocols are guidance for facility owners and are not intended as prescriptive operating requirements. Applicable protocols vary widely depending on the size of the facility, types of materials accepted, whether materials are reused or disposed of, municipality codes/practices, and permit requirements specific to each facility. Facility owners should use an operations plan to specify standard operating procedures and address the permit requirements applicable to their facility (or facilities). The protocols use a checklist format for the following categories of information:

1. Facility operations
2. Facility users
3. Safety and security
4. Material acceptance
5. Hot load identification and handling
6. Solids handling, testing, and disposal
7. Liquids handling, testing, and treatment
8. Solids reuse.

Each category contains the following elements:

- Protocol objectives
- Basic operating procedures
- Considerations for opening to external users
- Facility design considerations
- Permit compliance considerations
- Additional considerations

The protocols are based on the following sources of information:

- Solid Waste Handling Standards (WAC 175-350) for Piles Used for Storage and Treatment (WAC 173-350-320)
- Solid Waste Handling Permits issued by local health departments/districts in the study area
- Major Discharge Authorizations or other permissions to use the sanitary sewer issued by local sewage treatment facilities in the study area
- Appendix 6 - Street Waste Disposal *in* Western Washington Phase I and II Municipal Stormwater Permits
- Appendix IV-G - Recommendations for Management of Street Waste *in* the Stormwater Management Manual for Western Washington, Volume IV Source Control BMPs
- Operation and Maintenance Plans and telephone interviews with facility representatives for each of the following decant facilities:
 - King County Regional Stormwater Decant Facility in Renton
 - Snohomish County Vector Facility at Cathcart Landfill
 - Thurston County Waste and Recovery Center Vector Waste Decant Facility
 - Pierce County Puyallup Vector Waste Decant Facility
 - City of Seattle Halladay and West Seattle Decant Facilities
 - City of Tacoma Environmental Services Cleveland Way Decant Facility

1. Facility Operations

Protocol Objective

Provide the facility owner, operator, and user with a detailed Operations Plan describing all aspects of facility operations to comply with permit requirements and ensure consistent operations

Basic Operating Procedures

- Prepare Operations Plan describing basic facility operations and practices including, but not limited to, solids handling and characterization, record keeping, reporting, inspections, compliance, facility maintenance, truck scale use, and disposal and reuse procedures (see Operations Plan Template).
- Conduct operations in compliance with any permits that may be required by state or local regulators. These permits may include the following:

- Solid Waste Handling Permit issued by the municipality's health department/district in accordance with local codes and regulations, Solid Waste Management –Reduction and Recycling (RCW 70.95), and Solid Waste Handling Standards for Piles Used for Storage and Treatment (WAC 173-350-320)
 - A Major Discharge Authorization or other permission to discharge to the sanitary sewer issued by the local sewerage authority in accordance with local codes and regulations including the Washington State Water Pollution Control Act (RCW 90.48) regulations for facilities discharging decanted liquids to a sanitary sewer
 - Municipal stormwater permit issued to an operating municipality by Ecology in accordance with the National Pollutant Discharge Elimination System.
 - Waste Disposal Permit under RCW 90.48 for facilities seeking to discharge liquids to ground or surface waters
- Update operations plan every two years, or as needed.
 - Specify regular operating hours.
 - Illustrate facility layout and traffic flow for users.
 - Prepare facility user requirements (see Section 2 below).
 - Maintain safety and security (see Section 3 below).
 - Provide material acceptance criteria (see Section 4 below).
 - Provide hot load identification and handling procedures (see Section 5 below).
 - Provide solids handling, testing, and disposal procedures (see Section 6 below).
 - Provide liquids handling, testing, and treatment procedures (see Section 7 below).
 - Provide truck washout recommendations that ensure washout liquids and solids are disposed at decant facility or approved treatment system.
 - Provide solids reuse procedures (see Section 8 below).
 - Routinely inspect and maintain facility to prevent stormwater contamination or nuisance plant or animal conditions.
 - Inspect material and decontaminate equipment as needed to prevent the spread of aquatic invasive species (see Aquatic Invasive Species Protocols).

Considerations for Opening to External Users

- Have signed terms and conditions agreement with external users (see Terms and Conditions Template).
- Consider an on-site, full or part-time operator to inspect and log loads from external users or a combination of camera surveillance, scale, and user log.
- Consider how to provide secured access for external users of the facility
- Consider how to handle disposal fees and billing procedures.

Facility Design Considerations

- Potential limiting factors for effective operations:
 - Solids storage capacity in decanting area, accounting for decanting time
 - Solids storage capacity in the drying/storage area, accounting for drying time
 - Liquids storage capacity and discharge limit, accounting for settling time
 - Sufficient space for access by multiple trucks
- Potential separation of solids depending on source and desired end use or disposal:
 - Solids exhibiting potential chemical contamination for separate testing and disposal
 - Solids from systems containing aquatic invasive species if materials are reused in aquatic environments
 - Street sweeping materials requiring no decanting and less or no drying time
 - Street sweeping materials comprised of leaves for transfer to a compost facility

Permit Compliance Considerations

- Permitting authority contact information and permit requirements
- Permit renewal schedule
- Permitting authority approval for changes in operations plan
- Measure and record accepted or processed quantities consistent with permit requirements.
- Test and report solids and liquids characteristics consistent with permit requirements.
- Stormwater pollutant source control, detention, and treatment consistent with permit requirements
- Dust control measures consistent with permit requirements
- Odor control measures consistent with permit requirements
- Nuisance animal vector control measures consistent with permit requirements
- Aquatic invasive species control measures consistent with permit requirements
- Stormwater Pollution Prevention Plan consistent with permit requirements

Additional Considerations

- Access route, road capacity, and restrictions
 - Procedures for emergency access outside regular operating hours
 - Signage at facility outlining operating procedures
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2. Facility Users

Protocol Objectives

- Provide the facility owner/operator with a simple system for ensuring that haulers from other municipalities or private entities observe standard best practices at the facility.
- Provide facility owner/operator a simple, clear understanding of when the privilege of using a shared facility should be revoked.

Basic Operating Procedures

- Train authorized users in basic facility operations and practices.
- Authorized users possess a valid commercial driver's license.
- Authorized users sign a statement that they understand the facility's procedures and that not following them will result in revocation of authorization to use the facility.

Considerations for Opening to External Users

- What is the application and approval system (by entity or individual driver)?
- How to measure quantities of materials received and bill external users?
- How to verify liability insurance?
- Restrict vehicle or equipment types?
- What, if any, types of loads to prohibit (e.g., restaurant grease trap waste)?
- Different training requirements for internal and external users?
- Criteria and procedures for revoking use authorization
- How to notify drivers of revoked privileges and ensure they don't use the facility?
- Who is responsible for gathering data, correcting data errors, answering inquiries, invoicing, collecting payment, notifying entities of revoked privileges, and cleanup of contaminated or prohibited materials?

Facility Design Considerations

- Manual or automatic system for:
 - Verifying use only by authorized haulers
 - Recording user activities and material quantities

Permit Compliance Considerations

- Approval from permitting authorities for accepting material from external users

Additional Considerations

- Provide ongoing user training.
 - Provide separate training for educator and sweeping truck drivers.
 - Under what conditions to allow re-authorization of revoked privileges?
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3. Safety and Security

Protocol Objective

Specify training and procedures for user safety, site security, and facility emergencies.

Basic Operating Procedures

- Required safety and personal protection equipment and procedures
- Site security equipment and procedures
- Operation restrictions during power outage
- Emergency contacts and notification procedures for observations of spills or contaminated loads, equipment damage or theft, personal injury, or inappropriate operations

Considerations for Opening to External Users

- Safety and security training
- User revocation for unsafe practices

Facility Design Considerations

- Safety-specific operating procedures
- Secure fencing and gate access
- Camera surveillance

Permit Compliance Considerations

- Specify authorized users
- Identify point person for safety issues

Additional Considerations

- Safety and security equipment inspection and maintenance
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4. Material Acceptance

Protocol Objectives

- Define acceptable and prohibited materials for the facility.
- Prevent acceptance of prohibited materials.

Basic Operating Procedures

- Acceptable materials may include:
 - Eductor liquids
 - Eductor solids
 - Excavated materials from stormwater detention/treatment/conveyance structures or facilities
 - Street and parking lot sweepings
 - Ditch spoils
 - Eductor soils generated during utility excavation and potholing
 - Other materials deemed acceptable by the decant station owner(s)
- Prohibited materials may include:
 - Suspected or confirmed contaminated waste (hot loads) that are not typically encountered or accepted
 - Sanitary sewer waste
 - Electrical vault waste
 - Detergent washed surface waste
 - Fuel or hazardous site waste
 - Concrete or other inert construction site waste
 - Grease trap waste
 - Stormwater treatment media (filter media)
 - Leachate from transfer stations
 - Waste materials from other decant facilities
 - Materials known or suspected of containing aquatic invasive species for reuse in aquatic environments

Considerations for Opening to External Users

- Require physical inspection for acceptance of materials from external users?
- Require a manifest of material source locations and inspection record from external users

Facility Design Considerations

- Separate inspection and storage areas for materials from external users

Permit Compliance Considerations

- Obtain approval from permitting authorities for changes in material acceptance policies.

Additional Considerations

None.

5. Hot Load Identification and Handling

Protocol Objectives

- Define hot loads.
- Prevent acceptance of hot loads at decant facilities.
- Provide regional consistency for training haulers and operators on identifying and handling hot loads.

Basic Operating Procedures

- Define hot loads as unacceptable materials known or suspected to exceed dangerous waste criteria, or other criteria established by permit or owner.
- Provide driver training on hot load identification using knowledge of material sources and visual inspection of materials before collection.
- Provide driver training on hot load notification, collection, and handling procedures.
- Facility operators verify that drivers do not possess a hot load by questioning the hauler and inspecting the load.
- Specify procedures and provide operator training on hot load identification and handling in case a hot load is inadvertently deposited at the facility.

Considerations for Opening to External Users

- Define revocation procedures for knowingly or inadvertently depositing hot loads.
- Establish billing rates and procedures for hot load handling and disposal.

Facility Design Considerations

- Separate storage for potential hot loads deposited at the facility
- Containment of liquids from potential hot loads to separate from other decant liquids

Permit Compliance Considerations

- Any additional procedures specified in permits for hot load identification and handling

Additional Considerations

- Chemical testing of suspected hot loads at the facility for identification or verification
 - Research historical spill or contamination information for material source areas before collecting or depositing materials.
 - Visual examination of drainage area for contaminant sources or poor housekeeping practices before collecting materials
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6. Solids Handling, Testing, and Disposal

Protocol Objective

Specify procedures for the handling, testing, and disposal of solid materials received by the facility. (For solids reuse, refer to Section 8.)

Basic Operating Procedures

- Deposit eductor solids on sloped and covered impervious dewatering pad and allow to drain.
- Move dewatered solids to covered impervious solids storage area (or use tarps to cover solids in uncovered area) for drying and hydrocarbon degradation as required by end use
- Deposit street sweeper solids and ditch dirt in solids storage area either separately or mixed with dewatered eductor solids.
- Store solids suspected of contamination in separate area.
- Develop and implement a sampling and analysis plan that complies with permit requirements and provides representative characterization of materials immediately prior to end use or disposal.
- Remove solids from storage area for reuse or disposal depending on test results and permit requirements, and record the amount of solids for reuse and disposal.
- Remove refuse from solids intended for reuse and properly store refuse pending disposal at a permitted facility.

Considerations for Opening to External Users

- Separately measure and record solids amounts from external users.

Facility Design Considerations

- Slope impervious dewatering pad to lessen dewatering time while minimizing solids in liquid drainage.

- Provide roof over solids storage areas to allow dewatering and drying.

Permit Compliance Considerations

- Test solids as prescribed in the Operations Plan and as approved by regulating agencies.
- Submit test results to solid waste permit authority as required.

Additional Considerations

- Special procedures for slurry loads to minimize vault maintenance
 - Mechanical equipment for solids dewatering, drying, and sorting
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7. Liquids Handling, Testing, and Treatment

Protocol Objective

Specify procedures for the handling, testing, and treatment of liquids received by the facility.

Basic Operating Procedures

- Decant liquids from eductor trucks to area designed to accept them.
- Drain liquids from eductor truck decant area and solids dewatering area to a settling bay or vault for detention and treatment.
- Drain vault to oil-water separator to remove floating oils, and maintain oil-water separator as needed for effective removal.
- Monitor and record liquids discharge flow from vault according to permit requirements.
- Sample and test liquids according to standard operating procedures and permit requirements.
- Excavate sediment from vault at specified intervals or maximum depth to maintain capacity, ensure proper function, and prevent loss of sediment.
- Provide additional liquids treatment as required by permit authority when discharging liquids to ground or surface water.

Considerations for Opening to External Users

- Measure and record liquid amounts from external users separately.

Facility Design Considerations

- Keep stormwater runoff separate from liquids treatment system.
- Liquid storage volume based on minimum detention time for treatment of maximum discharge
- Liquid discharge control for extended detention time as needed to meet effluent criteria

Permit Compliance Considerations

- Test liquids as specified by the permit authority.
- Submit test results to waste discharge permit authority as specified in the permit conditions.

Additional Considerations

- Transport liquids for disposal into sanitary sewer system or stormwater treatment system if sewer access or stormwater treatment system is not available on site according to approval by permitting authority.
- Apply approved coagulant to liquids in vault to accelerate settling, and ensure coagulant is appropriate for end use of liquids and sediment.

8. Solids Reuse

Protocol Objective

Specify procedures for reuse of solids generated by decant facility.

Basic Operating Procedures

- Separate solids consisting of greater than 90 percent leaves or other vegetation, and recycle at permitted compost facility if solids are not reused otherwise.
- Remove refuse (trash) from solids and dispose of appropriately if solids are reused.
- Screen and reuse coarse sand that is collected by street sweepers after recent road sanding that does not exhibit obvious contamination from spills.
- Define acceptable solids characterization based on Appendix IV-G of the Stormwater Management Manual for Western Washington.
- Define acceptable solids characteristics based on permit and material testing requirements for the following potential reuse options:
 - o Daily cover or fill at a permitted municipal solid waste landfill
 - o Fill or soil in commercial, industrial, and roadway areas where there is limited direct human contact, and where reuse as soil includes cover with vegetation or other means
 - o Fill in public areas where direct human contact is prevented by cover with other approved materials
 - o Other applications allowed by the jurisdictional health department or district

Considerations for Opening to External Users

- Separate measurement and billing rates for reuse or disposal of solids from external users.

- Separating solids from external users and billing them for disposal may be preferable to including external material in reuse options

Facility Design Considerations

- Delineate separate areas in solids storage area for external users and different types of materials.

Permit Compliance Considerations

- If required, obtain approval from permitting authorities for changes in material reuse procedures or locations.

Additional Considerations

- Process solids at treatment facility for reuse as required by the permitting authority.
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