MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Cleaning of Grit Chambers

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Cleaning of Grit Chambers
Grit chambers are part of the storm water collection and distribution system located along certain segments of trunk highway. The purpose of a grit chamber is to allow coarse particulate matter (mainly sand) in surface water runoff received from the roadway to settle out of the water within the grit chamber. This lessens the amount of sand introduced to surface waters in the state, thereby improving overall water quality.

Periodically, sand accumulated in a grit chamber must be removed. Sand within grit chambers can be considered similar to street sweeping sand. Therefore it is appropriate to handle grit chamber sand in the same manner as street sweepings, with the exception described in item 6 below.

Following is the recommended practice for cleaning grit chambers:

1) Clean the grit chambers frequently enough to ensure that the chambers work effectively. Having too much sand in the grit chamber can inhibit the settling process.
2) The grit chamber sand can be stored on either a paved or gravel surface at a MnDOT facility. Sand may be combined with street sweeping stockpiles as long as no staining or odors are exhibited from the material, indicating the possibility of chemical contamination. Contact the Office of Environmental Stewardship for further assistance if questionable staining or odors are noticed.
3) Trash and other debris should be removed from the sand by screening with a ¾" screen. Material that does not pass through the screen should be collected and

disposed of at an MPCA permitted sanitary (mixed municipal solid waste) landfill.

4) Material passing through the ¾" screen may be used in road projects as sub-base or fill material. Cover the stockpile to prevent erosion.
5) Maintain the following minimum setback distances when using the material as clean fill:
    - At least 100 feet from surface water/wetlands,
    - At least 100 feet from drainage structures,
    - At least 3 feet above groundwater (the water table) and
    - At least 10 feet above fractured bedrock.
6) **Exception for reuse of grit chamber sand:** If it is suspected that a large quantity of chemical may have entered a grit chamber, the chamber should be cleaned out and the material disposed of properly. The Offices of Environmental Stewardship and Freight and Commercial Vehicle Operations can assist in determining what type of chemical spills received by a grit chamber require special handling and how the material should be transported and disposed of properly.

    Example: A truck overturns on the highway and spills a large volume of chemical near the inlet to a grit chamber. Contact the Offices of Environmental Stewardship and Freight and Commercial Vehicle Operations for assistance in determining the appropriate procedure to clean the grit chamber and transport the material for disposal. It is possible that the entire cleanup operation in this scenario would be completed by a private contractor at the expense of the responsible party.

Optional practice for disposing of grit chamber sand:

1) The grit chamber sand may be disposed of at an MPCA permitted sanitary (mixed municipal solid waste) landfill. The landfill may consider the material adequate for use as daily cover. The landfill may require laboratory analysis of the material prior to acceptance. Contact the Environmental Investigation Unit for assistance in analyzing the material.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Street Sweepings

Contact Information:
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Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

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Subject: Management of Street Sweepings

MnDOT operations produce street sweepings that are primarily sand but also may contain salt, leaves and other assorted debris. The following management practice of street sweepings allows for beneficial reuse of the sand and proper disposal of associated debris. This practice is not appropriate for sand or sweepings collected at a location where a known or suspected chemical spill has occurred. Contact the Environmental Investigation Unit for assistance in managing disposal of sand or sweepings at spill locations.

1) Once collected, the street sweepings can be stored on either a paved or gravel surface at a MnDOT facility. Do not combine any street sweepings that exhibit staining or odors, which indicate the possibility of chemical contamination, with an existing street sweeping stockpile. Contact the Environmental Investigation Unit for further assistance if questionable staining or odors are noticed.
2) Trash and other debris should be removed from the sweepings by screening with a ¾" screen. Material that does not pass through the screen should be collected and disposed of at an MPCA permitted sanitary (mixed municipal solid waste) landfill. Contact the Environmental Investigation Unit for assistance in analyzing the material for acceptance by the landfill.
3) Material passing through the ¾" screen may be used in road projects as sub-base or fill material or incorporated in concrete. Cover the stockpile to prevent erosion.

4) Maintain the following minimum setback distances when using the material as clean fill:
    - At least 100 feet from surface water/wetlands,
    - At least 100 feet from drainage structures,
    - At least 3 feet above groundwater (the water table) and
    - At least 10 feet above fractured bedrock.

    After placing the material, the area should be seeded or covered with mulch to prevent erosion.

Optional practice for disposing of street sweepings:

1) Street sweepings may be disposed of at an MPCA permitted sanitary (mixed municipal solid waste) landfill. The landfill may consider the material adequate for use as daily cover. The landfill may require laboratory analysis of the material prior to acceptance. Contact the Environmental Investigation Unit for assistance in analyzing the material for acceptance by the landfill.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Cleaning of Stormwater Pipes & Culverts: Sediment Management

Contact Information:
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Jackie Klein: 651-366-3637

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

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Subject: Cleaning of Stormwater Pipes & Culverts

Pipes and culverts are part of the storm water collection and distribution system. Accumulated sediment in the stormwater pipes and culverts can result in reduced hydraulic capacity in the culvert that can lead to flooding of the roadway, increased sedimentation of roadside ditches and deterioration of the roadbed and drainage structures.

Periodically, sediment accumulated in a stormwater pipe or culvert must be removed. Sediment within pipes and culverts can be considered similar to street sweeping sand. Therefore it is appropriate to handle pipe and culvert sediment in the same manner as street sweepings, with the exception described in item 7 below.

Following is the recommended practice for cleaning stormwater pipes and culverts:

1) Clean the pipes and culverts frequently enough to ensure that they flow effectively and do not retain water. Having too much sediment in the pipe or culvert can damage the roadbed and other drainage structures.
2) The removed sediment can be stored on either a paved or gravel surface at a MnDOT facility. Sediment may be combined with street sweeping stockpiles as long as no staining or odors are exhibited from the material, indicating the possibility of chemical contamination. Cover the stockpile to prevent erosion. Contact the Office of Environmental Stewardship for further assistance if questionable staining or odors are noticed.

3) Trash and other debris should be removed from the sediment by screening with a ¾" screen. Material that does not pass through the screen should be collected and disposed of at an MPCA permitted sanitary (mixed municipal solid waste) landfill.
4) Material passing through the ¾" screen may be used in road projects as sub-base or fill material, provided the material meets any geotechnical requirements.
5) Small amounts of clean sediment can be disposed of on the backslope of the roadway near the removal site, provided local drainage and geometric conditions will not be adversely affected. Select an area that is less susceptible to erosion and away from the pipe inlet so sediment does not reenter the pipe. Spread the sediment thinly and evenly. Stabilize the area by broadcast seeding Mix # 250 @ 70 lbs/acre and spread straw mulch.
6) Maintain the following minimum setback distances when using the material as clean fill or placing on a backslope:
    - At least 100 feet from permanent surface water/wetlands,
    - At least 100 feet from drainage structures,
    - At least 3 feet above groundwater (the water table) and
    - At least 10 feet above fractured bedrock.
7) **Exception for reuse of stormwater pipe and culvert sediment:** If it is suspected that a large quantity of chemical may have entered a pipe or culvert, the drainage structure should be cleaned out and the contaminated material disposed of properly. The Offices of Environmental Stewardship and Freight and Commercial Vehicle Operations can assist in determining what type of chemical spills
   received by a pipe or culvert require special handling and how the material should be transported and disposed of properly.

Example: A truck overturns on the highway and spills a large volume of chemical near the inlet to a culvert. Contact the Offices of Environmental Stewardship and Freight and Commercial Vehicle Operations for assistance in determining the appropriate procedure to clean the culvert and transport the material for disposal. It is possible that the entire cleanup operation in this scenario would be completed by a private contractor at the expense of the responsible party.

Optional practice for disposing of stormwater pipe or culvert sediment:

1) The pipe or culvert sediment may be disposed of at an MPCA permitted sanitary (mixed municipal solid waste) landfill. The landfill may consider the material adequate for use as daily cover. The landfill may require laboratory analysis of the material prior to acceptance. Contact the Environmental Investigation Unit for assistance in analyzing the material.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management and Handling of Road-kill Carcasses

Contact Information:
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Jackie Klein: 651-366-3637

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT rights of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with the Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Management and Handling of Road-kill Carcasses

MnDOT operations require management of road-kill animal carcasses. The following management practice allows for proper removal and disposal of road-kill carcasses. Dumping carcasses into pits or mass graves is not an acceptable or legal disposal practice. The options listed below are possible methods for carcass disposal. Contact the Environmental Investigation Unit for assistance in unusual situations regarding disposal of road-kill carcasses.

1) **Place the carcass on MnDOT right of way in the vicinity of kill site.** Whenever possible, do not place the carcass in the water flow area of the ditch bottom. Placing the carcass in the ditch bottom has the potential to create erosion problems or surface water impacts. Place the carcass in a suitable location on the ditch backslope (typically about ten feet up from the ditch flow line – see diagram) and when feasible, cover the carcass with wood chips to remove visual impacts to motorists. Consider other disposal alternatives in areas of high pedestrian activity or other sensitive locations.
2) **Compost the carcass.** Carcasses may be composted using a mechanical composter or by creating compost piles. Contact Dwayne Stenlund in Environmental Stewardship at 651-366-3625 for information on composting carcasses. Composting procedures are also available in the Mn. Dept. of Agriculture publication, “Composting Animal Mortalities”, which can be accessed at the following Web site.
3) **Bury the carcass.** Carcasses cannot be buried within 5 feet of the seasonal high water table or within 10 feet of bedrock. To prevent groundwater impacts, do not

bury carcasses in sandy or gravely soils. The carcass must be completely covered with soil or wood chips. Bury a maximum of two carcasses per hole. There must be a separation distance of at least three feet from edge to edge of carcass burial locations. Consider disposal alternatives in areas of high pedestrian activity or other sensitive locations.

4) **Transport carcass to a landfill for disposal.**
5) **Incinerate carcass at an approved facility.** Contact Mark Vogel in Environmental Stewardship at 651-366-3630 for information on incinerating carcasses.
6) **Transport carcass to game farms or state wildlife refuge for animal food use upon approval of facility owner or operator.**

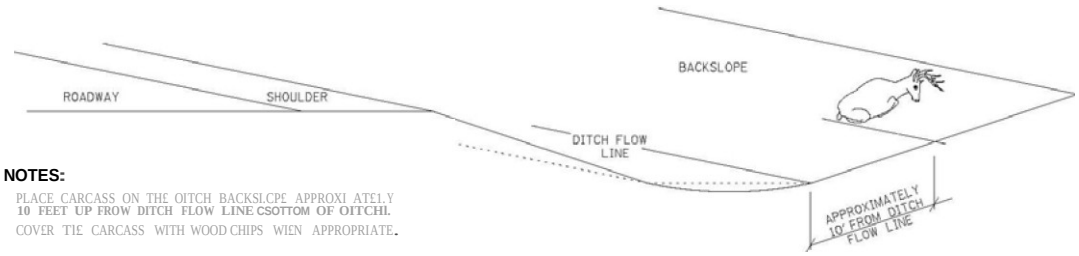
Carcass Handling Procedure

While there is no documented risk to humans from Chronic Wasting Disease, other pathogens such as E. Coli or salmonella can be prevalent in any animal carcasses and can represent a hazard to humans. To address these potential hazards, the following precautions should be used whenever handling animal carcasses (procedures may vary by District so contact District Safety Administrator with any questions regarding handling procedure):

1. Use appropriate traffic control procedures and wear proper high visibility garments before attempting to move carcasses. Whenever possible, use equipment/tools to handle carcasses to minimize direct bodily contact.
2. Never handle injured or stray animals. Contact local law enforcement or an animal control agency for assistance with live, injured or stray animals.
3. Do not attempt to move any carcass that appears to be in overall good condition (no obvious sign of injury) AND shows evidence of hemorrhaging at the mouth, nose or anus. These conditions may indicate anthrax as a possible cause for the animal's death. Movement of the carcass could release disease-carrying spores into the environment. Immediately contact the Minnesota Board of Animal Health (BAH) at 651-296-2942 or a local BAH office for assistance. Call the State Duty Officer (1-800-422-0798 or for Metro locations: 651-649-5451) if no one is available at BAH offices.
4. Wear disposable first aid-style gloves whenever you handle a carcass. Nitrile gloves are preferred over latex because it is a stronger material and is less likely to produce allergic skin reactions. The gloves must be thrown away after use and prior to operating any vehicle controls. It is recommended that two pairs of gloves be worn (one over the other) whenever contact with animal blood or organs cannot be avoided.
5. Wash your hands thoroughly with soap and water or an anti-bacterial product after handling a carcass, even though gloves were worn while handling the carcass.
6. If you have reason to believe that the equipment you used may have been contaminated, wash the area with an anti-bacterial product. It is preferable to clean equipment in the field in order to prevent bringing potential contaminants back to the shop. If you must perform the cleaning at the shop, the equipment

may be decontaminated with hot soap and water or with a solution of one part bleach to 9 parts water when feasible. You may also use dedicated tools for handling the carcass that are disposed of after use.

Please contact the Environmental Investigation Unit for further assistance.



NOTES:

PLACE CARCASS ON THE OITCH BACKSLCPE APPROXI ATE1.Y **10 FEET UP FROW DITCH FLOW LINE CSOTTOM OF OITCHI.**

COVER TIE CARCASS WITH WOOD CHIPS WIEN APPROPRIATE.

ROADKILL MANAGEMENT DETAIL

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Buried Asbestos Containing Waste Material

Contact Information:
Environmental Investigation Unit
Jim DeLuca: 651-366-3640
Keri Aufdencamp: 651-366-3627
Carolyn Boben: 651-366-3621
Sarah Jarman: 651-366-3609

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

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Subject: Buried Asbestos Containing Material

This document describes how MnDOT manages buried asbestos containing waste material (ACWM). ACWM is not asbestos containing material found in an intact underground utility or associated with a building demolition project. For instance, a building with asbestos bearing transite siding may have lost portions of siding over many years and as a result, asbestos containing materials may be present in soils surrounding the building. This type of material is not considered to be ACWM and is subject to other management techniques. Contact Mark Vogel with the OES for assistance in managing asbestos materials associated with buildings, bridges or other types of structures.

ACWM is generally regarded as asbestos containing material (ACM) that is no longer in use and occurs in areas of fill and typically found with other waste materials. MnDOT's approach in managing ACWM is determined primarily by two factors:

- the extent and depth of the material
- whether the material is present on MnDOT property or not.

Situation 1 in this document provides guidance for management of ACWM present on MnDOT property and Situation 2 provides guidance for management of ACWM present on non-MnDOT property. Information specific to segregation of waste materials and on buried utility lines with ACM is included at the end of the document.

Situation 1: ACWM is located within MnDOT right of way or easement (including highway right of way, MnDOT maintenance facilities, residential and commercial buildings acquired by MnDOT and any other property owned by MnDOT).

I. Complete removal of all ACWM is generally required for:
   a. ACWM that is associated with demolition of any structure, including ACM that may have fallen from the structure and accumulated in surrounding soil.
   b. Isolated, small volumes of ACWM.
   c. ACWM that is within four feet of final grade.

Additional Requirement:

- Following removal of the ACWM, confirmation samples must be collected to demonstrate that asbestos is not being left in place.

II. Leaving ACWM in-place may be allowed under the following circumstances:
   a. Volume of ACWM is excessive and not practical or feasible for complete removal. ACWM that is within four of final grade still must be removed.
   b. ACWM that extends beyond MnDOT's property line, regardless of depth of material, unless the ACWM is associated with a structure that MnDOT is in the process of demolishing or relocating.

Additional Requirements:

- Institutional Control required to document location of ACWM left in place. This documentation must be coordinated with District Permitting and Land Management Offices to ensure that MnDOT personnel and private contractors working on future projects in the location of the ACWM are made aware of its existence.
- A Contingency Plan must be prepared that addresses how ACWM should be managed on future development of the property containing ACWM. This documentation must also be coordinated with District Permitting and Land Management Offices.
- A deed restriction must be placed on any property containing ACWM prior to reconveyance.

Situation 2: ACWM is located outside MnDOT right of way or easement (including highway right of way, MnDOT maintenance facilities, residential and commercial buildings acquired by MnDOT and any other property owned by MnDOT).

I. ACWM outside of MnDOT right of way should be left in place. Report the discovery of ACWM to the State Duty Officer (651-6495451 or 800-422-0798) and the Minnesota Pollution Control Agency Asbestos Program (651-297-5518). Reporting discovery of the release will ensure that the ACWM is properly documented by the regulatory agency.

II. The MnDOT Project Engineer may choose to remove the ACWM outside the right of way if the volume is limited and would result in a complete removal.

Additional Requirement:

- ACWM that lies outside MnDOT right of way but is associated with a structure owned by MnDOT that is being demolished or relocated must be completely removed.

Segregation of ACWM during excavation activities

Under some circumstances it may be appropriate to segregate ACWM during excavating operation. A certified asbestos inspector may determine that the presence of ACWM is isolated based on observation of test pits excavated in areas of buried solid waste. In this case, these isolated occurrences of buried solid waste associated with ACWM may be segregated from areas of buried solid waste where ACWM suspect material is not present.

Ash can be indicative of the presence of asbestos. Therefore if ash is encountered during excavation, the situation should be reassessed to determine the source of the ash to determine if it is likely to contain asbestos. Confirmation to determine the extent of ACWM in areas of isolated occurrences may be based on visual inspection by a certified asbestos inspector. The decision to segregate ACWM must be based on the professional judgment of a certified asbestos inspector.

Utility lines with ACM

It is common for buried utility lines to be insulated with ACM. Following is guidance on how to manage buried utility lines:

- If the utility is active: contact the utility owner if any portion of the line is damaged so that the owner can repair the line.
- If the utility is inactive and intact: try to identify the utility owner and make arrangements for the owner to remove the line. If the utility owner cannot be identified, proceed as follows:
  - Properly remove the utility within the area of excavation.
  - Once the limit of excavation has been reached, assess if it is practical to remove the utility up to the MnDOT property line. If practical, remove the utility line up to the property line. If is not practical to remove the line to the property boundary, leave the line in-place. The asbestos abatement contractor must document any utility line with ACM left in-place, even if it is beyond the MnDOT property boundary.
- If the utility line is inactive but not intact (fragmented pieces): remove the material in the same manner as any other ACWM discussed in previous sections of this document.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Property Reconveyance Assistance on Environmental Issues

Contact Information:
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Carolyn Boben: 651-366-3621
Sarah Jarman: 651-366-3609

The intent of this guidance document is to provide general procedural information for Minnesota Department of Transportation (MnDOT) personnel or contractors working on reconveyance of MnDOT-administered property. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit (EIU) personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the EIU in the MnDOT Office of Environmental Stewardship (OES) for additional information or legal requirements.

Background

MnDOT is exposed to short and long term financial liability when reconveying properties that have environmental risk associated with soil or groundwater contamination. The EIU can assist District Land Management and Maintenance Operations personnel in assessing environmental risk associated with property transfers and recommend an appropriate course of action to reduce liability to MnDOT. The success of liability reduction depends on early recognition and communication of affected properties by the District to EIU to ensure that appropriate review is conducted before reconveyance.

Types of Reconveyance Properties and Associated Risks

- Surplus property – property that is acquired for trunk highway purposes but at a later date it is discovered that a portion of the property is no longer needed. Surplus properties also include acquisition of property that is an uneconomical remnant.

Depending on when MnDOT acquired surplus properties or the conditions of the acquisition, it is possible the entire property was not adequately investigated for contamination prior to purchase.

- Excess property – additional property being acquired at the written request of the property owner.

Because MnDOT personnel did not anticipate acquiring the additional property early in the project, it is likely that the unneeded portion was not investigated for contamination prior to acquisition. This can result in MnDOT becoming the owner of contaminated property that must be characterized and potentially cleaned up prior to reconveyance.

- MnDOT-Owned Facility – a facility such as a district headquarters, truck station, rest area, storage yard, gravel pit or any other property owned by the Department with a potential for chemical use, storage or disposal activities.

If the property is being sold to a buyer who intends to use, store or dispose of the same chemicals, a future release could be said to have occurred during MnDOT's ownership if not proven otherwise prior to sale of the property. Completing an environmental review prior to reconveyance establishes the condition of the property relative to soil and groundwater contamination. Therefore, environmental review and if deemed necessary, cleanup of contaminated soil/groundwater at the site, should be completed prior to reconveyance. If the property is to be redeveloped for a completely different use, the condition of the property relative to soil and groundwater contamination still needs to be determined.

Associated Risk in Reconveying Property with Uncharacterized Contamination
If contamination is discovered after MnDOT reconveys these types of property, the buyer, a regulatory agency, or other third party may look to MnDOT for the cost to cleanup, or for damages associated with exposure to the contamination.

Property Reconveyance Review
From mid-2007 to early 2009, the EIU reviewed all reconveyance parcels for known or potential contamination issues. This review period encompassed approximately 150 reconveyance packages including about 200 parcels. Based on this experience, the EIU has determined that only certain properties are likely to present a higher risk of contamination problems that could lead to substantial difficulties with future owners of the properties, potentially resulting in cleanup costs to MnDOT. The EIU determined that higher risk sites are MnDOT-owned facilities and surplus and excess properties that that have any Recognized Environmental Conditions (RECs – see definition below). Therefore, district personnel should contact the EIU before reconveying any MnDOT-owned facility or surplus or excess properties with RECs to determine the need for site characterization and/or cleanup.

Recognized Environmental Conditions:

- Evidence of dumping (waste abandoned on surface or buried at the site).
- Known or suspected fill materials of unknown origin or quality placed on the property.
- Aboveground and underground storage tanks.
- Vent pipes (may indicate presence of underground storage tanks).
- Groundwater monitoring wells
- Groundwater supply wells (not generally considered a REC but the well should be sealed by a licensed contractor before the property is sold).

- Onsite chemical use (e.g., vehicle maintenance, manufacturing or industrial operations, dry cleaning, degreasing, paint spraying, wood treatment, etc.).
- Chemical/waste containers, storage rooms, or sheds.
- Outdoor storage yards.
- Subgrade features with the potential to leak (e.g., hydraulic hoists, flammable waste traps – oil/water separators, vaults, pits, or vats).
- Stained soil or stained floors with large cracks.
- Dead vegetation.

Property Reconveyance Environmental Review Process

The following procedure defines the environmental review process for reconveyances:

1. District Planning and Notification to EIU
   - District identifies and prioritizes anticipated property reconveyances requiring EIU review – All MnDOT-owned facilities and surplus and excess properties containing any RECs.
   - District notifies EIU of properties requiring review at least six months prior to reconveyance for typical property transactions or immediately for expedited reconveyances.
   - District immediately notifies EIU if any RECs are identified during district review of the property

2. Preliminary Environmental Review
   - EIU completes a cursory environmental review of the property and surrounding land use (e.g., review of environmental databases, historical photographs, historical topographic maps, MnDOT project files, and parcel files) and determines whether or not a more detailed review of property history is necessary.
   - EIU communicates the review to the District and makes a recommendation to complete a Detailed Environmental Review (see Item 3), or for no further action.

3. Detailed Environmental Review
   - EIU sends requisition to District for approval and to secure funding to retain an Environmental Consultant to perform a historical review of the property by completing a Phase I Environmental Site Assessment (ESA). Phase I ESAs generally cost $5,000 to $10,000 depending on the complexity of the property use and size.
   - Consultant prepares a Phase I ESA, which includes the following additional tasks: review of property use; review of regulatory agency files for the site; interviews with MnDOT maintenance personnel or previous property owners (as appropriate); reconnaissance of the site; and report preparation.

4. EIU Recommendations to District

   Possible outcomes of the environmental review of the property are as follows:

- EIU recommends that MnDOT reconveys the property without additional environmental investigation.
- EIU recommends that MnDOT not reconvey the property.
- EIU recommends that MnDOT limit the area being reconveyed.
- EIU recommends that MnDOT conduct a drilling investigation (see item 5) to collect soil and/or groundwater samples from the property in order to determine the existence and magnitude of contamination and work with appropriate regulatory agency to (1) obtain letters of assurance to reduce our liability in releasing the property and/or (2) cleanup of the property to appropriate levels for reconveyance.

5. Drilling Investigation
   - EIU provides District with estimated investigation cost.
   - EIU sends requisition to District for approval and to secure funding to retain a consultant to perform a drilling investigation at the property (i.e., obtain soil and/or groundwater samples).
   - Consultant completes the investigation and prepares a Drilling Investigation Report.
   - EIU submits the report to the MPCA to obtain liability assurances, approvals, and/or site closure, as appropriate.
   - EIU notifies the District if the drilling investigation results identify the need to complete cleanup of soil and/or groundwater contamination prior to reconveyance (see item 6).

6. Property Cleanup
   - EIU provides District with estimated cleanup cost.
   - EIU sends requisition to District for approval and to secure funding to retain a consultant to perform cleanup operations at the property.
   - Consultant prepares and submits a cleanup plan, known as a Response Action Plan (RAP), to the MPCA for approval.
   - Once the RAP has been approved by MPCA, the Consultant provides oversight of the cleanup and prepares a RAP Implementation Report upon completion.
   - EIU submits the report to the MPCA to obtain liability assurances, approvals, and/or site closure, as appropriate.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Reducing Environmental Liability in Leasing MnDOT Property or Permitting Work in Right of Way

Contact Information:

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Carolyn Boben: 651-366-3621
Sarah Jarman: 651-366-3609

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Background

MnDOT may incur liability when leasing property for private or public use or when allowing contractors to complete work within MnDOT right of way. To avoid or lessen this liability, it is important to consider the following:

- the land use at the leased property;
- implications of contractors encountering contamination during work in MnDOT right of way
- The Environmental Investigation Unit (EIU) can assist District personnel in addressing these issues and recommending the appropriate course of action. It is important that communication occur between District Land Management, Permits, and EIU to ensure that adequate review of proposed actions are conducted before permit issuance associated with leasing or subsurface work on MnDOT right of way.

Property Leasing

Leasing property to certain business operations can result in contamination of the property. In fact, some past leasing arrangements have resulted in contamination of MnDOT property. Depending on the financial resources of the lessee, MnDOT may be held responsible in part or wholly for investigating and cleaning up the contamination. Therefore, at a minimum, MnDOT should not allow the following types of businesses to operate on MnDOT-owned properties:

- Petroleum or other liquid chemical storage.

- Hazardous Waste Generators.
- Manufacturing and industrial operations.
- Wood treatment operation or treated wood storage.
- Vehicle maintenance.
- Onsite chemical use and storage (e.g., vehicle maintenance, dry cleaning, degreasing, paint spraying, wood treatment, etc.).

Any department property that is leased should be periodically inspected for signs of actual or potential site contamination. Indicators of contamination include the following:

- Fugitive dumping.
- Obvious areas of fill materials.
- Aboveground storage tanks.
- Vent pipes (may indicate presence of underground storage tanks).
- Wells (groundwater monitoring or supply wells) or cisterns.
- Onsite chemical use (e.g., vehicle maintenance, manufacturing or industrial operations, dry cleaning, degreasing, paint spraying, wood treatment, etc.).
- Chemical/waste containers, storage rooms, or sheds.
- Outdoor storage yards.
- Subgrade features with the potential to leak (e.g., hydraulic hoists, oil-water separators, vaults or vats).
- Stained soil or stained floors with large cracks.
- Dead vegetation.

MnDOT Permit Issuance for Work in Right of Way

MnDOT also incurs liability for soil and groundwater contamination mismanaged by third parties performing subsurface work on its right of way. MnDOT also may incur third party liability for workers unknowingly exposed to soil and groundwater contamination present on MnDOT right of way. As a result, MnDOT has the obligation to report the presence of soil and groundwater contamination on its right of way to those obtaining permits for subsurface work. EIU can provide the District permits coordinator information with regard to the occurrence of contamination on specific parcels and the need to have special permit conditions addressing the contamination attached to subsurface work permits issued on the parcel.

Following is standard language that should be included for permits issued to contractors cleaning up chemical spills in MnDOT right of way:

Excavation of petroleum contaminated soil must continue until there is no further evidence of contamination based on visual and olfactory observations and photoionization soil screening values do not exceed 3 parts per million.

Verification soil samples must be collected from the excavation area following removal of the contaminated soil and submitted for laboratory analysis. The number of samples collected (one sample for every 100 square feet excavated) must be in compliance with MPCA Guidance Document 3.01 (www.pca.state.mn.us/publications/c-prp3-01.pdf).

The soil samples must be analyzed for the appropriate parameters based on MPCA Guidance Document 4.04 part III B (www.pca.state.mn.us/publications/c-prp4-04.pdf).

A report documenting excavating activities and soil sample analytical results, including an electronic version, must be submitted to the MnDOT Office of Environmental Stewardship, Summer Allen, 395 John Ireland Blvd., MS 620, St. Paul, MN 55155.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Emulsion Tanks

Contact Information:
Environmental Investigation Unit
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Considerations and Requirements for Installing Permanent Emulsion (Road Oil) Tanks and Mobile (Patch Blower) Tank Systems

Permanent Emulsion Storage Tanks
Emulsion tank system operations are known for frequent spills and therefore require more attention to both tank containment and product transfer area containment than aboveground tank systems containing other products. The typical capacity of these tanks also requires compliance with federal tank rules in addition to state rules. Consequently, the Office of Environmental Stewardship (OES) does not promote emulsion tanks at MnDOT facilities. If a District is contemplating installing an emulsion tank, the following environmental/compliance issues should be given serious consideration prior to purchasing a tank system:

1. These tank systems must comply not only with state regulations but also the federal spill plan. The federal spill plan imposes more stringent requirements on containment measures and emergency response planning than state regulations not only for the emulsion tank but for all aboveground petroleum stored in containers greater than 55 gallon capacity. Following are some of the requirements imposed by the federal spill plan:

    - Tank System
        - Typical installations are single-walled tanks located outdoors
            - Required tank containment is typically accomplished by constructing an impermeable floor and berm around the tank. Rainwater and snowmelt come in contact with spilled emulsion and must be managed for proper disposal.

- Current regulations require documented inspection of single-walled outdoor tanks every week.
- Outdoor containment areas must be inspected on a regular basis to ensure that necessary maintenance of the containment area is performed, such as repair of cracked floors or berms.

Recommendation: If these tank systems must be installed at a MnDOT facility, OES highly recommends installing indoor tank systems, such as those at the MnDOT St. Cloud Headquarters. Indoor facilities allow for easier management of product spills, higher probability of compliance with federal and state regulatory requirements and decreased probability of causing environmental harm through product releases.

- Substance Transfer Area
  - The substance transfer area must contain the volume of the largest single compartment of any transfer vehicle that delivers or takes product from the tank. This typically requires a containment area of several thousand gallons that must be capable of containing spilled product until recovery actions can be taken.
  - Recommendation: Careful planning is needed to determine where transfer vehicles will be situated during product transfer operations and where tanker vehicles may park at the facility. Containment is also needed in areas where tankers remain on-site.

- Security
  - Controlled access is required for facilities subject to the federal spill plan. This typically requires:
    - Fencing with locked gates
    - Secured access to tank system and any starter controls
    - Lighting system to discourage vandalism and enable spill recovery operations at night.
  - Additional Recommendation: Security cameras to monitor user operations.

- Personnel
  - Frequent inspections – weekly for outdoor installations or monthly for indoor installations.
  - Annual training required for all personnel who transfer product from tanks.
  - All personnel using the tank system, both dispensing and transferring product, must follow a strict protocol that is designed to lessen the probability that a release occur.

- Site Plan
  - BEFORE the tank system is purchased, plans must be drawn up and submitted to OES for review to make certain that the design will meet federal spill plan requirements.

Guidance on Emulsion Tank Cleaning

Mobile (Patch Blower) Tanks

- Storage of Mobile Tanks:
  - Park tank on curbed, paved surface to contain releases.

- Tank Cleaning for Dura Patcher products (look to manufacturer instructions for other brands):

1. Use or drain all the emulsion from the tank using the drain valve on the bottom of the tank. Collect contents for disposal/recycling.
2. Put 3 to 4 gallons of diesel fuel in the tank.
3. Close the loading hatch and plug the patcher in with the thermostat set at around 150 degrees and heat overnight.
4. Once heated, pull patcher around the yard to agitate the hot fluid in the tank.
5. Drain fluid from the tank. Collect contents for disposal/recycling.
6. Check that the tank is clean of any hard emulsion.
7. Once clean, put 3 to 4 gallons of diesel in the tank for long-term storage.
8. Prior to using tank system again, heat diesel and drain before loading with fresh emulsion. Collect contents for disposal/recycling.

Permanent Emulsion Storage Tank:

- Properly cleaning tanks requires confined space entry and management of tank sludge, therefore, MnDOT personnel should not perform tank cleaning. Contract with one of MnDOT's approved storage tank recyclers to clean tanks and properly manage tank sludge.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Salt Brine Tank Sludge

Contact Information:
Environmental Investigation Unit
Summer Allen-Murley: 651-366-3635

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Subject: Management of Salt Brine Tank Sludge

MnDOT operations require management of the salt brine sludge generated in brine mixers and storage containers. Generally this sludge is produced when brine production and storage tanks are cleaned out at the end of the deicing season. The following management practice allows for proper disposal of salt brine tank sludge. The options listed below are possible methods for sludge removal and disposal. Contact the Environmental Investigation Unit for assistance in unusual situations regarding removal or disposal of brine sludge.

Sludge that accumulates in salt brine mixing tanks or storage tanks is likely the result of iron hydroxide or manganese hydroxide that precipitates in the brine solution. Iron and manganese may be introduced in the salt brine from well water used to make the brine solution. Iron hydroxide precipitates generally produce an off-white gelatinous slime that settle in the tank over time and form a semi-solid like material. However, depending on the amount of iron and manganese in the water, the color of the sludge may vary. Impurities, like coal dust present in train cars used to transport the salt, may also be introduced in the salt during shipping and produce a grey sludge in the brine solution.

Option #1:
With a sludge pump, remove what is left in the salt brine tanks into loader bucket or equivalent. Contain the sludge within the salt shed, allowing the liquid to evaporate. Once all liquid has evaporated, blend the salt into the salt pile. Absolutely no liquids can be allowed to escape from the salt shed, drain into a storm sewer or impact surface water, septic field or the ground.

Option #2:
District should contact the local wastewater treatment plant to see if they will accept the sludge in their treatment process. If the treatment plant accepts the sludge, then it can be drained into the sanitary sewer. If the tank location is not connected to a sanitary sewer, contact the treatment plant for delivery options. Under no circumstances should the sludge be disposed of in the storm sewer, in a septic field or allowed to discharge directly on the ground.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Used Batteries

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for properly managing used batteries. Any deviation from procedures contained in this document must be discussed with the Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Management of Used Batteries

Non-Disposable Batteries
Used rechargeable batteries, button-style non-rechargeable batteries and lead acid batteries must be recycled.

- Rechargeable batteries include the following products: nickel-cadmium (Ni-Cd), nickel metal hydride (Ni-MH) and 9V lithium (Li-ion). Rechargeable batteries are commonly used in electronic devices such as computers, cell phones, portable power tools, flashlights and cameras.
- Button-style batteries contain mercuric oxide or silver oxide and are commonly used in devices such as watches and hearing aids.
- Lead acid batteries include the following products: flooded or wet cell, gel and absorbed glass mat (AGM). Lead acid batteries are commonly used in vehicles.

Disposable Batteries
Alkaline, Carbon Zinc, and Zinc Air batteries are non-hazardous and non-recyclable and therefore may be disposed of in the trash, **AS LONG AS**, the battery ends are taped or they are individually placed in a plastic bag.

Management Requirements of Rechargeable and Button-Style Non-Disposable Batteries

Storage
- Tape ends of all used batteries prior to storage.

- Used batteries may be stored in a cardboard box or plastic pail with a cover.
- Containerize battery types separately.
- Label storage container(s): “Batteries for Recycling”.

Transportation

Batteries can be transported by MnDOT personnel but must be recorded on a MnDOT shipping paper or a waste-tracking invoice that contains the following information:

- Date of shipment,
- Storage location and drop-off destination.
- Quantity of batteries shipped (in weight or number of items).

A copy of the shipping paper or waste-tracking invoice should be kept in the District waste management file.

Recycling Facilities

Even though some of these batteries contain hazardous materials, the hazardous waste contract is not required for recycling used batteries. The following options are available for recycling rechargeable batteries and button-style non-rechargeable batteries:

- The MnDOT Office of Electronic Communications located in Oakdale (Radio Shop - Mail Stop 710, 651-366-4405) will accept used rechargeable batteries and button-style batteries and will send them to an approved recycler.
- The District Waste Management Coordinator has a list of facilities approved by the MnDOT Office of Environmental Stewardship that can accept batteries for recycling.

Management Requirements of Lead Acid Non-Disposable Batteries

Storage

- Store within a curbed area constructed of non-reactive and impermeable material or use a container made specifically to store lead acid batteries. If batteries are stored in a curbed area of the floor, a floor drain cannot be present within the storage area.
- Place cracked or leaking batteries in an acid-resistant, leak-proof, closed container. A five-gallon plastic pail is adequate.
- Store away from outside elements. Storage area does not have to be heated but batteries must not be exposed to precipitation or direct sunlight.
- Regularly inspect storage area/container for cracks and leaks and integrity of batteries.

Record Keeping

- District Headquarters may fulfill record keeping requirements by maintaining a used lead acid battery log (see attachment 1) containing the following information:
    a] battery hauler

b] battery destination
c] quantity
d] date shipped

Note: Battery log should also include abandoned batteries found on highway right of way.

- Document all used batteries that are picked up by a battery supplier for recycling.
- Truck stations which use District Headquarters Inventory personnel to pick up new lead acid batteries and return used lead acid batteries do not need to keep a used lead acid battery log.
- Truck stations that do not use District Headquarters Inventory personnel to pick up new lead acid batteries and return used lead acid batteries must keep a used lead acid battery log.

Transportation

CFR 49 173.159(e) exempts transport of lead acid batteries (new or used) from ALL transportation requirements if all of the following conditions are met:

- No other hazardous material is in the vehicle.
- Batteries are braced and terminal posts are covered or protected when loaded to prevent damage and short-circuiting.
- All other material in the truck must be secured to prevent contact with batteries.
- All material carried in the truck must be owned by the battery hauler.

If any of the above four listed conditions are not met, the exemption no longer applies and shipping becomes fully regulated - shipping papers and package marking and labeling are required. Vehicle placarding is also necessary if shipment exceeds 1,000 lbs.

Spills

Contain small spills and manage as a hazardous waste. Battery fluid is hazardous because it is corrosive and may contain toxic levels of lead. Small spills and leaks may be contained and neutralized using lime, cement, or other basic material.

Recycling Facilities

The following options are available for recycling sealed lead acid (vehicle) batteries:

- Vendors that sell lead acid batteries to MnDOT should accept used lead acid batteries for recycling.
- The District Waste Management Coordinator has a list of facilities approved by the MnDOT Office of Environmental Stewardship that can accept batteries for recycling.

Please contact the Environmental Investigation Unit for further assistance.

Attachment 1

MnDOT
USED LEAD ACID BATTERY SHIPMENT LOG

Battery Hauler	Battery Destination	Quantity	Date Shipped

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Aerosol Cans

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Management of Aerosol Cans

Background

MnDOT operations require management of aerosol cans. The following management practice allows for proper storage and disposal options of aerosol cans. Contact the Environmental Investigation Unit for assistance in unusual situations regarding storage or disposal of aerosol cans.

Aerosol products must be used with adequate ventilation and/or personal protective equipment to prevent inhalation, employee exposure and potentially harmful health effects. Always check the Material Safety Data Sheet for proper use and follow the directions.

Pressurized cans present additional environmental concerns. If punctured, contents may be released so forcefully that injuries could result. Releasing the contents of an aerosol container, even when not under pressure, may introduce flammable vapors or liquids to a source of ignition. Extreme temperatures may cause cans to rupture, and moisture may cause them to rust, resulting in a release of the contents with potential to harm the air, water or land. Pressurized cans sent to a landfill present safety concerns during compacting, and fire hazard becomes less likely if container contents are vacated using an aerosol-puncturing device for the purpose of disposal.

Storage of New and Open Aerosols

Aerosol products must be kept in a dry area not subject to extreme temperatures, such

as a flammables cabinet. Follow label directions to clean the nozzle after each use to prevent clogging.

Managing Empty Aerosol Cans

An empty container has no product or pressure. Empty containers are exempt from hazardous waste rules and can be thrown in the trash or scrap bin.

Managing Non-Empty, Waste Aerosol Cans

Non-empty aerosols that cannot be returned or exchanged with the supplier or manufacturer must be managed as a hazardous waste by

- Storing at a truck station or District Headquarters until picked up for disposal or,
- Using an aerosol-puncturing device to collect the liquids for disposal that is approved by the district safety administrator.

Storage

Non-empty waste aerosol cans may be temporarily stored at a truck station in a labeled plastic bucket or labeled section in a flammables cabinet. Waste cans can be transported to District headquarters through the VSQG consolidation program to arrange for disposal (see transportation requirements below). Metro is not in this program. Storage requirements at a District headquarters are as follows:

- Cans must be capped or the stems removed.
- When storing waste aerosols in steel drums:
    - Store with a loose lid or a pressure release valve.
    - Contact your district safety administrator regarding grounding the drum to prevent a static charge from igniting the drum contents.
- Label drum as “Hazardous Waste” and include the description of the waste and the accumulation start date.
- Perform and document weekly inspections of the waste.

Aerosol-Puncturing Device

These devices rupture and empty the cans to classify them as “empty”. Because these cans no longer contain hazardous waste they can be thrown in the trash or scrap bin. If you choose to use one of these devices, following are some precautions to keep in mind:

- Do not puncture aerosols containing any of these ingredients:
    - Ethyl ether (often found in starting fluids)
    - Chlorinated compounds, examples include:
        - Carbon tetrachloride
        - Methylene chloride
        - Trichloroethylene
        - 1,1,2-Trichloroethane
    - Pesticides
    - Freons and foamers
    - Oven cleaners
    - Unknowns

Follow the guidelines provided above for non-empty aerosol cans containing these products.

- Follow the manufacturer's instructions for properly operating, cleaning and maintaining the puncturing device.
- Staff needs to be trained on proper use of the device and should wear appropriate personal protective equipment.
- Smoking cannot be allowed in or near the puncturing area.
- Operate only in an open, well-ventilated area.
- Sort cans by size and puncture similar sizes at the same time. Puncturing solvents, degreasers and/or lubricants last help to clean the device.
- Collect liquids in a rust-free drum with a bung opening that can be fitted with a pressure-release valve. Ground storage drum to prevent static charge from igniting the drum contents
- Label drum as "Hazardous Waste", "Paint/Solvents"
- Perform and document weekly inspections of the liquid container.

Transportation to Headquarters

Shipping requirements generally do not apply to non-empty, waste aerosol cans that are generated in a remote area. These cans can be taken directly to the District Headquarters or truck station without shipping papers, however, the cans should be secured during transport.

Non-empty aerosol cans generated at a truck stations in the VSQG consolidation program (does not include Metro) must be stored on-site until transported to the District Headquarters according to the following shipping requirements:

- Properly package waste aerosols in strong outer packaging (example: plastic bucket or steel drum).
- The outer container should not be air-tight.
- Drums used for transport should be vented.
- Place the appropriate name and ID number on the outer package, such as:
  - aerosols, flammable UN 1950,
  - aerosols, non-flammable, UN 1950 or
  - poison or corrosive.

  Labeling information should be available on the product Material Safety Data Sheet or consult the District Waste Management Coordinator.
- All shipping containers must be properly secured in the vehicle for transport.
- Driver must use a VSQG Consolidation shipping paper when transporting.

Disposal

Drums containing non-punctured, non-empty aerosol cans and drums containing liquids from punctured aerosol cans must be disposed of through the MnDOT Hazardous Waste Contractor. Contact OES or District Waste Management Coordinator for vendor information.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Mercury Spill Management

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637

The intent of this guidance document is to provide general procedural information for properly managing small mercury spills. Contact your supervisor and local safety professional before proceeding with any spill. Any deviation from procedures contained in this document must be discussed with the Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Background[1]
Mercury is a naturally occurring element found in rocks, soil, water, air and living things. Mercury is the only metal that is liquid at room temperature. In its pure form (often called metallic or elemental), mercury is a shiny, silver-white, odorless liquid. If heated, mercury vaporizes into a toxic, colorless, odorless gas. Metallic mercury is found in items like thermometers, thermostats, fluorescent lights, switches, batteries, manometers and other equipment.

Exposure
Mercury is a hazardous chemical that can damage the central nervous system, kidneys and liver. Both high level/short-term and low level/long-term exposures can lead to serious health problems. Mercury exposure can occur from absorption through the skin, inhalation of mercury vapor and ingestion.

Spill Response Procedure[2]
1. Immediately isolate the spill and ventilate the area. Notify your supervisor and District Safety Administrator.
   - Keep all employees away from the spill area.
   - Immediately open windows and exterior doors.
   - Close all interior doors between the room where the mercury was spilled and the rest of the work area.
   - Close all cold air returns. Turn down heaters and turn up room air conditioners.
   - Do not use central air conditioning.
   - Turn off fans unless they vent to the outdoors. Turn on fans if they vent directly outdoors to disperse mercury-contaminated air outside.

2. Call a poison control center if someone has inhaled mercury vapors. Phone 911 or the Poison Control Center at 800-222-1222 from anywhere in the state.

3. If the mercury spill is greater than 2 tablespoons or 1 pound call the Minnesota Pollution Control Agency through the Minnesota Duty Officer immediately at 651-649-5451 or 1-800-422-0798. A duty officer is available 24 hours a day.

4. Remove mercury from shoes, clothing and skin.
   - If mercury has touched your skin, shoes, or clothing, stay still and have someone bring you a plastic trash bag and wet paper towels.
   - Wipe off visible beads of mercury with wet paper towels and put them into the trash bag. Check your shirt and pants pockets for mercury drops.
   - Remove contaminated shoes and clothing and place them in the trash bag. Seal the bag.
   - Dispose of clothing properly and shower well. See Disposal and Recycling section below for proper disposal procedure.

5. Notify your supervisor and District Safety Administrator immediately to determine whether you should attempt to clean up the spilled mercury yourself or contact an environmental contractor to perform the cleanup.

Equipment for Cleanup of Small Spills (less than 2 tablespoons or 1 pound)

Nitrile Gloves
Paper Towels
Flashlight
Zipper Shut Plastic Bags
Rubber Squeegee
Plastic Dust Pan
Plastic Trash Bags
Wide-mouth plastic container with screw on lid
Large tray or box
Eye dropper, turkey baster
Index cards, playing cards, rigid paper
Sulfur Powder
Electrical or Duct Tape

Clean Up Procedure

1. MnDOT should only initiate cleanup of spills less than 2 tablespoons or 1 pound.
2. If the mercury spill is greater than 2 tablespoons or 1 pound, MnDOT personnel should contact the Minnesota Duty Officer at 1-800-422-0798 immediately to report the spill. Contact the District Safety Administrator or OES to arrange for a contractor to perform the cleanup.
3. To prevent spreading contamination, do not allow employees with mercury contaminated clothing to walk around. Have the affected person remain in the room where the incident occurred. Remove shoes and clothing that have been

contaminated and place in a plastic bag. Do not launder the clothes. See Disposal and Recycling section below for proper disposal procedure. Anyone coming into contact with mercury should shower well with soap and water.

4. Use the equipment listed above to clean up the spill. Do not use a vacuum, broom or paint brush to clean up the spill. These methods can spread the mercury to other areas.
5. Change into old clothing (you may need to dispose of clothing after the cleanup operation) and remove all jewelry. Mercury can adhere to metal.
6. Wear nitrile gloves during cleanup procedure to prevent skin exposure. Use tongs to carefully collect any broken glass. Place glass on cardboard or paper towel and place the materials into the plastic container.
7. Begin picking up the mercury from outside the spill area and work towards the center of the spill. This helps to minimize spreading the contamination.
8. Push beads of mercury together while using two razor blades, stiff cardboard, rubber squeegee, index cards, playing cards or rigid paper.
9. Prevent mercury from moving into drains, cracks or crevices in the floor.
10. Use a flashlight to search for glass & mercury. Light will reflect off of the mercury.
11. Pick up beads by pushing them into a dustpan or onto stiff cardboard or paper.
12. Use an eye dropper to help pick up small beads of mercury.
13. Pick up remaining droplets with tape, cotton ball or moist paper towel.
14. To investigate cracks and crevices, turn off lights and use a flashlight to detect the presence of mercury. Use tape, cotton ball, or moist paper towel to collect any mercury in cracks/crevices.
15. Place container and all items used for cleanup in the plastic bag.
16. Remove gloves by turning them inside out, place gloves in plastic bag and seal the plastic bag.
17. Place sealed bag into a five gallon bucket or drum with a sealed lid.
18. Label container: “Mercury Containing Debris”.
19. Contact District Safety Administrator for guidance on cleaning up porous items like carpet, rugs or sofas.
20. An environmental laboratory can be retained to determine if mercury has vaporized. This is required for large spills.
21. Sulfur powder may be used to verify if any mercury is still present following cleanup. If the yellow sulfur powder turns brown, mercury contamination still exists. If additional cleaning is necessary, follow the same cleaning procedure.
22. Wash thoroughly before eating, taking breaks during the cleanup procedure and when the cleanup process has been completed.

Recommendation

Whenever feasible replace mercury containing items with non-mercury alternatives.

Disposal & Recycling

The hazardous waste contract is not required for recycling mercury. The District Waste Management Coordinator has a list of facilities approved by the MnDOT Office of Environmental Stewardship that can accept mercury for recycling and disposal.

Storage Guidelines
Place the contaminated material container in the District hazardous waste storage building.

Transportation and Documentation
Mercury can be transported by MnDOT personnel but must be recorded on a MnDOT shipping paper or a waste-tracking invoice that contains the following information:

- date of shipment,
- storage location and drop-off destination,
- quantity of mercury shipped (in weight or number of items).

A copy of the shipping paper or waste-tracking invoice should be kept in the District waste management file for a minimum of three years. After three years the files can be brought to OES for permanent storage.

Sources:

[1] "Exposure to elemental mercury" – Minnesota Department of Health

[2] "Cleaning up spilled mercury" – January 2006, Minnesota Pollution Control Agency

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Parts Washers

Contact Information:
Environmental Investigation Unit
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Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Management of Parts Washer Waste

Background
MnDOT currently uses petroleum and aqueous based solvents in parts washers. Both of these solvents have a flashpoint above 140° F and do not contain any MPCA targeted F-listed solvents. Using solvents that meet the above criteria minimize the regulatory requirements in managing the waste materials produced by the parts washing process. Using different solvents may require compliance with additional regulations. Therefore, before using a different solvent or parts washing system, contact EIU for assistance in determining if additional regulations are applicable.

General Guidance on Parts Washer Operation
The following information can be useful in minimizing waste production from the parts washer and remaining compliance with applicable regulations:

- Use the washer only for cleaning oil-contaminated parts.
- Don't use aerosol cleaners over or near the parts washer sink. Introduction of other cleaning products in the parts washer system will likely result in the waste washer solvent having to be managed as a hazardous waste.
- Regularly clean sludge build-up.
- Keep washing units closed and turned off when not in use to eliminate solution loss through evaporation.
- Follow parts washer manufacturer's instructions on changing filters and other maintenance requirements.

Parts Washer Waste Management
The management procedures discussed below apply to wastes produced by parts washing systems using solvents according to manufacturer instructions. Contact EIU personnel for additional assistance in managing any parts washer waste materials, such as filters, oil, sludge or solvents that do not appear typical compared to past waste materials.

Filters, Oil & Sludge
As stated previously, the parts washer must only be used for cleaning oil-contaminated parts. Following this requirement, parts washer filters, sludge and skimmed oil may be managed as follows:

- Recycle used fiber filters with burnable used oil sorbents.
- Recycle used metal-cased filters with used vehicle oil filters.
- Recycle sludge from filtering process with burnable used oil sorbents.
- Place oil from skimmer in used vehicle oil storage tank for later recycling.

Note: If the parts washer system has been used to clean other items such as paint brushes or if aerosol cleaners or other solvents are used over or near the sink, the filters, oil, and sludge need to be containerized separately and treated as a hazardous waste. See guidance on containerization below.

Petroleum Parts Washer Solvent
When washer solvent is no longer usable, containerize and dispose of as a hazardous waste.

Aqueous Parts Washer Solvent
When washer solvent is no longer usable, select one of the following three management options:

Evaporate solvent until only sludge remains. Containerize and dispose of sludge as a hazardous waste. This process must be documented with the MPCA by completing a form available at: http://www.pca.state.mn.us/waste/pubs/4_44.pdf

1. Once completed, this form must be kept on file with the MPCA. Contact the MnDOT Environmental Investigation Unit for assistance in completing this form.
2. Containerize and dispose of used solvent as a hazardous waste.
3. The used solvent may be disposed of in the sanitary sewer where it will eventually be treated at a Public Owned Treatment Works (P.O.T.W.). This option can only be used if laboratory testing demonstrates that the solvent is non-hazardous and written permission from the local P.O.T.W. is obtained and retained in District files. **Be sure to note the time period allowed between disposals.**

Containerized Liquid
The storage container must be an appropriate Federal DOT spec approved drum labeled with the words “Hazardous Waste” and one of the following: “Petroleum Parts Washer Solvent”, “Aqueous Parts Washer”, or “Aqueous Parts Washer Sludge” (if evaporated). When the container is full, date and move the drum to the hazardous waste storage area within 3 days.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Used Antifreeze Management

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Used Antifreeze Management

The Minnesota Pollution Control Agency regulates used antifreeze. MnDOT facilities that generate used antifreeze are responsible for its proper management. There are three options to choose from.

Option 1: Recycle at a MnDOT Facility

General Requirements

1. Do not mix antifreeze with used oil.
2. Do not mix other wastes with used antifreeze.
3. All MnDOT facilities will collect used antifreeze generated during MnDOT vehicle maintenance activities. Used antifreeze from home, public, or other businesses will not be accepted.
4. Antifreeze must not be disposed of in septic system (drainfield), storm sewer, surface water or on the ground.
5. Antifreeze managed under this program, outside the metropolitan counties, does not need to be reported on the annual generators license renewal form. Antifreeze managed within the seven county metropolitan area must be reported on the annual generators license renewal form.
6. Recycling on-site will generate waste filters and sludge. The waste filters and sludge must be evaluated and managed properly. The waste must remain at the generation site until evaluated. Contact the Office of Environmental Stewardship to request waste evaluation and to determine proper disposal method.

Storage

1. Use a new, open head, metal or poly drum dedicated for storing only used antifreeze.
2. Secure all bungs and lids when not in use.
3. Segregate from other wastes to prevent accidental mixing.
4. Store indoors away from outside elements.
5. Label container "Antifreeze for Recycling".
6. Antifreeze must be recycled within 180 days after the date when two 55-gallon drums have been filled.
7. Inspect drums regularly for possible leaks or spills. Documentation of inspections is not required.

Recordkeeping

When transporting used antifreeze for recycling, the facility receiving the waste must record the following information in an operating log (see Attachment 1):

1. Name and address of the facility shipped to (recycler);
2. Name and address of the facility shipped from (generator);
3. Quantity of used antifreeze shipped;
4. Dates of shipment and delivery.

Another option is districts in the VSQG consolidation program can use a copy of the VSQG shipping paper, Metro can use the attached shipping paper (see Attachment 2). The recycling and generating facilities must both retain a copy of the shipping paper.

Records shall be maintained on site for a minimum of three years. After three years, the records can be shipped to OES for permanent storage.

Transportation

MnDOT personnel in MnDOT vehicles can transport used antifreeze to the MnDOT recycling site. All containers must be secured during transport.

Option 2: Recycle at a MnDOT Approved Recycling Service

General Requirements

1. Do not mix antifreeze with used oil.
2. Do not mix other wastes with used antifreeze.
3. All MnDOT facilities will collect used antifreeze generated during MnDOT vehicle maintenance activities. Used antifreeze from home, public, or other businesses will not be accepted.
4. Antifreeze must not be disposed of in septic system (drainfield), storm sewer, surface water or on the ground.
5. Antifreeze managed under this program, outside the metropolitan counties, does not need to be reported on the annual generators license renewal form. Antifreeze managed within the seven county metropolitan area must be reported on the annual generators license renewal form.

6. Recycling on-site will generate waste filters and sludge. The waste filters and sludge must be evaluated and managed properly. The waste must remain at the generation site until evaluated. Contact the Office of Environmental Stewardship to request waste evaluation and to determine proper disposal method.
7. All recycling Stewardship must pass a MnDOT environmental audit before use.

Storage

1. Use a new, open head, metal or poly drum dedicated for storing only used antifreeze.
2. Secure all bungs and lids when not in use.
3. Segregate from other wastes to prevent accidental mixing.
4. Store indoors away from outside elements.
5. Label container "Antifreeze for Recycling".
6. Antifreeze must be recycled within 180 days after the date when two 55-gallon drums have been filled.
7. Inspect drums regularly for possible leaks or spills. Documentation of inspections is not required.

Recordkeeping

MnDOT facilities that recycle used antifreeze through a MnDOT approved recycling service are required to maintain records showing the amount of used antifreeze generated and recycled.

Records shall be kept indicating the name and address of the recycler, date accepted by the recycler and amount of used antifreeze recycled. Receipts, shipping papers (see Attachment 2) or maintaining a logbook (see Attachment 1) are all acceptable means of recordkeeping.

When consolidating used antifreeze at one MnDOT facility, the MnDOT facility receiving the waste must record in an operating log the following information (see Attachment 1):

1. Name and address of the facility shipped to (recycler);
2. Name and address of the facility shipped from (generator);
3. Quantity of used antifreeze shipped;
4. Dates of shipment and delivery.

A copy of the shipping paper on file can be used in place of an operation log.

When consolidating at a MnDOT facility, another option is districts in the VSQG consolidation program can use a copy of the VSQG shipping paper, Metro can use the attached shipping paper (see Attachment 2). The recycling and generating facilities must both retain a copy of the shipping paper.

Records must be filed on site for a minimum of three years. After three years, the record can be sent to OES for permanent storage.

Transportation
MnDOT personnel can transport used antifreeze in MnDOT vehicles to another MnDOT facility or to a recycling service. All containers must be secured during transport.

If shipping outside of Minnesota, additional steps are required. Contact the Office of Environmental Stewardship to determine the proper outstate transportation requirements.

Option 3: Discharge to a Sanitary Sewer System
MnDOT facilities generating less than 600 hundred gallons per year of used antifreeze are eligible to discharge the waste to a sanitary sewer system after receiving permission. The MnDOT District/Division must notify and obtain written permission from local wastewater treatment plant prior to sewering used antifreeze. Some wastewater treatment plants have banned sewering of used antifreeze.

General Requirements

1. Do not mix antifreeze with used oil.
2. Do not mix other waste with used antifreeze.
3. All MnDOT facilities will collect used antifreeze generated during MnDOT vehicle maintenance activities. Used antifreeze from home, public, or other businesses will not be accepted.
4. Antifreeze must not be disposed of in septic system (drainfield), storm sewer, surface water or on the ground.
5. Antifreeze managed under this program, outside the metropolitan counties, does not need to be reported on the annual generators license renewal form. Antifreeze managed within the seven county metropolitan area must be reported on the annual generators license renewal form.

Recordkeeping
MnDOT facilities that discharge used antifreeze to the sanitary sewer system are required to permanently maintain the following records:

- Written permission from the local wastewater treatment plant to discharge used antifreeze.
- Records showing the amount of waste antifreeze generated. For example, a logbook indicating the following:
    - Person performing the discharge,
    - Date of discharge
    - Quantity discharged.

  The records must be filed on site for a minimum of 3 years. After 3 years the record can be sent to the Office of Environmental Stewardship for permanent storage.

Attachment 1
Used Antifreeze
Consolidation Program
Operating Log

Name/address Shipped from (Generator)	Name/address Shipped to (Recycling facility)	Quantity	Date Shipped	Date Received

Attachment 2
Sample Shipping Paper

SHIP TO**:**	SHIP FROM**:**
STREET:	STREET:
CITY:	CITY:
STATE: ZIP:	STATE: ZIP:
ROUTE: VEHICLE NUMBER:	

Designates Hazardous Materials as defined in the Department of Transportation regulations governing the transportation of hazardous materials. The use of the column is an optional method for identifying hazardous materials on bills of lading per section 172.201 (A)(1)(iii) of title 49 Code of Federal Regulations.
This is to certify that the above named materials are properly classified, described, packaged, marked, labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPING PAPER

No. & Size of Drums	* HM	DESC. OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	No.#
		Used antifreeze for recycling	
		DATE OF SHIPMENT:	
		SHIP TO CONTACT:	
		PHONE:	
		SHIP FROM CONTACT:	
		PHONE:	

SHIPPER NAME:	CARRIER NAME:
AUTHORIZED SIGNATURE:	AUTHORIZED SIGNATURE:

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Used Fluorescent Lamps, High-Intensity Discharge Lamps and Other Mercury-Containing Items

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities and waste management issues. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Management of Fluorescent & HID Lamps and Other Mercury-Containing Items

Background
The Minnesota Pollution Control Agency regulates materials containing mercury. MnDOT is responsible for proper storage, record keeping and transportation of mercury containing waste.

Equipment containing mercury includes but is not limited to the following: electrical switches (including silent switches), thermostats, gauges, batteries (may be within smoke detectors and emergency lighting), exit signs, security systems, alarm systems, thermometers, barometers manometers, relays, thermocouples and the following types of lighting: fluorescent, mercury vapor, metal halide, high-pressure sodium, neon and HID (high-intensity discharge) lamps.

Consult the Mercury Guidance Document for spill response procedures.

Recycling
All mercury-containing items must be recycled by a MnDOT approved waste contractors and recyclers. Removal of mercury-containing items on MnDOT construction projects must be performed by MnDOT approved waste contractors and recyclers.

Storage
Because many of the items containing mercury are fragile, the following storage and transport procedures must be followed to ensure proper handling:

- Store used fluorescent tubes and HID lamps in the original box or a box of similar size. To prevent breakage, box spacers may be needed.
- Store other mercury-containing items in a sturdy cardboard box or plastic pail.
- Keep box/container in a designated storage location.
- Do not tape fluorescent tubes together.
- Do not break or crush fluorescent tubes.
- Place a hazardous waste label on the container. In addition, write "Used Fluorescent Tubes", "Used High-Intensity Discharge Lamps", "Thermometers for Recycling" "Switches for Recycling" or other clear description on the container.
- If mercury-containing products break, store the broken pieces in a sealed container (5 gallon plastic pail). Place a hazardous waste label on the sealed container. Label the container with a clear description of the waste such as "Broken Thermometers" or "Broken Fluorescent Tubes".

Documentation
Mercury-containing item waste management records produced as part of a construction project should be retained in the project file. Waste management records produced for work conducted at a MnDOT administrative or maintenance facility should be retained in district files.

For waste generated on construction projects:

- Removal contractor must document the mercury-containing items removed with a log or shipping paper.
- Copies of the completed shipping paper and the recyclers waste acceptance receipt must be furnished to the project engineer within 10 days of completion of the removal and kept in the project file.

For waste generated at MnDOT administrative or maintenance facilities:

Document the mercury-containing items removed with a log or shipping paper. Retain the recyclers waste acceptance receipt

- Management of waste mercury-containing items generated from MnDOT facilities must be documented in an operating log or shipping paper and retained in district files for three years. After three years the operating log or shipping paper should be sent to the Office of Environmental Stewardship for permanent storage. The operating log must contain the following information (see attachments 1 and 2):

- Name and address of the facility that the mercury-containing items are being shipped from
- Name and address of the facility that the mercury-containing items are being shipped to
- Quantity shipped
- Dates of shipment and receipt at facility accepting waste

Transportation

- The waste can be accompanied by a shipping paper or recorded in a log and the transporter must be issued a receipt by the facility accepting the waste material. There are more regulations when transporting over one pound of mercury, contact the Office of Environmental Stewardship if this amount is exceeded.
- MnDOT vehicles may be used to transport waste from MnDOT truck stations or wayside rest areas to the district headquarters for storage.
- MnDOT vehicles may be used to transport waste from the district headquarters, truck station or wayside rest areas to a MnDOT approved recycling facility.

MnDOT
Used Fluorescent Lamp, High-Intensity Discharge Lamp and Other Mercury-Containing Items Consolidation Program

OPERATING LOG

To: Name/address DISTRICT HEADQUARTERS ADDRESS	From: Name/address DISTRICT TRUCK STATION ADDRESS	Quantity	Date Ship	Date Rec.

NOTE: RETAIN COPY OF SHIPPING PAPER FOR EACH SHIPMENT LISTED

MnDOT
Used Fluorescent Lamp, High-Intensity Discharge Lamp and Other Mercury-Containing Items Consolidation Program

OPERATING LOG

To: Name/address HAZARDOUS WASTE CONTRACTOR ADDRESS	From: Name/address DISTRICT HEADQUARTERS ADRESS	Quantity	Date Ship	Date Rec.

NOTE: RETAIN COPY OF SHIPPING PAPER FOR EACH SHIPMENT LISTED

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Used Electronics
(computer/computer parts, TV's, etc.)

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities or on issues regarding waste management. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

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Subject: Management of Used Computers/Computer Parts

The Minnesota Pollution Control Agency regulates waste computers/computer parts. MnDOT facilities that generate this waste are responsible for proper storage, record keeping, transportation, and containment. MnDOT currently recycles all of these items.

General Requirements

1. No hazardous waste license or license fees are required.
2. No reporting requirements to the MPCA are required. However, records must be kept on quantities generated and shipping papers that document where the waste was recycled or disposed of.
3. Can transport in MnDOT vehicles using a shipping paper.

Options for Beneficial Reuse
See MnDOT approved list for more information.

1. Surplus or trade in through the Fleet and Surplus Service, Department of Administration.
2. Deliver or ship directly to a MnDOT approved recycling facility.
3. Use the MnDOT Hazardous Waste Contractor for recycling.

Storage

1. Store waste computers/computer parts in containers sufficient to contain the waste (e.g. a sturdy cardboard box).
    a. Label containers “Computers for Recycling” or “Computer Parts for Recycling”.
2. Keep container in a designated storage location.
3. Inspect regularly for inadequate packaging, rips, spillage, etc. Documentation of inspections is not required.
4. Up to 500 kilograms/1,100 pounds of computer waste can be stored indefinitely. The waste must be shipped within 180 days after this weight limit is reached.

Transportation

1. MnDOT vehicles may be used to transport waste computer/computer parts to a MnDOT approved recycling facility.
2. A shipping paper needs to be used
3. Shipment/load must be secure.

Record Keeping

All participating MnDOT facilities must record shipping in an operating log (see attachment 1) and maintain for three years. After three years, the log should be sent to Environmental Stewardship for permanent storage. The operating log must contain the following information:

1. Name and address of the facility that the waste computer/computer parts are being shipped to.
2. Name and address of the facility that the waste computer/computer parts are being shipped from.
3. Quantity shipped.
4. Dates of shipment and delivery.
5. Copy of shipping paper.

When consolidating at a MnDOT facility, districts in the VSQG consolidation program can use a copy of the VSQG shipping paper, Metro can use the attached shipping paper (see Attachment 2). The recycling and generating facilities must both retain a copy of the shipping paper.

Note: Retaining a copy of the shipping paper containing the above information would be sufficient to meet record keeping requirements.

Attachment 1
Used Electronics
Consolidation Program
Operating Log

Name/address Shipped from (Generator)	Name/address Shipped to (Recycling facility)	Quantity	Date Shipped	Date Received

Attachment 2
Sample Shipping Paper

SHIP TO**:**	SHIP FROM**:**
STREET:	STREET:
CITY:	CITY:
STATE: ZIP:	STATE: ZIP:
ROUTE: VEHICLE NUMBER:	

* Designates Hazardous Materials as defined in the Department of Transportation regulations governing the transportation of hazardous materials. The use of the column is an optional method for identifying hazardous materials on bills of lading per section 172.201 (A)(1)(iii) of title 49 Code of Federal Regulations.
This is to certify that the above named materials are properly classified, described, packaged, marked, labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPING PAPER

No. & Size of Drums	* HM	DESC. OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	No.#
		Used electronics (computers, TV's, etc) for recycling	
		DATE OF SHIPMENT:	
		SHIP TO CONTACT:	
		PHONE:	
		SHIP FROM CONTACT:	
		PHONE:	

SHIPPER NAME:	CARRIER NAME:
AUTHORIZED SIGNATURE:	AUTHORIZED SIGNATURE:

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Treated Wood

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

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Subject: Management of Treated Wood

Treated wood is regulated by the Minnesota Pollution Control Agency. Chemicals used to preserve wood may be toxic and could impact the environment through normal use or disposal if not properly managed. MnDOT is responsible for proper disposal of treated wood products that have been taken out of service or are a waste.

Examples of Treated Wood
Sources of treated wood include but are not limited to the following: creosote, pentachlorophenol, CCA (chromated copper arsenate or green treat), ACQ (alkaline copper quat), CA (copper azole), copper naphthanate and disodium octaborate tetrahydrate.

Disposal and Recycling Requirements
Landfill
Treated wood can be disposed of in an MPCA permitted lined mixed municipal solid waste landfills and MPCA permitted lined industrial landfills. However, some of these landfills have a more stringent acceptance policy and may not accept at least some types of treated wood.

Incineration
Only creosote treated wood may be chipped and incinerated for disposal. In general, chipping is only cost effective for large volumes of wood, such as an amount produced by dismantling a railroad yard or a building. Only a MnDOT approved chipper and incinerator may be used to dispose of creosote treated wood.

Beneficial Reuse
Any treated wood may be reused for beneficial purposes provided that it is in a condition where it is reusable in its original form or in a secondary application such as fence posts or landscaping timbers. However, treated wood cannot be chipped and used as mulch or as wood chips on landscaping projects.

Ownership transfer of treated wood for beneficial reuse must be documented with a treated wood transfer of ownership form.

Documentation Requirements
Records must be maintained that indicate the type of treated wood, quantity, date and disposal location. Records may include but are not limited to invoices and scale tickets. If the treated wood is beneficially reused, the Transfer of Ownership Form is an acceptable management record.

Treated wood management records produced as part of a construction project should be retained in the project file. Treated wood management records produced for work conducted at a MnDOT maintenance facility should be retained in district files.

Transportation Requirements
There are no transportation requirements for treated wood materials.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Tree/Brush Burning Debris Management

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637

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Subject: Tree/Brush Burning

Burning wood is regulated by the Minnesota Department of Natural Resources (MN DNR) and county and city governmental agencies. Contact the MN DNR and the county and city where the proposed burning will take place for permitting instructions and local ordinance requirements.

Special Note: It is illegal to burn treated wood products.

Please contact the Environmental Investigation Unit for further assistance.

For information of forest pests, contact: Dan Gullickson at 651-366-3610

Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Used Oil Sorbent Management

Contact Information:
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Mark Vogel: 651-366-3630
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Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for Minnesota Department of Transportation (MnDOT) personnel to ensure proper management of used oil sorbents. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit (EIU) personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the EIU in the MnDOT Office of Environmental Stewardship (OES) for additional information or legal requirements.

Background
The following guidance is intended to ensure that MnDOT manages used oil sorbents in accordance with regulations and in a manner that is protective of the department's long-term liability. Used oil sorbents include floor sorbents, waste trap sorbents and rags used to absorb oil.

General Requirements
Definition: For the purposes of this guidance document, used oil must meet all of the following requirements:

- Used oil includes engine oil, transmission fluid, lubricating oil, hydraulic oil, power steering fluid, brake fluid and gear oil.
- Sorbent material is any natural or synthetic product used to collect liquid waste. Common examples of sorbent material include polypropylene, cellulose, peat, paper, corn, pumice, diatomaceous earth, clay and rags.
- The used oil sorbents must be generated from MnDOT maintenance activities. Used oil sorbents must not be accepted from public or private parties.
- Do not mix sorbents contaminated with solvents, gasoline, degreaser or paint thinner with used oil sorbents.
- Do not mix used oil sorbent material that may be burned for energy recovery (such as polypropylene, cellulose, peat, paper, rags, pillows, pads, fiber filters, and corn) with used oil sorbents that cannot be burned for energy recovery (such as clay, pumice, or diatomaceous earth sorbents).
- Used oil sorbents from multiple MnDOT facilities can be consolidated at one MnDOT facility within the district.

Management of Used Oil Sorbents
The two options for managing used oil sorbents are to recycle or burn for energy recovery through an approved MnDOT vendor.

Storage

- Store used oil sorbent in leak proof drums meeting the appropriate US DOT specification. The drums must be clean of other chemicals (such as other products or waste materials) that could contaminate the used oil sorbent and thus require more costly disposal.
- Segregate used oil sorbent containers from other waste containers to prevent accidental mixing.
- Store used oil sorbents that can be burned for energy recovery (such as polypropylene, cellulose, peat, paper, rags, pillows, pads, fiber filters, and corn) in separate containers from sorbents that cannot be reclaimed for energy (clay, pumice or diatomaceous earth).
- Secure all bungs and lids after placing used oil sorbent in the drum.
- Label drums as "USED OIL SORBENTS". If necessary, provide additional labeling to distinguish between containers of sorbents that will be recycled from sorbents that will be burned.
- Drums should be located indoors or protected from the outside elements and placed within secondary containment to capture any spills.

Transportation
MnDOT personnel can transport used oil sorbents with MnDOT vehicles. Shipping papers or manifests are not required for transporting used oil sorbents.

Recordkeeping
Facilities generating and receiving used oil sorbents for recycling or burning for energy recovery/burning must maintain a document containing the following information (see Management Log, next page):

1) Name and address of the facility shipped from (MnDOT facility);
2) Name and address of the facility shipped to (facility accepting the used oil for recycling or energy recovery/burning);
3) Quantity shipped;
4) Dates of shipment and acceptance at recycling or energy recovery/burning facility.

Records shall be maintained at MnDOT facility for a minimum of three years. After three years, the records can be sent to OES for permanent storage.

Note: Retaining a copy of the shipping paper containing the above information would be sufficient to meet record keeping requirements.

MnDOT
Used Oil Sorbent Management Log

Shipped From	Shipped To	Quantity	Date Shipped	Date Received

Shipped From: provide MnDOT facility name & address
Shipped To: provide recycling or burning facility name & address

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Used Oil Tank Sludge in Lube Cubes

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

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Subject: Management of Used Oil Tank Sludge

Background
Two options for cleaning used containers (Lube Cube) and managing used oil sludge are provided below. The cleanout of the tank can be completed by MnDOT personnel or by contracting.

Option #1
All work completed by MnDOT personnel:
1. Remove used oil from Lube Cube.
2. Add diesel fuel to the Lube Cube to make the sludge pumpable.
3. Stir the contents of the Lube Cube to thoroughly mix the diesel fuel and sludge.
4. Pump out the diesel fuel/sludge mixture and containerize in a drum.
5. Label the drum as “Used Oil Tank Sludge” and “Hazardous Waste”.
6. Disposal will be arranged through the MnDOT hazardous waste contractor.

Option #2
Tank cleanout by contractor, disposal by MnDOT:
1. The MnDOT contractor will perform the entire Lube Cube cleanout.
2. The MnDOT contractor will containerize in a drum and leave drum on site.
3. The MnDOT contractor or MnDOT personnel will Label the drum as “Used Oil Tank Sludge” and “Hazardous Waste”.
4. MnDOT personnel will arrange disposal through the MnDOT hazardous waste contractor.

Please contact the Environmental Investigation Unit for further assistance.

Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Used Oil Management

Contact Information:
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The intent of this guidance document is to provide general procedural information for Minnesota Department of Transportation (MnDOT) personnel to ensure proper handling of used oil. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit (EIU) personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the EIU in the MnDOT Office of Environmental Stewardship (OES) for additional information or legal requirements.

Background
The following guidance is intended to ensure that MnDOT manages used oil in accordance with regulations and in a manner that is protective of the department's long-term liability. Procedures are provided for used oil recycling with MnDOT approved vendors and for use as heating fuel in MnDOT facilities equipped with a used oil burner system.

General Requirements
Definition: For the purposes of this guidance document, used oil must meet all of the following requirements:

- Used oil includes engine oil, transmission fluid, lubricating oil, hydraulic oil, power steering fluid, brake fluid and gear oil.
- The used oil must be generated from MnDOT maintenance activities. Used oil must not be accepted from public or private parties.
- The used oil cannot be mixed with any cleaning product or waste material including but not limited to the following: antifreeze, solvents, gasoline, degreasers, paint thinners or aerosol cleaning products. Mixing chemicals with used oil may produce the following adverse results:
    - The Fire Marshall may require additional measures to reduce storage container fire potential.
    - The chemical mixture may adversely react with the used oil burner.
    - The used oil mixture may not pass the on-specification test required for burning as energy recovery and may have to instead be disposed of as a hazardous waste.

- Sets a precedent for illegally disposing of wastes/materials in used oil.

Management of Used Oil
The two options for managing used oil are to recycle through an approved vendor or to burn as energy recovery.

1) Recycling Used Oil
   Used oil can only be recycled at MnDOT approved vendors.

2) Burning Used Oil as Energy Recovery (to heat a facility)

   Oil Burner Requirements
   Used oil may only be used to heat a facility if the oil burner is:
   - rated at less than 500,000 BTU's per hour,
   - vented to the outdoors,
   - designed to burn used oil and
   - only when the oil is burned for energy recovery (burning for purposes other than to heat the facility is not allowed).

   ➢ Contact the State Fire Marshall and the local Fire Marshall to inquire about any other requirements.

   Used Oil Requirements
   Used oil burned for energy recovery must meet the following requirements:
   - Laboratory Analysis:
     Used oil burned can only be burned for energy recovery if laboratory analysis has demonstrated that the oil is on-specification (on-spec). On-spec determination is required for used oil generated from each individual facility that will be burned for energy recovery. Once used oil from a facility has been tested and proven to be on-spec, no further testing is required unless the used oil source changes. Examples of changes of the used oil source include:
     - A change in the types of used oil generated at the facility. Types of used oil include: engine oil, transmission fluid, lubricating oil, hydraulic oil, power steering fluid, brake fluid and gear oil.
     - A change in the maintenance schedule of equipment that could potentially alter the used oil chemistry.
   - A copy of the on-spec test results must be kept on file at each facility that generates used oil burned for energy recovery.
   - Each facility that generates used oil that is burned for energy recovery must notify the United States Environmental Protection Agency (EPA) to obtain an EPA ID # or to complete a one-time notification if the facility already possesses an EPA ID #. To complete the notification, check item 4 in box “C” of section VIII of MPCA the Notification of Regulated Activity form.
   - Contact the Office of Environmental Stewardship to request sampling for on-spec analysis of used oil.

- If laboratory analysis indicates that the used oil is off-specification, the Office of Environmental Stewardship will determine if the used oil can be recycled by a MnDOT approved vendor or if it must be disposed of as a hazardous waste. All efforts will then be made to determine why the used oil failed the on-spec analysis.

Storage

- Store used oil in leak proof drums or storage tanks that can easily be pumped. The drums or storage tanks must be clean of other chemicals (such as other products or waste materials) that could contaminate the used oil and thus require more costly disposal. Segregate used oil containers from solvents and other wastes to prevent accidental mixing.
- Secure all bungs and lids after placing used oil in the container.
- Label drums or storage tanks as "USED OIL".
- Drums and single-walled tanks should be located indoors and within secondary containment to capture any spills. Double-walled storage tanks may be located either indoors or outdoors.
- Storage containers with a volume greater than 500 gallons must be registered with the MPCA Aboveground Storage Tank Program Contact Summer Allen with the Office of Environmental Stewardship for assistance with tank registration.

Transportation

MnDOT personnel can transport used oil with MnDOT vehicles

- The facility that transports used oil that is burned for energy recovery must notify the United States Environmental Protection Agency (EPA) to obtain an EPA ID # or to complete a one-time notification if the facility already possesses an EPA ID #. To complete the notification, check item 1 in box "C" of section VIII of MPCA the Notification of Regulated Activity form.

Recordkeeping

Facilities generating and receiving used oil for recycling or energy recovery/burning must create a document containing the following information (see operating log):

1. Name and address of the facility shipped from (MnDOT facility);
2. Name and address of the facility shipped to (facility accepting the used oil for recycling or MnDOT facility accepting the used oil for energy recovery/burning);
3. Quantity shipped;
4. Dates of shipment and acceptance at recycling or energy recovery/burning facility.

Records shall be maintained at MnDOT generating facility for a minimum of three years. After three years, the records can be sent to OES for permanent storage.

Additional Recordkeeping Requirements

- Facilities with used oil burners shall permanently maintain on-site the laboratory analysis proving the used oil is on-specification.
- Facilities located in the seven-county metropolitan area shall record annual totals of used oil burned for reporting and licensing requirements of used oil activities. This is not required outside the seven-county metropolitan area.
- Storage tank registration and monthly inspection log (if applicable), shall be permanently kept on-site or at a centralized location (example: District Headquarters).

Note: Retaining a copy of the shipping paper containing the above information would be sufficient to meet record keeping requirements.

**MnDOT USED OIL
CONSOLIDATION PROGRAM
OPERATING LOG**

Name/address Shipped from (Generated by)	Name/address Shipped to (Recycle facility)	Quantity	Date Ship	Date Rec.

*See attached used oil analysis as on-specification

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Used Oil Filter Management

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities or on issues regarding waste management. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Management of Used Oil Filters

General Requirements

1. Immediately after the oil filter is removed from the vehicle, puncture the dome end of the filter and drain the oil into a container for a minimum of 24 hours.
2. After draining for 24 hours, the oil filter can be properly containerized.
3. Used oil filters from various truck stations can be consolidated at one MnDOT facility for storage.

Storage

1. Store used oil filters in leak proof DOT spec. containers. See section 8 for proper containers.
2. Container must be clean of other chemicals or contaminants.
3. Label container as “USED OIL FILTERS”. **Do not** label as a hazardous waste. Any labeling on the container about previous contents must be removed or covered.
4. Secure all bungs and lids when not in use.
5. Store indoors or protected from outside elements.

Note: Many used oil filter recycling contractors will only take used oil filters contained in drums supplied by the contractor. This may involve a drum deposit.

Disposal
MnDOT facilities must recycle used oil filters through a MnDOT’s approved vendors.

Transportation
Used oil filters can be transported by MnDOT personnel in MnDOT vehicles.

Recordkeeping
Facilities generating and receiving used oil filters for recycling must create a document containing the following information (see operating log):

1. Name and address of the facility shipped from (MnDOT facility);
2. Name and address of the facility shipped to (facility accepting the used oil for recycling or MnDOT facility accepting the used oil for energy recovery/burning);
3. Quantity shipped;
4. Dates of shipment and acceptance at recycling or energy recovery/burning facility.

Note: Retaining a copy of the shipping paper containing the above information would be sufficient to meet record keeping requirements.

Records shall be maintained at MnDOT generating facility for a minimum of three years. After three years, the records can be sent to OES for permanent storage.

**MnDOT USED OIL FILTER
CONSOLIDATION PROGRAM
OPERATING LOG**

Name/address Shipped from (Generated by)	Name/address Shipped to (Recycle facility)	Quantity	Date Ship	Date Rec.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Paint Wastes

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

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Subject: Management of Paint Waste

Background
Following is guidance on proper management of oil base paint, latex paint, related wastes generated during cleaning of brushes, spray guns, and solvent rags.

Waste Oil Base Paint and Brushes

Non-usable paint

- Once paint is determined to be a waste, place paint in an empty, clean drum.
- Immediately place a hazardous waste label on the side of the drum with a clear description of the waste, e.g. “WASTE PAINT”. Cover or remove all old drum labels.
- Keep lids and bungs closed and secured at all times, except when waste is being added.
- When drum is full, mark the fill date on the hazardous waste label and notify the District Waste Management Coordinator. Move the drum to a designated hazardous waste storage area within three days.
- Arrange disposal with MnDOT hazardous waste contractor.

Disposable Brushes

- Disposable brushes can be thrown in the trash after use.

Reusable Brushes

- Clean reusable paint brushes by soaking in paint thinner. Thinner used for cleaning brushes must not be allowed to evaporate – keep cleaning container covered.
- Once the thinner is determined to be a waste, place waste thinner in an empty, clean drum.
- Immediately place a hazardous waste label on the side of the drum with a clear description of the waste, e.g. "WASTE PAINT THINNER". Cover or remove all old drum labels.
- Keep lids and bungs closed and secured at all times, except when waste is being added.
- When drum is full, mark the fill date on the hazardous waste label and notify the District Waste Management Coordinator. Move the drum to a designated hazardous waste storage area within three days.
- Arrange disposal with MnDOT hazardous waste contractor.

Spray Gun Cleaning

- Thinner used for cleaning the spray guns must not be allowed to evaporate – keep cleaning container covered.
- Once the thinner is determined to be a waste, place waste thinner in an empty, clean drum.
- Immediately place a hazardous waste label on the side of drum with a clear description of the waste, e.g. "WASTE PAINT THINNER". Cover or remove all old drum labels.
- Keep lids and bungs closed and secured at all times, except when waste is being added.
- When drum is full, mark the fill date on the hazardous waste label and notify the district waste management coordinator. Move the drum to a designated hazardous waste storage area within three days.
- Arrange disposal with MnDOT hazardous waste contractor.

Recordkeeping

Records shall be kept indicating the name and address of the receiver, date accepted by the receiver and amount of paint waste. Receipts, hazardous waste manifests, VSQG shipping papers are all acceptable means of recordkeeping.

Records must be filed on site for a minimum of three years. After three years, the record can be sent to OES for permanent storage.

Transportation

Districts can transport from the MnDOT truck station to the MnDOT headquarters under the VSQG consolidation program (Metro district cannot use this option).

Waste Latex Paint and Brushes

Non-usable paint

- Palletize and shrink-wrap containers of non-useable paint. Label the pallet with "Used latex paint for recycling". Request the district waste management coordinator makes arrangements to recycle the waste.

Disposable Brushes

- Disposable brushes can be thrown in the trash after use.

Reusable Brushes

- Clean reusable paint brushes with water in sink. Rinsate from latex paint cleaning can be allowed to enter sanitary sewer through drain. Paint rinsate cannot be allowed to enter storm sewer.

Spray gun cleaning

- Clean spray guns with water. Paint rinsate from cleaning spray guns may be allowed into sanitary sewer through drain, but written permission from the publicly owned treatment works (POTW) must be obtained before doing so. Paint rinsate cannot be allowed to enter storm sewer.

Dried Paint from Hand Scraping

Dried paint waste can be generated by manual scraping on small scale jobs in the following ways:

- Removing peeling paint from a building or similar structure.
- Removing paint from a vehicle or other heavy equipment. If sandblasting, see Guidance Document: In-House Sandblasting.
- Removing paint from a bridge, radio tower or other steel structure. If sandblasting, see Guidance Document: In-House Sandblasting and In-House Bridge Blasting.
- Dry paint waste generated during pavement message marking operation.
- Removing paint from traffic signal cabinets.
- Removing paint from power tools.

Dried Paint must be determined if it's lead or non-lead. Contact your district waste management coordinator or contact the Office of Environmental Stewardship.

- If non-lead, dispose of dried paint chips in the trash.
- If lead,
  - Contact the District Safety Administrator before performing work. Personal protective equipment may be needed to protect worker safety.
  - Place dried waste paint chips in an empty, clean drum.
  - Immediately place a hazardous waste label on the side of the drum with a clear description of the waste, e.g. "HAZARDOUS WASTE", "LEAD PAINT CHIPS". Cover or remove all old drum labels.
  - Keep lids and bungs closed and secured at all times, except when waste is being added.
  - When drum is full, mark the fill date on the hazardous waste label

and notify the district waste management coordinator. Move the drum to a designated hazardous waste storage area within three days.

- Arrange disposal with MnDOT hazardous waste contractor.

Recordkeeping and Transportation for Dried Lead Paint

Records shall be kept indicating the name and address of the receiver, date accepted by the receiver and amount of paint waste. MnDOT must use its hazardous waste contractor with shipping off site using a hazardous waste manifest.

When consolidating at a MnDOT facility (Metro District cannot do) if hazardous, districts can transport waste under the VSQG consolidation program. The receiving and generating facilities must both retain a copy of the VSQG consolidation shipping paper.

Records must be filed on site for a minimum of three years. After three years, the record can be sent to OES for permanent storage.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: In-House Paint Removal by Abrasive Blasting
On-site at MnDOT Facilities

Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities and waste management issues. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: In-House Paint Removal by Abrasive Blast Removal

Background
Products used for paint removal by blasting may include sand, coal slag, steel shot, or commercial products such as Blastox. The Minnesota Pollution Control Agency (MPCA) regulates proper containment of particulate blasting activities for lead and non-lead paint removal. The MPCA also regulates proper management of the blasting residue generated by paint removal activities.

General Requirements
- Air Quality rules state that reasonable measures must be taken to prevent emission of sandblasting particles. A good rule of thumb is to prevent any visible emissions from escaping the containment surrounding the working area. Containment is required for both lead and non-lead paint sandblasting operations.
- In addition to controlling emissions, work area containment enhances the ability to collect the waste blasting residue for proper disposal.
- Failing to contain even non-lead paint chips can result in illegal disposal of a waste material. Any visible paint chips or blasting residue that escapes containment area must be collected for proper disposal.
- Contact your District Safety Administrator and your District Waste Management Coordinator prior to any paint removal operation.

Lead Paint Determination and Disposal Requirements

- Determine if paint is lead or non-lead.
  - Non-lead paint has lead content less than 0.5%. Non-lead blasting residue must be disposed of as an industrial solid waste. Contact and obtain written permission from the industrial landfill before disposing.
  - Lead paint has lead content equal to or greater than 0.5%. When blasting lead paint or paint of unknown composition, the blasting residue must be managed as a hazardous waste, unless the particulate used for blasting is the commercial product Blastox.

    Blastox has the capability to make the final composition of the blasting residue non-hazardous. When using Blastox as the blasting media, the blasting residue must be analyzed for RCRA metals in accordance with TCLP methodology to confirm the waste is non-hazardous. If TCLP analysis demonstrates the blasting residue is non-hazardous, it can be disposed of as an industrial waste. Contact and obtain written permission from the MPCA permitted Sanitary Landfill or Industrial landfill before disposing.

Containment for Both Lead and Non-Lead Paint Removal

- Minimum containment may consist of three walls and a roof over a paved surface or ground cover (tarp) that will prevent air emissions from escaping the work area and facilitate collection of the blasting residue.
- Curtains: Curtains used for containment must be rated by the manufacturer as 100 percent impermeable and be in good condition without holes or tears. If using multiple curtains, adjoining curtains must overlap at least three feet unless the edges are completely joined.
- Wind Speed Limitation: Do not conduct paint removal whenever wind speeds render the curtains and ground cover ineffective for containment.

Cleanup of Waste Material

- Collect all visible paint particles and blasting residue containing paint at the end of each workday from the work area. Inspect outside the containment and collect any paint particles or blasting residue that escaped the work area. Collect waste material by manual means or by vacuum. Do not use air pressure or streaming water to assist in waste collection because these activities will disperse the waste material. Methods of handling and storage of waste material must prevent formation of dust or loss of material.

Storage and Disposal

- If the blasting residue is an industrial waste:
  - Store in a drum that meets US DOT requirements of a 1A2 or 1H2 container.
  - Label drum as “Blasting Residue”.
  - Store drum in designated storage area away from outside elements.

- Arrange with MPCA permitted Mixed Municipal Solid Waste Landfill or MPCA permitted Industrial Landfill for disposal.

- If the blasting residue is a hazardous waste:
  - Store in a drum that meets US DOT requirements of a 1A2 or 1H2 container.
  - Label drum as “Blasting Residue” and “Hazardous Waste”.
  - Place date on drum.
  - When the drum is full, date and move the drum to the hazardous waste storage area within 3 days.
  - Arrange disposal with MnDOT hazardous waste contractor.

Recordkeeping and Transportation if Nonhazardous
Records shall be kept indicating the name and address of the Landfill, date accepted by the landfill and amount of blasting residue. Manifest, shipping papers, and receipts are all acceptable means of recordkeeping.

When consolidating at one MnDOT facility, if not a hazardous waste, the MnDOT facility receiving the waste must record in an operating log the following information (see attachment 1):

1. Name and address of the facility shipped to (receiver);
2. Name and address of the facility shipped from (generator);
3. Quantity shipped;
4. Dates of shipment and delivery.

A copy of the VSQG shipping paper on file can be used in place of an operation log.

Records must be filed on site for a minimum of three years. After three years, the record can be sent to OES for permanent storage.

MnDOT personnel can transport with MnDOT vehicles.

Recordkeeping and Transportation if Hazardous
Records shall be kept indicating the name and address of the receiver, date accepted by the receiver and amount of paint waste. MnDOT must use its hazardous waste contractor with shipping off site using a hazardous waste manifest.

When consolidating at a MnDOT facility (Metro District cannot do) if hazardous, districts can transport waste under the VSQG consolidation program. The receiving and generating facilities must both retain a copy of the VSQG consolidation shipping paper.

Records must be filed on site for a minimum of three years. After three years, the record can be sent to OES for permanent storage.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Sandblast Waste Consolidation Program

OPERATING LOG

To: Name/address DISTRICT HEADQUARTERS ADDRESS	From: Name/address DISTRICT TRUCK STATION ADDRESS	Quantity	Date Ship	Date Rec.

Note: Retain a copy of shipping paper for each shipment listed.

Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Sediment and Flammable Waste Trap Management

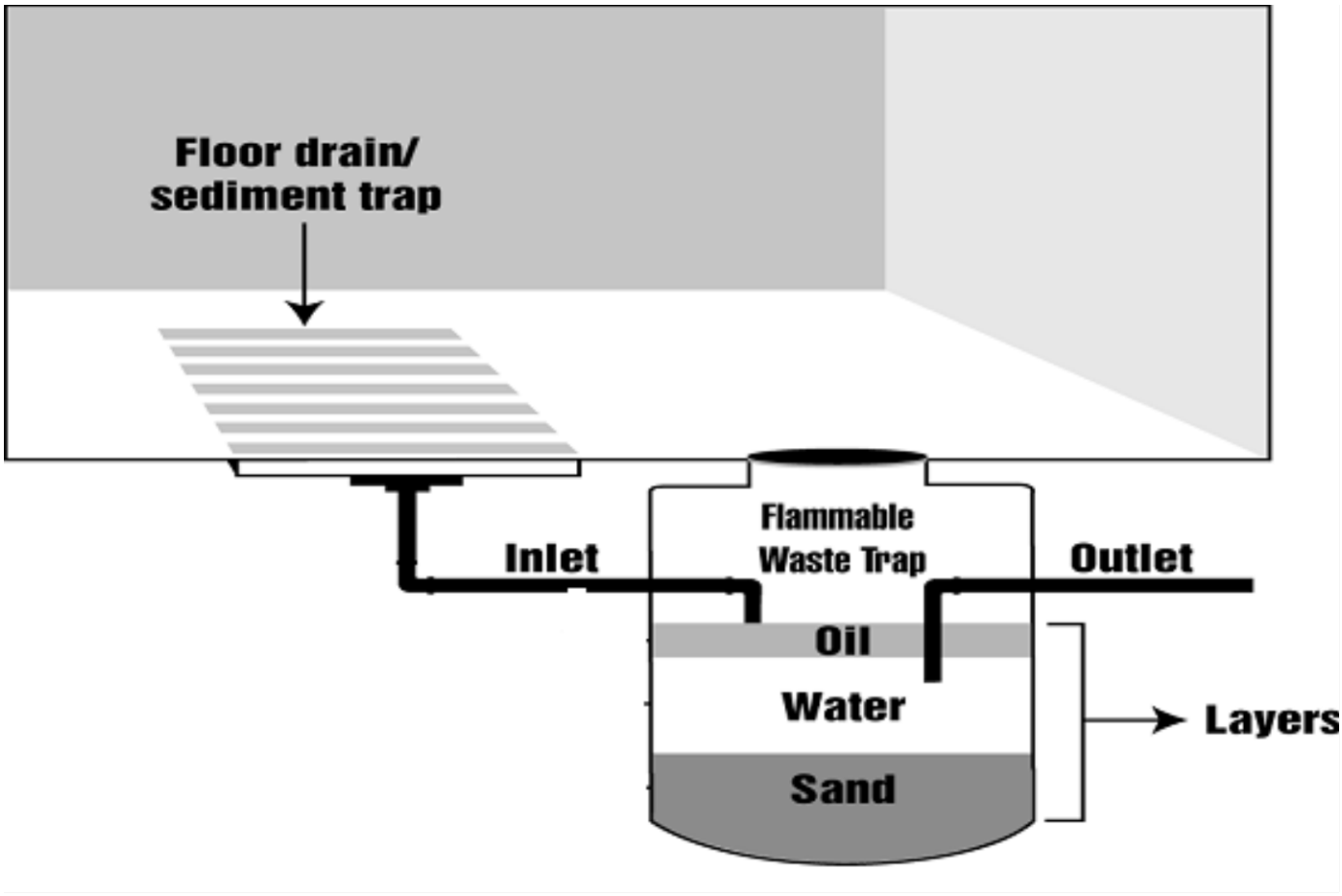
Contact Information:
Environmental Investigation Unit
Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for Minnesota Department of Transportation (MnDOT) personnel to ensure proper maintenance of sediment and flammable waste traps and management of waste materials collected from the traps. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit (EIU) personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the EIU in the MnDOT Office of Environmental Stewardship (OES) for additional information or legal requirements.

Background
In general, the sediment trap collects wastes generated from the vehicle washing area and the flammable waste trap collects wastes from the maintenance shop area. Sediment and flammable waste traps are designed to contain solid particulates and oily wastes that are produced during maintenance and washing operations of vehicles, equipment and floors. The flammable waste trap generally has three layers (see diagram) comprised of a top oily layer, a middle water layer and a bottom sand (solid particulate) layer.

The objective of the waste traps is to minimize the release of solid particulates and oily waste through the floor drain system to the sanitary sewer, wastewater holding tank or drain field. This is beneficial for the wastewater treatment system, the environment and also prevents illegal discharges of these waste materials. In order for the traps to operate efficiently, it is critical to clean the traps periodically to ensure that adequate capacity is available in the traps to contain waste materials. This guidance document describes the procedure to clean the traps and how to properly manage the waste materials collected during the cleaning process.



General Requirements

The following recommendations should help reduce the amount of chemicals released on the maintenance shop floor that ultimately ends up in the waste traps.

Good general housekeeping:

- Clean spills immediately to prevent chemicals from entering waste traps.
- Keep containers sealed when not in use to prevent spills.
- Only wash engines if absolutely necessary to reduce generation of oily wastes and other contaminants.
- Sweep up sand and other waste.
- Use screens in the drain to prevent solids from reaching the waste trap.
- Use drip pans under equipment being serviced to collect fluids.
- Have necessary spill response equipment in place to quickly clean up and contain spills.
- Cleaning out the sediment trap periodically will prevent sediment from flowing into the flammable waste trap. Note: Typically drainage from the sediment trap flows into the flammable waste trap which then flows into the sanitary sewer or wastewater holding tank.
- Avoid dumping liquid wastes (solvents, oils, etc.) into floor drains. This is an illegal disposal practice and compromises the wastewater drainage system from functioning properly.

Waste Trap Cleaning Procedure
The following guidance for cleaning waste traps and managing the waste materials removed from the traps assumes that wastes entering the traps are from routine maintenance procedures. Notify your District Waste Management Coordinator if a gasoline, solvent, herbicide or any other chemical spill has entered the floor drain system. In the event of a spill, OES personnel will collect samples from the waste trap for analysis and determine how to properly manage the waste material.

Sediment Trap
The sediment traps in the vehicle wash bays must be cleaned periodically. Once the trap becomes full of sediment, the trap will no longer function properly and sediment will begin to pass through the trap. The following procedure should be used to clean the sediment trap:

- Remove any oils using sorbent pads that are hydrophobic (will not absorb water).
- Drain water from the trap by pump or bucket. Temporarily store water in clean container. Return the water to the trap after the cleaning procedure is complete.
- Remove sand/sediment from trap using shovel and/or vacuum equipment.

Flammable Waste Trap
The oil layer in upper portion of the flammable waste trap must be removed at least once a year. This is necessary to prevent the top oil layer from reaching a thickness where oils and other potential chemicals could pass through the trap and into the sanitary sewer. Whenever removing the oil layer, check how much sediment has accumulated in the bottom of the trap. Excessive sediment should also be removed to ensure that the trap functions properly. The following procedure should be used to remove the oil layer and to clean the trap:

- Place sorbent pads that are hydrophobic (will not absorb water) in the trap to collect the oil layer.
- The middle water layer can be removed and temporarily stored in clean drums. After the sediment has been removed from the flammable waste trap, the water can be returned to the trap.
- Remove sand from tank using shovels and/or vacuum equipment.
- If there are any additional layers or any inconsistency with the above description of the flammable waste trap, discontinue the cleaning operation and notify your District Waste Management Coordinator. The Office of Environmental Stewardship will determine the composition of the waste material through sampling and laboratory analysis.

Storage

- The used sorbent pads may be stored with other oily wastes such as rags and other sorbent materials.
- The sand or sediment is considered an industrial waste and must be stored out of the outside elements. This would be in an area with a roof and the ground must be covered or on pavement.

Disposal of Waste Materials
Following are disposal and recycling alternatives for the various waste materials collected during sediment and flammable waste trap cleaning.

- Sediment or sand collected from the sediment or flammable waste trap:
  - MPCA Permitted Line Sanitary Landfill or Industrial Landfill
    Sediment can be disposed of once all water has been removed from the sediment. This can by letting the sand and water separate where the water can be pumped off or run off. Contact the landfill to make disposal arrangements.
  - Asphalt Plant
    Sediment can be reused at a MnDOT approved Asphalt Plant once all water has been removed from the sediment. The Asphalt Plant must be contacted and arrangements made prior to use. Contact OES to request an environmental audit for any asphalt plant not already approved for use.
- Oil sorbents or oil collected from flammable waste trap
  - Oil sorbents collected from the trap may be combined and recycled with other burnable oily wastes by a MnDOT approved vendor.
- Contracting with a septic service
  MnDOT facilities can contract with a septic Service to clean sediment and flammable waste traps and to transport the waste for disposal at a wastewater treatment plant. Contact OES to request an environmental audit for any asphalt plant not already approved for use.

Transportation
The waste trap sediment can be transported in MnDOT trucks, roll-off containers or drums. The load must be properly covered to prevent loss during transport. Check with the disposal or recycling facility to determine any additional requirements for dropping off the waste.

Recordkeeping
Facilities generating and receiving waste materials from sediment and flammable waste traps must maintain disposal or recycling records. The record must contain the following information:

- Description of waste material;
- Name and address of the facility shipped from (MnDOT facility);
- Name and address of the facility shipped to (facility accepting the waste for recycling or disposal);
- Quantity shipped;
- Dates of shipment and acceptance at recycling or disposal facility.

Records include: manifests, scale tickets, or invoices at MnDOT facility for a minimum of three years. After three years, the records can be sent to OES for permanent storage.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Waste Acid/Base Management

Contact Information:
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Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

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Subject: Management of Waste Acid/Base

Background
The Minnesota Pollution Control Agency regulates acid and base waste as hazardous waste, because of the corrosivity of the chemicals. Acid and base waste may be hazardous for reasons in addition to pH. For instance, high levels of lead or chromium that accumaulate in the waste through use may influence disposal options.

MnDOT Materials Laboratories that generate acid and base waste during laboratory analytical operations are responsible for proper storage, record keeping, disposal, containerization and containment of spills.

Note: Procedures in this document do not apply to acid from or intended for use in vehicle lead acid batteries.

Storage and Inspection Requirements
- Accumulate the waste in sturdy leak proof containers made of plastic or glass.
- Do not mix with any other waste stream. Mixing is allowed to neutralize the waste for the purpose of disposal – see Disposal section on next page.
- Store containers indoors on a non-reactive impermeable surface away from floor drains and outside entrances/exits.

- Less than 55 gallons of waste may be stored at or near the point of generation – where laboratory testing is completed. Inspect containers weekly for signs of leaking or spills. Documented inspection is not required for containers located at or near the point of generation. To be considered "at or near the point of generation" the storage container should be visible in work area where the waste is produced.
- When the 55-gallon storage limit is reached, date the container and move to the hazardous waste storage area within three days. Disposal must be completed within 180 days of the container fill date. Container inspections conducted in the hazardous waste storage area must be documented.
- Segregate acids/bases from solvents and other wastes. Segregation can be achieved with a dike, berm, or wall within the storage area.
- All container bungs and lids must be closed except when waste is being added or removed.

Container Labeling

- Label the container with a hazardous waste label or by writing "Hazardous Waste" on the side of the container.
- Place a clear description of the waste on the container that identifies its contents to employees and emergency personnel. Example: "Waste Hydrochloric Acid Solution"
- Date containers when full.

Disposal

If the waste acid/base is stored in the hazardous waste storage area, on-site neutralization and sewering must occur within 180 days from the container fill date.

On-site disposal

- Acid/base waste can be disposed of in sanitary sewer in the laboratory under the following conditions:
  - Must first obtain written approval from the local sewer authority. Is there another name to use such as local wastewater treatment facility?
  - Must neutralize the waste to pretreatment specification before sewering. Neutralizing can be done by combining waste acids and bases to reach the acceptable pH range.
- If the waste acid or base has high levels of lead, chromium or others chemicals, it may not be sewered. In such instances, the waste will require disposal through the MnDOT hazardous waste contractor. How would they know this without testing or knowledge of their process? Can we add any helpful statement here?
- Maintain a log documenting disposal. This log will contain the following: acid/base waste, quantity neutralized, acid/base neutralized with and amount, pH before and pH after neutralization, date, name, signature, and comments.
- If waste cannot be neutralized for sewering, it must be managed as a hazardous waste and disposed of through MnDOT's hazardous waste contractor.

Transportation
Waste that meets all the requirements for on-site sewering does not need to be transported. Wastes that require off-site disposal must be transported as a hazardous waste by the MnDOT hazardous waste contractor.

Spills
Proper spill control equipment for small spills must be available on-site. This includes personal protection equipment (consult with District Safety Administrator), sorbents, neutralizing media, plastic shovel or scoop and a DOT spec approved plastic container. In the event of a small spill, evaluate if spill cleanup material is sufficient to respond to the spill, contact your waste management coordinator before initiating cleanup. In the case of a large spill, clear the area and contact your supervisor and District Safety Administrator to determine the course of action.

Record Keeping
- All acids/and bases disposed of in the sanitary sewer must be documented in an operating log and kept on file for a minimum of three years. In accordance with the Minnesota Pollution Control Agency Generator License, waste volumes must be reported annually for the facility.
- Written permission from the local wastewater treatment authority to sewer acids or bases must be kept on file permanently.
- Inspection records of the hazardous waste storage area must be maintained on-site for a minimum of three years.
- Documents retained for three years on-site can be sent to the Office of Environmental Stewardship for permanent storage.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Refractory Bricks/Molds and Ash in Boilers

Contact Information:
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Mark Vogel: 651-366-3630
Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities and waste management issues. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Refractory Bricks/Molds and Ash in Boilers

Some boilers have refractory brick or mold in the combustion chambers that contain stainless steel fibers and/or asbestos fibers. The fibers are used to hold the brick or mold together under high temperature conditions. Over time the brick/mold breaks down causing the stainless steel or asbestos fibers to be exposed or fall out and become mixed in the ash.

The waste refractory brick/mold and ash may be a hazardous waste due to high concentrations of chromium in the stainless steel. Consequently, these wastes must be treated as hazardous waste unless examination with an x-ray diffraction (Niton) instrument or laboratory analysis demonstrates the wastes as being non-hazardous. These wastes may also contain asbestos and therefore must be treated as an asbestos containing material unless laboratory analysis detects less than 1% asbestos content.

Boiler room with gray, crescent-shaped refractory mold visible against back wall.

Boiler mold is cracking and in need of repair.

Disposal
Contact Office of Environmental Stewardship personnel to request sampling of the refractory brick/mold and ash prior to commencing any repair work or waste disposal.

If refractory brick/mold and ash analysis determine the materials are hazardous for chromium:

- Containerize in Federal DOT spec approved drum.
- Label container "Hazardous Waste" and "Refractory Brick/Mold and Ash".
- Date container when full and move to hazardous waste storage within 3 days. How soon does waste need to be shipped?
- Make arrangements with MnDOT's Hazardous Waste Contractor for disposal.

If the refractory brick/mold and ash analysis determine the materials contain 1% or greater asbestos:

- Contact Ron Lagerquist, Office of Maintenance, Central Office, at 651-366-3561 to arrange for removal and disposal.

If the refractory brick/mold and ash analysis determine that the materials contain 1% or greater asbestos and is hazardous for chromium:

- Contact Ron Lagerquist, Office of Maintenance, Central Office, at 651-366-3561 to arrange for removal.
- Containerize in Federal DOT spec approved drum.
- Label container "Hazardous Waste" and "Refractory Brick/Mold and Ash".
- Date container when full and move to hazardous waste storage within 3 days. How soon must it be shipped?
- Make arrangements with MnDOT's Hazardous Waste Contractor for disposal.

If the refractory brick/mold and ash analysis determine the materials are non-hazardous and contain less than 1% asbestos:

- Dispose of in the trash.

Record Keeping
Retain all analytical and disposal records for a minimum of three years. After three years, send to the Office of Environmental Stewardship for permanent storage.

Please contact the Environmental Investigation Unit for further assistance.

Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Locally Led Trunk Highway/Partnership Projects: Soil/Groundwater Contamination and Regulated Material Review Process

Contact Information:
Environmental Investigation Unit
Contamination Team: contaminated soil and groundwater management
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Keri Aufdencamp: 651-366-3627
Carolyn Boben: 651-366-3621
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Regulated Materials Team: building and bridge demolition or relocation management
Jackie Klein: 651-366-3637
Mark Vogel: 651-366-3630

The intent of this guidance document is to provide general procedural information for Minnesota Department of Transportation (MnDOT) personnel, local governmental units or contractors performing work on locally led truck highway/partnership projects that include work on MnDOT right of way and/or include property transactions that involve MnDOT in any way. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit (EIU) personnel prior to implementation.

Background
Highway projects with substantial local government involvement may be implemented through MnDOT by any of the following three programs, with funding source being the major determinant on which program a project falls under:

State Aid
Federal Aid
Cooperative Agreements
Metro Municipal Agreements

Projects in these programs may or may not affect the trunk highway system. The Environmental Investigation Unit (EIU) within the MnDOT Office of Environmental Stewardship has interest only in projects that directly impact the trunk highway system, including acquisition of highway right of way or easements that will include MnDOT on the property title at the time the project is let or any time in the future. Specifically, the EIU recommends that locally led/partnership projects that will affect the trunk highway system or will involve property acquisition be reviewed for possible issues associated with the following:

- Potential presence of contaminated soil or groundwater within or adjacent to the project area, including properties proposed for acquisition or easement.

- Regulated material management related to building demolition/relocation or bridge demolition/rehabilitation.

The primary purpose of EIU's involvement on these projects is to reduce the department's liability associated with contaminated properties and management of regulated materials. Identifying contamination and regulated material issues early in project development and scoping offers the following potential benefits, in addition to reducing the department's short and long-term liability:

- Opportunity for development of design modifications associated with high-risk contaminated properties,
- Initiate communication with regulatory agencies on any required notifications, permits and when possible, secure liability release documentation,
- Adequate characterization of contamination and regulated material issues early in the process can minimize project delays and identify significant potential impacts to project cost.

Process

1. MnDOT State Aid personnel submit project plans/proposals and the completed Contaminated/Regulated Material checklist (attachment 1) to EIU for review for projects that occur on any portion of existing MnDOT right of way or include property transactions that involve MnDOT at the time of the project or will be conveyed to MnDOT in the future.

2. The EIU reviews project plans/proposals and checklist for contaminated and regulated material issues. EIU provides the following information to the MnDOT State Aid office:

   Contaminated Material Management
   - Description of known or potential sources of contamination in or near the project area
   - Identification of actions necessary to characterize contaminated material issues. These actions may include but are not limited to completion of a Phase I environmental site investigation, Phase II or limited drilling investigation and construction monitoring.
     - Provide scope of work templates for Phase I, Phase II or construction monitoring for the project. Review scopes of work prepared by the project proposer. Assist project proposer with preparation of special provisions (contractual language containing environmental management requirements), as necessary.
     - Provide project proposer with list of MnDOT prequalified vendors capable of performing actions described above.

   Regulated Material Management
   - Description of known or potential regulated materials associated with building demolition/relocation, bridge demolition/rehabilitation or paint removal operations from bridge or other steel structures.

- Identification of actions necessary to manage regulated materials. These actions may include but are not limited to completion of an assessment and subsequent management and disposal of regulated materials.
  - Provide scope of work templates for assessment, oversight and abatement/removal of regulated materials for the project. Review scopes of work prepared by the project proposer. Assist project proposer with preparation of special provisions (contractual language containing environmental management requirements), as necessary.
  - Provide project proposer with list of MnDOT certified contractors capable of performing actions described above.

3. The EIU will be available to assist the project manager during construction in determining appropriate actions that the contractor should take to manage contaminated soil/groundwater and/or regulated materials properly.

Training

The EIU will provide training on contaminated and regulated materials to local governmental units. This training will provide information necessary for government officials to understand environmental liability issues associated with contaminated and regulated materials and management approaches that have been used successfully by MnDOT to reduce liability concerns and assist construction in staying on schedule and on budget.

Please contact the Environmental Investigation Unit for further assistance.

Attachment 1

CHECKLIST FOR LOCALLY LED TRUNK
HIGHWAY/PARTNERSHIP PROJECT PROPOSALS

Project Number: _____

Project Name and Location: _____

Project Letting Date: _____

Contact Name, Phone Number and e-mail Address: _____

_____

Check all that apply	Project will or may include the following:	Comments
	Property acquistion[1]	
	Excavation (including utilities)	
	Urban, Commercial and/or Industrial setting	
	Dewatering	
	Contamination[2]	
	Building demolition	
	Bridge demolition or re-decking	
	Bridge (or other structure) paint removal	

[1] Property acquisitions include permanent and temporary takings acquired through any of the following actions:

- Strip acquisition
- Excess acquisition property
- Total takes
- Acquisition through Commissioner's Orders
- Transfer of custodial control or any other acquisition (example: agreements, donations)

Note: identify any properties that will be conveyed to MnDOT

[2] Contamination: there are areas with known or potentially contaminated soil or groundwater within 500 feet of the project area.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Solvent Contaminated Waste Rag Management

Contact Information:
Environmental Investigation Unit
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Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel generating waste rags during routine work practices. Any deviation from procedures contained in this document must be discussed with the Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship (OES) for additional information or legal requirements.

Subject: Solvent Contaminated Waste Rag Management

Background
MnDOT uses rags and solvents to clean a variety of materials. The purpose of this guidance is to assist in determining appropriate management practices for rags contaminated with solvent and methods that may be used to reduce or eliminate the use of solvents.

Minimize Waste Production and Toxicity
Reducing or eliminating the use of solvents and associated production of rags contaminated with solvent offers the following benefits:

- Reduced disposal cost
- Decreased regulatory liability
- Decreased safety concerns for workers performing cleaning operations
- Increased environmental stewardship for the department

Ways of reducing the use or toxicity of solvents/rags or elimination of solvent/rags through alternative products includes the following alternatives:

Use Less Toxic Solvents

- The OES can assist in selection of less toxic cleaning alternatives. OES, in conjunction with MnDOT safety administrators and maintenance personnel, have completed studies on some cleaning product lines. This information will be included in the MnDOT Approved Products Web site.

Contact OES for more information on less toxic solvents or to request completion of additional product studies.

Replace Solvents

Consider using less toxic alternatives to solvents such as soap. Please share your experiences of using products to replace solvents with OES so that the information can be shared throughout the department. Contact OES for assistance in determining potential replacement products for solvents.

Reuse Rags

To reduce the volume of rags contaminated with solvent, reuse rags until they are no longer usable.

Managing Waste Solvent Contaminated Rags

The process that must be followed to properly manage solvent rags depends on the type of solvent used. Use the appropriate process described below based on the solvent type. Consult OES if you need assistance in managing rags containing an unknown solvent or a solvent not mentioned in the following procedures.

I. Management procedure for waste rags containing the following solvents: mineral spirits, acetone, methanol, n-butyl alcohol and xylene.

1. Remove as much liquid as possible by wringing out rags prior to disposal. The extracted liquids can be reused or containerized and treated as a hazardous waste.
2. Storage of Waste Rags
    - Use US DOT spec containers
    - Secure all container bungs and lids when not in use
    - Label container as “Waste Solvent Rags” or “Used Solvent Rags”
3. Recycle or Disposal Alternatives
    - Recycle with a commercial laundry service
    - Dispose as an industrial waste through:
        - MPCA permitted lined sanitary or industrial landfill
        - Incinerate at an MPCA permitted waste combustor
4. Transportation to Commercial Laundry or disposal.
    - Rags can be transported by MnDOT personnel in MnDOT vehicles.

II. MnDOT should avoid using the solvents listed below because the waste solvent and rags containing the solvent are both hazardous and therefore must be managed as a hazardous waste:

toluene, methyl ethyl ketone, methylene chloride, tetrachloroethylene, trichloroethylene, 1,1,1 trichloroethane or any mixture containing more than 10% of any of these solvents.

1. Remove as much liquid as possible by wringing out rags prior to disposal. The extracted liquids can be reused or containerized and treated as a hazardous waste.
2. Storage of Rags Use US DOT spec containers
    - Secure all container bungs and lids when not in use
    - Label container with the following information:
        - "Hazardous Waste" and "Used Rags" or "Rags"
        - date when container becomes full
    - Container must be located in a secured hazardous waste storage area.
3. Recycle or Disposal Alternatives
    - Recycle with a commercial laundry service with proper permitting to take this waste.
    - Dispose as hazardous waste
        - Incinerate at permitted hazardous waste incinerator
        - Arrange disposal through the MnDOT Hazardous Waste Contractor
4. Transportation and Recordkeeping Requirements for disposal
    - A licensed hazardous waste transporter must transport rags to the disposal facility
    - MnDOT personnel in MnDOT vehicles may transport rags within district boundaries from truck stations to the hazardous waste storage area located at the district headquarters, if the facilities are in the MPCA Very Small Quantity Generator (VSQG) consolidation permit program. This does not include Metro facilities because these facilities are not VSQGs.
    - Must report management of rags on MPCA annual disclosure as Hazardous Waste.
5. Transportation and Recordkeeping Requirements for Laundry Service
    - Arrange for pickup from the laundry service. A licensed hazardous waste transporter is not required when using a permitted laundry service.
    - MnDOT personnel in MnDOT vehicles may transport rags within district boundaries from truck stations to the hazardous waste storage area located at the district headquarters, if the facilities are in the MPCA Very Small Quantity Generator (VSQG) consolidation permit program. This does not include Metro facilities because these facilities are not VSQGs.
    - Must report management of rags on MPCA annual disclosure as Hazardous Waste.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Subject: Management of Waste N-Propyl Bromide Solvent and Sludge

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Jackie Klein: 651-366-3637
Summer Allen-Murley: 651-366-3635

The intent of this guidance document is to provide general procedural information for MnDOT personnel generating waste rags during routine work practices. Any deviation from procedures contained in this document must be discussed with the Environmental Investigation Unit personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the Environmental Investigation Unit in the MnDOT Office of Environmental Stewardship for additional information or legal requirements.

Subject: Management of Waste N-Propyl Bromide Solvent and Sludge

Background
MnDOT Materials Laboratories use N-Propyl Bromide solvent to clean a variety of materials. The purpose of this guidance document is to assist in determining the appropriate management practices for the waste solvent and sludge produced following the cleaning process.

N-Propyl Bromide solvent has a flashpoint above 140° F and does not contain certain MPCA listed solvents. Depending on the particular use of the solvent, the waste solvent and sludge may need to be treated as a hazardous waste (see the different use categories described below). Contact your District Waste Management Coordinator before changing to a different solvent because the management requirements for the proposed solvent may be different than those described below for N-Propyl Bromide.

Use Categories

1) Used alone or in combination with other solvents or aerosol products for cleaning purposes:

   Waste N-Propyl Bromide solvent or solvent mixtures and associated waste filters, sludge or other materials generated during cleaning of any material, including but not limited to filters and paint brushes, must be managed as hazardous waste.

2) Used in asphalt extraction testing

Waste N-Propyl Bromide and associated filters and sludge generated from asphalt extraction testing do not have to be managed as a hazardous waste. Instead, the waste materials may be managed as follows:

- Used fiber filters - recycle with burnable used oil sorbents
- Used metal-cased filters - recycle with used oil filters
- Sludge from filtering or distillation operation - recycle with burnable used oil sorbents or dispose of as nonhazardous waste through the MnDOT hazardous waste contractor
- When solvent is no longer usable, containerize and dispose of as nonhazardous waste through the hazardous waste contractor

Containerization of Waste Solvent and Sludge
The storage container must be a Federal DOT Spec approved metal or plastic drums labeled with the words "Waste N-Propyl Bromide Solvent" or "Waste N-Propyl Bromide Solvent Sludge".

Storage of Waste Solvent and Sludge

1. Use a new metal or poly open head drum dedicated to storing only waste solvent or waste sludge. Solvent and sludge must be stored in separate containers.
2. Secure all bungs and lids after placing waste in container.
3. Segregate from other waste containers to prevent accidental mixing. Label container "Waste N-Propyl Bromide Solvent", add no other solvent waste or any other waste to the container.
4. Store indoors away from the outside elements.

Recordkeeping Requirement for Waste Solvent and Sludge Disposal
The facility receiving the waste solvent or sludge must create a document with the following information:

1. Name and address of the facility shipped from (MnDOT facility);
2. Name and address of the facility shipped to (accepting the waste for disposal);
3. Quantity shipped;
4. Date of shipment and acceptance at disposal facility.

Disposal/shipping record shall be maintained at MnDOT facility for a minimum of three years. After three years, the record can be sent to OES for permanent storage.

Transportation of Waste Solvent and Sludge
MnDOT personnel can transport containers in a MnDOT vehicle. All containers must be secured during transport.

MnDOT Waste Tracking Log
N-Propyl Bromide

Shipped From	Shipped To	Quantity	Date Shipped	Date Received

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Best Management Practice
Taconite Tailings Road Aggregate

Contact Information:
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The intent of this guidance document is to provide a best practice for managing taconite road aggregate that must be disturbed as part of roadway reconstruction.

Background
The Minnesota Department of Transportation (MnDOT) current (2005) *Standard Specification for Construction* manual allows taconite to be used in bituminous mixtures and states that taconite tailings "…shall be obtained from ore that is mined westerly of a north-south line located east of Biwabik, MN (R15W-R16W); except that taconite tailings from ore mined in southwestern Wisconsin will also be permitted for use." Historically, starting in the 1950s, MnDOT constructed roadways in northern Minnesota using taconite tailings for aggregate in road base and bituminous. No records were kept documenting the origin of the taconite. Many of these roadways now require reconstruction which requires excavation of taconite tailings.

Taconite Geology
As described by Jirsa et al. (2008), the Biwabik Iron Formation is a layered sequence of iron-rich sedimentary rocks that was metamorphosed by intrusions of the Duluth Complex. The metamorphic recrystallization of iron-formation locally produced iron-rich amphiboles and other fibrous iron-silicate minerals. McSwiggen et al. (2008) state that most of the Biwabik Iron Formation has not been metamorphosed to any extent but the emplacement of the Duluth Complex resulted in metamorphism of a 2-3 mile-wide band (metamorphic aureole) of the formation on the east end of the mining range. The east range contains a significant number of metamorphic silicates such as the grunerite-cummingtonite series which has minerals that generally resemble some asbestos-like minerals. Because the minerals associated with the Biwabik Iron Formation are complex, it cannot be assumed that the mineralogy of one mine or part of the range will correlate with other mines or parts of the range.

Iron ore was discovered in Minnesota in 1865, and when, by 1940, the high-grade natural ore had been removed, a process was developed to mine the low-grade 'taconite" rock

that surrounded the enriched ore deposits. The process produced iron-rich taconite pellets and unwanted waste rock—taconite tailings (Berndt et al. 2008).

Taconite Studies

Zanko et al. (2008) examined 18 samples of coarse taconite tailings (which generally meet the construction industry definition of fine aggregate, rock that is less than 3/8 inch) from five western taconite operations for mineralogy using X-ray diffraction, polarized light microscopy, scanning electron microscopy, transmission electron microscopy and two Environmental Protection Agency methods. They concluded that no regulated asbestos minerals or amphibole minerals were detected in western Biwabik Iron Formation samples A small number of non-asbestos and non-amphibole mineral cleavage fragments/mineral fibers were detected by scanning electron microscopy (26 out of 1000 fields sampled). One sample of eastern Biwabik Iron Formation detected the presence of amphibole, which when pulverized to -200 mesh, can produce a larger number of cleavage fragments/mineral fibers than comparably pulverized western range taconite. Zanko et al. (2008) stated that "…the Superfund Method for the Determination of Releasable Asbestos in Soils and Bulk Materials (United States Environmental Protection Agency (USEPA), 1997) as modified by Berman and Kolk (2000) failed to generate any protocol fibers, i.e., fibers longer than 5 um and thinner that 0.5 um, from either the western coarse tailings samples or the single eastern Biwabik Iron Formation sample. The combined findings suggest coarse tailings and other taconite mining byproducts should be treated with the same common sense safety and industrial hygiene approach practiced for all mineral-based materials that have the potential to generate respirable dust."

In 2009 MnDOT collected samples of taconite-containing aggregate road base and bituminous in a portion of TH 61 where old road plans indicated taconite was used for construction. MnDOT completed analysis of the samples using the National Emission Standards for Hazardous Air Pollutants, (NESHAP**)**-required method of Polarized Light Microscopy (PLM) to determine the presence of asbestos. Taconite with no detection of fibers using the PLM method would not be regulated by NESHAP. Because of the potential presence of eastern range amphibole minerals in the taconite, MnDOT also completed Transmission Electron Microscopy (TEM) analyses of the samples. The results of the analyses showed no detection of fibers from either method in bituminous samples. Aggregate base samples also showed no detection of fibers using PLM analysis. However, the minerals Cummingtonite-Grunerite and Actinolite were detected in some samples by the TEM method (MnDOT, 2009).

Conclusions

Sample testing conducted by MnDOT and others indicates that taconite tailings are not subject to asbestos regulations. MnDOT has produced this best practice for management of tailings used in highway construction, recognizing that even though taconite tailings are not subject to regulation, some reasonable handling techniques are prudent because a fraction of the minerals found in taconite have an asbestos-like form. This best practice is based on MnDOT sampling and on studies conducted by others which are cited in this document.

Best Management Practice of Roadway Taconite Tailings

1. Future MnDOT highway construction contract special provisions will inform potential bidders of the presence of taconite tailings in road sections where MnDOT knows or suspects the material was historically used to construct the roadway.

2. The MnDOT District Safety Office in the district where a highway project with suspect or known taconite tailings is located will provide awareness training for all MnDOT project personnel regarding proper safety and industrial hygiene practices to follow when working with mineral-based materials such as taconite tailings.

3. Safety and industrial hygiene practices, such as wetting active work areas, will be used when handling taconite tailings, to minimize the generation of respirable dust.

4. Temporary stockpiles of taconite tailings will be covered with minimum 10 mil reinforced plastic or wetted to minimize generation of respirable dust.

5. All taconite tailings excavated for the project will be re-used on the project as part of road base, fill areas (such as berms) or fill slopes. All taconite tailings re-used on a project will be covered with either pavement or minimum of six inches of soil.

References

Berman, D.W., Kolk, A.J., 2000. Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Materials, Revision 1: Submitted to the U.S. Environmental Protection Agency, Region 8, May 23, 2000.

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McSwiggen, P. L., Morey, G.B., 2008. Overview of the mineralogy of the Biwabik Iron Formation, Mesabi iron Range, northern Minnesota. Regulatory Toxicology and Pharmacology 152, S11-S25.

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Minnesota Local Road Research Board, 1998. Scoping Study for Taconite Tailings Use in Road Construction, P99-2.

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Zanko, L.M., Niles, H.B., Oreskovich, J.A., 2008. Mineralogical and microscopic evaluation of coarse taconite tailings from Minnesota taconite operations. Regulatory Toxicology and Pharmacology 152, S51-S65.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Government Accounting Standards Board Statement No. 49

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The intent of this guidance document is to provide general procedural information for Minnesota Department of Transportation (MnDOT) personnel to address Government Accounting Standards Board Statement Number 49. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit (EIU) personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the EIU in the MnDOT Office of Environmental Stewardship (OES) for additional information or legal requirements.

Subject: Compliance with Government Accounting Standards Board (GASB) Statement Number 49

Background
GASB 49 requires that government agencies report known contamination that the agency is either the responsible party for or obligates itself to investigate and cleanup contaminated materials (groundwater and/or soil). For MnDOT, this could include involvement under one of the following scenarios:

- Contamination is discovered at a MnDOT-owned facility, such as a district headquarters, truck station, rest area, storage yard or gravel pit. Assuming that the property is the source of contamination, as the property owner MnDOT is responsible to investigate and complete any cleanup actions required by the regulatory agency.
- As part of a highway construction project, MnDOT discovers contamination before or during construction operations. Typically, the highway right of way is not the source of the contamination. Therefore, MnDOT is not the responsible party and so is not responsible for addressing the entire extent of contamination. However, MnDOT obligates itself to pay the cost of managing contaminated materials properly to the extent that the construction project impacts the contamination.

Typical Contaminated Material Management Process

MnDOT's procedure for identifying and managing contaminated soil/groundwater on a construction project or at a MnDOT-owned facility is as follows:

- District notifies EIU of a proposed construction project through the Early Notification Memo process. EIU personnel complete a cursory review of the project location and proposed construction actions to determine the potential that construction operations will encounter contaminated materials or that the department will acquire contaminated property.

District notifies EIU of a known or suspected chemical release at a MnDOT-owned facility. EIU personnel develop a plan to investigate the release.

- Depending on the outcome of the cursory review, EIU personnel may conduct a more detailed review (Phase I site assessment) of the project location for contamination and if necessary, collect soil and/or groundwater samples to characterize the contamination (Phase II or drilling investigation) prior to any property acquisition or commencement of construction.

EIU conducts an investigation to determine the magnitude and extent of the chemical release at the MnDOT-owned facility and the need for any remedial action.

- If contamination is present within construction limits or the project includes acquisition of contaminated property, EIU works with District to minimize or avoid contamination depending on the nature of the contaminants and degree of liability to the Department associated in acquiring or working with the expected contaminated materials.

- If EIU and District personnel determine that contaminated materials will be encountered on a construction project or if contamination is discovered at a MnDOT-owned facility, costs to remediate the property are estimated using the probability-weighted average method. This method considers a range of probabilities for potential costs to investigate and mitigate contamination. For example, it may be estimated that costs to address contamination range from a 10 percent probability of $300,000 to a 75 percent probability of $700,000 and finally to a 15 percent probability of $1,000,000. The probability-weighted average for this expected cash flow would be:

(.10 x $300,000) + (.75 x $700,000) + (.15 x $1,000,000) = $705,000

In this example, the $705,000 would be the total estimated cost considered for potential reporting in accordance with GASB 49. Making a determination if this estimated cost must be reported is described in the next section.

Determining GASB 49 Project Liabilities

Once the probability-weighted average cost has been estimated for the construction project or MnDOT-owned facility, the project will be added to the list of properties as required by GASB 49 if both of the following criteria are met:

1. The probability-weighted average cost to manage contaminated materials exceeds $500,000. Expenses to consider in estimating contaminated material management cost include the following:
    - For construction projects - internal EIU oversight, construction monitoring, contaminated soil/groundwater treatment/disposal and post-construction monitoring requirements.
    - For MnDOT-owned facilities - internal EIU oversight, property investigation, remedial action, contaminated soil/groundwater treatment/disposal and long-term monitoring requirements
2. Expenses to manage known contaminated materials will affect a future fiscal year. For example, if contamination is discovered during a fiscal year and all expenses to manage the contamination are realized within that same fiscal year, the project is not included in the GASB 49 list of projects. This is because the known contamination was not identified early enough in the process to project expenditures from the fiscal year budget used to cover the costs.

If the contamination expenses straddle fiscal years, only the cost remaining for successive fiscal years should be considered in determining if the project must be reported as required by GASB 49. For example, consider a project where $250,000 is spent responding to a contaminated property in the fiscal year it is discovered and the probability-weighted average cost for the project predicts an additional cost of $300,000 will be spent in the next fiscal year to complete the response action. Even though the total cost of the project exceeds the $500,000 threshold, the project is not reported as a liability because the estimated cost remaining in the next fiscal year is under $500,000.

Contaminated Material Management History

The EIU has over twenty years of experience managing contaminated materials on construction projects and at MnDOT-owned facilities. The vast majority of projects requiring management of contaminated materials does not exceed or even closely approach a total cost of $500,000. Therefore, MnDOT anticipates that few projects will need to be reported under the GASB 49 requirement.

Reporting Time

In July or August of each year, the MnDOT Office of Finance will contact OES requesting a list of projects with known probability-weighted average costs exceeding $500,000 for future fiscal year expenditures. OES will furnish a list of project names and associated estimated costs as outlined in this guidance document. The Office of Finance will furnish the contaminated list of liabilities to Minnesota Management and Budget.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Property Acquisition: Contaminated Property Review Process

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The intent of this guidance document is to provide general procedural information for Minnesota Department of Transportation (MnDOT) personnel or contractors working on acquisition of property. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit (EIU) personnel prior to implementation.

This document should not be construed as a full description of all regulations pertaining to the subject matter. Contact the EIU in the MnDOT Office of Environmental Stewardship (OES) for additional information or legal requirements.

Background

MnDOT incurs liability when acquiring properties that have soil or groundwater contamination. To avoid or reduce this liability, it is important that certain actions are taken prior to property acquisition. The Environmental Investigation Unit (EIU) can assist District personnel in assessing contaminated property liability and recommending the appropriate course of action. It is important that communication occur between District Land Management and EIU personnel to ensure that adequate review of properties is conducted before a decision to make an acquisition is made.

Property Acquisition

Property acquisitions include right of way acquired through the following actions:
Note: Includes both permanent and temporary takings.

- Total takes
- Excess and surplus property takes
- Acquisition through Commissioner's Orders
- Conveyance to MnDOT (e.g., acquisition through rail bank program, acquisition from City or County on partnership projects)
- Temporary and permanent easements
- Transfer of custodial control
- Any other acquisition action

Any of these acquisitions can result in MnDOT being associated with a property with soil or groundwater contamination. By becoming the property owner or being named on

an easement, MnDOT can be held as a responsible party for cleaning up contamination and/or subject to third party lawsuits relative to contamination issues. Once MnDOT incurs liability due to ownership, it can never be released from that liability, even by selling the property.

At a minimum, acquisitions of the following types of properties should be reviewed by EIU prior to a decision to make an acquisition (including easements):

- Properties in developed areas.
- Properties with existing or previous commercial or industrial businesses.
- Properties exhibiting any of the following conditions:
    - Evidence of dumping (waste abandoned on surface or buried at the site).
    - Known or suspected fill materials of unknown origin or quality placed on the property.
    - Aboveground or underground storage tanks.
    - Vent pipes (may indicate presence of underground storage tanks).
    - Groundwater monitoring wells
    - Onsite chemical use (e.g., vehicle maintenance, manufacturing or industrial operations, dry cleaning, parts washing, paint spraying, wood treatment, etc.).
    - Chemical/waste containers, storage rooms, or sheds.
    - Outdoor storage yards.
    - Subgrade features with the potential to leak (e.g., hydraulic hoists, flammable waste traps – oil/water separators, vaults, pits, or vats).
    - Stained soil or stained floors with large cracks.
    - Dead vegetation.

Contaminated Property Review Process

The following procedure defines the Contaminated Property Review process for proposed property acquisitions:

1. District Planning and Budgeting
    - District identifies anticipated property acquisitions and prioritizes properties to be reviewed by EIU.
    - EIU provides a cost estimate to the district for completing a Contaminated Property Review for the project. District approves and secures funding for EIU to retain a consultant to complete the estimated number of Contaminated Property Reviews (see item 3 below) per fiscal year.

2. District Notification to EIU of the Need for a Contaminated Property Review
    - District notifies EIU of suspect contaminated properties requiring review as soon as the district has made a decision that the property must be acquired based on the current project design.
    - District immediately notifies EIU if suspect contamination problem (see list of conditions in Property Acquisition section) is identified at any time during the appraisal process.

3. Contaminated Property Review
   - EIU, or a consultant contracted by EIU, reviews the Minnesota Pollution Control Agency (MPCA) databases to check for known contaminated sites in the parcel area. The databases searched included: leaking underground storage tank facilities, landfills, salvage yards, voluntary investigation and cleanup (VIC) sites, Superfund sites and dump sites. A review of these MPCA files is a component of a Phase I Environmental Site Assessment (Phase I ESA). The review may also include: historical photographs or topographic maps, MnDOT project files, and parcel files. After completing the review, EIU determines whether a more thorough review of property history, a Phase I ESA, is necessary.
   - EIU and district determine when the Phase I ESA needs to be completed.

4. Detailed Property Review
   - EIU sends requisition to District for approval and to secure funding to retain a consultant to perform a Phase I ESA.).
   - Consultant completes a Phase I ESA. This more detailed review includes at least two additional components: research on historic land use (e.g. review of City and County building and environmental records; interviews with previous property owners), and site reconnaissance. Phase I ESAs generally cost $5,000 to $10,000 per parcel, depending on the complexity of the property history.

5. EIU Recommendations to District
   Possible recommendations based on the results of the Phase I ESA are as follows:
   - EIU recommends that MnDOT acquire the property without additional environmental investigation.
   - EIU recommends that MnDOT not acquire the property.
   - EIU recommends that MnDOT limit the area being acquired.
   - EIU recommends that MnDOT complete a drilling investigation to collect soil and/or groundwater samples from the property in order to determine if contamination is present, and what the magnitude and extent of the contamination is on the site.

6. Drilling Investigation
   - EIU provides District with estimated investigation cost.
   - EIU sends requisition to District for approval and to secure funding to retain a consultant to perform a drilling investigation at the property (i.e., obtain soil and/or groundwater samples).
   - Consultant completes the investigation and prepares a Drilling Investigation Report.
   - EIU submits the report to the MPCA to obtain letters of assurance to reduce MnDOT's liability, approvals, and/or site closure, as appropriate.
   - EIU notifies the District if the drilling investigation results identify the need to complete cleanup of soil and/or groundwater contamination during construction and how to manage contaminated materials.

7. Property Cleanup during Construction
   - EIU provides District with special provisions for management of contaminated materials during construction.
   - EIU sends requisition to District for approval and to secure funding to retain a consultant to monitor and document management of contaminated materials during construction, and to prepare a documentation report.
   - EIU submits the construction documentation report to the MPCA to obtain liability assurances, approvals, and/or site closure, as appropriate.

Please contact the Environmental Investigation Unit for further assistance.

MnDOT Office of Environmental Stewardship
Environmental Investigation Unit

Management of Photographic Waste

Contact Information:
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The intent of this guidance document is to provide general procedural information for MnDOT personnel or contractors performing work on MnDOT right of way, including MnDOT-owned facilities. Any optional procedures will be indicated in the document. Any deviation from procedures contained in this document must be discussed with Environmental Investigation Unit personnel prior to implementation.

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Subject: Management of Photographic Waste
Film, negatives and photographic paper can contain silver at hazardous waste concentrations. The photographic waste can be analyzed to determine if the waste is hazardous. The preferred management option is to recycle this waste material so that the sliver can be recovered. Photographic waste can be recycled whether it is classified as a hazardous or non-hazardous waste and so does not have to be analyzed if it will be recycled. However, any photographic waste that is not analyzed must be assumed to be hazardous and therefore included in the annual MPCA disclosure form accordingly. Therefore, the only reason to analyze photographic waste that will be recycled is if the waste volume generated would increase the facilities hazardous waste generator status.

If the waste will not be recycled, options are provided for disposal as a hazardous or non-hazardous waste, depending on the analytical results or if the waste is assumed to be hazardous. The options listed below are acceptable methods for management of photographic waste:

Preferred Option #1 - Recycling (for both hazardous or non-hazardous waste)
- Store in a sturdy, closed container at a designated location.
- Mark the container with the words “Used Film, Negatives, or Photographic Paper for Recycling”.
- Use the MnDOT approved photographic waste contractor for recycling.
- MnDOT vehicles may be used to transport to a MnDOT approved recycling facility.

- Maintain documentation demonstrating that the recycler received the material. The waste material must be reported annually on the MPCA disclosure form if it was determined or assumed to be hazardous. The documentation can be sent to OES for permanent storage after three years.

Option #2 - Disposal as a hazardous waste (determined by analysis or assumed to be hazardous)

- Store in a sturdy, closed container, in a designated hazardous waste storage location.
- Mark the container with the words "Hazardous Waste" and "Used Film, Negatives, or Photographic Paper" and date when container is full.
- Use MnDOT's hazardous waste contractor for disposal.
- A hazardous waste manifest must accompany the waste.
- Maintain documentation of amount of waste generated and copies of manifest and Land Disposal Record. The waste material must be reported annually on the MPCA disclosure form as a hazardous waste. The documentation can be sent to OES for permanent storage after three years.

Option #3- Disposal as a nonhazardous waste (determined by analysis)

- Store in a sturdy, closed container at a designated location.
- Mark the container with the words and "Used Film, Negatives, or Photographic Paper" and date when container is full.
- Waste may be disposed of in any MPCA permitted mixed municipal landfill.
- Maintain documentation demonstrating that the landfill received the material. Acceptable documentation includes scale tickets, receipts or nonhazardous manifests. The documentation can be sent to OES for permanent storage after three years.

Please contact the Environmental Investigation Unit for further assistance.