



STORMWATER POLLUTION PREVENTION PLAN

MAY 31, 2016

4473 PURGATORY MAINTENANCE STATION



Utah Department of Transportation
Purgatory Maintenance Station
5340 W. 200 S.
Hurricane, Utah 84737
(435) 635-2204

Certification

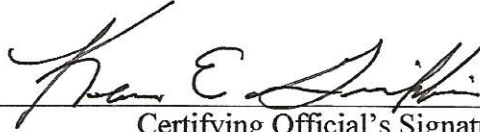
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Kevin Griffin, P.E.

Certifying Official

Director of Maintenance

Certifying Official's Title



Certifying Official's Signature

12/20/2016

Date

Stormwater Pollution Prevention Team (Permit Condition 4.1.1.7)

The following personnel are responsible for implementing this Stormwater Pollution Prevention Plan (SWPPP). The Station Supervisor is responsible for ensuring that there is a current SWPPP for this facility.

Todd Abbott,

Name

Station Supervisor

Title

Brandon Mckinlay,

Name

Area Supervisor

Title

TABLE OF CONTENTS

Acronyms and Abbreviations	ii
1 INTRODUCTION	1
1.1 SWPPP Purpose	1
1.2 SWPPP Objectives	1
1.3 Pollutants.....	1
1.3.1 Description of Potential Pollutant Sources (Permit Condition 4.2.6.3).....	2
1.4 SWPPP Availability.....	2
1.5 SWPPP Revisions	2
2 MAINTENANCE FACILITY INFORMATION	3
2.1 Property Information	3
2.2 Topological Features	3
2.3 Environmental Areas and Surface Water Bodies	3
2.4 Water Supply and Site Wells	4
2.5 Stormwater Conveyance and Treatment BMPs	4
2.6 Wash Water Conveyance	4
2.7 Sewage Conveyance.....	4
3 MAINTENANCE FACILITY ACTIVITIES AND BMPS	5
3.1 Activities	5
3.1.1 Operations and Maintenance Program – Standard Operating Procedures (Permit Conditions 4.2.6.4.1, 4.2.6.4.2, 4.2.6.4.3, 4.2.6.4.4).....	5
3.1.2 SOPs for Salt and Other Deicing Materials (Permit Condition 4.2.6.4.2)	5
3.1.3 SOPs for Vehicles and Equipment (Permit Condition 4.2.6.4.4)	6
3.2 Pollutant Sources and Best Management Practices.....	6
3.3 Non-Hazardous Materials Storage.....	9
3.4 Hazardous Materials Storage	10
3.5 BMP Training and Awareness (Permit Conditions 4.2.1.5, 4.2.3.11, 4.2.5.6, & 4.2.6.9)	12
4 NON-STORMWATER DISCHARGES	13
4.1 Non-Stormwater Discharges (Authorized: Permit Condition 1.2.2.2).....	13
4.2 Non-Stormwater Discharges Authorized by a Separate Permit	13
4.3 Non-Stormwater Discharges (Prevention and Reporting).....	14
5 OPERATIONS AND MAINTENANCE PROGRAM INSPECTIONS (PERMIT CONDITION 4.2.6.6)....	15

Attachments

ATTACHMENT A: Site Map

ATTACHMENT B: Operations and Maintenance Program (Standard Operating Procedure Resources)

ATTACHMENT C: Maintenance Station BMP Fact Sheets

ATTACHMENT D: Hazardous Materials References

ATTACHMENT E: Training Information

ATTACHMENT F: Inspection Documentation

Acronyms and Abbreviations

BMP	Best Management Practice
Maintenance	UDOT Maintenance Division
MEP	Maximum Extent Practicable
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
Permit	UDOT UPDES Municipal Stormwater Permit
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
UDOT	Utah Department of Transportation
UDWQ	Utah Division of Water Quality
UPDES	Utah Pollutant Discharge Elimination System
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey

1 INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared for this maintenance station in general accordance with the requirements of the Utah Department of Transportation (UDOT) Stormwater Management Plan (SWMP) to comply with the Utah Pollutant Discharge Elimination System (UPDES) Permit. The Permit requires the preparation of SWPPPs for maintenance stations. The SWPPP identifies potential pollutants and the best management practices (BMPs) that are implemented at the facility and defines the inspection requirements. This SWPPP identifies the activities conducted and the BMPs to be implemented to reduce or eliminate the discharge of pollutants from this facility.

1.1 SWPPP Purpose

The purpose of the SWPPP is to identify the activities conducted at the maintenance station and the stormwater BMPs that will be implemented to reduce the discharge of pollutants to the maximum extent practicable (MEP) in stormwater runoff from the facility. This SWPPP provides a site-specific description of stormwater pollution prevention practices at this facility.

Under the MS4 Permit, UDOT is required to reduce the discharge of pollutants associated with stormwater drainage from UDOT-owned facilities. This SWPPP is a planning, evaluating, implementing and reporting tool that is used to ensure compliance with UDOT's MS4 Permit.

1.2 SWPPP Objectives

This SWPPP has been developed to meet the following objectives:

- Identify pollutant sources that may affect the quality of stormwater discharges;
- Identify potential pathways and conveyances for pollutants to discharge from the facility;
- Identify, assign, and implement control measures and best management practices to reduce or prevent pollutants in stormwater discharges.

1.3 Pollutants

The MS4 Permit requires that the SWMP address, at a minimum typical pollutants of concern from UDOT facilities and operations (Permit Condition 4.2.6). These pollutants are:

- Total suspended solids
- Sediment
- Petroleum products
- Pesticides/herbicides/fertilizers
- Chlorides
- Heavy metals (e.g., zinc, lead)
- Bacteria
- Chlorine
- Organic matter

SWPPPs developed for UDOT owned or operated facilities shall identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges associated

with activity from the facility (Permit Condition 4.2.6.3) and include BMPs to reduce or eliminate pollutants in stormwater runoff to the MEP.

1.3.1 Description of Potential Pollutant Sources (Permit Condition 4.2.6.3)

There are potential pollutant sources that can exist in different areas around the maintenance station. Potential areas of concern at a maintenance facility include:

- Fixed fueling operations
- Vehicle and equipment maintenance and/or cleaning areas
- Brine making areas
- Loading/unloading areas
- Waste storage or disposal areas
- Liquid Storage tanks
- Process and equipment operating areas
- Storage or disposal areas for significant materials
- Operations that have the potential to discharge pollutants into stormwater conveyance systems that leave the site

A list of potential pollution sources can be found in Section 3.2, Table 1. A list of hazardous materials located at the station can be found in Section 3.4. To identify the locations of potential pollutant sources at the station, please refer to the Site Map in Attachment A.

1.4 SWPPP Availability

This SWPPP will be maintained at the maintenance station and will be made available to a representative of the Utah Division of Water Quality (UDWQ), the US Environmental Protection Agency (USEPA) and/or other local agency if requested.

1.5 SWPPP Revisions

The Stormwater Pollution Prevention Team listed on the Certification Page of this SWPPP is responsible for ensuring that any changes in design, construction, operation, or maintenance activity at the station do not cause the discharge of pollutants to surface water, groundwater, or a municipal separate storm sewer system (MS4). This SWPPP will also be revised if it is in violation of any condition of the Permit, has not achieved the general objective of reducing pollutants in stormwater discharges, or whenever the UDWQ requires revision of the SWPPP. The Station Supervisor is responsible for ensuring the SWPPP is revised as activities and BMPs change.

2 MAINTENANCE FACILITY INFORMATION

This section of the SWPPP provides a general description of the maintenance station.

A road maintenance crew is stationed at this facility. A materials lab also operates on-site. Maintenance vehicles required to support the highway activities conducted from this maintenance station are stored at this station.

2.1 Property Information

Described below is property information for the Purgatory Maintenance Station. All elevations are referenced to mean sea level. Latitude and Longitude are in decimal degrees. A facility site map is located in Attachment A of this SWPPP.

Street Address	5340 W. 200 S.
City	Hurricane
State	Utah
Zip Code	84737
County	Washington
Facility Acreage (acres)	26
Facility Elevation (feet)	3049
Latitude	37.1661°
Longitude	-113.4130°

2.2 Topological Features

The Purgatory Maintenance Station is located along 5300 W. within Hurricane, Utah. Only the main operating area of the property is paved. The rest of the property is pervious and consists of compact dirt, native grasses and shrubs. The site generally slopes to the southeast.

2.3 Environmental Areas and Surface Water Bodies

The station is located in the Upper Virgin Hydrologic Unit. Within the hydrologic unit, the station is in the Cottonwood Wash-Virgin River Hydrologic Subarea (150100080909) of the Gould Wash-Virgin River Hydrologic Area. The average annual rainfall at this station is 9.2 inches.

The nearest downstream surface water body is the Virgin River, which is approximately .85 miles southeast of the station. The Virgin River is 303(d) listed as impaired with boron, selenium, total dissolved solids, and for temperature. Total Maximum Daily Loads are required for boron, selenium, total dissolved solids, and temperature. Special attention should be taken at this site to ensure UDOT is not contributing to the impairments within the impaired waterbodies.

Under Section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop a list of water quality limited segments. These listed water bodies do not meet water quality standards. Federal law requires priority rankings for water on the lists and action plans called Total Maximum Daily Loads to improve water quality.

2.4 Water Supply and Site Wells

There are no on-site groundwater wells, drinking water wells, agricultural wells, or injection wells operated at this station. Potable water service is provided to the site by the Hurricane City Water System, they can be contacted at ph: (435) 635-9442.

2.5 Stormwater Conveyance and Treatment BMPs

The Purgatory Maintenance Station has a general surface stormwater flow to the southeast. The hillside to the north conveys surface water onto the property. A retention basin captures some surface water flow from the west end of the paved area. There is a series of earthen ditches and pipes which exist around the perimeter of the paved area on the west, north and east side. This continuous system leads stormwater to the detention basin. A series of inlets in the paved area also lead to the detention basin. The detention basin has an overflow outfall which discharges to the roadside earthen ditch to the east. Some surface water exits the property along the southern border to an earthen roadside ditch. This water is then conveyed through a pipe under the driveway and continues east.

Treatment BMPs are defined as permanent stormwater treatment measures to improve stormwater quality. The Purgatory Maintenance Station has an oil-water separator, a retention basin and a detention basin which are Treatment BMPs.

2.6 Wash Water Conveyance

The wash rack at the station is located adjacent to the retention basin. Wash water sheets flows directly into the basin.

2.7 Sewage Conveyance

Floor drains inside the shop lead to an oil-water separator before discharging to the sanitary sewer system.

Sanitary waste at the Purgatory Maintenance Station is conveyed to the Ash Creek Special Services District, they can be contacted at ph: (435) 635-2348.

3 MAINTENANCE FACILITY ACTIVITIES AND BMPS

This section identifies the activities conducted at the maintenance station and the BMPs to be implemented to reduce and/or eliminate the discharge of pollutants in stormwater runoff from the facility.

3.1 Activities

The Purgatory Maintenance Station is a staging area for the routine and emergency repair and upkeep of the state highway system within the State of Utah. The maintenance station's primary activities are to store equipment, tools, raw materials, roadway waste materials, loading and unloading of materials, equipment repair, equipment cleaning and materials testing.

3.1.1 Operations and Maintenance Program – Standard Operating Procedures (Permit Conditions 4.2.6.4.1, 4.2.6.4.2, 4.2.6.4.3, 4.2.6.4.4)

The Operations and Maintenance program for UDOT maintenance stations shall include Standard Operating Procedures for the following items:

- use, storage and disposal of chemicals
- spill prevention plans
- dumpster and waste management
- cleaning, washing, painting and other activities
- parking lot and facility cleaning (sweeping & schedules)
- inventory of floor drains and discharge locations
- salt and other deicing materials
- application, storage and disposal of fertilizers, pesticides, and herbicides
- vegetation waste
- vehicle cleaning, maintenance and storage
- wastewater disposal
- fueling operations
- guidance documents for the Operations and Maintenance Program may be found in the Standard Operating Procedure Resources (Attachment B) and Maintenance Station BMP Fact Sheets (Attachment C)

3.1.2 SOPs for Salt and Other Deicing Materials (Permit Condition 4.2.6.4.2)

Storage piles of salt or other materials used for deicing shall be enclosed or covered to prevent exposure to precipitation. Materials should be prevented from physically leaving the maintenance station. For further guidance, see the BMP Fact Sheet for Snow Removal, Traction Aides, and Deicing (Attachment C: MS-9).

Salt at the station is stored inside a shed and brine is stored inside liquid storage tanks. Both are stored within the drainage area of the retention basin. The retention basin does not discharge to receiving waters.

3.1.3 SOPs for Vehicles and Equipment (Permit Condition 4.2.6.4.4)

Vehicle and equipment repair, storage and maintenance shall be conducted in a manner to prevent the discharge of contaminants from the site. For further guidance see the BMP Fact Sheets for Vehicle and Equipment Fueling, Vehicle and Equipment Cleaning and Vehicle and Equipment Maintenance (Attachment C: MS-14, MS-15 and MS-16).

Maintenance vehicles at the station are stored indoors. Absorbents are readily available on site. Mechanical work is completed inside the main building. Vehicles are washed at the wash rack. Wash water sheet flows into the retention basin.

3.2 Pollutant Sources and Best Management Practices

Maintenance BMPs are pollution prevention measures designed to reduce the discharge of pollutants associated with maintenance activities to the MEP. The maintenance station is currently implementing BMPs for each maintenance activity identified in Section 3.1. Based on the activities conducted, a list of potential pollutant sources, potential pollutants, locations, and applicable BMPs has been compiled in Table 1 of this section. The BMPs identified in Table 1 for this facility are considered appropriate and are implemented on an activity-by-activity basis. Details describing the BMPs are provided in Attachments B and C including description, appropriate application, and implementation.

Table 1: Potential Pollutant Sources at the Purgatory Maintenance Station, Pollutants of Concern, Location, BMPs and BMP Reference

Potential Pollutant Sources	Pollutants of Concern										FW* = Facility Wide		
	Petroleum Products	TSS/Sediments	Litter and Debris	Heavy Metals	pH	Nutrients	Pathogens	Pesticides	Solvents/ Degreasers	Chlorides	Map Location Attachment A	Describe BMPs in Place	BMP Reference Attachment C
Building and Grounds Maintenance	X	X	X							X	FW*	Building and grounds maintenance activities are conducted in a careful manner to ensure pollutants are not discharged into the storm drains.	MS-1, MS-2, MS-5, MS-6, MS-7, MS-9
Vehicle & Equipment Parking	X			X	X						3F, 3G	Spill cleanup materials are utilized in the event of vehicle or equipment leaks or spills. Used absorbent or other clean-up materials are disposed of properly.	MS-16
Vehicle & Equipment Washing & Steam Cleaning	X	X	X	X		X				X	4E	The wash rack drains to the retention basin.	MS-15
Vehicle & Equipment Maintenance & Repair	X			X		X		X			3F, 3G	Maintenance and repair activities are conducted indoors. Petroleum products, solvents, degreasers, and other automotive fluids used during maintenance and repair are kept inside the shops or within covered secondary containment. Spill kits equipped with dry sweep absorbent and absorbent pads are utilized in the event of a spill. Used absorbent or other clean-up materials are disposed of properly.	MS-16
Outdoor Loading & Unloading of Materials & Tools	X	X	X	X	X	X				X	3E	Spills or leaks resulting from outdoor material loading/unloading are cleaned immediately.	MS-7, MS-9, MS-13

Table 1: Potential Pollutant Sources at the Purgatory Maintenance Station, Pollutants of Concern, Location, BMPs and BMP Reference

Potential Pollutant Sources	Pollutants of Concern										FW* = Facility Wide		
	Petroleum Products	TSS/Sediments	Litter and Debris	Heavy Metals	pH	Nutrients	Pathogens	Pesticides	Solvents/ Degreasers	Chlorides	Map Location Attachment A	Describe BMPs in Place	BMP Reference Attachment C
											Spill kits equipped with dry sweep absorbent and absorbent pads are utilized in the event of a spill. Used absorbent or other clean-up materials are disposed of properly.		
Outdoor Storage of Raw Materials	X	X	X	X	X	X					3F, 4D	No BMP's in place.	MS-2, MS-7, MS-12, MS-13
Roadway Waste Handling & Disposal	X	X	X	X	X	X					4F	When possible, roadway waste is accumulated and sorted in a dumpster. Surrounding areas are swept as needed.	MS-2, MS-7, MS-12, MS-13
Storage of Hazardous Materials	X	X	X	X	X	X		X			3E, 3F, 3G	All hazardous materials are stored indoors or within covered secondary containment.	MS-3
Pesticide Storage					X			X			3F, 3G	Pesticides are stored indoors.	MS-3
Portable Sewage: Restrooms/RV Dump Station/Maintenance					X		X				3F, 3G	The restroom is located indoors.	MS-8

3.3 Non-Hazardous Materials Storage

Based on the activities conducted at the facility, the following non-hazardous materials are stored outdoors.

Non-Hazardous Material	Location on Site Map	BMPs
Aggregate	3F, 4D	No BMPs in place
Treated Wood	2F, 3D, 4D	No BMPs in place
Steel/Sheet Metal	2F, 3D, 3E, 3F, 4D, 4F	No BMPs in place
Trash	4F	Stored in covered dumpster
Rubber	2F	No BMPs in place

3.4 Hazardous Materials Storage

The following hazardous materials are stored at this facility in proper containment. Hazardous materials reference documents are included in Attachment D of this document.

Table 2: Maintenance Hazardous Materials List				
Common Name	Chemical Name	Storage Location on Site Map	Liquid or Solid	BMPs
Motor Oil	Petroleum oil	3F, 3G	Liquid	Stored inside building.
Used oil	Petroleum oil	3F	Liquid	Stored under cover within a concrete basin.
Hydraulic Oil	Petroleum oil	3F, 3G	Liquid	Stored inside building.
Transmission Oil	Petroleum oil	3F, 3G	Liquid	Stored inside building.
Grease	Grease	3F, 3G	Solid	Stored inside building.
Lubricant	Petroleum Oil	3F, 3G	Liquid	Stored inside chemical storage locker.
Tar be gone	Mineral spirits	3F, 3G	Liquid	Stored inside chemical storage locker.
Paint	Titanium dioxide	3F, 3G	Liquid	Stored inside building.
Graffiti remover	2-Pyrrolidinone, 1-methyl	3F, 3G	Liquid	Stored inside chemical storage locker.
Degreaser	Monoethanolamine	3F, 3G	Liquid	Stored inside chemical storage locker.
Balance	Dimethylmethyl(polyethylene Citric acid, Trisodium Salt Dihydrate, Benzododecinium Chloride	3F, 3G	Liquid	Stored inside building.
Mice, Rat Killer	diphacinone (ISO)	3F, 3G	Solid	Stored inside building.
Asphalt sealer	Mineral Spirits	3E	Liquid	Stored under cover.
Gasoline	Petroleum oil	3F, 3G	Liquid	Stored inside chemical storage locker.
Solvent Based Paints	Acetone, toluene, xylene, polyester resin, aliphatic polyisocyanate resin	3F, 3G	Liquid	Stored inside chemical storage locker.

Table 2: Maintenance Hazardous Materials List				
Common Name	Chemical Name	Storage Location on Site Map	Liquid or Solid	BMPs
Glass cleaner	Isopropanol	3F, 3G	Liquid	Stored inside building.
Battery cleaner	Liquefied petroleum gas	3F, 3G	Liquid	Stored in a chemical storage cabinet.
De-icer	Methanol	3F, 3G	Liquid	Stored in a chemical storage cabinet.
Diesel fuel additive	Butanol	3F, 3G	Liquid	Stored inside building.

3.5 BMP Training and Awareness (Permit Conditions 4.2.1.5, 4.2.3.11, 4.2.5.6, & 4.2.6.9)

Per the UDOT SWMP, UDOT policy and practice is to provide education and training to ensure employees have the knowledge and skills necessary to perform their functions effectively and efficiently. The UDOT MS4 permit requires training for the following topics:

- equipment inspection to ensure timely maintenance;
- proper storage of industrial materials (emphasize pollution prevention);
- proper management and disposal of wastes; proper management of dumpsters;
- minimization of use of salt and other deicing materials (cover/prevent runoff to MS4 and ground water contamination);
- benefits of appropriate on-site infiltration (areas with low exposure to industrial materials such as roofs or employee parking);
- proper maintenance of parking lot surfaces (sweeping).

UDOT provides awareness training and education to employees who have responsibility for stormwater management.

Station Supervisors will review BMPs with crews to prevent or control non-stormwater discharges every time there is a change of type of work activity. BMP training sign in sheets for this facility are included in Attachment E of this document.

The Station Supervisor is responsible for providing on-going awareness training for stormwater pollution issues for activity crews and station personnel. Training is conducted during tailgate and pre-job meetings to review environmental concerns and BMPs, and to ensure that BMPs are implemented during maintenance activities. The awareness training includes:

- The importance of observing good housekeeping practices, with emphasis on preventing debris from entering the Station's stormwater management system.
- Explanation and discussion of required standards for housekeeping and the procedures required to maintain those housekeeping standards.
- Explanation and discussion of spill response procedures, locations and proper usage of absorbent materials and spill recovery equipment, spill response methods, disposal of spill cleanup materials, and spill reporting requirements.
- Discussion of material management practices and UDOT policies associated with the outdoor storage of materials and the practices for handling materials to minimize the potential for discharges.
- Discussion of proper solid waste handling procedures.

4 NON-STORMWATER DISCHARGES

The UDOT MS4 Permit prohibits the release of non-stormwater discharges into UDOT's stormwater conveyance systems, unless the discharges are authorized either by a separate UPDES permit or in accordance with section 1.2.1 of the UDOT MS4 permit. (This permit covers all portions of municipal separate storm sewer systems including all state and interstate highways and the right-of-ways associated with them that discharge to State waters).

4.1 Non-Stormwater Discharges (Authorized: Permit Condition 1.2.2.2)

The following non-storm water discharges do not need to be addressed unless the Permittee or the Director identifies these discharges as significant sources of pollutants to Waters of the State or as causing or contributing to a violation of water quality standards:

- a. Water line flushing
- b. Landscape irrigation
- c. Diverted stream flows
- d. Rising ground waters
- e. Uncontaminated ground water infiltration
- f. Uncontaminated pumped ground water
- g. Discharges from potable water sources
- h. Foundation drains
- i. Air conditioning condensate
- j. Irrigation water
- k. Springs
- l. Water from crawl space pumps
- m. Footing drains
- n. Lawn watering runoff
- o. Individual residential car washing
- p. Flows from riparian habitats and wetlands
- q. Dechlorinated swimming pool discharges
- r. Residual street wash water
- s. Dechlorinated water reservoir discharges
- t. Discharges or flows from emergency firefighting activity

Although permitted non-stormwater discharges are not typically found at UDOT maintenance stations, the UDOT stormwater program includes methods for controlling potential pollutants from permitted non-stormwater discharges. BMPs will be implemented to ensure that permitted discharges remain uncontaminated.

4.2 Non-Stormwater Discharges Authorized by a Separate Permit

This station does not have any non-stormwater discharges authorized by a separate UPDES permit.

4.3 Non-Stormwater Discharges (Prevention and Reporting)

The Department's UDOT MS4 Permit prohibits the discharge of non-permitted non-stormwater discharges. If a discharge occurs, or if the station receives a written notice or order from any regulatory agency, the Station Supervisor will immediately notify the District Engineer. The Station Supervisor will coordinate the reporting of prohibited non-stormwater discharges to the UDWQ through the District Engineer.

To prevent non-stormwater discharges from occurring, the responsible Station Supervisor will ensure that maintenance personnel:

- Determine where the flow of a leak, spill, or other runoff will travel;
- Identify drain inlets and water courses, both upstream and downstream of the work site;
- Ensure that vehicles and equipment are clean and in good operating condition by conducting pre-operational inspection of vehicles and equipment;
- Set up work areas to minimize the tracking of material by vehicles and equipment in and out of the work area;
- Collect and properly dispose of wastes, materials removed as a result of equipment and system maintenance, litter and debris;
- Secure lids on containers of liquids when not in use;
- Control spills promptly;
- Have appropriate spill cleanup material onsite and protect drainage systems and watercourses from spilled material.

5 OPERATIONS AND MAINTENANCE PROGRAM INSPECTIONS (PERMIT CONDITION 4.2.6.6)

As stated in the UDOT MS4 Permit, UDOT is required to conduct weekly, or more frequent as necessary visual inspections of UDOT facilities and track those inspections in a log for every facility. The purpose of the inspections is (1) to identify areas contributing to a discharge of potential pollutants associated with the maintenance station activities, and (2) to evaluate whether BMPs identified in the SWPPP are adequate and properly implemented or whether additional control practices are needed.

Station Supervisors are responsible for weekly visual inspections, quarterly comprehensive inspections (with specific attention paid to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, salt storage and brine making areas and similar pollutant-generating areas) and quarterly visual observation of stormwater discharges. Inspections are to monitor the implementation and adequacy of the facility's BMPs and for notifying the District Engineer in the event that a non-stormwater discharge or other instance of non-compliance occurs. Inspection results shall be documented on the inspection forms included in Attachment F. The inspection information must include the date of the inspection, the individual(s) who performed the inspection, observations, and any recommended corrective actions. Inspection forms are to be completed and submitted through UPLAN [at this link](http://uplan.maps.arcgis.com/home/item.html?id=1ecd28d1bb1d429392b82eb5c665b19e). The link's web address is: <http://uplan.maps.arcgis.com/home/item.html?id=1ecd28d1bb1d429392b82eb5c665b19e>.

Completed inspection forms will be maintained in Attachment F of this SWPPP. SWPPP records will be maintained for at least the effective period of the permit. Any observed instances of non-compliance will be reported to the District Engineer.

Stormwater self-audit inspections conducted by UDOT personnel, or inspection documents from local regulatory agencies, will be appended to Attachment F of this SWPPP, and retained for at least the effective period of the permit.

Weekly Inspection Forms

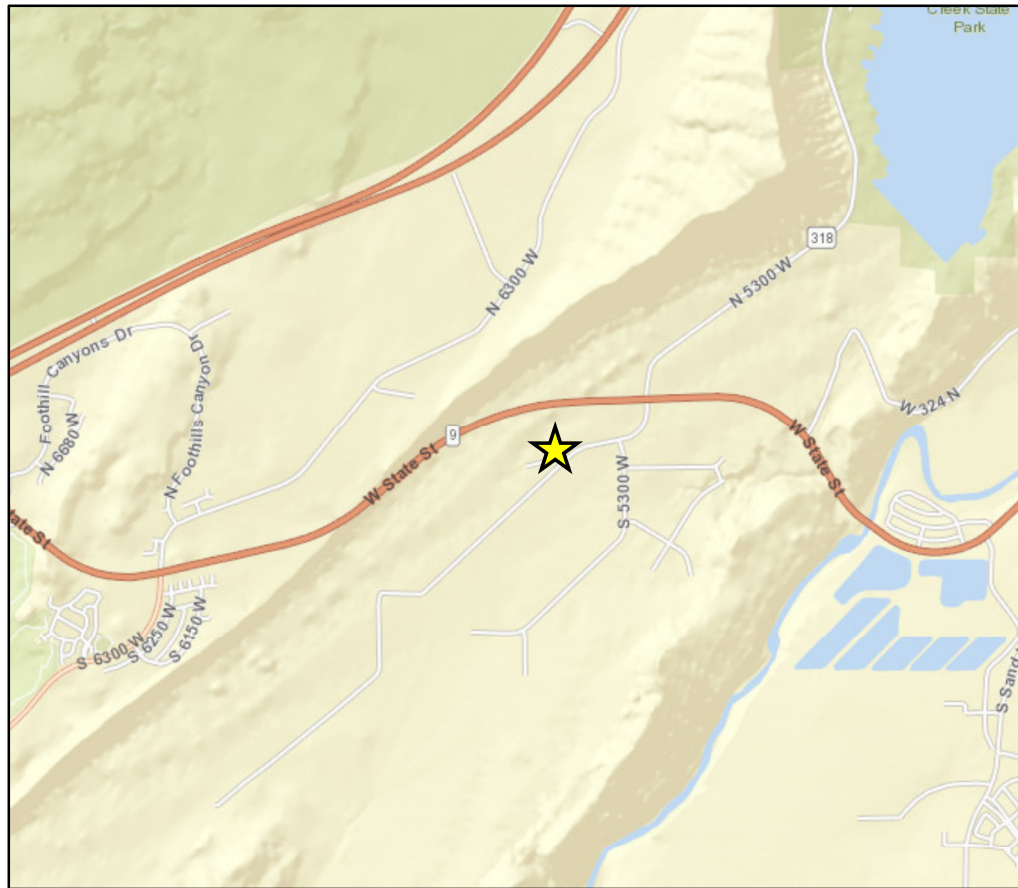
- UDOT Maintenance Station Weekly Inspection Log – This visual inspection is to be completed at least weekly and whenever a spill is detected at the maintenance station. Weekly inspections are documented with the form on page F-7, and any spill events (whether observed during the weekly visual inspection or otherwise) must be documented with the Weekly Inspection Spill/Leak/Deficiency Detail form on page F-8.

Quarterly Inspection Forms

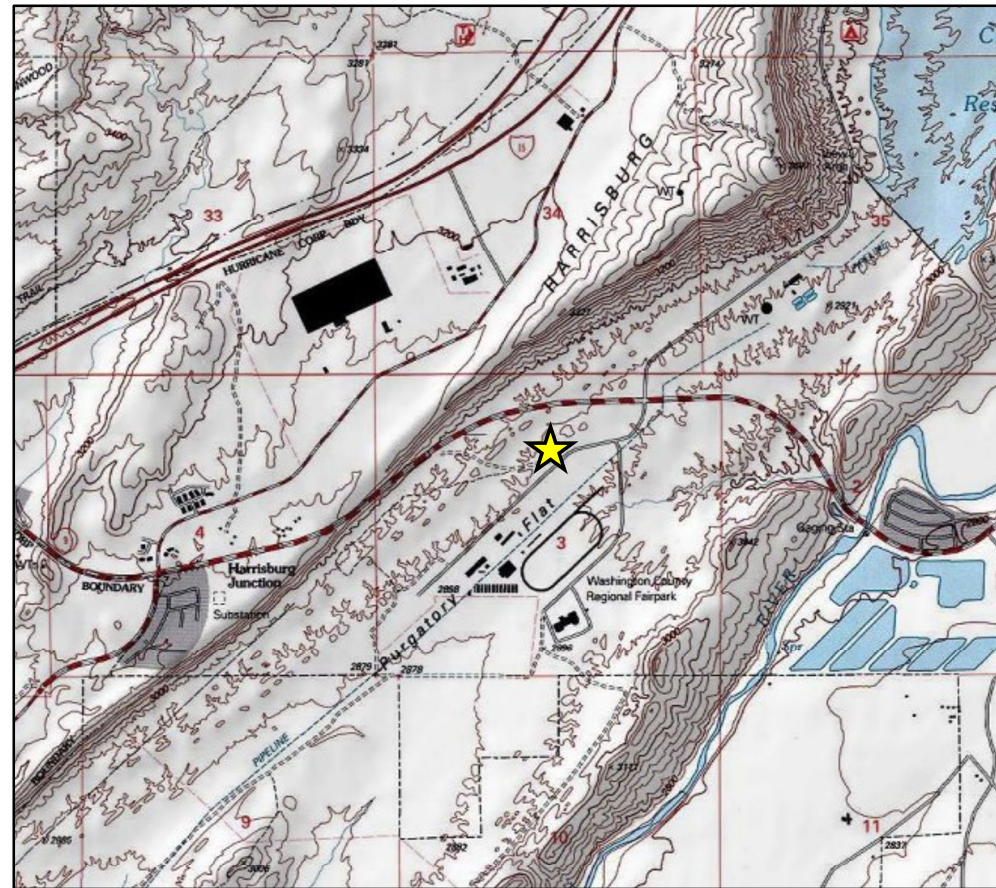
- UDOT Maintenance Station Stormwater Compliance Inspection Checklist – This quarterly comprehensive checklist is to be completed quarterly. (Pages F-1 to F-5)
- UDOT Maintenance Station Stormwater Discharge Inspection Sheet – This visual inspection form is to be completed quarterly. (Page F-6)

Station supervisors are responsible for addressing deficiencies noted on any inspections and documenting the corrective actions.

ATTACHMENT A:
Site Map



Google Maps



USGS Topographic Map



ESRI Aerial

DESCRIPTIONS

 Site Boundary

 Site Feature Area

 Pervious Area

(All areas within site boundary not listed as pervious are assumed to be impervious.)

 Stormwater Gutter

 Stormwater Earthen Ditch

 Wastewater Pipe

 Stormwater Pipe

 Stormwater Surface Flow

 Basin


 Battery Storage

 Chemical Storage

 Fuel Island / Storage

 Inlet

 Metals

 Misc. Equipment

 Misc. Storage or Waste

 Oil Products

 Oil Water Separator


 Outfall

 Paint Related Materials

 Salt / Brine Making

 Salt Shed / Storage

 Spill Kit

 Spreader / Loading Rack

 Stockpile

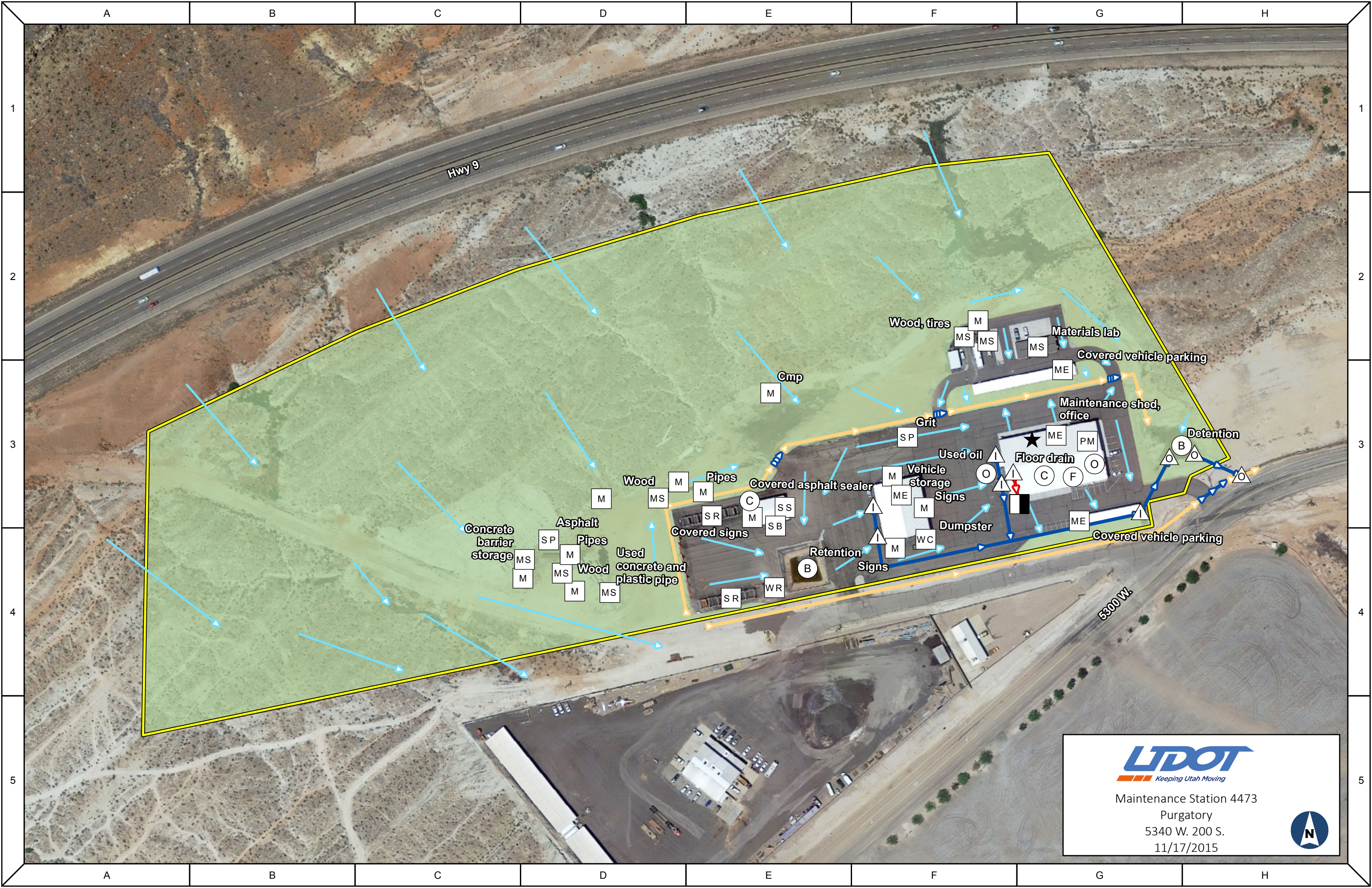
 Wash Rack


 Waste Container




Maintenance Station 4473
Purgatory
5340 W. 200 S.
11/17/2015






UTAH
 Keeping Utah Moving

Maintenance Station 4473
 Purgatory
 5340 W. 200 S.
 11/17/2015



ATTACHMENT B:
Operations and Maintenance Program
(Standard Operating Procedure Resources)

Description of Pollution Prevention Measures and Controls

Different methods of control are used for the various potential sources and are described below.

Vehicle Maintenance/Storage Buildings:

Buildings where maintenance vehicles are stored have oil/water separators in the drainage system between the floor drain and the discharge point to the sanitary sewer.

Stormwater Runoff:

Some maintenance stations have a single retention basin that collects stormwater runoff that falls on hard surface areas of the site. Retention basins would then collect and contain all stormwater tributary to the basin. Stormwater flowing into retention basins may contain salt and other potential pollutants such as sand or grit. Stormwater collected in retention basins either evaporates or is pumped and disposed of at a landfill site.

New maintenance stations typically have both a retention basin and a detention basin. Paved surfaces near salt storage and brine making locations are graded such that stormwater falling in these areas flows to the retention basin. Storm water falling on other areas of the site drains to the detention basin. Detention basins have a controlled outlet and oil/water separator. Outlets from detention basins typically flow to a sanitary sewer that serves the maintenance station.

New and Used Oil Storage:

New oil for vehicles and equipment is contained in barrels and placed in basins with secondary containment. Used oil filters drain for 24 hours prior to disposal. The collected oil is then pumped to a container that is located in a containment basin. Used oil is collected by approved transporters and taken to oil recycling facilities.

Fueling Procedures:

Fueling is a routine procedure and can sometimes lead to overfills and spills. All UDOT personnel are instructed to stay by their vehicle while refueling. "Topping off" or over filling after the pump's automatic shutoff has activated is discouraged. Venders re-supplying fuel storage tanks are required to stay by their tankers during the fill, as well. Vehicle and equipment fuels are contained in approved storage tanks, either above or below grade.

Solvents/Hazardous/Flammable Materials:

Self-contained parts washers and citrus-based solvents have replaced chlorinated versions.

Hazardous materials, flammable and volatile cleaners are stored in fire resistant cabinets inside maintenance buildings.

Absorbent pads are stored at all maintenance stations and are used to contain small leaks or spills if they should occur. Absorbent pads and pillows protect drains and are placed in oil/water separators to aid oil-skimming. Absorbent pads also collect oil drips under vehicles and equipment.

Inventory Control:

Region and Central warehouses have eliminated chlorinated solvents from inventories and now stock citrus-based solvents. Good BMPs for inventory control:

Inventory Management

- Buy only what is needed over a 3-month period
- Rotate inventory so older material is used first
- Store materials in a manner to prevent spills, leaks, or damage to containers
- Use secondary containment where prudent
- Use an inventory tracking system
- Label all containers with contents, date of purchase, date opened
- Don't accept free samples you won't use
- Be licensed to use restricted chemicals
- Read and become familiar with labels
- Use environmentally safe chemicals
- Keep absorbent materials readily accessible; renew supply to handle a 55-gallon drum rupture.

Waste Management:

All hazardous wastes are defined by characteristics that are harmful to human health and the environment. A chemical product (including liquids, gases, solids, powders, etc.) becomes a waste when it is released from its original container in an uncontrolled manner. Proper waste management must include knowledge of each product's and/or waste material's properties. This aids in determining proper handling and disposal. Properties that are "characteristic" and define hazardous waste are listed in the box below.

Characteristic Wastes*

- Ignitable
- Corrosive
- Reactive
- Toxic

**40 CFR, Part §261.20-261.24*

Characteristic wastes are regulated by federal, state, and local laws and codes. These waste characteristics are carefully defined in the Code of Federal Regulations, (CFR) Title 40, and Part 260. Review of regulations covering a particular waste stream is necessary to determine how to properly manage, transport, and safely dispose of it. Careful handling and multi-copy paperwork that tracks waste generation to final disposal ("cradle to grave") is required.

Waste Segregation:

Characteristic wastes should be stored and segregated according to their properties. Some wastes can be incompatible, causing chemical reactions that can lead to toxic gas production and/or spontaneous ignition. Product Material Safety Data Sheets aid in determining proper handling and disposal. Keep waste containers tightly closed and stored in a well-ventilated area. Storage times do not exceed UDOT's Small Quantity Generator status of 180 days. Likewise, quantity stored should not exceed 2200 pounds per month (approximately 4 drums). Arrangements are made for disposal with a State contracted hazardous waste disposal company to have the wastes removed.

Storage of Salt and Deicing Materials (Permit Condition 4.2.6.4.2)

Storage piles of salt or other materials used for deicing shall be enclosed or covered to prevent exposure to precipitation, except for exposure resulting from adding or removing materials from the pile. The Director of the Division of Water Quality (UDWQ) may waive this requirement for salt piles located in areas where surface and/or ground waters are already high in concentrations of salt.

Spill Response & Emergency Preparedness

First response agencies shall be called when UDOT employees and/or its agents observe **any hazardous material/s release to water bodies, 1 gallon or more of hazardous chemical/s, 25 gallons of hydrocarbons (fuel, oil) or more are released to the environment** (see Attachment D for US D.O.T. Hazardous Materials definition and classifications). Call down lists are posted at maintenance stations and provide the Department of Environmental Quality's (DEQ's) 24-hour emergency response number.

Maintenance Emergency Call Down List

Immediately Contact	
Dispatch	911
Station Supervisor	435-619-0987
Area Supervisor	435-691-5450
24 Hour Emergency Phone Number for Incident Spills	801-536-4123
Within ½-hour contact	
District or Maintenance Engineer	435-201-2215
Local Health Department	
Region Safety/Risk Manager	
Hazardous Waste Spills	801-538-6170
Large Spills And/or Water Affected	
Releases Affecting "Waters of the State" or involving Petroleum Products	801-538-6146
National Response Center	800-424-8802

Report spills immediately. Begin cleanup ASAP.

Obtain help from experts!

Maintenance Stations - Good Housekeeping Checklist	
Used Oil & Fuels	
	Drum oily rags for an industrial cleaner to process and recycle. Do not add liquids to drum. Keep drum lid closed when not in use.
	Collect used oil in maintenance station's used oil tank or collect in drums stored within lined and bermed secondary containment at construction staging areas.
	Pierce used oil filters and allow to drain for a minimum of 24 hours. Wrap empty filters in newspaper and dispose in dumpster.
	Label as "Used Oil" tanks or drums and secure with padlocks to deter illegal dumping. Used crankcase oil is recyclable and therefore considered non-hazardous. Utah has many certified oil recyclers. The Division of Solid and Hazardous Waste in DEQ has a variety of resources listed on their website: http://www.deq.utah.gov/ProgramsServices/programs/waste/usedoil/#facilities
Solvents, Chemicals, Herbicides	
	Eliminate chlorinated solvent usage. These solvents generate hazardous waste, are toxic to environment and carcinogenic to humans. Use citrus-based solvents in their place. Secure tight fitting lids on volatile substances to prevent evaporation and spills.
	Use contained and self-draining parts washers. If warranted, consider a solvent recycling/regeneration parts washer. No hazardous waste is generated.
	Do not aerate solvents, thinners, or fuels as a disposal method. This is an air quality regulation violation and is subject to fines.
	No open containers in and around work site. Use spigots and hand pumps on drums and 5-gallon containers. When mixing chemicals such as herbicides, pour concentrate slowly to avoid "glug and splash" from vacuum created in container.
Vehicle Maintenance	
	Regularly inspect and maintain station equipment. Repair seals and leaks as practicable and use absorbent materials where necessary.
	Never hose hazardous materials down drains or off pavement. Avoid spreading hazardous waste to the environment.
	Use drip pans and/or absorbent pads under work that can release fuels, oils, solvents, and chemicals that will produce characteristic wastes.
Security	
	Secure maintenance stations and construction staging areas with locked gates when unoccupied.
	Use and maintain a supply of personal protective equipment appropriate to work (i.e. gloves, protective eyewear, coveralls, etc).
	Keep a supply of absorbent materials/spill prevention kit at hand for accidental spills. Learn proper disposal methods from MSDS.

ATTACHMENT C:
Maintenance Station BMP Fact Sheets



Keeping Utah Moving

Maintenance Station BMP Fact Sheets

MS-1 : Chemical Vegetation Control C-2

MS-2 : Fiber Rolls C-4

MS-3 : Hazardous Waste Management C-6

MS-4 : Liquid Waste Management..... C-8

MS-5 : Maintenance BMP C-11

MS-6 : Maintenance Station Housekeeping Practices C-12

MS-7 : Material Delivery and Storage..... C-14

MS-8 : Sanitary/Septic Waste Management..... C-16

MS-9 : Snow Removal, Traction Aides, and Deicing C-17

MS-10 : Solid Waste Management..... C-19

MS-11 : Spill Prevention and Control..... C-20

MS-12: Stockpile Management C-21

MS-13 : Sweeping and Vacuuming..... C-23

MS-14 : Vehicle and Equipment Fueling..... C-24

MS-15 : Vehicle and Equipment Cleaning C-26

MS-16 : Vehicle and Equipment Maintenance C-27

MS-1 : Chemical Vegetation Control

Description and Purpose

Stormwater BMPs are focused on reduction or elimination of the use of fertilizers, herbicides, pesticides, and sediment that could be discharged to the storm drain system. This can be accomplished through the use of native plants, inert landscape materials and other integrated roadside vegetative management (IRVM) practices. In some regions, non-native plants require more irrigation compared to native plants, as well as additional nutrients and protection from local pests. The use of fertilizer, herbicides, and pesticides should be reduced or eliminated.

Maintenance and Inspection

Mowing Practices

- Avoid mowing noxious weed patches before spraying to help sprayer identify noxious weed area.
- Avoid mowing for noxious weed control immediately after spraying operations.
- Limit mowing to no more than 8 to 10 feet off edge of pavement in designated water quality problem areas, unless needed to maintain proper functioning of highway (e.g. drainage or snow drift control).

Removal of Vegetation and Brush

- Leave cut brush in place in riparian areas to promote habitat, when possible.
- Maintain shade trees along streams and rivers, especially those that assist with bank stabilization.
- Generally, limit brush removal to no more than 20 feet from bridge structures during repair work.
- Generally, limit removal of brush to 10 feet at both sides of a culvert, unless the area has noxious weed or invasive species presence.

Timing and Application of Pesticides, Herbicides, and Fertilizers

- Prior to spray operations, ensure permit coverage and inspect spray routes to “flag” all cross culverts, streams and wetlands.
- Generally, spot spraying should be conducted rather than blanket spraying.
- Spray when trees and shrubs are small (less than 6 feet tall), and preferably in the fall.
- Spray weeds during the seeding stage and prior to flowering. Large weeds and brush should first be mowed and then sprayed with herbicide, as necessary.
- Do not spray chemicals when rainfall is forecast within 12 hours.
- Calibrate the spray rig based upon manufacturer’s recommendations to ensure accurate application of sprays.
- Apply spray products using appropriate additives and low-pressure nozzles to reduce drift.
- Utilize computer assisted spray trucks whenever available.

- Follow all federal, state and local regulations regarding herbicide use. Read and follow product labels. It is a violation of federal law to use an herbicide in a manner inconsistent with its label.

Limitations on the Use of Chemical Controls

- Generally, limit herbicide use to locations that cannot be mowed by conventional means (i.e., guardrails and signposts).
- Do not use chemical vegetative control measures on vegetated treatment BMPs.
- Shut sprayers off 20 to 30-feet before entering designated environmentally sensitive areas and buffers. Identify these locations with permanent markers wherever feasible.
- Spray product use should be restricted within 100-feet of wetlands, dwellings, public buildings, and parks.
- All spraying to control vegetation within riparian areas should be done by hand. Avoid spraying these areas unless absolutely necessary.

MS-2 : Fiber Rolls

Description and Purpose

A fiber roll consists of commercially available straw (straw wattles), native grasses, flax, or other similar materials rolled or bound into a tight tubular roll and placed on the face of slopes at regular intervals. When fiber rolls are placed at the toe and on the face of slopes, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff. By interrupting the length of a slope, fiber rolls can also reduce erosion.

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow
- At the end of a downward slope where it transitions to a steeper slope
- Along the perimeter of a project
- As check dams in unlined ditches
- Down-slope of exposed soil areas
- Around temporary stockpiles
- Fiber rolls are not effective unless trenched. Fiber rolls at the toe of slopes greater than 5:1 (H:V) should be a minimum of 20 in. diameter or installations achieving the same protection (i.e. stacked smaller diameter fiber rolls, etc.).
- Fiber rolls are difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.
- For Minor Slides and Slipouts Cleanup/Repair.
- Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- To provide some sediment control.

Implementation

Fiber Roll Materials

- Fiber rolls should be either prefabricated rolls or rolled tubes of erosion control blanket.

Assembly of Field Rolled Fiber Roll

- Roll length of erosion control blanket into a tube of minimum 8 in. diameter.
- Bind roll at each end and every 4 ft along length of roll with jute-type twine.

Installation

- Locate fiber rolls on level contours spaced as follows:

- Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
- Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
- Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into a 2 to 4 in. deep trench with a width equal to the diameter of the fiber roll.
 - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
 - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.

Removal

- Fiber rolls are typically left in place.
- If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location.
- If fiber rolls are used for erosion control, such as in a mini check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.

MS-3 : Hazardous Waste Management

Description and Purpose

The requirements for handling and disposal of hazardous wastes vary for the different categories of wastes. A hazardous waste determination may be conducted by using the following:

- Material Safety Data Sheet (MSDS)
- Knowledge of ingredients
- Testing

Wastes that could be classified as hazardous wastes include:

- waste paint filters
- used antifreeze
- used caustic solutions
- waste pesticides
- spent paint abrasives
- waste paints



Tires and hazardous waste should always be stored in a covered area whenever possible. Spill response kits should also be kept where they can be accessed if needed.

Photo source: Michael Baker International

Storage Containers

- Keep in good condition.
- Compatible with the wastes contained in them.
- Opened only to add or remove wastes.
- Marked with the dates and labeled with the words “hazardous wastes.”
- Clearly marked to identify their contents.
- Kept within a secured area.
- Recorded in a log of wastes for each container.
- Inspected weekly for leaks and deterioration.

Storage Area Practices

- Different waste types should be kept separate.
- Use a secondary containment dike that can hold leaks, spills, and rain runoff.
- Keep access routes clear in the event of a spill or emergency.
- There should be proper emergency equipment, such as alarms, phones, and fire extinguishers, available.
- Packaging should:
 - Meet the USDOT specifications for the waste.
 - Be tight enough to prevent loss of materials.
 - Kept closed.
 - Allow for free space above the liquid for expansion.

Manifesting

A hazardous waste manifest must be used with all hazardous waste shipments. They are designed to track shipments from start to finish. The manifest should be completed before shipping hazardous wastes.

Inventory and Record Keeping

Records are a very important part of regulatory compliance. Good records can be used to prove compliance and may avoid problems with regulatory agencies. Keep the following records:

- Hazardous waste test results.
- Monthly log of wastes.
- Inspection reports.
- Records of training.
- Copies of the manifests.
- Spill or leak reports.

MS-4 : Liquid Waste Management

Description and Purpose

Liquid waste management includes procedures and practices to prevent discharge of pollutants to the storm drain system or to watercourses as a result of the creation, collection, and disposal of non-hazardous liquid wastes. Liquid waste should be reduced as much as possible by recycling and reuse. Waste that cannot be avoided should be carefully managed based on the type of material.

Suitable Applications

Liquid waste management is applicable to construction projects and maintenance activities that generate any of the following non-hazardous by-products, residuals, or wastes:

- Drilling slurries and drilling fluids
- Grease-free and oil-free wastewater and rinse water
- Dredgings
- Other non-stormwater liquid discharges not permitted by separate permits

Limitations

- Disposal of some liquid wastes may be subject to specific laws and regulations or to requirements of other permits secured for the construction or maintenance project (e.g., NPDES permits, Army Corps permits, etc.).
- Liquid waste management does not apply to dewatering operations, solid waste management, hazardous wastes, or concrete slurry residue.
- Typical permitted non-stormwater discharges can include: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; irrigation water; springs; water from crawl space pumps; footing drains; lawn watering; flows from riparian habitats and wetlands; and discharges or flows from emergency firefighting activities.

Implementation

General Practices

- Instruct employees and subcontractors how to safely differentiate between non-hazardous liquid waste and potential or known hazardous liquid waste.
- Instruct employees, subcontractors, and suppliers that it is unacceptable for any liquid waste to enter any storm drainage device, waterway, or receiving water.
- Educate employees and subcontractors on liquid waste generating activities and liquid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Verify which non-stormwater discharges are permitted by the statewide NPDES permit; different regions might have different requirements not outlined in this permit.

Containing Liquid Wastes

- Drilling residue and drilling fluids should not be allowed to enter storm drains and watercourses and should be disposed of.
- Liquid wastes generated as part of an operational procedure, such as water-laden dredged material and drilling mud, should be contained and not allowed to flow into drainage channels or receiving waters prior to treatment.
- Liquid wastes should be contained in a controlled area such as a holding pit, sediment basin, roll-off bin, or portable tank.
- Containment devices must be structurally sound and leak free.
- Containment devices must be of sufficient quantity or volume to completely contain the liquid wastes generated.
- Precautions should be taken to avoid spills or accidental releases of contained liquid wastes.
- Containment areas or devices should not be located where accidental release of the contained liquid can threaten health or safety or discharge to water bodies, channels, or storm drains.

Capturing Liquid Wastes

- Capture all liquid wastes that have the potential to affect the storm drainage system (such as wash water and rinse water from cleaning walls or pavement), before they run off a surface.
- Do not allow liquid wastes to flow or discharge uncontrolled. Use temporary dikes or berms to intercept flows and direct them to a containment area or device for capture.
- Use a sediment trap for capturing and treating sediment laden liquid waste or capture in a containment device and allow sediment to settle.

Disposing of Liquid Wastes

- A typical method to handle liquid waste is to dewater the contained liquid waste
- Methods of disposal for some liquid wastes may be prescribed in Water Quality Reports, NPDES permits, Environmental Impact Reports, 401 or 404 permits, and local agency discharge permits, etc. Review the SWPPP to see if disposal methods are identified.
- Liquid wastes, such as from dredged material, may require testing and certification whether it is hazardous or not before a disposal method can be determined.
- If necessary, further treat liquid wastes prior to disposal. Treatment may include, though is not limited to, sedimentation, filtration, and chemical neutralization.

Costs

- Prevention costs for liquid waste management are minimal. Costs increase if cleanup or fines are involved.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly

during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.

- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur. Remove deposited solids in containment areas and capturing devices as needed and at the completion of the task.
- Inspect containment areas and capturing devices and repair as needed.

MS-5 : Maintenance BMP

Description and Purpose

Activities at maintenance stations can involve materials and products that are harmful to the environment. Good housekeeping consists of maintaining various pollution prevention practices at maintenance stations. Source control practices, used when pollutants can be attributed to specific point sources, are discussed under “Material Storage and Source Control,” “Waste Management and Source Control,” and “Vehicles and Equipment.”

General Pollution Prevention Practices at Buildings and Yard Areas

Maintenance workers should implement the following pollution prevention measures whenever feasible:

- Sweep paved areas to reduce transport of sediment, debris, and trash. Keeping pavement areas in good condition will make sweeping more effective.
- Stencil drain inlet locations with paint or provide signs prohibiting all non-stormwater flow.
- Keep sufficient emergency materials; such as drain covers, absorbent booms, rags, or sandbags near inlets.
- Inspect drainage facilities annually, and as needed during the rainy season.
- Minimize pesticide, herbicide, and fertilizer use.
- Renew peeling paint and rust.

MS-6 : Maintenance Station Housekeeping Practices

Description and Purpose

Daily activities occurring at maintenance stations often involve the use of materials and products that are potentially harmful to the environment. Good housekeeping practices are intended to eliminate the potential for discharge of pollutants to drainage paths, stormwater drainage systems or watercourses by promoting efficient and safe storage, use and cleanup of potentially harmful materials.

Suitable Applications

Proper housekeeping practices apply to all maintenance personnel who participate in activities that have a potential to generate pollutants that could discharge to stormwater drainage systems or watercourses.

Implementation:

- Maintain clean, orderly material and equipment storage areas. Provide covers for materials as needed.
- Use the 'first in first out' policy for material storage and control. Avoid ordering more materials than can be stored properly or used in a reasonable timeframe.
- Properly reuse, recycle, or dispose of empty containers, excess materials, equipment, and parts that are not likely to be used. All solid wastes shall be managed per the requirements of the Solid Waste Management BMP.
- Maintain equipment and buildings to avoid peeling paint, rust, and degradation. Request funding for major repairs.
- Sweep or vacuum maintenance station floors and pavement.
- If mopping is used to clean floors or pavement, contain the mop water and dispose of it to the sanitary sewer system according to the following guidelines:
 - Do not dispose of mop water into the parking lot, street, gutter or drain inlet; and
 - If an oil/water separator is available, pour the mop water into the separator so that the wastewater is treated before being discharged to the sanitary sewer system.
 - Secure and close lids on waste receptacles and bins when not in use.
 - Clean up spills promptly.
 - Use drip pans or absorbent material under leaking vehicles and equipment to capture fluids.
 - If it is necessary to use a hose for cleaning, wash water shall not be discharged to the stormwater drainage systems or watercourses.
- Minimize the possibility of stormwater pollution from outdoor waste receptacles by doing at least one of the following:
 - Use only watertight waste receptacle(s) and keep the lid(s) closed;
 - Grade and pave the waste receptacle area to prevent run-on of stormwater;
 - Install a roof over the waste receptacle area;

- Install a low containment berm around the waste receptacle area; or
- Use and maintain drip pans under waste receptacles.

Oil/Water Separators

Oil/water separators are tanks that collect oily water and encourage separation of solids and oil droplets. The oily solids or sludge can then be pumped out of the system. The sludge can be hauled off site, and the wash water can be discharged to a treatment plant.

Each oil/water separator should be cleaned of all liquid and grit at least annually.

- Once all free-floating petroleum products are absorbed, the liquid may be decanted to the municipal sewer system with permit approval or to a tank, for final disposal at a wastewater treatment facility or hazardous waste location.
- All grits are to be disposed of at a special waste landfill.
- Once empty, fill with clean water above the bottom of the outflow pipe.

Floor Drain Maintenance

- Floor drains should be cleaned a minimum of once per year.
- Floor drains should have oil absorbent socks maintained in them at all times. These petroleum socks should be properly disposed (as hazardous waste) when they show evidence that oil has been absorbed.

MS-7 : Material Delivery and Storage

Description and Purpose

Many types of material can be stored or handled at each maintenance station. Care should be taken to limit contact with stormwater.

Material Storage

- Consider the following for material storage areas:
- Store materials away from drainage systems or other watercourses.
- Cover materials.
- Identify storage area boundaries.
- Provide adequate lighting, fencing, and security.
- Use erosion and sedimentation controls and wind erosion controls.



Materials storage areas should always be clearly defined and covered such as this one.

Photo source: Michael Baker International

Material Management

- Remove litter, debris, sediment and any spilled materials.
- Recycle when possible.
- Inspect BMPs regularly as well as before and after rain events.
- Sediment Controls - Remove captured sediment. Replace or repair BMPs as needed.
- Drainage Facilities - Take note of their condition. Add more BMPs if there is excess sediment or debris.
- Contaminated material should not be used as fill. Report any contaminated material.
- Stockpiles having no future use should be removed at least annually.
- Use the “first in, first out” policy for material storage. Avoid ordering more materials than can be stored properly or used in a reasonable timeframe



Stored materials should be organized and placed within containment areas when not in use.

Photo source: Michael Baker International

Recycling and Reducing Waste

Recycling

The following materials should routinely be recycled whenever feasible:

- Paper
- Steel drums used for other purposes after they are emptied

- Batteries
- Waste tires and tire scraps
- Used motor, gear and hydraulic oil
- Used oil filters
- Road signs and posts
- Metal scrap found along the highway

Re-use

- Guardrails
- Boxes
- Damaged bridge structural steel
- Truck tires



Providing lids on trash bins is an easy way to prevent wind dispersal and contact with stormwater. Signs are advisable to limit contents

Photo source: Michael Baker International

MS-8 : Sanitary/Septic Waste Management

Description and Purpose

Sanitary/septic waste management procedures and practices are designed to minimize or eliminate the discharge of sanitary/septic waste materials to storm drain systems or watercourses.

- If work generates wash water containing a cleaning compound, plug nearby storm drains and vacuum/pump wash water to a landscaped area or the sanitary sewer. Secure necessary sewer agency permits and approvals before directing flow to the sanitary system.

Appropriate Applications:

- Sanitary/septic waste management practices are implemented for all maintenance activities that use portable sanitary/septic waste systems.

Implementation:

- Sanitary facilities shall be located away from drainage facilities and watercourses. When subjected to risk of high winds, sanitary facilities shall be secured to prevent overturning.
- Wastewater shall not be discharged (unless the discharge is to a permitted leach field or pond) or buried within the highway right-of-way.

Maintenance:

- Sanitary/septic waste should be discharged to a sanitary sewer or managed by a licensed hauler.
- Sanitary/septic waste storage and the disposal procedures should be managed to prevent non-stormwater discharge.

Vactor Waste

- Vactor waste is considered to have a high environmental risk. This risk is due to its makeup of easily transported silts and potentially contaminated liquid fraction.
- Vactor liquids should be disposed to an approved sanitary sewer by permission only.
- Where sanitary sewers are not available, the DOT hazardous materials coordinator should specify areas suitable for field decanting of vactor solids or liquids under a state permit. Disposal lands should also maintain controls to prevent public access.
- Dispose of vactor waste only in locations approved by the DOT environmental division

MS-9 : Snow Removal, Traction Aides, and Deicing

Description and Purpose

DOTs are responsible for maintaining passable and safe roadways during winter using plow blades, abrasives, and chemical anti-icing and de-icing agents.

The primary non-structural BMPs used to reduce the environmental impacts of winter maintenance include: proper training of maintenance personnel, street sweeping, improved anti-icing and de-icing practices and improved sanding practices.



Snow removal helps maintain a clear vehicular path of travel. Sand and salt applied to the roadway can be transported offsite and impact stormwater quality.

Photo source: Michael Baker International

Maintenance and Inspection

Application Methods

- Evaluate road and weather conditions and trends to ensure that the proper type and timing of treatment is made.
- A timely response to snow and ice events will help prevent a bond from forming between the frozen precipitation and the pavement.
- Plowing and targeted use of anti-icing or de-icing agents are preferable.
- Plow snow or slush prior to applying anti-icing or de-icing chemicals to decrease dilution and increase effectiveness
- Do not overload the material spreader to avoid spillage.
- Control spreading speeds to reduce bounce and scatter.
- Materials should not be dispersed wider than the plowed area.
- Return unused materials to stockpiles and avoid heavy “end of beat” applications that empty the load.
- Wherever feasible, alter application methods and rates in sensitive areas:
 - If allowable based upon local practices, place barriers in site-specific locations along streams or direct drainages to route sanding/anti-icing material away from watercourses.
 - Reduce plowing speed in sensitive areas.
 - Stop sidecast sweeping (i.e. over the downhill side of a slope) within 50-feet of structures over water, wherever possible.
 - Clean inlets prior to first rain wherever feasible.

Salt Application

- As snow melts within the shoulder area, avoid or minimize the use of salting directly into drains.
- Be conscious of wind conditions when spreading salt. Maintenance crews should avoid bridge areas where high wind has the potential to blow salt over side rails or into deck drains or scuppers.
- Plowing operations should be timed to allow maximum melting by salt. The need for another salt application can be determined by watching melting snow kicked out behind the vehicle tires and by monitoring surface temperature.

Post Winter Cleanup

The timing of post winter cleanup of sand and salt is important because the removal of accumulated material in the spring creates less opportunity for transport during springtime and summer rain events.

Staff Training

Consider inclusion of the following elements within staff or contractor training programs:

- General water quality and fishery resource issues
- Perform preseason “dry runs.” Be sure to note drainage facilities, wildlife crossing structures, and other facilities requiring delineation or special treatment in plowing, along with possible obstructions.
- Understand the issues involved with material selection quantity and function associated with tractive agents, deicers, and anti-icing materials.
- Understand how to measure brine concentrations.
- Understand the importance of timely plowing.
- Spreader calibration
- Spreader controller operation
- Brine equipment operation
- Equipment washing procedures
- Use and interpretation of pavement sensor data and forecasts
- Understand the role and effective placement of snowdrift control devices (structural snow fences, snow ridging, agricultural stubble, living snow fences).

Air Quality Issues

UDOT is subject to the Utah Administrative Code R307. Environmental Quality, Air Quality ([Rule R307-307. Road Salting and Sanding](#)). This section of the code applies when salt or abrasives are applied in PM-10 and PM-2.5 nonattainment and maintenance areas.

- UDOT staff applying salt or abrasives in PM-10 and PM-2.5 areas should become familiar with the Utah administrative code requirements.

Other General Practices

- Snow and ice control decision-making should be based on ongoing monitoring of pavement temperatures rather than air temperatures.
- Keep accurate records of materials usage to allow monitoring and improvement of operations.

MS-10 : Solid Waste Management

Description and Purpose

Solid waste management procedures and practices are designed to minimize or eliminate the discharge of pollutants to drainage systems or watercourses associated with the stockpiling or removal of maintenance activity wastes.

Solid waste should be reduced as much as possible by recycling and reuse. Waste that cannot be avoided should be carefully managed based on the type of material.



Solid waste receptacles such as this one are effective at preventing contact with stormwater runoff.

Photo source: Michael Baker International

Appropriate Applications:

- Solid waste management practices are implemented during maintenance activities that generate solid wastes. These solid wastes include, but are not limited to:
- Maintenance wastes, including brick, mortar, asphalt concrete, Portland cement, concrete, timber, steel and metal scraps, pipe and electrical cuttings, nonhazardous equipment parts, Styrofoam, grindings, sandblast grit and other materials used to transport and package maintenance materials;
- Highway planting wastes, including vegetative material, plant containers and packaging materials; and
- Litter and debris, including food containers, beverage cans, coffee cups, paper bags, and plastic wrappers.

Implementation:

- Use dry cleanup techniques (e.g., vacuuming, sweeping, dry rags) to remove solid waste from the maintenance activity site when practicable. Use another technique only when dry cleanup techniques are not practicable, such as having to wet for dust control for safety or air quality reasons.
- Recycle, reuse, or properly dispose of solid waste.
- Stormwater run-on shall be prevented from contacting stored solid waste through the use of ditches, berms, dikes, and swales.
- Solid waste storage areas at maintenance stations should be located away from drainage facilities and watercourses and shall not be located in areas prone to flooding or ponding.

Maintenance:

- Periodically inspect the solid waste storage areas and review the disposal procedures.
- Repair or replace damaged or missing BMPs.

MS-11 : Spill Prevention and Control

Description and Purpose

Spill prevention and control procedures and practices are implemented to prevent and control spills in a manner that minimizes or prevents discharge to stormwater drainage systems or watercourses at maintenance activity sites and maintenance stations.

Appropriate Applications:

- These controls apply at maintenance activity sites and at maintenance stations.
- Spill prevention and control procedures are implemented wherever non-hazardous chemicals and/or hazardous substances are stored or used. Substances may include, but are not limited to, soil stabilizers, dust palliatives, pesticides, growth inhibitors, fertilizers, paints, de-icing chemicals, fuels, lubricants and other petroleum distillates.
- To the extent that the cleanup work can be accomplished safely, wastes shall be contained and cleaned up immediately.

Implementation:

- When fueling tools such as chain saws, weed-eaters, pumps and generators, etc., use appropriate spill prevention measures. Vehicles transporting these types of tools should contain spill kits.
- In the event of a spill or leak, storm drain inlets should be protected to prevent non-stormwater discharge.
- If a spill or leak occurs in the containment area, accumulated rainwater shall be evaluated to determine appropriate disposal method.
- To the extent that cleanup activities and safety are not compromised, spills shall be covered and protected from stormwater run-on during rainfall.
- Dry cleanup methods should be used when possible.
- Used cleanup materials, contaminated materials and recovered spill material that is no longer suitable for its intended purpose shall be disposed of as hazardous or solid waste, depending on waste characteristics.
- Contaminated water used for cleaning and decontamination shall not be allowed to enter stormwater drainage systems or watercourses.
- Waste storage areas shall be kept clean, well-organized, and equipped with cleanup supplies that are appropriate for the materials being stored. Perimeter controls, containment structures, covers and liners shall be repaired or replaced as needed to maintain proper function.
- Tarps and similar control measures should be used to prevent spills or material drift from being deposited into watercourses (e.g., during bridge maintenance).

Maintenance:

- Verify that spill control cleanup materials are located near material storage, unloading, and use areas. It is recommended that spill kit locations be clearly identified at maintenance stations.
- Update spill prevention and control plans and stock appropriate cleanup materials whenever changes occur in the types of chemicals stored on site.

MS-12: Stockpile Management

Description and Purpose

Stockpile Management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, paving materials such as Portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt binder, and pressure treated wood.



Cover stockpiles to minimize erosion or dispersion by wind or water.

Photo source: Michael Baker International

Suitable Applications

Implement in all projects that stockpile soil and other materials.

Limitations

None identified.

Implementation

Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

- Locate stockpiles a minimum of 50 ft away from concentrated flows of stormwater, drainage courses, and inlets.
- Protect all stockpiles from stormwater run-on using a temporary perimeter sediment barrier such as berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale barriers.
- Implement wind erosion control practices as appropriate on all stockpiled material.
- Place bagged materials on pallets and under cover.

Protection of Non-Active Stockpiles

Non-active stockpiles of the identified materials should be protected further as follows:

Soil stockpiles

- During the rainy season, soil stockpiles should be covered or protected with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- During the non-rainy season, soil stockpiles should be covered or protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate sub base

- During the rainy season, the stockpiles should be covered or protected with a temporary perimeter sediment barrier at all times.
- During the non-rainy season, the stockpiles should be covered or protected with a temporary perimeter sediment barrier prior to the onset of precipitation.

Stockpiles of “cold mix”

- During the rainy season, cold mix stockpiles should be placed on and covered with plastic or comparable material at all times.
- During the non-rainy season, cold mix stockpiles should be placed on and covered with plastic or comparable material prior to the onset of precipitation.

Stockpiles/Storage of pressure treated wood with copper, chromium, and arsenic or ammonical, copper, zinc, and arsenate

- During the rainy season, treated wood should be covered with plastic or comparable material at all times.
- During the non-rainy season, treated wood should be covered with plastic or comparable material at all times and cold mix stockpiles should be placed on and covered with plastic or comparable material prior to the onset of precipitation.

Protection of Active Stockpiles

Active stockpiles of the identified materials should be protected further as follows:

- All stockpiles should be protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of “cold mix” should be placed on and covered with plastic or comparable material prior to the onset of precipitation.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.

MS-13 : Sweeping and Vacuuming

Description and Purpose

Sweeping and vacuuming are performed to remove litter, debris, and de-icing abrasives from paved roads and shoulders. Sweeping to reduce track-out generally involves manual sweeping or use of small equipment, but does not exclude the use of sweepers should the need arise (e.g., for slides and slipouts).

Suitable Applications:

- Sweeping and vacuuming operations are appropriate for removing de-icing abrasives, material from small slides, litter, and debris.
- Sweeping and vacuuming may be implemented anywhere sediment is tracked from off-road maintenance activity sites onto public or private paved roads typically at the points of egress.

Implementation:

- Highway Sweeping:
 - Do not sweep up any unknown substance that may be potentially hazardous. If a substance is known to be hazardous, suspected of being hazardous or cannot be identified, notify the Hazardous Materials Manager immediately. If an illegally dumped substance within the Department's Right of Way has the potential of entering a municipal drain system, the immediate supervisor and the District Stormwater Coordinator must be notified so that the downstream municipality can be contacted.
 - Adjust brooms to maximize the efficiency of sweeping operations.
 - Do not load hoppers beyond their capacity.
 - Dispose of waste to a landfill or approved site. There is to be no dumping on site, especially during the rainy season or during unseasonal storm events to abate wash out. Clean materials may be incorporated into the maintenance activity area.
- Tracking Control:
 - Substantially visible sediment shall be swept or vacuumed from the maintenance activity site.
 - If not mixed with debris or trash, consider incorporating the removed sediment back into the maintenance activity site.
 - Washing and rinsing of equipment shall be performed in designated areas and in accordance with the Vehicle and Equipment Cleaning BMP.

MS-14 : Vehicle and Equipment Fueling

Description and Purpose

Vehicle and equipment fueling procedures and practices should minimize or eliminate the discharge of fuel spills and leaks.

Bulk Fuel Delivery

- All aboveground and underground storage tanks should be equipped with automatic overfill shutoff valves.
- Spill prevention and control BMPs should be implemented to prevent spillage.
- Spill kits must be located in fueling areas.

Fueling Area Maintenance

- Label drains at fuel dispensing areas to indicate if they discharge to the storm drain or to the sewer.
- Storm drain inlets may be temporarily covered with spill pads and/or mats during fueling operations.
- Absorbent spill cleanup materials or drip pans should be stored in fueling and maintenance areas and used materials should be disposed in accordance with hazardous waste management BMPs.
- Immediately clean up leaks and drips.
- Hosing off the fueling area is prohibited. Dry shop clean up practices should be used.
- Manage wastes to reduce adverse impacts on stormwater quality. Fueling areas should be kept free of litter and debris that might become contaminated with petroleum products.



Use containment to control fuel leaks identified in the field.

Photo source: Michael Baker International

Vehicle Fluid Removal

When removing automotive fluids such as used motor oils or coolant from vehicles or equipment, the following practices should be used:

- Transfer removed fluid to a designated used fluid storage tank as soon as possible.
- If possible, remove fluids directly into a holding tank. For example, newer types of used oil tanks can be connected to the vehicle to pump oil directly into the tank.
- If necessary, drain fluids into a drip pan and then transfer the fluids to the designated container. A larger drip pan may be required to catch any unanticipated splashing.
- Properly remove, clean and store drip pans promptly after use.
- Designate specific areas for parts cleaning.



Clean leaks like this using a damp mop or absorbent cloth. Do not hose down.

Photo source: Michael Baker International

Cleaning Up Spills of Vehicle and Equipment Fluids

- Accidental releases of vehicle fluids at maintenance sites can pollute receiving waters. Typical vehicle fluids include oil and hydraulic fluids leaking from vehicles and equipment, accidental spills from fueling operations and leaks and spills around storage tanks and containers. The following practices are recommended for cleaning up spills of vehicle and equipment fluids:
- Advanced preparation will assist if and when a spill happens:
- Evaluate the spilled material to determine the appropriate methods for cleaning up the spill.
- Maintain up-to-date spill prevention, control, and response plans.
- Maintain appropriate and adequate supplies of cleanup materials at fueling areas, vehicle and equipment maintenance areas, cleaning areas and vehicle and equipment parking areas.
- Regularly inspect vehicle parking, maintenance, cleaning and fueling areas for leaks and spills.
- Repair or replace vehicles and equipment that consistently leak.
- Repair or replace, as needed, material and waste storage perimeter controls, containment structures, covers and liners in order to contain spills and leaks.
- Vehicle fluids such as oil, fuels, and hydraulic fluids are considered hazardous wastes and require appropriate safety precautions. For spilled material, immediately contain the material to keep it from spreading and clean it up.
- Place absorbent materials or pads around leaks to soak up spills.
- Place a leaking container in appropriate spill containment or transfer the contents to another container.
- For leaks or spills that occur during storm events, cover and protect the spilled material from stormwater run-on.
- Once the spilled material has been contained, ensure that all of the material and absorbent has been cleaned up.
- Whenever possible, use “dry shop” methods to clean up spills.
- Do not hose down the spill area.
- Use an absorbent-type cloth on fuel pumps or damp mop on pavement in fueling areas.
- If rainwater has accumulated in a contained area where a spill or leak has occurred, treat the contaminated water as a hazardous waste.
- Take additional precautions in situations where dry cleanup methods cannot be implemented to ensure that the water used for cleaning and decontamination is prevented from entering storm drainage systems or receiving waters.
- Dispose of the contaminated wastes (spilled material, used cleanup materials, contaminated rainwater) appropriately.



Leaking fuels are a common source of pollutants within vehicle storage areas.

Photo source: Michael Baker International

MS-15 : Vehicle and Equipment Cleaning

Description and Purpose

Water used in washing cars, trucks and other vehicles may contain oil, other hydrocarbons, metals, detergents, road salt and grit. This water must not be discharged to the storm drain or to land.

Vehicle washing should be conducted in designated wash rack areas, where proper wash equipment and drainage are present. Wash water must be contained and directed to a permitted sanitary sewer connection or appropriate disposal site. Under no circumstances should wash water be allowed to directly enter the site storm drain system



Clarifiers such as this one are commonly used within wash rack areas.

Photo source: Michael Baker International

MS-16 : Vehicle and Equipment Maintenance

Description and Purpose

The following practices apply to equipment maintenance:

- Maintenance should be performed in covered or indoor maintenance areas.
- Inspect equipment for damaged hoses and leaky gaskets and repair or replace as necessary.
- Drip pans or absorbent materials should be used during vehicle and equipment maintenance work that involves fluids.
- Non-stormwater discharges into stormwater drainage systems or watercourses are prohibited.
- Utilize pollution prevention and response measures. Any contaminated soil resulting from vehicle or equipment repair should be removed and disposed of.
- Use dry methods (e.g., dry rags, vacuuming or sweeping) for cleaning associated with maintenance in outdoor areas
- Inspect areas following field maintenance to ensure there is no residual contamination that might impact stormwater quality. Clean areas as needed using dry methods, (e.g., sweeping or vacuuming).
- Maintain waste fluid containers in leak-proof condition

Pre-Operation Inspection

- Vehicles and equipment should be inspected for leaks on each day of use. When performing pre-operational inspection:
- Ensure that the vehicle/equipment is clean and in good operating condition. Preventive maintenance should occur in accordance with departmental guidance.
- Place a drip pan under any leaking vehicle or equipment.
- Clean up spilled or leaked fluids immediately.
- Daily pre-trip inspection should be logged and kept for 3 months, or as required otherwise by local standards.



Basic drip pan for collecting leaks

Photo source: Michael Baker International



Perform maintenance inside an enclosed garage.

Photo source: Michael Baker International



Gravel bags and tarps offer effective containment of possible leaks.

Photo source: Michael Baker International

ATTACHMENT D:
Hazardous Materials References

DOT Definition of Hazardous Material:

Any substance that poses an unreasonable risk to life, the environment, or property when not properly contained. A hazardous material is further defined as any substance or material that could adversely affect the safety of the public, handlers, or carriers during transportation.

There are nine classes of hazardous materials:

Hazard Class 1: Explosives	1.1 mass explosion hazard 1.2 projectile hazard 1.3 minor blast/projectile/fire 1.4 minor blast 1.5 insensitive explosives 1.6 very insensitive explosives
Hazard Class 2: Compressed Gases	2.1 flammable gases 2.2 non flammable compressed 2.3 poisonous, toxic
Hazard Class 3: Flammable Liquids	Flammable (flash point below 141°) Combustible (flash point 141°-200°)
Hazard Class 4: Flammable Solids	4.1 flammable solids 4.2 spontaneously combustible 4.3 dangerous when wet
Hazard Class 5: Oxidizers and Organic Peroxides	5.1 Oxidizer 5.2 Organic Peroxide
Hazard Class 6: Toxic Materials	6.1 Material that is poisonous 6.2 Infectious Agents
Hazard Class 7: Radioactive Material	Radioactive I Radioactive II Radioactive III
Hazard Class 8: Corrosive Material	Destruction of the human skin Corrode steel at a rate of 0.25 inches per year
Hazard Class 9: Miscellaneous	A material that presents a hazard during shipment but does not meet the definition of the other classes

ATTACHMENT E: Training Information

ATTACHMENT F
INSPECTION DOCUMENTATION

**UDOT Maintenance Station
Stormwater Compliance Inspection Checklist
(Quarterly Comprehensive)**

Maintenance Station Name and Number:		Today's Date:	For Quarter/Year:		
Station Supervisor:		Name of Inspector(s):			
Station Address:					
Treatment BMPs on site (circle): Yes No Type:					
BMP	Objective/Criteria	Yes	No ⁽¹⁾	N/A	Comment Number ⁽²⁾
Building and Grounds Maintenance	Objective is to maintain the buildings and grounds to reduce the potential for discharge of pollutants to the stormwater drainage system.				
Buildings/General	1. Equipment and buildings are maintained to avoid peeling, paint, rust, and degradation.				
	2. Material and equipment storage areas are maintained in a clean and orderly manner.				
	3. The facility water supply lines/appurtenances (including water valves and pipes for filling tanks) are not leaking.				
Paved Surfaces	1. Pavement surface is free of accumulation of pollutants (oil spots).				
	2. Pavement surface condition allows runoff to flow to drains, and does not increase pollutant loading.				
Non-Haz Waste Storage Areas	1. Solid waste and waste containers are covered, bermed, or graded to prevent run-on of stormwater.				
	2. Solid waste storage areas are located away from storm drains or water courses.				
	3. Sweeper waste and/or other waste piles are contained to prevent run-on/run-off of stormwater.				
	4. Waste bins are plugged to prevent discharge of pollutants.				
	5. Lids on waste receptacles are secure and closed when not in use.				
Landscape/Irrigation	Vegetation or other BMPs are used for erosion control on non-paved areas.				
	Vegetation or other BMPs, if used for erosion control on non-paved areas, are properly applied and maintained.				
	There are no physical indicators of irrigation system runoff (i.e., sediment trains and/or pavement discoloration).				
	Irrigation system is functioning properly (no leaks, breaks, etc.).				
	Mulch, chips, or other ground cover are appropriately applied.				
Storm Drainage System	Storm drains and/or drainage systems are clean, and protected if necessary.				
	Drain inlets are stenciled.				
	BMPs are in place to detain and/or to filter sediment laden stormwater run off.				
	Storm drain inlets, pipes, channels, or other conveyances are free of damage.				
Treatment BMPs	Treatment BMPs, if present, are properly maintained.				
Sanitary Waste Systems	Sanitary wastes are discharged to the sanitary sewer and prevented from discharging to storm drains or watercourses.				
	Septic wastes are discharged to an on-site septic tank. Septic tank system has been inspected and is functioning properly. (Note: Follow-up reporting is required if system function is found to be deficient.)				

(1) Include a comment for every "No" answer.

(2) Detail comments on page F-5.

**UDOT Maintenance Station
Stormwater Compliance Inspection Checklist
(Quarterly Comprehensive)**

Maintenance Station Name and Number:		Today's Date:		For Quarter/Year:	
BMP	Objective/Criteria	Yes	No ⁽¹⁾	N/A	Comment Number ⁽²⁾
Building and Grounds Maintenance (Cont.)	Objective is to maintain the buildings and grounds to reduce the potential for discharge of pollutants to the stormwater drainage system.				
Illicit Discharges	The facility has been inspected for illicit discharges.				
	Outfall reconnaissance inventory has been conducted along the perimeter of the facility.				
	Facility and perimeter are free of illicit discharges.				
Other					
Storage of Hazardous Materials (Working Stock)	Objective is to properly manage hazardous materials (working stock) to reduce the potential for discharge of pollutants to the stormwater drainage system.				
	1. There are spill kits, spill control equipment, and ample supplies of spill cleanup materials located at the site and readily accessible.				
	2. Hazardous materials are stored with spill containments.				
	3. Storage areas are clean and organized.				
	4. Spill containment area is free of rainwater or spills.				
	5. Bagged or boxed materials are stored on pallets and covered during the rainy season or prior to rain events.				
	6. Chemicals are stored and/or loaded away from storm drain inlets or watercourses.				
Storage of Hazardous Wastes	Objective is to properly manage hazardous wastes to reduce the potential for discharge of pollutants to the stormwater drainage system.				
	1. There are spill kits, spill control equipment, and ample supplies of spill cleanup materials located at the site and readily accessible.				
	2. Hazardous wastes are stored with spill containment.				
	3. Hazardous wastes are stored in sealed containers.				
	4. Storage area is clean and organized.				
	5. Secondary containment area is free of rainwater or spills.				
	6. Hazardous wastes are covered during the rainy season or prior to rain events.				
	7. Hazardous wastes are stored and/or loaded away from storm drain inlets of watercourses.				

(1) Include a comment for every "No" answer.

(2) Detail comments on page F-5.

**UDOT Maintenance Station
Stormwater Compliance Inspection Checklist
(Quarterly Comprehensive)**

Maintenance Station Name and Number:		Today's Date:		For Quarter/Year:	
BMP	Objective/Criteria	Yes	No ⁽¹⁾	N/A	Comment Number ⁽²⁾
Outdoor Storage of Raw Materials	Objective is to maintain the storage of outdoor raw materials to adequately reduce the potential for the discharge of materials to the stormwater drainage system and to minimize exposure to stormwater.				
	1. Stockpiles, if present, are properly maintained to prevent run-on/run-off of stormwater (appropriate BMPs are in place).				
	2. BMPs are appropriately maintained, and are replaced as needed.				
	3. Raw materials are stored away from drainage paths or storm drain inlets.				
Vehicle & Equipment Fueling	Objective is to minimize the contact between stormwater and vehicle fluids at fueling areas.				
	1. There is a spill kit, spoil control equipment, and ample supplies of spill cleanup materials located near fueling areas and readily accessible.				
	2. Fueling is performed away from storm drain inlets or watercourses.				
Vehicle & Equipment Maintenance and Repair	Objective is to reduce the discharge of potential pollutants from vehicle maintenance and repair activities and minimize contact between stormwater and activity areas and products used.				
	1. There is a spill kit and ample supplies of spill cleanup materials located in the vehicle & equipment maintenance areas and readily accessible.				
	2. The vehicle & equipment maintenance areas are clean and organized.				
	3. Used cleanup material and waste have been removed and properly disposed.				
	4. Mop water/cleaning agents are contained and/or disposed of to the sanitary sewer.				
	5. BMPs are used under leaking vehicles and equipment to prevent tracking.				
	6. Vehicle fluids are prevented from discharging to drainage paths, storm drain systems, or watercourses.				
Storage of Materials Utilized for Maintenance and Repair of Vehicles and Equipment	7. Hazardous material storage areas have spill kits and ample supplies of appropriate absorbent material readily accessible.				
	8. Hazardous materials are stored indoors and/or with spill containment.				
	9. Storage areas are clean and organized.				
	10. Spill containment area is free of rainwater or spills.				
	11. Materials are stored away from storm drain inlets or watercourses.				

(1) Include a comment for every "No" answer.

(2) Detail comments on page F-5.

**UDOT Maintenance Station
Stormwater Compliance Inspection Checklist
(Quarterly Comprehensive)**

Maintenance Station Name and Number:		Today's Date:		For Quarter/Year:	
BMP	Objective/Criteria	Yes	No ⁽¹⁾	N/A	Comment Number ⁽²⁾
Vehicle & Equipment Maintenance and Repair (Cont.)	Objective is to reduce the discharge of potential pollutants from vehicle maintenance and repair activities and minimize contact between stormwater and activity areas and products used.				
	12. Hazardous waste storage areas have spill kits and ample supplies of appropriate absorbent material readily accessible.				
	13. Hazardous wastes are stored will spill containment.				
	14. Hazardous wastes are stored in sealed containers.				
	15. Storage areas are clean and organized.				
	16. The secondary containment area is free of rain water or spills.				
	17. Hazardous wastes are covered during the rainy season or prior to rain events.				
	18. Hazardous wastes are stored and/or loaded away from storm drain inlets or watercourses.				
Aboveground & Underground Tank Leak and Spill Control	Objective is to reduce the discharge of potential pollutants to the storm drainage system from aboveground and underground storage tanks.				
	1. There is a spill kit, spill control equipment, and ample supplies of spill cleanup materials located near fueling areas and readily accessible.				
	2. Used cleanup material and waste have been removed and properly disposed.				
	3. Proper fueling and spill cleanup instructions are posted at the fueling area:				
	a) Automatic shutoff valves are installed at each nozzle.				
	b) Manual/emergency shutoff valves are present.				
	4. There is a spill containment system around fuel tank and pumps (not required with double-walled tanks):				
	a) The spill containment system is free of rainwater and spills.				
	b) The spill containment drain valve is closed.				
	5. Above ground tanks are located (or controls in place) to prevent spilled fluids from discharging to drainage paths, storm drain systems, or watercourses.				
	6. Fuel pumps, hoses, and nozzles are clean and free from leaks.				
	7. Fuel for generator is stored in secondary containment.				
	8. Portable fueling tanks are maintained in a leak-free manner.				
	9. Portable fueling tanks are stored in secondary containment.				
	10. Drip pans and/or absorbent material are used under leaking vehicles and equipment to capture fluids.				
	11. Used spill cleanup material and waste have been removed and properly disposed.				

(1) Include a comment for every "No" answer.

(2) Detail comments on page F-5.

**UDOT Maintenance Station
Stormwater Discharge Inspection Sheet
(Quarterly Visual)**

Maintenance Station Name and Number:	
Address:	Today's Date:
Name of Inspector (s)	For Quarter/Year:

Note: Inspection to be performed if stormwater physically leaves the maintenance station property. Visually inspect stormwater runoff from a 0.1 inch (or greater) rainfall event within the first 30 minutes of flow.

Outfall Information:

Location on station property: _____

Is stormwater leaving station property in a pipe or gutter? Yes No

Receiving water name: _____

Physical Characteristics of Storm Water Discharge:

Odor	Color	Clarity	Floatables	Deposits/ Stains	Adjacent Vegetation
<input type="checkbox"/> None	<input type="checkbox"/> Clear	<input type="checkbox"/> Clear	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None
<input type="checkbox"/> Chemical	<input type="checkbox"/> White	<input type="checkbox"/> Cloudy	<input type="checkbox"/> Oily/Sheen	<input type="checkbox"/> Sediment	<input type="checkbox"/> Normal
<input type="checkbox"/> Sewage	<input type="checkbox"/> Brown	<input type="checkbox"/> Opaque	<input type="checkbox"/> Foamy	<input type="checkbox"/> Oily	<input type="checkbox"/> Excessive
<input type="checkbox"/> Rotten Egg	<input type="checkbox"/> Yellow	<input type="checkbox"/>	<input type="checkbox"/> Sewage	<input type="checkbox"/>	<input type="checkbox"/> Dead
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Does the stormwater discharge appear to be contaminated? Yes No

If Yes, what is the likely source of contamination:

Is sampling and lab testing needed? Yes No

If Yes, additional action is required.

UDOT Maintenance Station
Weekly Inspection Spill/Leak/Deficiency Detail
 (This form must be completed and submitted whenever a spill is detected, whether during a weekly inspection or otherwise. Do not wait until the weekly inspection to complete and submit this form if a spill is detected prior to the weekly inspection.)

Maintenance Station Name and Number:	
Address:	
Name of Inspector (s):	Date:

Visual Inspection of Significant Spills or Leaks			
Substance Spilled/Leaked	Approximate Quantity	Contained On Site?	Corrective Actions

Visual Inspection of Other Deficiencies	
Description of Observation	Corrective Actions