



Best Management Practice Field Manual for Operations at State of Hawaii Airports



**STATE OF HAWAII, DEPARTMENT OF
TRANSPORTATION, AIRPORTS**
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LIST OF ACRONYMS

AIR-EE	Airports Engineering Branch, Environmental Section
AOA	Airport Operations Area
AOC	Airport Operations Control
AOM	Airport Operations Maintenance
ARFF	Aircraft Rescue and Firefighting
AST	Aboveground Storage Tank
BMP	Best Management Practice
CFR	Code of Federal Regulations
DOH	State of Hawaii, Department of Health
DOH HEER	State of Hawaii, Department of Health, Hazard Evaluation and Emergency Response
DOH SHWB	State of Hawaii, Department of Health, Solid and Hazardous Waste Branch
DOT	State of Hawaii, Department of Transportation
DOTA	State of Hawaii, Department of Transportation, Airports
EC	Emergency Coordinator
EPA	U.S. Environmental Protection Agency
GSE	Ground Service Equipment
HAR	Hawaii Administrative Rules
HAZMAT	Hazardous Materials
HRS	Hawaii Revised Statutes
LQG	Large Quantity Generator
MS4	Municipal Separate Storm Sewer System
MST	Mobile Storage Tank
NRC	National Response Center
OWS	Oil Water Separator
PBMP	Post Construction BMP or Permanent BMP
PPE	Personal Protective Equipment
SDS	Safety Data Sheet
SPCC	Spill Prevention, Control, and Countermeasure
SQG	Small Quantity Generator
SWPPP	Storm Water Pollution Prevention Plan
UIC	Underground Injection Control
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VSQG	Very Small Quantity Generator

INTRODUCTION

Industrial and commercial activities conducted at airports have the potential to discharge pollutants into the environment including soil, groundwater, and the DOTA MS4, drainage system, or State waters. Drainage systems may include ditches, canals, inlets, and/or drainage wells (such as UIC wells). Airport tenants (those who lease space(s) from DOTA, sublets, service providers, and concessionaires) have a responsibility to prevent or reduce the release or discharge of pollutants generated by their operations at their tenant space(s) and the common use areas of the AOA, such as the ramp or hardstand areas. This Best Management Practice Field Manual for Operations at State of Hawaii Airports (hereafter referred to as "Manual") shall serve as a guidance document for general activities conducted by any and all tenants, concessionaires, and service providers at all State of Hawaii airports owned or operated by DOTA. A reference list of local, State, and Federal regulations that apply to environmental compliance at State of Hawaii airports can be found at the end of this Manual. It is every airport user's responsibility to ensure that their activities comply with all current and applicable environmental laws and regulations, as well as their signed lease agreement or contract with DOTA.

All tenants and/or their contractors, service providers, and concessionaires operating at State of Hawaii airports shall adhere to the following BMPs in their tenant space(s) and common use areas, airport responsibilities as described in HAR Title 19, Subtitle 2 – Airports Division, and pertinent State and Federal regulations. In the case of a conflict between tenants and/or their contractors' company policies or procedures and the BMPs provided by DOTA, tenants and/or their contractors shall follow the more stringent BMPs.

Implementation of the following BMPs is designed to prevent or reduce pollutants associated with operation, maintenance, and repair activities from impacting soil or groundwater, or from entering the DOTA MS4, drainage system, or State waters.

DISCLAIMER

The information presented in this Manual was taken from available and most recent sources deemed to be representative of the acceptable BMPs and stormwater runoff control measures. This Manual has been prepared as a reference guideline, however, due to site-specific conditions, the selection of the BMPs must be used in conjunction with the best professional judgment and sound engineering principles to assure proper function and performance of the BMPs contained herein. The most stringent BMPs should be chosen and used when referring to facility SWPPPs or other regulations such as EPA's SPCC. The author does not guarantee the accuracy or completeness of this document and will not assume any liability or responsibility for the use of, or for any damages resulting from the use of any information contained herein. Application of BMPs should comply with applicable Federal, State, and county regulations.

BEST MANAGEMENT PRACTICES

1.0 GOOD HOUSEKEEPING PRACTICES

DESCRIPTION

Good housekeeping BMPs are intended to maintain a clean and safe working environment, and reduce the potential for pollutants to come into contact with soil, groundwater, or from entering the DOTA MS4, drainage system, or State waters.

LIMITATIONS

There are no major limitations to the implementation of these BMPs.

PRACTICE	
1.1	DO NOT overfill dumpsters or leave trash outside of containers. Ensure that materials are properly placed in dumpsters and that dumpsters do not leak to avoid discharging contents into stormwater runoff. Use leak-proof dumpsters and keep them covered when not in use. If dumpsters are damaged, severely rusting (i.e., creating metal chips), delivered without lids, or leaking, implement BMPs to prevent and/or contain metal chips and/or discharges until dumpsters can be repaired or replaced.
1.2	Remove and properly dispose of debris and trash from all areas daily. Keep areas exposed to stormwater free of waste, garbage, and floatable debris to prevent these materials from being discharged into stormwater and transported off-site.
1.3	Schedule regular pickup and disposal of garbage and waste materials.
1.4	Dry sweep or vacuum all areas to prevent tracking and drag-out of materials. DO NOT hose down facility floors or outside areas unless a collection method and/or treatment device is implemented to contain wash water. Collection methods and treatment devices may include discharging to an OWS, discharging to an evaporation pond, discharging to a vegetated sump or depression, or collecting with a vac-truck. Properly dispose of collected wash water and dry material to prevent potential impacts to stormwater.
1.5	Place spill kits in easily accessible areas and keep them stocked, especially in areas where equipment/vehicle/aircraft leaks might occur and in areas where activities take place that have the potential to discharge (i.e., fueling operations, repairs, maintenance, hazardous material or petroleum storage areas, etc.). If activities are conducted in areas that pose a potential threat for non-stormwater discharges to impact soil, groundwater, or enter the DOTA MS4, drainage system, or State waters, such as fueling activities, it may be necessary to include drain mats or other preventative devices within spill kits to prevent such discharges.
1.6	Clean up spills and leaks promptly using dry methods such as rags or absorbent material to prevent pollutants from comingling with stormwater and being transported off-site. Properly dispose of spent cleaning materials. Disposal of hazardous spilled substances and spent cleanup materials shall be in accordance with the BMPs outlined in the Waste Storage and Disposal section of this Manual as well as applicable rules and regulations.
1.7	Perform PBMP inspections, at a minimum annually, and perform maintenance as required. Document and maintain records of all PBMP inspections and maintenance. Refer to the PBMPs Inspection & Maintenance Fact Sheet for more information.

PRACTICE (continued)	
1.8	Identify DOTA MS4 structures, drainage system, or State waters in each work area and prevent non-stormwater discharges into them.
1.9	Vehicles and equipment should be parked in designated areas, away from DOTA MS4 structures, drainage system, or State waters. If parking occurs on permeable areas, ensure that vehicles are not leaking.
1.10	Inspect storm drain inlets regularly for sediment build-up or debris accumulation. If the build-up and/or accumulation is not a result of tenant activity, notify AIR-EE of the storm drain structure(s) that require cleaning. Otherwise, it is the tenant's responsibility to ensure that all storm drain inlets and catch basins are maintained within their space(s).
1.11	Inspect and maintain tenant-installed BMPs (e.g., drain guards, inlet inserts, catch basin inserts, biosocks, etc.). Report abandoned or unmaintained DOTA-installed BMPs to AIR-EE.
1.12	Divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff to minimize the discharge of pollutants.
1.13	Perform daily facility inspections to verify that good housekeeping practices are being followed by facility personnel. Keep a daily log for drip pans in use outdoors.
1.14	Maintain records of all permits and plans as well as all required documentation for a minimum of five years, or per the permit/regulation.
1.15	<p>At a minimum, one person from each facility must complete the annual Environmental Compliance Program Training video and survey. This training covers BMPs listed in this Manual. If only one person completed the training, they will be responsible for training other employees as necessary and keep a roster of all personnel trained.</p> <p>Please view the video and take the survey found on the DOTA website here or with the QR code below.</p> 
1.16	Identify all chemical substances used in maintenance activities, compile SDSs for hazardous chemicals, and store SDSs where chemicals are used in an accessible location for employees. SDSs provide both workers and emergency responders with the proper procedures for handling hazardous substances and identify potential threats to personal health and the environment. It is recommended to keep compiled SDSs within or attached to spill kits for employees to easily reference in the event of a spill.
1.17	Storm drain inlets and other drainage features that have been assigned to the tenant must be inspected, at minimum, annually. Perform routine inspections as needed and maintain inspection and maintenance records.

2.0 AIRCRAFT, VEHICLE, AND EQUIPMENT MAINTENANCE AND REPAIR

DESCRIPTION

Routine maintenance on aircraft, vehicles, and equipment must be performed for proper operation and to prevent leaks and spills. Additionally, emergency maintenance of aircraft and equipment outside of tenant spaces may be required. Maintenance and repair activities may include fluids removal, engine and parts cleaning, and/or tire repair and replacement. These activities present a potentially significant source of contaminants due to the harmful materials used and the waste generated.

LIMITATIONS

Only emergency repair may be conducted in the common use areas of the AOA. All other maintenance and repair activities must be conducted in appropriate areas of the tenant facility following proper BMPs.

PRACTICE	
2.1	Maintain aircraft, vehicles, and equipment and keep in proper operating condition. Inspect aircraft, vehicles, and equipment periodically for leaks and immediately implement appropriate leak protection measures if a leak is observed, and repair as soon as possible. Leak protection measures, such as drip pans, are not intended for long term use and should only be used temporarily. When drip pans are used outside, a daily log must be kept ensuring drip pans are cleaned daily and prior to rain storms to prevent overfilling.
2.2	Perform aircraft, vehicle, and equipment maintenance and repair activities indoors or under cover whenever possible and ensure that all maintenance and repair activities (those which involve liquids, grease, or other types of potential pollutants) are conducted away from permeable ground surfaces, the DOTA MS4, drainage system or State waters. If emergency maintenance is conducted within the common use areas of the AOA or outdoors, BMPs must be in place. Perform an area inspection and clean up after maintenance is conducted. Note: Testing fuel (e.g., during helicopter operations) or topping off oils in aircraft is considered part of normal aircraft operation, not "maintenance or repair." However, appropriate BMPs must still be implemented to prevent spills or overfilling.
2.3	Store damaged and/or leaking aircraft, vehicles, and equipment indoors whenever possible. When a drip or leak is identified, use drip protective measures to prevent contact with ground (indoors or outdoors). If a drip pan is used outdoors, clean the drip pan regularly to prevent overflow, especially during rain events, which shall be documented in a daily log. DO NOT leave leaking aircraft, vehicles, and equipment parked within the common use areas of the AOA overnight.
2.4	Remove fluids and batteries from damaged and/or salvage aircraft, vehicles, or equipment before storage. Store damaged and/or salvage aircraft, vehicles, or equipment under cover, if feasible, until repair or disposal. Inspect, at least monthly, for signs of deterioration.
2.5	Use drip pans, tarps, or other liquid containment measures whenever fluids are being removed to capture releases and prevent stormwater pollution. Clean the drip pans, tarps, or liquid containment measures before they are full and properly dispose of the contents.
2.6	Prior to fluids transfer, closely examine the container(s) to be used for transfer. Carefully transfer fluids over pavement or concrete surface using a funnel or nozzle to a designated storage container as soon as possible. Ensure spill kit materials are easily accessible in case of a spill.

PRACTICE (continued)	
2.7	Store used, cracked, or damaged batteries upright, under cover, and within secondary containment measures.
2.8	Store drums with capacity of 25 gallons and above containing liquid materials and waste indoors or under cover and within secondary containment. Store smaller containers of liquid materials and waste indoors. If not indoors, store under cover and within secondary containment.
2.9	Properly empty and clean drip protection measures (i.e., drip pans) regularly and ensure all containers at the facility are properly covered and closed when not in use. If using drip pans outside, a daily log is required to be kept to ensure overfilling of drip pans does not occur and that drip pans are cleaned regularly prior to rain events.
2.10	Store drain protection materials, such as impermeable berms or drain mats, nearby to protect storm drain inlets in the event of a spill.
2.11	Designate areas for parts cleaning. Allow parts to drain over solvent tank or drip pan. DO NOT wash or rinse parts outdoors and do not allow solvent to drip or spill onto the floor. Remove any parts that are dipped in liquid slowly to avoid spills. Provide secondary containment for drums of solvent with capacity of 25 gallons and above and ensure parts washers are properly labeled.
2.12	Use dry methods such as dry sweeping, vacuuming, or wiping with rags or absorbent materials to clean all maintenance areas and properly dispose of collected materials and spent cleaning materials. Never wet wash maintenance areas that direct wash water to the storm drain system.
2.13	Dispose of liquid wastes properly. DO NOT pour liquid waste into floor drains, sinks, outdoor storm drain inlets, or other drainage structures or sewer connections.
2.14	Maintain stocked spill kits throughout the facility, especially in maintenance, and fueling areas, to prevent discharges to the soil, groundwater, or DOTA MS4, drainage system, or State waters in the event of a spill. Refer to the BMPs in the Spill and Leak Prevention and Response section of this Manual.
2.15	Ensure that the PBMPs installed at the tenant facility for stormwater management, such as OWSs, storm drain inlet inserts, etc., are operating as designed. Conduct inspections, maintenance, and/or repairs as needed. At minimum, annual inspections of PBMPs are required and must be provided to AIR-EE inspectors or their environmental consultants upon request.
2.16	Inspect maintenance areas regularly for proper implementation of BMPs. Drip pans located outside must be inspected, at minimum, daily. When liquid is present in drip pans, it must be properly removed and disposed of. Daily inspections must be documented in a daily log and must be provided to AIR-EE inspectors or their environmental consultants upon request. (Note: Tenant may use products, such as drip protection that captures oil and allows water to flow through. Since these types of protection allow stormwater to flow through, they do not require daily logs, but should be inspected and replaced as needed.)
2.17	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required.

3.0 AIRCRAFT, VEHICLE, AND EQUIPMENT BODY REPAIR

DESCRIPTION

Body repair for aircraft, vehicles, and equipment may only be conducted in approved paint booths, auto repair shops, or auto body shops. Body repair activities may include sanding, painting, welding, washing, and floor cleaning. The materials and waste generated by these activities have the potential to release pollutants such as oil and grease, organics, heavy metals, toxic chemicals, and paints to stormwater and impact soil and air.

LIMITATIONS

The fire code does not allow sanding and painting activities, unless conducted within an approved paint booth, auto repair shop, or auto body shop. Prior to conducting these activities tenants must receive permission from ARFF.

PRACTICE	
3.1	Perform all body repair activities indoors or under cover and within an approved paint booth, auto repair shop, or auto body shop.
3.2	Utilize plastic barriers or tarpaulins during blasting or painting operations to contain debris.
3.3	Sweep, vacuum, or use other dry cleanup methods routinely to pick up dust from dry sanding of primer, metal, or body filler. Keep airborne dust to a minimum by using vacuum attachments on sanding equipment whenever possible or utilize a paint booth. Make extra efforts to thoroughly sweep or vacuum dust prior to mopping.
3.4	Clean up wet sanding drips with rags or absorbent materials and let them drip dry, sweep or vacuum up the dust, mop the area and dispose of the mop water properly. Disposal of hazardous spilled material and spent cleanup materials shall be in accordance with the BMPs outlined in the Waste Storage and Disposal section of this Manual as well as applicable rules and regulations.
3.5	Use solvents and coatings with low VOC content, where possible. Use high-transfer efficiency coating techniques such as brushing and rolling to reduce overspray and solvent emissions.
3.6	Mix paints and solvents in designated areas indoors or under cover away from pervious surfaces and storm drain inlets.
3.7	Establish and implement effective inventory control to reduce paint waste, including tracking date received and expiration dates.
3.8	Conduct all priming and painting activities only in approved paint booths. Uncontained spray-painting activities and painting outside or inside of hangars is prohibited and may be a violation of the fire code.
3.9	DO NOT use water to control overspray or dust in paint booths, unless the water evaporates in the booth.
3.10	Store waste paint, solvents, and rags in covered, labeled containers to prevent evaporation to the atmosphere.
3.11	Wash water-based and latex paint brushes, rollers, and other equipment in utility sinks or other locations where wash water is properly contained and disposed.

PRACTICE (continued)	
3.12	DO NOT clean out brushes, rinse paint containers, or wash paint equipment onto the exposed ground, street, gutter, or into the DOTA MS4, drainage system, or State waters. "Paint out" brushes as much as possible.
3.13	Properly segregate and label waste paints for disposal in accordance with the BMPs outlined in the Waste Storage and Disposal section of this Manual as well as applicable rules and regulations. Note: oil-based paints are considered hazardous waste per DOH SHWB.
3.14	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required.

4.0 AIRCRAFT, VEHICLE, AND EQUIPMENT WASHING

DESCRIPTION

Routine washing of aircraft, vehicles, and equipment shall be conducted only at designated wash racks or wash areas. Designated wash racks or wash areas are located inside a building where wash water can be contained and properly disposed of or those that DOTA has designated by demarcation and/or signage where wash water will infiltrate into vegetation, or discharge through treatment devices into evaporation ponds, infiltration basins, or connected to sewer. Proper disposal methods include discharge to an OWS that drains to the sanitary sewer system, discharging to an evaporation pond and properly disposing of dried materials, or collecting with a vac-truck for proper disposal. Wash water may contain oils, greases, heavy metals, sediments, soaps, and other pollutants that pose a threat to the DOTA MS4, drainage system, or State waters.

LIMITATIONS

Aircraft, vehicles, and equipment washing shall ONLY be conducted at designated wash racks or wash areas.

PRACTICE	
4.1	Keep aircraft, vehicles, and equipment clean and in good operating condition. Aircraft, vehicle, and equipment washing activities are NOT permitted in the common use areas of the AOA, unless at DOTA designated wash racks/areas.
4.2	Ensure tenant installed wash racks or DOTA approved wash areas on tenant spaces are either located in an area where wash water can be contained and properly disposed of, directed to the sanitary sewer system, or in special circumstances where various criteria can be met, a designated area that AIR-EE has approved in writing.
4.3	Use biodegradable soaps and detergents that meet EPA's Safer Choice Standard. Please refer to the following link to verify if the product you are using meets this standard: https://www.epa.gov/saferchoice/products .
4.4	Where applicable, use dry methods to wash aircraft, vehicles, and equipment.
4.5	Conduct OWS maintenance in accordance with the BMPs outlined in the Waste Storage and Disposal section of this Manual.
4.6	Ensure OWSs within the tenant space(s) have all applicable permits.
4.7	Prohibit washing of personal vehicles.
4.8	Ensure BMPs are implemented while washing at wash racks or DOTA approved wash areas at the tenant facility.
4.9	Always use the minimum amount of water and soap needed for all washing activities and avoid overspraying.
4.10	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required.

5.0 AIRCRAFT, VEHICLE, AND EQUIPMENT FUELING

DESCRIPTION

During fueling of aircraft, vehicles, and equipment, there is the potential for leaked or spilled fuel to contaminate soil, groundwater, and/or stormwater.

LIMITATIONS

Fueling of aircraft, vehicles, and equipment shall ONLY be conducted outside.

PRACTICE	
5.1	All fueling activities should be performed on impermeable surfaces, away from storm drain inlets (use drain mats if near an inlet), DOTA MS4, drainage system, or State waters.
5.2	DO NOT top off when fueling.
5.3	During tank filling operations from MSTs, such as mobile refuelers, bowsers, and other portable tanks, engage the interlocking brake system and/or chock the wheels of the receiving vehicle to avoid movement. Deploy traffic safety cones or warning signs for safe fueling operations.
5.4	DOTA mandates that mobile refuelers and MSTs (including tanks on trailers where approved) be parked on space under a lease agreement or revocable permit when parking unattended or overnight.
5.5	Secondary containment is required for MSTs (including tanks on trailers where approved) that meet the following conditions: 500-gallon capacity or larger; Have fittings, valves, connectors, and/or fuel sumps situated on the bottom or sides of the tank; Have the potential to contain product when unattended or overnight.
5.6	Ensure that containment devices or diversion measures (e.g., storm drain cover, Safe Drain, etc.) are properly implemented during fuel transfer to ASTs and USTs. Continuously monitor the fuel transfer of ASTs and USTs. If containment devices or diversion measures contain accumulated product, properly remove product according to content specific environmental regulations.
5.7	DO NOT hose off fueling areas.
5.8	Post proper fueling and cleanup instructions in fueling areas.
5.9	Use only dry absorbents or other dry cleanup materials to contain spills. Promptly clean spills with rags or absorbent material, and properly dispose of cleaning materials. For large spills, contact spill response personnel immediately. Refer to the BMPs in the Spill and Leak Prevention and Response section of this Manual. Dispose of hazardous spilled material and spent cleanup materials in accordance with the BMPs outlines in the Waste Storage and Disposal section of this Manual as well as applicable rules and regulations.

PRACTICE (continued)	
5.10	Maintain an adequate supply of spill kits and spill control equipment near fueling areas to prevent pollutant discharge to soil, groundwater, or the DOTA MS4, drainage system, and State waters in the event of a spill. Equip fuel trucks and MSTs with spill cleanup kits. Each spill kit should include, at a minimum, loose absorbent material or absorbent pads, a broom, and a pan or shop vac to pick up used spill cleanup materials. Additional suggested materials include absorbent booms, drain mats, plugs, or other devices to immediately stop and prevent spills from coming into contact with permeable ground, or entering DOTA MS4, drainage system, or State waters.
5.11	Develop and implement an SPCC Plan, if required, based on facility oil storage and operations. Ensure the SPCC Plan is updated at the required frequency and when storage capacity and/or changes to the facility are made in accordance with the SPCC rule. Conduct inspections and training per SPCC Plan requirements at the required frequency.
5.12	Train all personnel who handle fuels, oil, and hazardous material on proper operations, as well as spill response and reporting procedures at a minimum annually, or as required. Refer to the BMPs in the Spill and Leak Prevention and Response section of this Manual.
5.13	Dispose of waste resulting from fuel tests and water collected in fuel tanks and hydrant sumps in accordance with applicable rules and regulations.
5.14	Confirm satisfactory operation of leak detection systems and/or pipeline monitoring systems, where installed.

PRACTICE (continued)

	<p>The tenant and/or their fueling contractors must conduct the following checks regularly in addition to their operational procedures. If the following checks fail, immediately repair or replace defective parts or remove from service until repaired or replaced.</p> <p><u>Fuel Storage Tanks:</u></p> <ul style="list-style-type: none">• Check the general condition of fuel storage tanks for safety defects, damage, corrosion, leaks, and appearance.• Check the condition of all fuel hoses and dispensing nozzles for wear.• Check piping systems (e.g., pipes, pumps, flanges, couplings, hoses, and valves, etc.) for failure, cracks, and leaks.• Check for appropriate monitoring via liquid level indicators or gauges, overfill protection with alarms, and/or leak detection systems.• Check that automatic shut off controls on fuel dispensing nozzles are in working condition.• Check that bollards/posts surrounding the fuel pumps and tanks are in good condition to prevent collisions during vehicle ingress and egress.
5.15	<p><u>Tank Truck or Fueling Vehicle Checks:</u></p> <ul style="list-style-type: none">• Check the general condition of tank trucks or fueling vehicles for safety defects, equipment damage, fuel leaks, and appearance.• Check the operation of deadman controls, brakes, and/or safety interlock systems.• Check the condition of all fuel hoses, swivels, and dispensing nozzles for wear.• Check the general condition of grounding reels, cables, clamps, and lift platforms.• Verify that fire extinguishers are properly placed with unobstructed access.• Verify the satisfactory operation of the emergency shutdown system. <p><u>Hydrant System Checks:</u></p> <ul style="list-style-type: none">• Check the hydrant valve pits for fuel leaks, liquid level, and cleanliness.• Check the hydrant valve and components for visual deficiencies.• Ensure all emergency fuel shutdown stations have clear access and check if the locator lights are working properly.• Verify the satisfactory operation of the emergency shutdown system.• Report abnormal pressure/flow recordings in charts because this may indicate leaks.• Check the isolation valve pits that control the distribution of fuel, for emergency access, lid condition, fuel leaks, and electrical components.

6.0 FERTILIZER AND PESTICIDE STORAGE AND APPLICATION

DESCRIPTION

Fertilizer and pesticide applications may be conducted by tenant facility personnel or a hired contractor to maintain landscaping or to eliminate pests at their facility. Improper use of pesticides and fertilizers can lead to contamination in soil, groundwater, surface water and stormwater. Pesticides are defined as chemicals used to kill pest animals or plants (e.g., insecticides, herbicides, fungicides, and rodenticides). They are typically used to control the growth of weeds or other undesirable vegetation or to control infestations of insects/rodents and prevent the spread of diseases.

LIMITATIONS

Fertilizer and pesticide applications should not be conducted during inclement weather (i.e., wind or rain) or applied within six feet of a waterway or on slopes greater than a three to one ratio.

PRACTICE	
6.1	Store fertilizers and pesticides in accordance with the container's label and Material Storage BMPs in this Manual to minimize potential contact with stormwater runoff.
6.2	Periodically check the condition of containers. Look for leaking or corroded containers, crystallization on covers or bases of containers, or discolored labels. Dispose waste containers properly in accordance with the SDS or BMPs outlined in the Waste Storage and Disposal section of this Manual.
6.3	Use fertilizers and pesticides only where needed in amounts or rates per the manufacturer's recommendations; DO NOT over apply. Calibrate equipment regularly for proper application and loading rates.
6.4	Use natural or organic alternatives, if possible.
6.5	Ensure that any application is a minimum of six feet away from the DOTA MS4, drainage system, and State waters.
6.6	DO NOT apply fertilizers or pesticides before or during rainfall or high winds or on slopes greater than a three to one ratio.
6.7	Transfer or mix fertilizers and pesticides above an impervious surface or container; clean up spills immediately.
6.8	Follow all rules and laws, refer to the Hawaii Department of Agriculture, Plant Industry Division, Pesticide Branch for more information on the following: HRS, Administrative Rules, Chapter 66; HRS, Hawaii Pesticide Law, Chapter 149A; Senate Bill 3095; and Act 45 (2018).
6.9	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required.

7.0 CONTAINER AND MATERIAL STORAGE AND HANDLING

DESCRIPTION

A variety of products and materials that may adversely affect water quality may be stored at tenant facilities or with approval in common use areas of the AOA. Tenants and airport users must minimize the exposure of such products and materials, minimize hazardous materials used on-site, and provide training to employees on the proper handling and use of materials.

LIMITATIONS

Materials and waste cannot be stored in the common use areas of the AOA without approval from the AOC/AOM/Security.

PRACTICE	
7.1	Store materials (e.g., tires, metals, etc.) indoors or in covered areas wherever practical. Store materials in their original or appropriate containers as recommended by the manufacturer.
7.2	Whenever possible, outdoor storage areas should be situated away from areas prone to flooding and in a location where they will not be accidentally damaged by equipment or vehicles. When storing non-liquid materials (e.g., tires, metals, etc.) outdoors, place off the ground on top of dunnage to minimize contact with stormwater runoff/run-on. Cover materials with a tarp when storing outdoors, whenever practical, to prevent pollutants from leaching into stormwater or mixing with stormwater runoff.
7.3	Single-walled liquid storage containers (except water) with capacity of 25 gallons or above and used batteries shall be stored indoors or under cover, and within secondary containment measures. Liquid accumulation in secondary containment measures should be minimized, managed, and disposed of properly.
7.4	Liquid containers with capacity less than 25 gallons shall be stored indoors or under cover within secondary containment measures. Liquid accumulation in secondary containment measures should be minimized, managed, and disposed of properly.
7.5	Store reactive, ignitable, or flammable materials in compliance with Federal, State, and county regulations. Store small containers of flammable materials within flammable storage lockers.
7.6	Ensure that all liquid containers are closed, secured to prevent movement, stored neatly and away from high traffic areas (if possible) to avoid accidental spills, and properly labeled.
7.7	Ensure that all empty containers are properly labeled as "empty" when stored on-site. If storage includes multiple containers that frequently go between empty and with liquids, an option is designating empty and non-empty storage areas with signage. For example, empty gas cans can be stored on a designated shelf/area with a sign stating "empty gasoline cans" and in a second designated shelf/area with a sign stating "gasoline." The containers can then be moved between the two designated areas depending on if empty or not.
7.8	Inspect storage areas regularly. Look for leaking or corroded containers, chemical discoloration, or other changes in the containers or contents that may indicate a potentially hazardous condition or chemical deterioration.

PRACTICE (continued)	
7.9	Maintain an accurate and organized inventory of stored supplies and materials used in the maintenance areas. Compile an inventory of SDSs for all chemicals and maintain them in an accessible location for employees. Periodically review the inventory and properly dispose of materials that are expired or no longer used. Follow manufacturer's instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
7.10	Only purchase and store needed quantities of hazardous materials and use less hazardous alternative materials where possible. Properly dispose of any unusable material, such as dried out paint.
7.11	ASTs and MSTs shall be kept in good condition (i.e., free of damage with no signs of failure) to prevent potential spills or releases and should be properly labeled. Single-walled ASTs and MSTs must be stored within secondary containment and meet DOTA standards. If possible, a canopy or cover should be installed over ASTs used for fueling or transfer of products.
7.12	Maintain spill kits where spills may occur (e.g., liquid material storage areas, fueling areas, etc.) or where a rapid response can be made. Spill kits should be stocked in accordance with the BMPs in the Good Housekeeping Practices section; Aircraft, Vehicle, and Equipment Maintenance and Repair section; and Aircraft, Vehicle, and Equipment Fueling section of this Manual.
7.13	Use absorbent materials to contain spills where appropriate. Promptly clean spills with rags or absorbent material, and properly dispose of used spill cleanup materials. Disposal of hazardous spilled material and spent cleanup materials should be in accordance with the BMPs outlined in the Waste Storage and Disposal section of this Manual. For spill response procedures, refer to the BMPs in the Spill and Leak Prevention and Response section of this Manual.
7.14	Recycle anti-freeze, used oil, solvents, windshield washer fluid, batteries, degreasers, paints, thinners, etc., as appropriate.
7.15	Develop and implement an SPCC Plan, if required, based on facility oil storage and operations. Ensure the SPCC Plan is updated at the required frequency or if storage capacity and/or changes to facility are made in accordance with the SPCC rule. Conduct inspections and training per SPCC Plan requirements at the required frequency.
7.16	Maintain an accurate and organized inventory of stored supplies and materials used in the maintenance areas. Compile an inventory of SDSs for all chemicals and maintain them in an accessible location for employees. Periodically review the inventory and properly dispose of materials that are expired or no longer used. Follow manufacturer's instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
7.17	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required. Train all employees who work in areas where industrial materials or activities are exposed to stormwater.

8.0 WASTE STORAGE AND DISPOSAL

DESCRIPTION

Various airport/tenant operations include storage, handling, and removal of waste products, such as universal waste, hazardous waste, used batteries, used oil, used paint, used tires, etc. Improper handling of waste may result in contaminants impacting soil, groundwater, and stormwater runoff. The potential for discharge of these pollutants can be reduced by using proper waste storage, handling, and disposal techniques, as well as reducing the waste generation through reuse and recycling.

Wastes generated from tenant activities that may pose a threat to stormwater include, but are not limited to, oil-based paints, solvents, thinners, petroleum products, used batteries, anti-freeze, light ballasts, and other chemicals. Waste material categorized as hazardous waste, universal waste, and/or used oil must be managed properly as required by Federal and State regulations.

Hazardous wastes are divided into listed wastes, characteristic wastes, universal wastes, and mixed wastes. Universal waste includes batteries, some pesticides, mercury containing equipment (mercury thermostats), and bulbs (lamps and light ballasts). It is the responsibility of the hazardous waste generator to make a hazardous waste determination and dispose of the waste properly.

LIMITATIONS

All hazardous waste shall be disposed of by a certified hazardous waste hauler.

PRACTICE	
8.1	Use the entire product before disposing of the container. Minimize use of hazardous materials on-site. Use less hazardous, alternative materials, where possible.
8.2	DO NOT remove the original product label; it contains important safety and disposal information. If a container is empty, label as such, or properly dispose of it.
8.3	Maintain good integrity of all liquid waste storage containers (e.g., used oils, hydraulic fluids, spent solvents, waste aircraft fuel). Inspect containers regularly and transfer waste from damaged containers into proper containers that are intact and ensure new containers are properly labeled.
8.4	Identify, list, and maintain an inventory of all chemical substances present in the facility. Compile an inventory of SDSs for all chemical substances and maintain them in an accessible location for employees.
8.5	Only purchase and store needed quantities of hazardous materials.
8.6	Water-based paint containers should be thoroughly dried and properly disposed of in dumpsters. Dispose of excess oil-based paints and sludge as hazardous waste.
8.7	Designate an indoor or covered area for hazardous waste and used oil collection.
8.8	Liquid waste should be stored in secure, closed containers, and protected from damage. Store liquid waste containers within secondary containment measures.
8.9	Label hazardous waste containers clearly with the words "Hazardous Waste" and the date when the hazardous waste accumulation began. Allowed on-site accumulation time is determined by your hazardous waste generator status (LQG, SQG, or VSQG).
8.10	DO NOT mix wastes; this may cause chemical reactions, make recycling impossible, and complicate disposal.

PRACTICE (continued)	
8.11	Arrange for regular hazardous waste collection before containers reach capacity and as required by hazardous waste generator status.
8.12	Ensure that hazardous waste is collected, removed, and disposed of only at authorized disposal sites by an approved hazardous waste hauler. DO NOT discard hazardous waste into dumpsters. Maintain disposal manifests for a minimum of three years.
8.13	Recycle any useful waste such as used oil, spent solvents, used batteries, scrap metal, used oil filters, etc. Filter and re-use thinners and solvents, whenever possible.
8.14	Store used oil in appropriate closed containers. Label containers clearly with the words "Used Oil," and provide secondary containment for containers with capacity of 25 gallons or above. Only dispose of used oil in used oil containers. Disposing of other liquids into used oil, such as brake or steering fluids, will contaminate used oil making it hazardous waste, which is far more costly to remove with fewer removal options.
8.15	Store universal waste in appropriate containers, indoors or under cover, and label containers clearly with the words "Universal Waste," the material (e.g., "lamps," "batteries," "pesticides," "mercury containing equipment," "mercury thermostat," etc.), and the accumulation start date. Universal waste can be stored for one year starting from the date the universal waste was generated.
8.16	Store used batteries indoors or under cover and within secondary containment.
8.17	Store used tires and rusted metal under cover and off the ground, if practicable, or indoors prior to disposal.
8.18	Place spill kits where they are readily accessible.
8.19	If containers leak or spill, clean up immediately; follow the BMPs in the Spill and Leak Prevention and Response section of this Manual.
8.20	At a minimum, OWSs must be inspected annually and cleaned to remove accumulated oil, grease, floating debris, and sediment in order to maintain proper operation and removal efficiency. Removed materials must be disposed of properly.
8.21	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required. Train employees on proper waste control and disposal procedures as well as spill prevention and control.
8.22	Keep all pertinent records on file for a minimum of three years, and easily accessible pertaining to removal of waste, such as invoices, waste manifests, testing results for liquids (if applicable), and training records.

9.0 SPILL AND LEAK PREVENTION AND RESPONSE

DESCRIPTION

Small spills or leaks of oil (less than 25 gallons) can be cleaned up using absorbent materials or other acceptable practices as long as they are cleaned up within 72 hours and do not threaten ground or surface waters. All spills or leaks must be reported to Airport personnel according to the *Spill Reporting Fact Sheet* for each specific DOTA airport. Daily inspections of the facility shall be conducted to identify any small spills or leaks, which shall be addressed and properly cleaned immediately.

In the event of a large or uncontrolled release, the owner or manager of the facility shall act as the EC. Tenant employees shall follow the BMPs listed below.

LIMITATIONS

There are no major limitations to the implementation of these BMPs.

PRACTICE	
9.1	Immediately Stop Work in the event of a spill and initiate spill cleanup procedures, if it can be safely accomplished.
9.2	Determine the source of the release and any hazards present, notifying employees in the vicinity and keeping non-essential employees and visitors away from the spill area. Attempt to turn off the source of the spill, if it can be safely accomplished. If the spill originates from a fuel delivery truck or from an AST fill port, alert the truck operator to stop fuel delivery.
9.3	Eliminate all possible sources of ignition/detonation such as vehicle engines, welding and grinding operations, and smoking.
9.4	Remove or isolate ignitable and incompatible materials from the area of the release, if it can be safely accomplished.
9.5	Notify Airport Personnel, (ARFF, Code 22, Dispatch, Duty Manager, etc.) according to the <i>Spill Reporting Fact Sheet</i> for the airport. This can be found on the environmental webpage (http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/) under the applicable airport. *All spills and leaks must also be reported to AIR-EE via the web link (https://veoci.com/v/p/form/7jnuujn8aswb) or via the QR Code: 
9.6	Prevent vehicles and equipment from driving through the spill area.
9.7	Protect qualified personnel with appropriate PPE, as required by the SDS, when responding to spills.

PRACTICE (continued)	
9.8	<p>Confine the spill to prevent further migration using drainage diversion practices and controls, including, but not limited to:</p> <ol style="list-style-type: none"> 1. Dike and/or berm the area downgrade from the spill using absorbent booms, sand, soil, or other inert material; 2. Protect storm drains with drain covers, plastic cover materials, rubber mats, absorbent booms, and/or sandbags; 3. Divert chemicals from entering DOTA MS4, drainage system, and State waters; 4. Implement retention techniques such as temporary lined pits; 5. Clean the spill with granular absorbent material, absorbent pads; booms; and/or rags. Do not apply absorbent material and leave overnight as it makes the spill harder to clean.
9.9	<p>Clean and properly dispose of the accumulated product resulting from the release. Properly collect and containerize the spilled materials, affected media, and used decontamination solutions, and transport off-site in accordance with applicable State and Federal regulations. If needed, call the spill response contractor for cleanup and removal of accumulated product resulting from the release. The contractor will remove spilled product and properly dispose of the material in accordance with applicable State and Federal regulations.</p>
9.10	<p>If a spill occurs to permeable ground, then impacted soil will need to be assessed and properly removed by a qualified environmental professional. All impacted soil must be laboratory tested to confirm removal of contaminants and replaced with clean material meeting pre-spill conditions. Manifests and a receiving facility agreement/acceptance documentation must be provided to AIR-EE to include in their close-out summary report.</p>
9.11	<p>Use the following procedures to clean stained pavement:</p> <ol style="list-style-type: none"> 1. Place a berm around the stain to contain liquids generated from cleaning activities; 2. Scrub the area using a biodegradable detergent or biodegradable degreasing solution; and 3. Rinse the area while ensuring that all detergent and rinse water is collected in the bermed area and properly removed and disposed.
9.12	<p>Implement proper decontamination procedures on vehicles, affected media, PPE, and equipment. This may include placing absorbent material on oil-stained pavement - later sweeping up, removing, and disposing of affected media (soil or loose asphalt) that contains contaminant, and/or berthing the spill area and scrubbing using detergents – disposing detergent and rinse in accordance with the procedures listed below.</p>
9.13	<p>All used decontamination solution, disposable PPE and affected media must be properly packaged in U.S. Department of Transportation specified containers.</p>

PRACTICE (continued)	
9.14	Immediately report spills of a certain size (volume of greater than 25 gallons of oil, or any volume not contained and remediated within 72 hours) per HAR 11-451 to DOH HEER and the NRC immediately. Comply with the DOH HEER requirements. A written report shall be provided to DOH HEER within 30 calendar days of a Reportable Quantity spill cleanup. Provide copies of the written report to DOT Airports Engineer and AIR-EE.
9.15	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required.

10.0 OUTDOOR LOADING AND UNLOADING PRACTICES

DESCRIPTION

Loading and unloading activities involving cargo, HAZMAT, aircraft servicing, and waste disposal operations are conducted at common use areas of the AOA and tenant spaces. The loading and unloading of materials usually take place outside; therefore, materials spilled, leaked, or lost during these activities may collect in the soil or on other surfaces and have the potential to impact stormwater runoff.

LIMITATIONS

There are no major limitations to the implementation of these BMPs.

PRACTICE	
10.1	Perform loading and unloading operations in designated areas on impermeable ground, and away from DOTA MS4, drainage system, and State waters.
10.2	Utilize appropriate PPE when engaging in HAZMAT handling operations.
10.3	Park trucks or GSE in designated areas that have drainage controls to contain spills or leaks of materials.
10.4	Limit exposure of material to rainfall, whenever possible, such as only loading or unloading during dry weather or conducting loading and unloading operations under cover. Whenever possible, avoid staging the loading/unloading area near storm drains or cover storm drains during loading or unloading operations.
10.5	Check loading/unloading equipment regularly for leaks. Remove any faulty or leaking equipment from service.
10.6	Use drip pans underneath hose and pipe connections, access fittings, and other leak-prone spots during liquid transfer operations. Drip pans should also be used for leaking delivery trucks, where appropriate. Keep a daily log for drip pans in use outdoors.
10.7	Some loading bay areas contain trench drains, which can collect silt, trash, leaks, and other pollutants. Most of these trench drains do not contain treatment devices and should be inspected and cleaned regularly to prevent illicit discharges to DOTA MS4, drainage structures or State waters.
10.8	Conduct regular broom sweeping of the loading and unloading area.
10.9	Maintain spill kits on all petroleum storage tank trucks as well as near the loading and unloading areas. In addition, place sufficient spill kits where it will be readily accessible.
10.10	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required.

11.0 TRITURATOR OPERATION PRACTICES

DESCRIPTION

The sanitary sewage and associated rinse waters produced during the servicing of aircraft lavatory facilities must be discharged to the designated DOTA triturator facility. All tenants and applicable personnel are responsible for proper disposal of waste associated with ground servicing of aircraft lavatory facilities. Tenant employees will follow each of the following steps for proper operation of the triturator facilities to minimize the risk of a wastewater spill. Please refer to the BMP signs at each airport triturator to ensure that you are following the proper procedures for that specific triturator.

Due to the potential for exposure to unknown pathogens, all wastewater spills, no matter how small, must be reported to Duty Manager/Code 22, Ramp Control, dispatch, or ARFF. In the event of a sewage spill, refer to HAR, Title 11, DOH, Chapter 62, Wastewater Systems. Additionally, all spills must be reported to AIR-EE via the on-line Spill Reporting Form at <https://veoci.com/v/p/form/7jnuujn8aswb> or via the QR Code below:



LIMITATIONS

There are no major limitations to the implementation of these BMPs.

PRACTICE	
11.1	Ensure the pit door is open when discharging to a triturator facility.
11.2	Position the vehicle so that the discharge pipe is centered over the pit to avoid spillage.
11.3	Some triturators may require the activation of the equipment via a start button. Verify that the triturator equipment is on prior to discharge.
11.4	DO NOT leave the vehicle unattended while waste is discharging.
11.5	Use the water hose to push clean water through the interior compartment of the vehicle. Note: the exteriors of vehicles are not allowed to be washed at the triturator units.
11.6	Upon completion, CHECK that the discharge valve is tightly closed to prevent releases. In the event of a faulty discharge valve, do not move the vehicle until the discharge valve is repaired or corrected.
11.7	When discharge is complete, move the vehicle and clean area surrounding the pit, as necessary.
11.8	Some triturators may require the deactivation of the equipment with a stop button. Verify that the triturator equipment is off prior to departure.
11.9	Observe the following warning signs to check for non-stormwater discharges: <ol style="list-style-type: none">1. Distinct odor2. Black staining inside drainage pipe3. Visible evidence of sanitary waste (e.g., toilet paper, gray water)

PRACTICE (continued)	
11.10	If an accidental spill occurs: Stop, Notify Airport Personnel, and Clean Up. Notify Airport Personnel in accordance with the <i>Spill Reporting Fact Sheet</i> for the airport. This can be found on the environmental webpage (http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/) under the applicable airport. Conduct cleanup in accordance with the <i>Triturator Fact Sheet</i> .
11.11	Conduct employee training, as described under the Good Housekeeping Practices section of this Manual, at a minimum annually, or as required.

REFERENCES

1. United States (U.S.) Environmental Protection Agency (EPA) Code of Federal Regulations (CFR), Title 40, Chapter I: Environmental Protection Agency
2. U.S. EPA CFR, Title 49, Transportation
3. State of Hawaii Administrative Rules (HAR), Title 11, Department of Health (DOH)
 - Chapter 54, Water Quality Standards
 - Chapter 55, Water Pollution Control
 - Chapter 58.1, Solid Waste Management Control
 - Chapter 62, Wastewater Systems
 - Chapters 260.1-279.1, Hazardous Waste Management General Provisions
 - Chapter 273, Universal Waste Management
 - Chapter 281, Underground Storage Tanks
 - Chapter 451, State Contingency Plan
4. HAR, Title 19, Department of Transportation
5. Hawaii Revised Statutes (HRS)
 - § 128, Civil Defense and Emergency Act
 - § 261, Transportation and Utilities
 - § 342, Environmental Quality