CON APPENDIX J
USAG-HI Construction Best Management Practice (BMP) Storm Water Training

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List of Acronyms

BMP	Best Management Practice
CFR	Code of Federal Regulation
CWA	Clean Water Act
CWB	Clean Water Branch
DPW-ENV	Directorate of Public Works, Environmental Division
EPA	U.S. Environmental Protection Agency
HAR	Hawaii Administrative Rules
LOA	Letter of Authorization
MS4	Municipal Separate Storm Sewer System
NGPC	Notice of General Permit Coverage
NOC	Notice of Cessation
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
SDOH	State Department of Health
SWPPP	Storm Water Pollution Prevention Plan

Outline

- Background
  - Environmental
  - Regulatory
- NPDES Permit Requirements
- Erosion and Sediment Control
  - BMP Overview
  - Common BMP Issues
- Inspection Procedures

Background

Goal of the SDOH-CWB:

"Keeping Hawaii's water clean for 'Beneficial uses' which include recreation and the protection and propagation of fish and aquatic life."

http://www.celebratebig.com/hawaii-big-island/i6-hawaii-south-point-honaunau-bay-puuhonua-o-honaunau-mango-sunset-bb-lyman-farms-wawaloli-beach.htm /

What is a MS4 Permit?

Municipal Separate Storm Sewer System (MS4) programs are intended to improve the Nation's waterways by reducing the quantity of pollutants

6 permit requirements incorporated into Army storm water management programs:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Storm Water Management
6. Pollution Prevention

Clean Water Compliance

No **"illicit discharges"** allowed to any storm water systems

Definition of **"illicit discharge"**- 40 CFR §122.26:

"There should be no non-storm water discharges into State waters except for NPDES permitted discharges"

Background

According to the EPA:

- Storm water runoff is the top cause of water pollution
- Sediment is the number one pollutant
- Storm water runoff from construction sites is a primary contributor to the impairment of water quality

Background

- The table represents the erosion rates categorized by land use.

- Notice that *construction* (along with mining) is the number one contributor to sediment pollution!

SOIL EROSION RATE

LAND USE	EROSION RATE Tons/SqMi/Yr	RATIO RELATIVE TO FOREST
Forest	24	1
Grassland	240	10
Abandoned Surface Mine	2,400	100
Cropland	4,800	200
Harvested Forest	12,000	500
Active Surface Mine	48,000	2,000
Construction	48,000	2,000

Background

- 1972 CWA gave the EPA and COE the power to regulate the discharge of pollutants to US Waters

- Under the CWA, storm water discharges are regulated through the NPDES permit program, administered by the SDOH-CWB

- NPDES permit requires development of construction enforcement procedures and actions to reduce pollutants in storm water runoff from construction activities disturbing one acre or more

    - USAG-HI Updated Enforcement Policy to be available early 2015 (available on the Clean Water Program website)
    - Quarterly Site Inspections and Follow-ups (monthly inspections after SWMP submitted)
    - Storm Water Pollution Prevention Plan (SWPPP) Review and Letter to Authorize Discharge

Background

Hawaii Revised Statutes (HRS) § 342D-50(a):

"No person, including any public body, shall discharge any water pollutant into state waters, or cause or allow any water pollutant to enter state waters, except as in compliance with the provisions of this chapter, rules adopted pursuant to this chapter, or a permit or variance issued by the Director."

HRS § 342D-1 defines "Water Pollutant" as:

"Dredged spoil, solid refuse, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, sediment, cellar dirt and industrial, municipal, and agricultural waste."

Source: State Department of Health Clean Water Branch (2005). "NPDES Storm Water Associated with Construction Activities."

Background

HAR: Basic water quality criteria, Section 11-54-04:

a. The Permittee shall not cause or contribute to a violation of the narrative basic water quality criteria specified in Section 11-54-04(a) which states:

(a) All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants, including:

(1) Materials that will settle to form objectionable sludge or bottom deposits;

(2) Floating debris, oil, grease, scum, or other floating materials;

(3) Substances in amounts sufficient to produce taste in the water or detectable off-flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity, or other conditions in the receiving waters;

Background

HAR: Basic water quality criteria, Section 11-54-04 (continued):

(4) Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life;

(5) Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands."

Non-Compliance

Consequences of CWA Non-Compliance:

- Warning Letter - Notice of Apparent Violation or Notice of Potential Violation letter

- Administrative / Civil Penalties - Notice and Finding of Violation and Order
    - Monetary penalties up to $25,000 per day per violation

- Criminal Enforcement
    - Monetary penalties up to $50,000 per day per violation and jail time possible (2005)

Background

Consequences of Non-Compliance: who gets the bill?

- The Permit holder for NPDES permitted projects

- The general contractor for not maintaining BMPs or for having prior violations of a similar nature

- The individual responsible for discharge

- “It is the prerogative of the SDOH-CWB to assign responsibility for the enforcement action. However, the Attorney General may also assign responsibility for enforcement actions.”

General Permit Requirements

SWPPP Document (Chapter 11-55, Appendix C, Section 7):

- As of December 2013, a SWPPP document is required prior to submitting a NOI Form C to SDOH.

- DPW-ENV will only issue LOAs to discharge storm water runoff to the Army's drain system during construction when SWPPPs are determined complete (containing all elements of NPDES permit section 7.2)

- A current SWPPP must be retained onsite and include: a project description, site contractor information, construction schedule, detailed site maps, site pollutants, sources of non-storm water, storm water control measures, pollution prevention procedures, spill plan, inspection logs/documentation records, staff BMP training, certified signature

- Changes to plan and site conditions must be documented in modification log
- SWPPP and site map must reflect current site conditions

Keys to Maintaining Compliance

1. Prepare and submit a SWPPP to DPW-ENV
2. When determined acceptable, DPW-ENV will issue a LOA
3. File a NPDES Permit NOI Form C via the SDOH E-Permitting Portal 60 days before the start of construction (SWPPP submittal not needed to SDOH)
4. Carefully read the issued NGPC and HAR 11-55, Appendix C
5. Install all erosion and sediment controls according to SWPPP specifications
6. Notify DPW-ENV before the initiation of ground-disturbing activities (after BMPs have been installed) to conduct an inspection
7. Maintain BMPs as needed, a “qualified person” conducts site inspections according to SWPPP schedule, maintain all documents on site
8. File a NOC upon completion

Erosion and Sediment Control

- SWPPPs are living documents subject to change!

- Maintain records showing the dates of all SWPPP modifications in the appendix amendment log

AMENDMENT LOG

Project Name: _____

SSCBMP Contact: _____

Amendment No.	*Description of the Amendment*	*Date of Amendment*	*Amendment Prepared by [Name(s) and Title]*

Add rows as needed.

Erosion and Sediment Control

Erosion Control (keeping the dirt in place) and Minimizing the Impact of Construction

1. Minimize disturbed area and protect natural features and soil
2. Phase construction activity
3. Control storm water flowing onto and through the project
4. Stabilize soils promptly
5. Protect slopes

Sediment Controls (the second line of defense)

6. Protect storm drain inlets
7. Establish perimeter controls
8. Retain sediment on-site and control dewatering practices
9. Establish stabilized construction exits
10. Inspect and maintain BMPs

General Permit Requirements

SWPPP Plan Inspections/ Documentations (Chapter 11-55, sct 9.1.2):

• At a minimum, a "*qualified person*" shall conduct a site inspection in accordance with one of the two schedules:

•At least once every 7 calendar days or;

•Once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater. Must obtain rain fall data via a properly maintained rain gauge on the site or weather station data (NOAA, Weather Underground), attach rain data and photos to inspection reports

•A "*qualified person*" is a person knowledgeable in the principles of erosion and sediment controls, pollution prevention, the site specific SWPPP and NPDES General Permit requirements, (e.g. engineer, QA/QC, superintendent)

•Inspections only required during normal working days

•Keep current copies of all inspection reports and photos onsite

General Permit Requirements

Corrective Action Requirements (Chapter 11-55, sct 10)

•The permittee is required to stop, reduce, or modify construction, or implement new or revised BMPs as needed to stop or prevent a water quality violation

•Minor BMP failures (silt fence, inlet protection, sediment track-out, etc.) must be repaired in 24 hrs. or by the end of the following work day, major repairs (slope rill erosion, repairs that require heavy equipment, etc.) must be complete in 7 days)

•Repair, modify, or replace any deficient storm water controls. Immediately take all responsible steps to minimize or prevent the discharge of pollutants until a permanent solution is made operational .

•The permittee shall immediately notify DPW ENV of any incidents and identify the pollutant(s) source(s) and the proposed and implemented control or mitigation measures as required

General Permit Requirements

HAR Chapter 11-55, Appendix C Section:
Record Retention

•The permittee shall retain all records and information resulting from the activities required by this general permit for a minimum of 5 years from the date the permit coverage is expired or terminated.

• The SDOH, or EPA can conduct unannounced audits, inspections and sampling at any time to ensure compliance with permit requirements.

Erosion and Sediment Control

Nature filters storm water through vegetation, healthy soils, organic matter and beneficial soil organisms

Vegetation mitigates erosion:

- It shields the soil surface from the impact of falling rain
- It holds soil particles in place
- It maintains the soil's capacity to absorb water
- It slows the velocity of runoff
- It removes subsurface water through evapotranspiration

Erosion and Sediment Control

Phase construction activity:

- Construction schedule should reflect phasing activities
- Only clear and grub the portions of the site where it is necessary for construction
- When less area is disturbed for construction, there is less erosion of soil
- Phased construction helps to lessen the risk of erosion by minimizing the amount of exposed disturbed soil

Erosion and Sediment Control

Control storm water flowing onto and through the project

5.3 Pictures and Diagrams

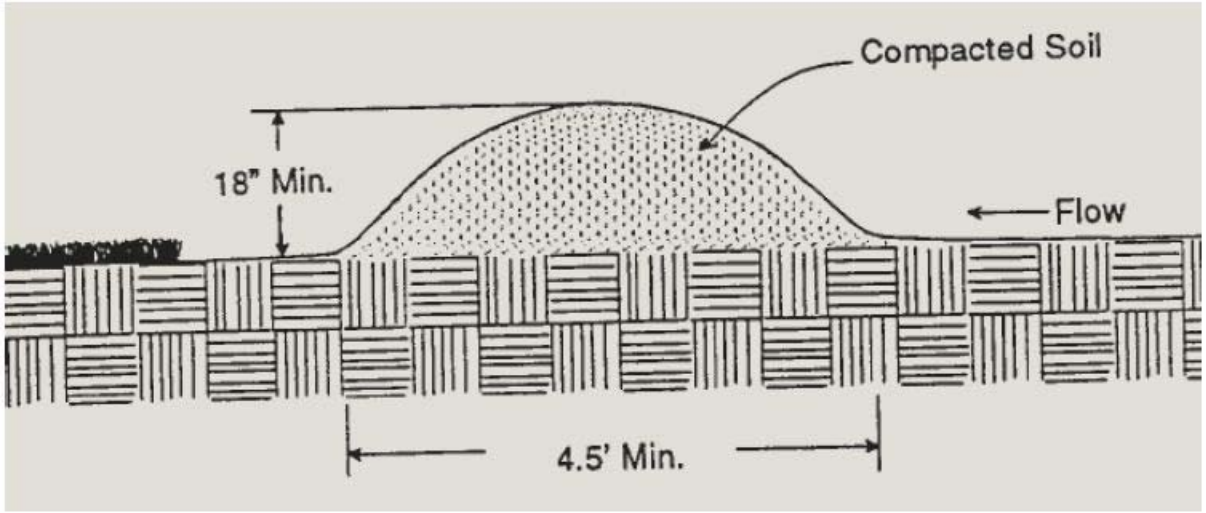


Figure 1. Temporary diversion dike lateral view.

Source: Land Rehabilitation and Maintenance

Erosion and Sediment Control

- Slope protection issue: slope not fully covered with geotextile, silt fence not properly installed

Silt fencing should be installed per manufacturers recommendations!

Sediment Control

Inlet protection:

- Install inlet protection measures that remove sediment from the discharge prior to entry into the storm drain inlet

- Many methods and Products available

- Clean or replace devices as sediment accumulates

- Remove inlet protection measures in the event of a flood or to prevent erosion

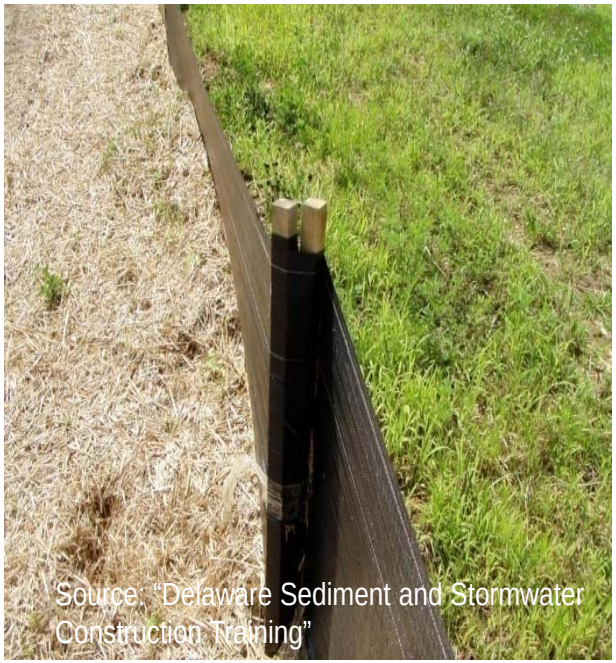
Erosion and Sediment Control

Perimeter controls:

- All runoff must pass through a sediment removal BMP

- Practices must be fully functional before land disturbance- DPW ENV inspects BMP installation prior to the initiation of construction

- Proper maintenance is critical; the permittee shall remove sediment before it accumulates to ***½ the height*** of any perimeter control



Source: "Delaware Sediment and Stormwater Construction Training"

Sediment Control

Stabilized construction exit:

- Restrict vehicle use to properly designated exit points

- Use appropriate stabilization techniques at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit;

- Sweep, shovel or vacuum sediment by the end of the work day in which track-out occurred

- Do not hose down or sweep sediment on pavement into a storm drain

Sediment Control

- Stabilized construction exit issue; sediment tracked outside project limits

- Remove sediment build up in rock entrance/exit

- Tire washing: is sediment being tracked away from the wash area? Channel runoff to a sediment-trapping device

Erosion and Sediment Control

Maintain all storm water control measures:

- All BMPs require maintenance

- Proper installation is only the first step

- The permittee shall ensure all erosion and sediment controls required remain in effective operating condition during permit coverage (until the NOC is filed)

- Modify BMPs as needed! Don’t want to use silt fence? Want to use something more effective? Go right ahead, but UPDATE YOUR SWPPP accordingly!

Erosion and Sediment Control

Other BMPs:

- Vehicle and Equipment Maintenance/Fueling
- Concrete Waste Management
- Material Storage and Use
- Stockpile Management
- Solid and Hazardous Waste Management
- Training (everyone should be familiar with the SWPPP plan)

DPW-ENV Inspection Procedures

- DPW-ENV will contact COE project POC to schedule an inspection, (inspections can also be unannounced)

- DPW-ENV will meet with contractor at site trailer to review SWPPP, maps, inspection documentation, training logs ect.

- Will walk the site to inspect BMPs, photograph noncompliance issues, debrief with group, findings will be discussed

- Inspection report with findings and photos will be emailed to contractor, COE representatives and DPW-ENV Program Manager within 3 calendar days

- All deficiencies shall be corrected ASAP or by no later than 5 calendar days after the inspection. ***Enforcement procedures will be applied if not received!***

New Permit Requirements

Significant Program/ Plan Changes:

- OCT2015-Clean Water Program will publish an improved MS4 Storm Water Management Plan which will include more stringent program requirements, monitoring and enforcement action

- NPDES permitted construction projects will be inspected at least monthly by DPW-ENV, notifications of noncompliance's will be forwarded to project managers

- The permittee shall install, repair, or modify storm water controls within 7 calendar days of discovering a deficiency.

- DPW-ENV is required to report all critical deficiencies to SDOH

Storm Water Materials

Helpful SDOH storm water resources:

- State NPDES General Permit- effective 6 DEC 2014
http://health.hawaii.gov/cwb/files/2013/04/Clean_Water_Branch_20131210_Appendices_C_and_A.pdf

- EPA SWPPP Construction Templates and Examples
http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Pollution-Prevention-Plans-for-Construction-Activities.cfm#template

- EPA NPDES Permit Website
http://cfpub.epa.gov/npdes/index.cfm

Questions?

Contact Us:

DPW Environmental

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Clean Water Program Support:

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24/7 DPW Emergency Spill Line: 656-1111

Mahalo!

References:

NPDES General Permit, Chapter 11-55 Appendix C. Effective: December 2013

Department of Environmental Services, City and County of Honolulu.
"Storm Water Best Management Practice Manual: Construction." November 2011.
Available online at:
http://www.cleanwaterhonolulu.com/storm/learning_center/BMP_manual_2011-11.pdf

CERTIFICATE

This is to certify that

ENTER NAME HERE

has completed the DPW Environmental Construction BMP Storm Water Training

XX XXX 20XX

Date