

GENERAL O&M SITE INSPECTION INSTRUCTIONS

The following general instructions are meant to provide a one page supplement to the O&M manual for inspectors to take in the field and be used as a guide in conjunction with the individualized inspection sheets.

For each Passive System Component do the following if applicable:

1. Enter effluent pH, temperature, alkalinity, flow and other field data as applicable in water monitoring section.
2. If water samples were collected for lab analysis, enter bottle numbers in water monitoring section.
3. Check the outlet spillway for stability, erosion rills, debris, and significant siltation.
4. If present, check the effluent pipe condition. Is the pipe in good condition? Is the pipe crushed, broken, leaking, or plugged?
5. Was the pipe cleaned out? Does the pipe need to be cleaned out?
6. Is all water going through the effluent pipe or over the appropriate spillway?
7. Check all valves to insure full operation and no leaking? Do any valves need to be replaced?
8. If an inline water control structure is present: Were (Do) any stoplogs (need to be) added or removed? Were stoplogs cleaned and greased?
9. Is the access deck to the inline control structure in good condition? Is the deck damaged or rotting? Does the deck need repaired or replaced?
10. If present, check the condition of the emergency spillway for erosion rills, debris, and significant siltation.
11. Check the berm of the pond for slumping, erosion rills, tension cracks, vegetation. Is there evidence of water overtopping the berm?
12. Is there evidence of damage by wildlife such as muskrats burrowing into berms? Is there a need to conduct trapping?
13. Does sludge need to be removed? (If water is overtopping the berm or is about to over top the berm, sludge may need to be removed.)
14. Note any maintenance that was conducted. Note any maintenance that is needed and mark on schematic.

Anoxic Limestone Drains (ALDs)

1. Are there significant slumping or "subsidence-like" features where the ALD is located?
2. Is there water seeping out from the ALD indicating the ALD may be plugging?

Collection Channels, Diversion Channels, Open Limestone Channels (OLCs), Oxidation & Precipitation Channels (OPCs)

1. Check the channel for stability, erosion rills, debris/obstructions, and significant siltation. Does the channel need to be cleaned out?
2. Is there any evidence that water has overtopped the channel? Does the channel need to be repaired or replaced?

Culverts

1. Check to see if the culvert is crushed, plugged, damaged? Does the culvert need to be cleaned out, repaired, or replaced?
2. Is the culvert able to handle all of the water? Is there evidence of water flowing over or around the culvert?

Diversion Well

1. Does limestone or other treatment media need to be added? Does limestone or other treatment media need to be ordered & delivered?
2. Is the inlet clear of debris?

Forebays, Ponds, Settling Basins/Settling Ponds

1. Does the pond appear to be short-circuiting? Determine with use of a dye-test or by water quality data. If so, a baffle may need to be installed.
2. Is the baffle functioning properly? Is the baffle in the proper position? Does the baffle need to be weighted down? Does the baffle need reset?

Horizontal Flow Limestone Beds (HFLBs), Manganese Oxidizing Beds (MOBs), Sloped Limestone Beds (SLBs)

1. Is the water flowing above the top of the stone indicating the treatment media or piping may be plugging? Does the media need to be stirred?
2. Is there excessive vegetation growing in the treatment media that needs to be removed?

Vertical Flow Ponds (VFPs), Vertical Flow Wetlands (VFWs), Successive Alkalinity Producing Systems (SAPS)

1. Does the water level appear to be increasing in the pond?
2. Was the component flushed? Does the component need to be flushed or backflushed?
3. Does the treatment media need to be stirred and/or mixed?

Weirs & Flumes

1. Does the weir or flume need to be cleaned out? Clean the debris, sediment, and sludge and allow to equilibrate before measuring flow.
2. Check to make sure the weir or flume is stable and is level both horizontally and vertically. Does the weir or flume need to be reset?
3. Does the weir or flume need to be repaired or replaced?

Wetlands

1. Does the wetland appear to be short-circuiting or channelizing? If so, were haybales placed? Do haybales need to be placed?
2. Is the wetland well vegetated with wetland plants? If not what is the cause (water level to high, muskrats, water quality, etc)?
3. Are there invasive species in the wetlands?

Figure 15: Inspection guidelines by Biomost (2007)

Table 2: Summary of O&M tasks and project phases where they may occur

The O&M Phase				
BMPs	Inspection, Monitoring, Operation, Quick Fixes	Volunteer group projects	Small projects with heavy equipment	Major repairs or replacement
Aerobic wetlands	Determine load reduction	Remove debris; remove iron deposits; restore residence time; eliminate any short-circuiting		
Anaerobic vertical flow wetlands	Flush regularly, or make sure flushing mechanisms are operating; Note appearance of flushed water	Remove iron crust	Remove iron crust; Replace compost layer	Replace compost layer; Replace limestone; Replace BMP
Anoxic limestone drains	Monitor flow to assess clogging		Replace limestone	Replace limestone
Diversion well	Add limestone to well			
Doser	Confirm doser is full and functioning			
Limestone leachbeds	Remove any debris		"Lift and sift" leachbed	
Flushed limestone leachbeds	Remove debris, make sure flushing mechanisms are operating		"Lift and sift" leachbed	
Limestone sand dumps	Make sure sand is moving; shovel sand		Replace sand	Replace sand
Steel slag leachbed	Measure load of alkalinity from steel slag bed; Assess need for removing sludge from mixing or settling ponds			