smartPOND Vault Valve System

-Operation, Inspection & Maintenance-

Operation

The smartPOND vault valve configuration includes a weatherproof and lockable control cabinet housing all actuators and electronics, which is mounted in a manhole structure that is typically buried in the berm of a stormwater detention pond. Manual control, real time remote control, and pre-programmed automated functions are all standard options with this free-standing, self-contained system.

Periodic inspection and maintenance is required to guarantee proper functioning and optimal performance of the device. This document will detail those procedures.

Inspection

Environmental conditions on site as well as device condition must be inspected regularly. Inspection frequency of your system must be determined based on the contributing drainage area of the site, as well as each respective site's design and environmental conditions, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for active construction sites which still have disturbed soils in the stormwater basin. Preventative measures must be taken to avoid sediment buildup around the perforated inlet riser screen. Accumulation of garbage and debris must also be monitored and cleared on an as-needed basis per site conditions.

With the right equipment, your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, consideration of all local/regional requirements as well as OSHA standards should be given.

smartPOND vault valve system receives water via a close pipe that originates from a perforated inlet riser screen. The inspector should always conduct a visual inspection of the condition of the valve assembly through the inspect cover of the manhole, control cabinet, and solar panel– as well as the perforated inlet riser screen. The valve assembly is designed to be removed from the surface by disconnecting the drive shaft from the motor, unbolting and removing the

manhole cover, and releasing the two quick release pins of the valve assembly. To access these quick release pins, use a long rod with a hook. The valve housing will have a lifting eye to hook on to for removal.

If sediment buildup or debris is observed around the inlet screen, the depth of the material should be determined. This is typically accomplished with a stadia rod.

Maintenance

Sediment or debris buildup around the perforated inlet riser screen should be removed when it reaches depth of six inches or more from the base of the screen. Follow local guidelines to dispose of or relocate the sediment as allowed.

The basin should be well vegetated to prevent erosion and sediment accumulation around the device. Any damage or gaps in the vegetation in the basin should be repaired and re-planted as needed.

Ideally, appropriate vegetation should be established before installation of the smartPOND inlet valve in order to avoid excess sediment buildup around the inlet riser screen. If the system is installed in disturbed-soil conditions, proper sediment control measures should be taken, such as a silt fence around the unit until the soil is stabilized and vegetated.

The hardware of the smartPOND vault valve must be maintained as well—including conditions of the inlet riser screen, butterfly valve assembly, control box, and solar panel assembly. Check for signs of tampering or vandalism, ensure no components are missing, and confirm that the control cabinet door is locked and secured.

Step-by-step Inspection and Maintenance Routine

1. **Inspection**
    - **a.** Pond conditions
        - **i.** Inspect the conditions of vegetation and note any exposed or disturbed soils.
        - **ii.** Inspect for signs of erosion on pond slopes
        - **iii.** Inspect condition of silt fence, if applicable
        - **iv.** Identify any significant accumulation of garbage or debris in the basin or around the perforated inlet riser
        - **v.** Use a stadia rod or tape measure to measure depth of any accumulated sediment at the base of the perforated inlet riser
    - **b.** Manhole/Vault Structure
        - **i.** Check for signs of erosion, animal burrows, etc. adjacent to and external to the manhole
        - **ii.** Open the visual inspection port in the cover plate to the manhole, if daylight is poor use a flashlight to illuminate the area and look at valve.

   iii. Inspect for accumulated sediment and debris
   iv. Inspect the condition of water level sensor wire, noting any damage to the wire itself
- **c.** Valve Stem
   i. Ensure the valve stem is fully seated between the vault valve and bottom of control cabinet
   ii. Ensure the valve stem is rigid and does not rotate freely by hand
- **d.** Control Cabinet
   i. Ensure cabinet is mounted securely above the manhole cover and door is locked in the closed position
   ii. Inspect for any signs of damage or vandalism
- **e.** Solar Panel
   i. Ensure panel is clean of debris
   ii. Ensure panel is fastened securely and facing SOUTH
   iii. Ensure panel wires are connected and undamaged

2. Maintenance

- **a.** Use appropriate means to remove accumulated sediment around perforated inlet riser
- **b.** Use shovels and hand tools closest to the riser to avoid damage by large equipment.
- **c.** Stabilize soil and re-plant slopes and sump of basin as needed
- **d.** Clean solar panel and secure in the south-facing position
- **e.** If maintenance or repairs are required, please contact Convergent's manufacturing partner, Autoflow LLC (Ph: 601.842.6806, info@autoflowllc.com) to receive a Field Maintenance Request Form to discuss pricing and a service call to the device.