



PUMP STATION INSPECTION CHECKLIST

SITE

- Inspect asphalt; check slope for proper drainage (no puddles)
- Inspect grounds
- Inspect fencing and gate; ensure correct operation of gate (full swing)
- Inspect fence posts and fabric for correct material (vinyl coated black or brown)
- Ensure that all debris has been removed from site
- Ensure that all required signage has been installed (incl. Pump Station I.D. sign)

WETWELL

- Inspect interior coating (cracks, blisters, loose material, exposed concrete, etc.)
- Inspect exterior coating (coal-tar epoxy)
- Inspect concrete penetrations (discharge piping, conduits, etc.)
- Ensure that all penetrations are cored and link-sealed, then finished with epoxy grout
- Check proper operation of aluminum hatch and placement per approved design
- Check and verify opening of hatch to accommodate pump extraction
- Verify all required signage has been provided ("Confined Space Entry - Permit Required", OSHA, etc.)
- Verify operating range of (bubbler and/or floats) per approved design
- Inspect alignment of discharge piping
- Ensure that stainless steel bolts are utilized in ductile iron piping
- Inspect paint used on piping
- Ensure that FCA is installed at 90-degree elbow on discharge piping
- Inspect alignment of poly ladder rungs, ladder placement, and ladder mast bracket
- Inspect grating platform and supports (stainless and fiberglass grating) w/ stainless steel fasteners

PUMPS

- Pull each pump and reset; check for ease of removal, alignment of rails and proper sealing at disconnect flange
- Inspect for any damage to paint on pump
- Inspect cord and cord placement

VALVE VAULT

- Inspect interior coating (cracks, blisters, loose material, exposed concrete, etc.)
- Inspect paint on all mechanical piping (cracks, blisters, loose paint)

Inspect alignment of discharge piping

Verify pressure gauges are in place and the correct type

Check and verify opening of hatch

Verify all required signage has been provided ("Confined Space Entry - Permit Required", OSHA, etc.)

Ensure drain line is at grade from valve vault to wetwell

PIPING

Ensure alignment of discharge piping between wetwell and valve vault

ELECTRICAL

Verify that seal-offs are sealed with CHICO

Verify that pump motor leads are a continuous run from pump to control panel

Verify the usage of stainless steel strain reliefs on all pump and float cords

Verify that bubbler line is sealed off in conduit

Verify seal-offs are located in vault, and that all conduit penetrations are grouted

Verify that there has been a signed, approved electrical inspection report from Tacoma Power or Washington State Labor and Industries

Ensure that ground rods are accessible and have risers installed for access per *Specification*

CONTROL PANEL

Ensure that wiring schematic is in door pocket

Ensure that "control" side of panel is oriented facing the wetwell

Verify UL labeling

Inspect enclosure for chipped paint or other damage

Utilize mil-thickness gauge to verify proper DFT per *Specification*

Verify signed-off electrical inspection report from governing electrical inspector

Verify all pilot lights are operational

Verify all wires are labeled

Verify all placards are in place

Verify all wiring debris has been removed from enclosure

General inspection of field wiring

Conduct operation test of controls

Pump manufacturer to supply additional motor nameplates (crew to place on interior door)

Specialty products mounted and placed in interior of control panel (see Section 11.7 of *Specification*)

Panel manufacturer to conduct O&M training

TELEMETRY SYSTEM

Visually verify all components have been provided and pre-wired (radio, antenna, all associated wiring, alarm points, etc.)

Pierce County Instrumentation Specialist to program/set-up system for communications to CCRWTP base station, and aim antenna if necessary

Check communication link to CCRWTP base station

Inspect field wiring

Ensure that standard mast and antenna are supplied (standard anchoring method)

OPERATIONS TEST - PUMP SYSTEM

Ensure contractor and contractor's representatives are present during start-up (electrician, control panel manufacturer, pump manufacturer, mechanical, etc. - generator manufacturer optional)

Verify pump rotation, reverse leads if necessary

Throttle valves while filling force main, if applicable

Draw-Down Test - Calculate actual GPM and compare to design specifications (check both pumps)

Add water to system and/or simulate flow; confirm operation of liquid level control system

Inspect sealing flange of pump for proper seal (no leaks)

Pull pumps and extract from wetwell; ensure clearances are maintained and pumps travel smoothly on rail system; check pump cords for obvious obstructions

Test "high-water" and "low-water" alarms

Note any unusual noises/vibration

OPERATIONS TEST - GENERATOR

Verify diesel tank is fully fueled after manufacturer's representative has performed load run

Run generator in "manual" mode; check hertz, voltage, etc; verify operation of load bank

Verify certified affidavit of start-up and load testing from manufacturer's representative

Receipt of manufacturer's warranty (2-year)

Test "auto shut-down" on overspeed circuit

Test to see if genset meets decibel requirements of *Specifications*

Simulate power failure (disconnect main breaker); verify automatic start of genset

Verify automatic transfer of power to emergency source; check for proper time delay between sequences

Let run for ten (10) minutes

Restore utility power source; verify automatic transfer, cool-down cycle time, and shut down

Test load bank for proper operation

Ensure that separate circuits are provided for battery charger and block heater

Test block heater and battery charge for proper operation

OPERATIONS & MAINTENANCE MANUALS

Receipt of O&M manuals

Check for detailed equipment literature

Submersible pumps

Plug valves

Swing check valves

Gauges

Ball valves

Control panel

Transfer switch

Softstart

Air compressor

Wiring schematic

Specification sheet

Outline drawing

Operator's manual

Parts catalog

Installation manual

Engine operation and maintenance manual

Engine parts catalog

Certified test record

Approved construction drawings (plan, profile and details)

Map of tributary area

SPECIALTY PRODUCTS (SECTION 11.7)

Ensure that all specialty products are provided

Ensure correct placement of signage, including Pump Station I.D. sign