

SECTION 33 32 15

WASTEWATER PUMP STATION STARTUP

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Structure leakage testing.
 - 2. Scheduling field start-up meetings with manufacturer representatives, Owner, Engineer, and CFPUA to run all pump station equipment through its proper functions.
 - 3. Testing procedures and certification requirements by manufacturer's representative.
 - 4. Manufacturer's representative startup, field tests and O&M manuals for CFPUA operating personnel on operation and maintenance of equipment item.
 - 5. Contractor to schedule repeat start-ups as required for certification and acceptance.
- B. Related Requirements:
 - 1. Section 33 05 13 - Precast Concrete Manholes and Utility Structures.
 - 2. Section 40 71 00 - Magnetic Flow Meter.
 - 3. Section 40 95 01 - Wastewater Pump Station SCADA Remote Telemetry Unit (RTU)
 - 4. Section 43 21 39 - Submersible End Suction Pump.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 WETWELL LEAKAGE TEST

- A. Prior to testing, wet well shall be coated per Section 33 05 13 – Precast Concrete Manholes and Utility Structures.
- B. Conduct a visual inspection of concrete wet wells and valve vaults. Repair all visible and defects.
- C. Wet wells shall be leakage tested prior to backfilling by the following procedures:
 - 1. Temporarily plug all wall sleeves, piping entrances, and other openings during test period.
 - 2. Fill structure to overflow level.
 - 3. Allow to stand for a minimum of four (4) hours.
 - 4. Repair visible leaks.
 - 5. Refill to overflow level.

6. Allow to stand for 24 hours.
7. Examine exterior surfaces and joints for leakage. Measure the drop in surface water.
8. Allowable leakage is a drop of ½-inch or less during the test period and no visible signs of leakage.
9. Repair all visible and detectable leaks. If leakage exceeds the allowable limit, the structure shall be repaired by method approved by the Engineer.

3.2 PUMP FIELD SERVICES TESTING

- A. The pumping manufacturer shall provide the services of a representative for a minimum of five (5) days to provide start-up and follow up advisory service, including O&M instructions to the operating personnel. Representative shall schedule at least two separate trips for these services. The Contractor, Owner, Engineer, and CFPUA shall be notified when manufacturer's representative is to be at the work site one week in advance to be present during start-up of equipment.
- B. Provide pump manufacturer specified inspections and tests on each pump including but not limited to the following:
 1. Impeller, motor rating, and electrical connections check for compliance with the job requirements.
 2. Motor and cable insulation test for moisture content to insulation defects.
 3. Prior to submergence, run pump dry to establish correct rotation and mechanical integrity.
 4. Run pump for 30 minutes submerged, a minimum of six (6) feet under water.
 5. After operational test No. 4, Perform insulation test (No. 2) again.
 6. Certified records of the test shall substantiate the operation of the equipment at the design head, capacity, and horsepower as specified.
 7. Return elbows are securely bolted in place and fasteners are tight.
 8. Slide rails are installed properly. Pumps shall be raised to test reliability by CFPUA operator.
 9. No electrical connections, splices, or junction boxes within the wet well or in locations of condensing humidity.
 10. Ensure proper oil levels.

3.3 O&M MANUALS AND SPECIAL TOOLS

- A. Furnish four (4) sets of operations and maintenance (O&M) manuals for each equipment item.
- B. Provide any special tools specific to the equipment provided which is needed to perform maintenance and as recommended by the equipment manufacturer.

3.4 CERTIFICATION AND ACCEPTANCE OF FIELD STARTUP TESTING

- A. Correct Equipment Deficiencies:
 1. Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.
 2. Make final adjustments to equipment under direction of manufacturer's representative.

- B. Furnish installation certificates from equipment manufacturer's representative attesting that equipment is properly installed and ready for operation.
- C. Final certification and approval of all electric, instrumentation, and mechanical components is a required condition of project closeout and acceptance by CPFUA.
 - 1. Section 01 70 00 – Execution and Closeout Requirements (CFPUA Capital Projects).
 - 2. Section 01 70 00 – Execution and Closeout Requirements (Development Projects).

END OF SECTION