

Process Control Event

Equipment / Resources

- Pencils
- Nonprogrammable calculators
- Test packet with answer sheet forms

Instructions

- Start with a 5-minute review of the test to examine all the questions and point values.
- Return all pages to the test envelope in any order
- Answer multiple choice questions; short math questions with multiple choice answers; and up to five operational type scenarios, each with four to six questions that may require considerable calculations.
- Finish all portions of test in the remaining 20 minutes.
- “Teams are given the opportunity to provide as many correct answers as they can in the allowed time,” according to the event’s instructions.

Laboratory Event

Equipment / Resources

- 500-mL sample
- 200-mL GGA standard
- 300-mL seed material
- 3-L dilution water
- pH meter and probe
- Dissolved oxygen meter
- Pipets (transfer and volumetric) and bulbs
- Graduated cylinder
- Beakers
- 300-ml biochemical oxygen demand (BOD) bottles, stoppers, and caps
- Worksheets
- Sharpie® markers
- Squirt bottles

Instructions

- Determine sample pH using pH meter and probe.
- Rinse all BOD bottles with dilution water.
- Number BOD bottles according to worksheet.

- Prepare blank by filling a BOD bottle with dilution water.
- Plant sample dilutions in BOD bottles using pipets and graduated cylinder.
- Plant GGA standard in BOD bottle using volumetric pipet.
- Add seed material using pipet to sample and GGA bottles.
- Fill BOD bottles with dilution water.
- Calibrate dissolved oxygen meter.
- Use dissolved oxygen meter to determine dissolved oxygen concentration and record it in mg/L for each BOD bottle.
- Top off bottles with dilution water using squirt bottle and add a stopper without entraining air to each bottle.
- Add additional dilution water over the stopper and place plastic cap over each bottle.
- Ensure neither bubbles nor entrapped air are present in any of the bottles.
- Obtain dissolved oxygen concentration readings for each bottle and calculate blank result, seed correction, GGA standard results, and sample results.
- Calculate results for the worksheet provided.

Collection Systems Event

Equipment / Resources

- One 114-mm (4.5-in.) hole saw and bit brace
- Two 457-mm (18-in.) polyvinyl chloride saws
- Two 1.8-m (6-ft) lengths of 1.8-m (6-ft) SDR35 pipe
- Two Fernco Inc. (Davison, Mich.) couplings
- One 102-by-203 mm (4-by-8 in.) GPK Products Inc. (Fargo, N.D.) saddle connection
- Six pipe clamps
- Six National Association of Sewer Service Companies (Marriottsville, Md.) Pipeline Assessment and Certification Program pipe defect images

Instructions

- Prepare repair section of pipe and install saddle connection.
- Remove damaged section of pipe.
- Install replacement length and secure with flexible couplings and pipe clamps.
- Identify and categorize pipe defects.
- Pressure test and evaluate integrity of repair for 30 seconds.

Godwin Maintenance Event

Equipment / Resources

- Godwin (Bridgeport, N.J.) Dri-Prime NC80 102-by-76 mm (4-by-3 in.) trailer-mounted pumpset
- Lift station skid
- Suction and discharge hoses
- Level transducer
- PrimeGuard control panel
- Vacuum pad and gauge

Instructions

- Service engine by replacing oil, fuel, and air filters.
- Service pump, which includes servicing the Venturi assembly, ejector housing, and nonreturn valve.
- Inspect the trailer.
- Connect battery, program PrimeGuard panel, and perform vacuum test.
- Isolate power source, level pump, and attach discharge and suction hoses.
- Program level transducer, open gate valve, and secure manhole opening.
- Return to designated start and indicate completion.

Safety Event

Equipment / Resources

- Reid Lifting (Chepstow, Wales) Rapide Gantry
- DBI/Salalift II winch
- Ultra-Lok self retracting lifeline (SLR)
- Scott Safety (Monroe, N.C.) Protégé gas monitor
- 2 ExoFit vest-type harnesses

Instructions

- Test confined space for hazardous gases.
- Attach gas monitor to entrant.
- Deploy gantry as well as attach winch and SRL.
- Ventilate space.
- Descend and apply harness to victim.
- Extract victim, and extract entrant.
- Disassemble gantry unit.
- Revive and decontaminate victim.
- Return to designated start and indicate completion.