

PROCESS CONTROL EVENT



EQUIPMENT/ RESOURCES

- Pencils
- Nonprogrammable calculators
- Computer
- SimuWorks by Hydromantis Environmental Software Solutions (Hamilton, ON)



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.

Review plant profile for computer simulation and evaluate performance results.

- Adjust operating conditions to achieve target effluent parameters.
- Finish all portions of test in the remaining 20 minutes.

LABORATORY EVENT

EQUIPMENT/RESOURCES

- 6- 500mL pH/Alkalinity Samples
- pH Meter and Stirrer Probe
- Alkalinity Reagent
- pH as Total Alkalinity Chart
- 6- 500mL Ammonia Samples
- Colorimeter (Thermo Scientific Orion)

AQUAFAST AQ 4000

- Ultra Low Range Ammonia Cuvettes with Activator and Catalyst Solution (Thermo Scientific AQUAFAST IV)
- 2- Bottle Carriers for Samples
- Cut Resistant Gloves
- 10- 10mL Serological Blow out disposable pipets and 2 pipet filler bulbs

- Colored Labeling Dots
- Graduated cylinder
- Beakers
- Volumetric Flasks
- Alkalinity profiling Worksheet
- Calculator
- Squirt bottles
- Deionized water



INSTRUCTIONS

- Label beakers using color coded dots for ammonia and pH/Alkalinity analysis.
- Rinse all glassware with appropriate samples for both Ammonia and pH/Alkalinity analysis.
- Pour off samples for pH/Alkalinity and measure and record pH in su.
- Add Alkalinity Reagent using a transfer pipet and use the "pH as Total Alkalinity" chart to determine Alkalinity and record in mg/L.
- Label three 100 mL volumetric flasks for preparing ammonia sample dilutions.
- Pipet 10mL of the correct sample into the volumetric flask, and fill with deionized water to the 100mL mark.
- Measure Ammonia in three diluted samples and three undiluted samples.
- Clean all work surfaces with disinfection wipes, place all pipets in washer and dump flasks, beakers and other liquid waste into receptacles.
- Replace all sample bottle caps.
- Complete calculations and answer questions on the Alkalinity Profiling Worksheet.

COLLECTION SYSTEMS EVENT

EQUIPMENT/RESOURCES

- One 4 1/2" 72L hole saw and bit brace
- Two 18" pvc saws
- Two 6' lengths 8" SDR35 pipe
- Two Fernco Inc. (Davison, Mich.) couplings
- One Inserta Tee (Forest Grove, OR) compression fitting
- Four pipe clamps
- One Hach (Loveland, Co.) Model AS950 All Weather Sampler

INSTRUCTIONS

Prepare repair section of pipe, and install compression fitting.

Remove damaged section of pipe.

- Install replacement length and secure with flexible couplings and pipe clamps.
- Program automatic sampler.
- Pressure test and evaluate integrity of repair for 30 seconds.



KSB MAINTENANCE EVENT



EQUIPMENT/RESOURCES

- KSB (Richmond, VA) KRTF 80-216 Submersible Pump
- Reid Lifting (Monmouthshire, UK) Port a Gantry
- Reid Lifting Closed Couple Trolley
- Harrington (Manheim, PA) Mini Chain Hoist
- Graceport (Davenport, IA) Voltage Test Station
- Steele Plastics (Conway, AR) Wet Well

INSTRUCTIONS

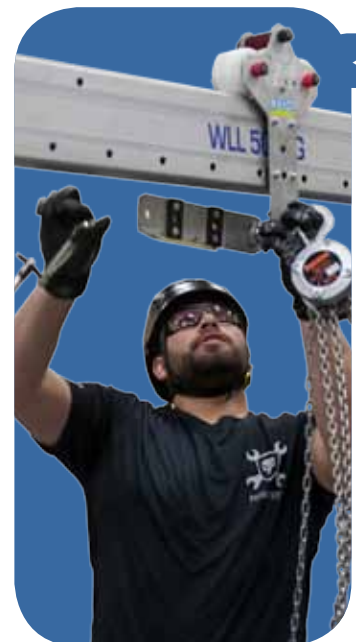
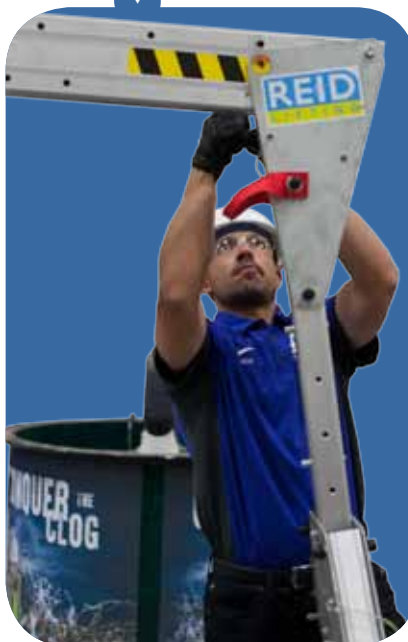
- Troubleshoot Control Panel
 - Lock out and tag out the pump station
- ◀ Close and Lock out 3" gate valve on pump discharge
- Arc Flash Verification

▼ Examine and replace fuses

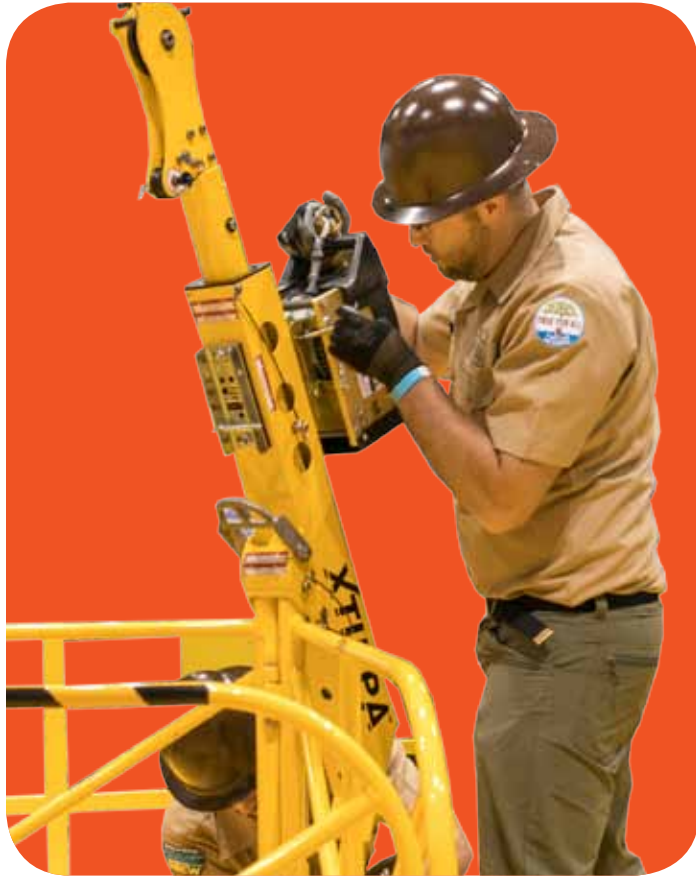
Assemble Reid Gantry unit

Mount trolley and chain hoist

- Extract pump
- Service pump and volute
- Replace guide rails
- Disassemble Gantry unit
- Restore gate valve and control panel service



SAFETY EVENT



EQUIPMENT/RESOURCES

- XTIRPA (Granby, Quebec) Portable Manhole Guard.
- DBA Salalift II winch.
- Ultra-Lok self-retracting lifeline.
- Scott Safety (Monroe, N.C.) gas monitor.
- 3 ExoFit vest-type harnesses.

INSTRUCTIONS

- Test confined space for hazardous gases.
- Attach gas monitor to entrant.

▶ Deploy manhole guard and attach winch and SRL

- Ventilate space.

Descend and apply harness to victim.

Extract victim

- Replace Crispin (Berwick, PA) RF 41 check valve.
- Exit confined space.
- Disassemble rescue equipment.
- Decontaminate victim.

