

Direct Potable Water Reuse Standard Operating Procedure

Wichita Falls, Texas

Chlorine Injection Failure WW-O13

This SOP supersedes any previous SOP on this topic.

INTRODUCTION

This is the Standard Operating Procedures in the event the chlorine injection system fails for any purpose.

OBJECTIVE

The objective of this document is to provide guidelines to verify the readings; an action plan once the shutdown occurs and proper guidelines before the DPR pump can be restarted. Chlorine is the essential part of the disinfection process, therefore an adequate residual should be maintained at all times to insure proper disinfection.

The influent chlorine analyzer will send a shutdown command to the DPR pumps when the residual at sample site 2J is ≤ 0.5 mg/l. If the system shuts the pumps off for low chlorine residual, the following must be completed.

NOTE: At no time will any water be pumped to Cypress Water Plant if the Chlorine Influent Residual is below 0.5 mg/l.

- Turn the DPR pump controls to the off position so the pump can't auto restart until the alarm can be substantiated. If utilizing the electric pump reference # 1 image. If utilizing the diesel pump reference image # 2 for motor controls.
- Notify the Cypress Plant Operator that the pumps have been turned off and why. Why is very important in this scenario.
- Check chlorine feed of the chlorinator, image # 3. Calculate chlorine dosage based upon current flow. $\text{Lbs.} / 8.34 / \text{MGD} = \text{Dosage or feed rate}$. Compare this to previous dosage calculations.
- If the chlorinator is under feeding or not feeding at all, proceed to the Tank Room and insure that the chlorine tanks that are on-line have sufficient chlorine in them. If not, chlorine tanks will have to be switched to full bank of cylinders. If this doesn't rectify the problem proceed with the following.
- Check chlorine analyzer inside CCB room; image # 4. Make sure the unit is powered and has sufficient water flow. If unit has no water flow or power contact on-call supervisor and inform them of the situation with all pertinent facts.
- If the unit is powered and has water flow, grab a sample from the influent chlorine analyzer and titrate with the Amperometric Titrator; image 5 as per SOP for titration. If the residual is confirmed low. Apply Calcium Hypochlorite (HTH) to the basin to insure effective

disinfection to the water. Once sufficient chemicals have been applied, page on-call supervisor to initiate crews to rectify the problem with the injection of chlorine. If the titration indicates sufficient chlorine residual, page supervisor so he can contact Electronic Technicians to facilitate the repairs to the analyzer.

- Once repairs have been made to the system and the unit is working properly and is verified once again with the Titrator. The Cypress Operator will be notified what the actual Chlorine Residual of the water is and the DPR pumps are ready to start upon their command.

Associated SOP's: River Road Shutdown Communication.
Chlorination Titration

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Reviewed by: _____	Reviewed Date: _____
Reviewed by: _____	Reviewed Date: _____

SOP considered effective upon approval date.

*SOP's are to be reviewed and/or updated annually or any time this process has changed.

Sign below and date that you have received this SOP.

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Image # 1

Electric Pump Off Switch

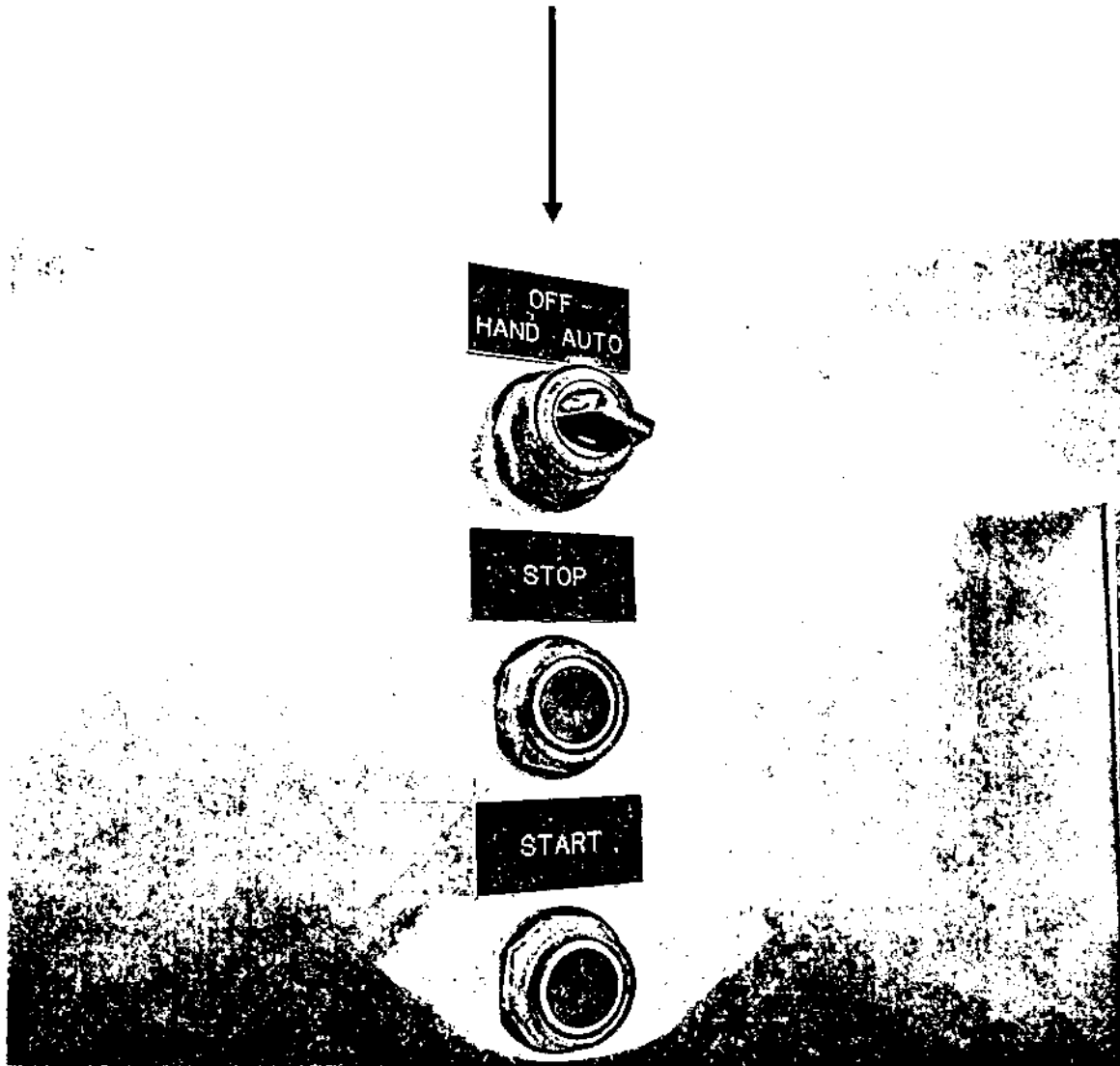


Image # 2

Diesel Pump Off Switch

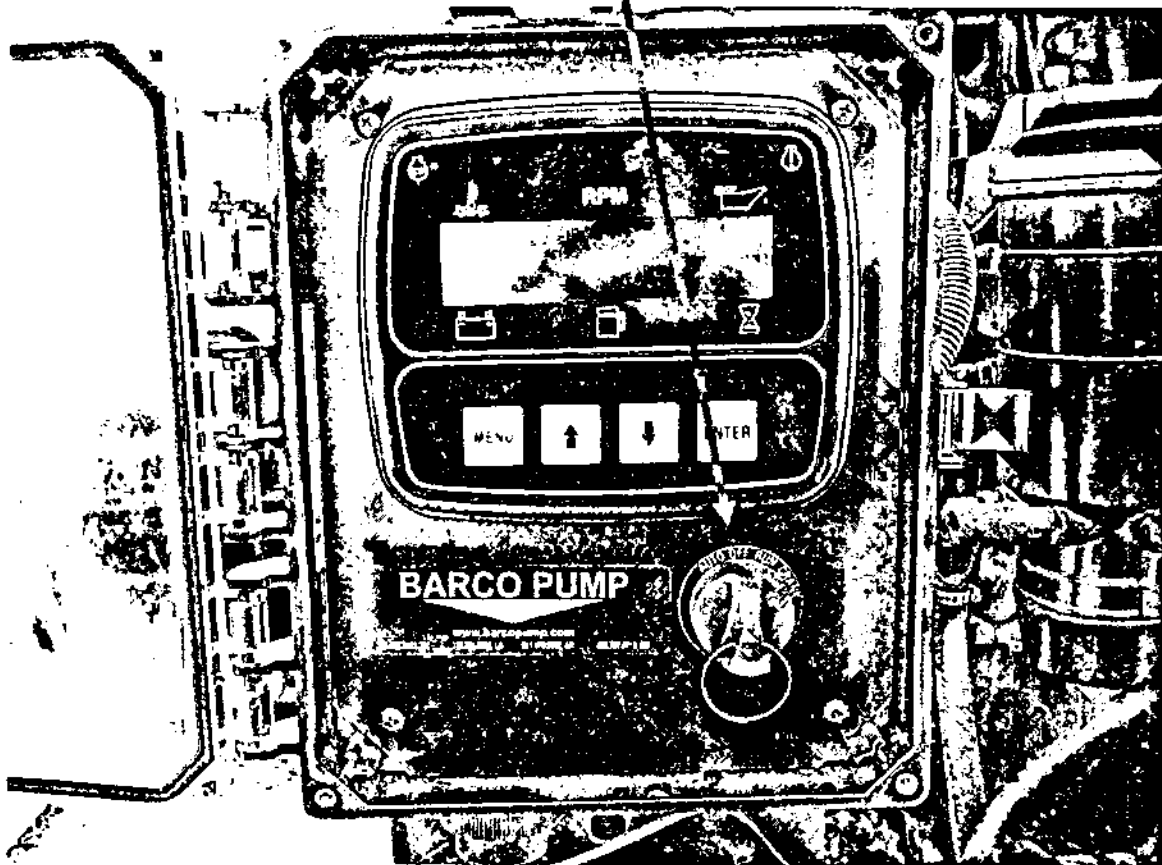


Image # 3 Chlorine Feed

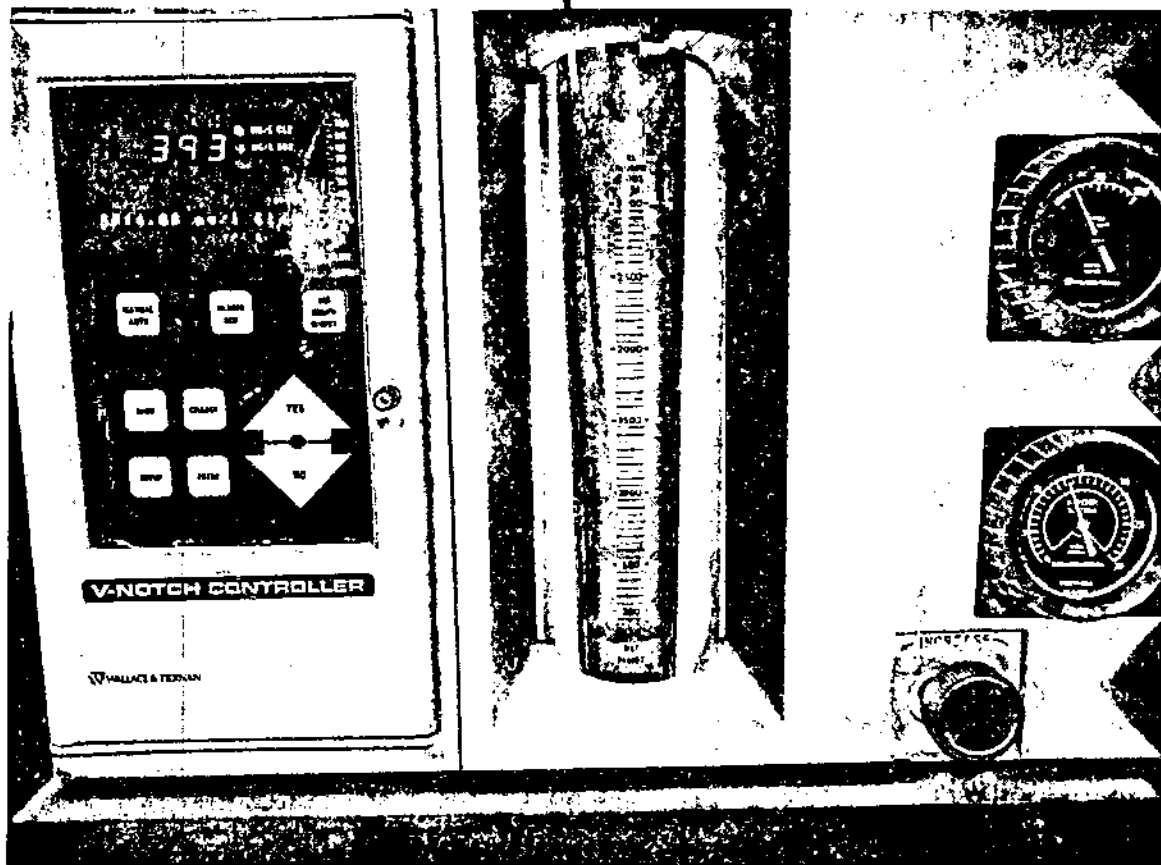


Image # 4

Chlorinator



Image # 5

Titrator

