

INTERNSHIP: Optimize a chemical treatment process to reduce chemical use and improve discharge water quality (Summer 2017)

COMPANY: Minneapolis Water Treatment & Distribution Services, Columbia Heights, MN

The Minnesota Technical Assistance Program (MnTAP) is seeking a junior or senior college student to lead a project focused on optimization of the neutralization of chemicals used to clean and disinfect membrane filters used to purify the Minneapolis water supply. This will involve understanding the treatment process, procedures, controls and equipment, along with constraints and limitations, to develop and evaluate proposals to improve the process. Minneapolis Water Treatment & Distribution Services is the supplier of drinking water to the City of Minneapolis and some surrounding communities.

JOB DUTIES:

As part of this project, you will be asked to complete the following tasks:

1. Evaluate the use of membrane filter cleaning chemicals for self-neutralization as a way to minimize the use of virgin chemicals for treatment.
2. Identify modifications to automated procedures and control settings to accomplish self-neutralization. Quantify the impact on chemical purchases, effluent volume, loading and discharge.
3. Review treatment records and the physical structure of the treatment process to identify ways to improve neutralization control to minimize pH & ORP overshoots and resulting additional chemical consumption.
4. Evaluate bleach disinfectant solution and perhaps other membrane treatment wastes for internal or external reuse for less critical applications.
5. Evaluate the compressed air system for leaks and ways to prevent them as a way to conserve energy.
6. Identify and evaluate potential improvements to these operations and demonstrate the feasibility of change.
7. Develop a cost-benefit analysis and justifications for the most promising changes identified, and make formal proposals for implementation to management and contractors as appropriate.
8. Organize and manage project tasks, activities, and project documentation effectively.
9. Work with Water Services staff and contractors to guide implementation as appropriate.
10. Summarize the recommendations and results in a detailed report.
11. Present project findings to Water Services, and at a MnTAP hosted public presentation event.

As an intern, you will work at the company and report back to MnTAP. The position is full time, 40 hours per week, for three months to start after the conclusion of spring semester or quarter. Pay is \$13/hour, with a lump sum stipend of \$1,000 upon completion of the project deliverables: a final report and presentations. Cumulatively, this equates to \$15.00/hour when averaged over the project.

QUALIFICATIONS:

- Cumulative GPA of at least 3.0
- Good oral & written communication skills
- A technical academic background
- Troubleshooting skills
- Self-motivated
- Excel and other software skills
- Appropriate majors: *Engineering, environmental or physical sciences and others as applicable*

TO APPLY:

Apply online at:

www.mntap.umn.edu/intern/student_apply.htm

Remember to submit your application form, cover letter, resume, and unofficial transcript.

Applications can be addressed to:

Nathan Landwehr, Intern Program Administrator
200 Oak Street SE, Suite 350-1
Minneapolis, MN 55455 • landwehr@umn.edu

MNTAP IS THE HIRING BODY: DO NOT CONTACT THE COMPANY.