Building Futures Behind the Fence

Turning incarceration into certification – wastewater training at William Head opened doors to new skills, new confidence, and new futures

By Mike Hewitt

Since 2024, Almaquin Enterprises has operated the Class 3 wastewater treatment plant at William Head Institution in Metchosin, British Columbia. The William Head Institution, which is managed by Correctional Service Canada, is a minimum-security facility located 25 kilometres southwest of Victoria. Designed with residential-style living, it offers a variety of educational and vocational programs that support rehabilitation and practical skill-building. Within this framework, Almaquin's contract focuses not only on compliance and efficient operations of the facility, but also on mentoring inmates who wish to pursue a career in water and wastewater.

The Facility and Its Operations

The William Head Wastewater Treatment Plant is a mechanical treatment system with marine outfall discharge. Its processes are monitored and controlled through a Supervisory Control and Data Acquisition (SCADA) system, which provides real-time data, alarm management, and trend analysis.

The plant was designed to handle wastewater from 115 staff and 150 inmates, with an average daily flow of 130 cubic metres and a maximum capacity of 450 cubic metres. Because the inmate population fluctuates, operators must adjust sludge wasting and recycle rates to maintain treatment balance.

Incoming wastewater passes through headworks that include lift station pumps, macerators, grit chambers, and basket screens to remove solids and debris. Flow then enters an anoxic tank for denitrification, followed by aeration tanks where blowers supply oxygen to support biological treatment. Operators monitor dissolved oxygen, pH, temperature, suspended solids, and settling characteristics to guide process decisions.

Clarification occurs in the secondary clarifier, where solids settle and clear effluent moves toward marine discharge. Biomass is recycled via return activated sludge (RAS) pumps, while waste activated sludge (WAS) is directed to aerobic digesters for stabilization. Routine operations include daily checks of SCADA alarms, grit chamber cleaning, and process testing, supported by weekly, monthly, and annual maintenance schedules.

Training at the Plant

Robin McLean, Almaquin's Chief Operator, turned the William Head wastewater plant into a training ground where six inmates earned industry certification and a chance at a new career path.

Robin McLean, Almaquin's Chief Operator, led the initiative. Robin holds Level IV certifications in both water treatment and wastewater treatment and was the first operator in British Columbia to achieve that milestone. With more

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than 30 years of experience in wastewater treatment and infrastructure management, he combined technical leadership with a strong commitment to developing future operators. His role extended beyond plant operations to include mentoring and structured training.

At William Head, the Almaquin team collaborated closely with the facility's Maintenance Supervisor. Together, they shaped a training program that provided inmates with practical, hands-on skills while introducing them to the work of the broader industry. Robin's first crew quickly embraced the challenge, with one inmate emerging as a lead operator and taking an active interest in biological processes and process troubleshooting of the wastewater facility. Their curiosity made clear the need for a formalized training pathway.

Since then, Almaquin has partnered with the BCWWA and the EOCP to bring accredited training to inmates at William Head. In July 2024, the first Small Wastewater Systems course was delivered. All three students passed the EOCP exam, becoming certified operators. One went further, writing and passing the Wastewater Treatment Plant Operator I exam. A year later, another three inmates completed the same training, again with all three passing. One of the original participants advanced to earn a Multi-Utility Wastewater I certification.

Each of the six students completed the two-day SWWS course for 1.2 CEUs. Training at the plant gave them exposure to regulatory frameworks, system design principles, and the characteristics of wastewater that influence treatment. They gained hands-on experience with monitoring techniques, process testing, and the use of safety procedures. Instruction emphasized how treatment systems are operated and maintained, with a strong focus on safe workplace practices such as confined space entry, WHMIS, and lockout/tagout

Results and Reflections

In total, six inmates became certified operators through Almaquin's mentorship at William Head. Recruitment for the operator crew even included peer-led screening. Existing inmates walked candidates through daily tasks, then gave them a final test: scooping grit from the headworks. Those with a strong enough stomach who could handle the task without hesitation demonstrated the resilience needed for the role.

The program gave inmates exposure to opportunities they had never considered. Through Almaquin's training, they gained technical skills along with confidence, teamwork, and responsibility. For those pursuing the profession, Robin provided personal references to support their next steps after parole. At the same time, William Head Institution benefited from improved operations of the facilities wastewater treatment and a model for linking infrastructure management with vocational training.

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"Over 17 months, I had the privilege of mentoring inmates who never imagined wastewater treatment could be a career. Six of them earned certification, and while the path is not for everyone, it was rewarding to watch them embrace learning and find pride in solving process challenges. Coming out of retirement to do this work was worth every moment. I am proud of them, and I will always value the time we shared in building both skills and confidence for their future."

— Robin McLean, WT-IV, WWT-IV

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