



**Yukon  
University**

Centre for Northern Innovation in Mining

# CNIM update

January 2024

[YukonU.ca/CNIM](http://YukonU.ca/CNIM)



## At a glance

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- Class 1, 3 and Air Brakes
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- Safety Training
- First Line Supervisor
- Housing Maintainer
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- Applied research: Industrial Research Chair in Northern Mine Remediation



# CNIM update - January 2024

## **Heavy Equipment Technician**

In December, all five Level 1 apprentices successfully completed their training and challenged their apprentice exam. The eight remaining pre-apprentice students participated in a week of hands-on experience in the welding shop before the holidays and plan to return to class on January 2 to continue with the program.

## **Surface Mining/Heavy Equipment Operator Training program**

In December, the ThoroughTec 'Cybermine' surface mining simulator arrived. CNIM staff and electricians are working hard to ensure all components are ready to mobilize the simulator for February and March HEO offerings in communities. A train-the-train course will be offered at the end of January in Whitehorse with a small group of government, industry partners and CNIM staff.

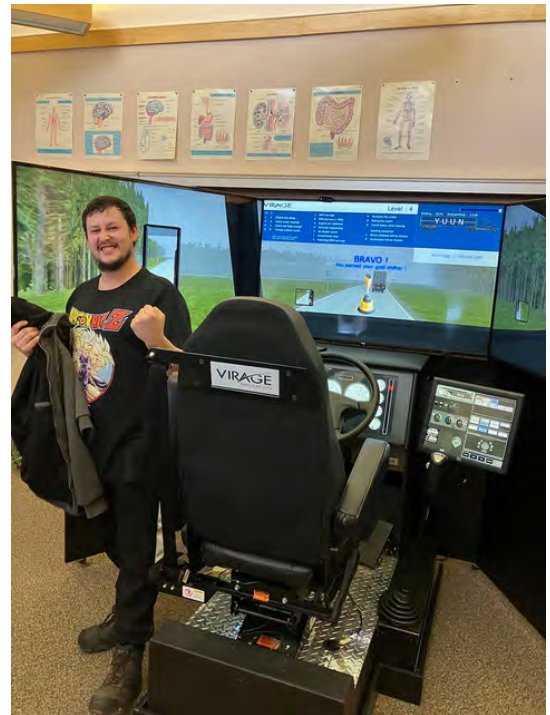
## **Class 1, 3 and Air Brakes**

In December, CNIM's commercial driver training offerings included three Air Brakes courses in Whitehorse, Watson Lake and Haines Junction and a class 3 Commercial Driving course in Whitehorse. Instruction was provided by the commercial driving instructor/coordinator along with additional Air Brakes and in-cab instructors. CNIM staff supported with logistics, transport of simulator, student communication, registration and recruitment. Challenges continue to exist in securing a safe reliable Class 3 vehicle to conduct training. Yukon Department of Highways and Public Works, Transportation and Maintenance offered to donate a Kenworth 18-speed dual axle dump truck to CNIM. While this truck requires repair, Heavy Equipment Technician and Welding program faculty look forward to this project with their current students.

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Since October, courses have been offered in the communities of Teslin, Whitehorse, Dawson City, Haines Junction and Watson Lake with some training stretching into January and February to complete class 3 theory, simulator and in-cab portions. Further programming is planned in the communities of Burwash, Mayo, Carmacks, Carcross and Ross River before the end of March. In total, about 34 students have attained their Air Brake endorsement, 20 students started class 3 training (2 attained their class 3 license), and 2 students started class 1 training (both attained their class 1 license). More students have booked their respective YG Department of Motor Vehicles' road exams for the earliest available dates in February 2024.

To date, over 200 Yukoners have responded to our Commercial Driving Pathways program poster campaign. Interest from Yukon's communities is strong with a keen interest in air brake endorsement and Class 3 training. We anticipate continuing to provide Commercial Driving Pathways programming beyond March 31, 2024, when Yukon University's generous Employment and Social Development Canada Workforce Development Project funding expires.



*Commercial driving student - simulator training*



*Commercial driving student & CNIM - simulator training*

# CNIM update - January 2024

## Workforce Readiness program

Workforce Readiness programs continue to be offered in multiple communities, including Watson Lake as a Mining Workforce Readiness program (October-January), Readiness for Employment and Learning programs in Old Crow (November-March), and Pelly Crossing (November-March). In early January, two additional programs will begin in Ross River and Mayo. Workforce Readiness programs are organized by community campus staff, and CNIM provides support in funding, program and fleet logistics, student registrations and instructor/coaching support when available.



*Students preparing good during the Old Crow, as part of the culinary portion of the program.*

## Safety Training

The first aid instructional team responded to a request by Kluane Drilling, Nov 4, to customize and deliver a Blended Standard First Aid for Spanish speaking employees. Over the past calendar year, 16 first aid courses were delivered onsite at Yukon mines.

# CNIM update - January 2024

## First Line Supervisor

The process to renew has been fully updated and moved online on Yukon University's website as of January 19th.

## Housing Maintainer

In December, the Whitehorse-based Champagne Aishihik First Nations (CAFN) Housing Maintainer project continued to progress through several stages of construction. Utility rough-ins were completed and inspected, interior insulation was completed, and drywall was installed and finished. Students also completed shingle roofing on their doghouse shop projects. Housing Maintainer students look forward to completing house construction in the new year by March 2024.

*Student dog house projects.*



*Instructor and students.*



*Interior house progress.*

Faculty welcomed back 10 returning Earth Sciences students in Winter 2024, with an additional two who are working on upgrading courses to become majors in September 2024. Courses are running smoothly, and there has been significant uptake in our non-lab courses by students from other programs (e.g. Indigenous Governance Degree, Liberal Arts, etc.).

Course numbers are as follows:

- Geochemistry (GEOL 211); lecture and lab (3 students)
- Hydrogeology (GEOL 301); lecture and lab taught (6 students)
- Historical Geology (GEOL 106); lecture and lab (5 students)
- Earth Through Time (GEOL 108); online lecture (19 students)
- Introduction to the Mineral Exploration and Mining Industries (GEOL 112); hybrid lecture (19 students)
- Earth Systems: Landscapes and Natural Hazards (GEOG 102); lecture (6 students)

There are several exciting events associated with course offerings this semester which will introduce students to the broader geoscience community in the Yukon. Students in the Geochemistry course will visit ALS Laboratories in Whitehorse to learn about sample prep and processing. Hydrogeology students will work in collaboration with the Water Resources Branch, Yukon Government, to complete a semester-long water balance project at Marsh Lake. Hydrogeology students will also benefit from several guest lectures, learning about topics including geothermal potential in the Yukon, the Faro Mine Remediation Project, and the Yukon Observation Well Network.



*First-year Earth Sciences students proudly receiving their Earth Sciences sweatshirts in December 2023.*

Drs. Joel Cubley and Chad Morgan will attend the AME Roundup conference this year. A strong presence at conferences such as AME ensures that the Earth Sciences program continues to teach relevant content and employers are aware of potential student and graduate hires. Joel will present a talk on the Virtual Geology Project in the Geoscience Innovation session; this is a multi-year project spearheaded by Earth Sciences faculty, funded by GEM GeoNorth, that aims to create virtual geology field experiences and educational outreach projects.

Research efforts and preparation for summer projects continue this semester. Highlights include a student hire working with Chad on microfossil analysis from the Grand Canyon. Joel and Mary are planning for a busy summer working on new field sites with the Virtual Geology Project; the main focus will be the icefields and glacial geology in Kluane National Park. They are also planning for a field season examining metal(oid) contamination in groundwater in the Whitehorse area; the project (AGWA) is funded by the National Research Council Canada. As a part of this project, Joel will begin co-supervision of a M.Sc. student examining uranium partitioning between individual mineral phases in skarn settings, and the leachability of that uranium under specific surface and groundwater conditions. Supervision will be shared between Joel, Dr. Elliott Skierszkan (CarletonU), and Dr. Matt Lindsay (USaskatchewan). Between Virtual Geology and AGWA, Earth Sciences will be hiring two summer research students and a full-time project officer.



*Laboratory-scale froth floatation tank separating copper sulphide minerals in the Earth Sciences Laboratory.*



# Environmental Monitoring Certificate

In December, the Environmental Monitoring Certificate program (ENVM) delivered a second condensed offering of the ENVM 090 Course for students who could not attend the October course. This course was offered at the Ayamdigut Campus and was delivered out of the new wall tent classroom. Students were oriented to the program, to the University, and to support programs available to students. On campus, students learned the foundational concepts of environmental monitoring and water quality sampling, explored safety considerations, discussed employment opportunities and visited local organizations involved in environmental monitoring.

ENVM administrators and instructors also developed and submitted a proposal to Crown-Indigenous and Northern Affairs Canada (CIRNAC) for three years of continued program funding, which included a request for support for a half-time coaching position. With Youth Employment and Skills Strategy (YESS) funding expiring at the end of March 2024, this approach would secure the coaching supports that are so critical to the success of the ENVM Program.



*Students participate in the ENVM 090 Instruction in the Vadzaih Zeh Wall Tent classroom, December 2023.*

Yukon University's NSERC Industrial Research Chair in Northern Mine Remediation leads applied research projects that address challenges facing the northern mining industry.

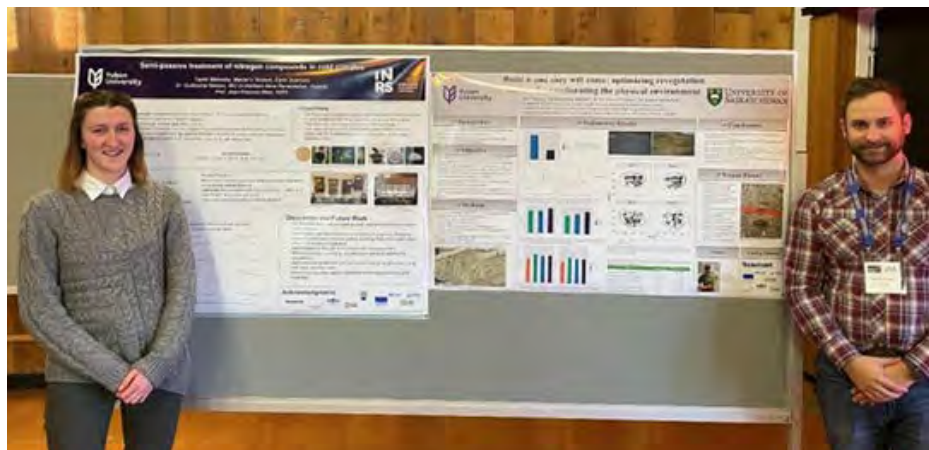
This research program supports the development of new evidence-based approaches to northern mine development and operations, and supports mining companies as they navigate the environmental assessment process and operate mines in northern Canada.

Areas of expertise are:

- passive treatments
- tailing management
- mine revegetation

### *General Updates*

- At the last Yukon Mining Research Consortium in November 2023, the Consortium agreed that Northern Mine Remediation (NMR) could collaborate with YG to work on abandoned mines.
- The NMR course for First Nation was developed with funds from the Colleges and Institutes Canada (CICan) grant and will be delivered in schools in Mayo and Pelly Crossing from January-March 2024. Dr. Vladimir Kabanov was hired to teach these courses and will travel to the communities on a weekly basis.
- The NMR team led a panel and presented two posters on Northern Mine Remediation and Restoration at the November 2023 Geoscience Forum.



*Master's students Taylor Belanksy and Ben Budzey, poster presentations.*



*Dr. Guillaume Nielsen & NMR team presenting at Geoscience Forum.*

- Master's student, Taylor Belansky visited UBC to perform DNA extraction analysis on the bacterial community uses in her bioreactors. She will also be travelling to the AME roundup in Vancouver to present her poster on how to remove nitrogen from mine-impacted water with native bacteria.
- Guillaume will present about the NMR program to the Water Board on January 25th.
- A peer reviewed paper on Lorax/Newmont Columns is being finalized in partnership with Canadian light source.
- Two site visits are scheduled in February and March to conduct snow surveys for the mine revegetation project.

### **Media**

Since November 2023, NMR's work was covered in Yukon News, UpHere business, Radio Canada and National Post Inc.

