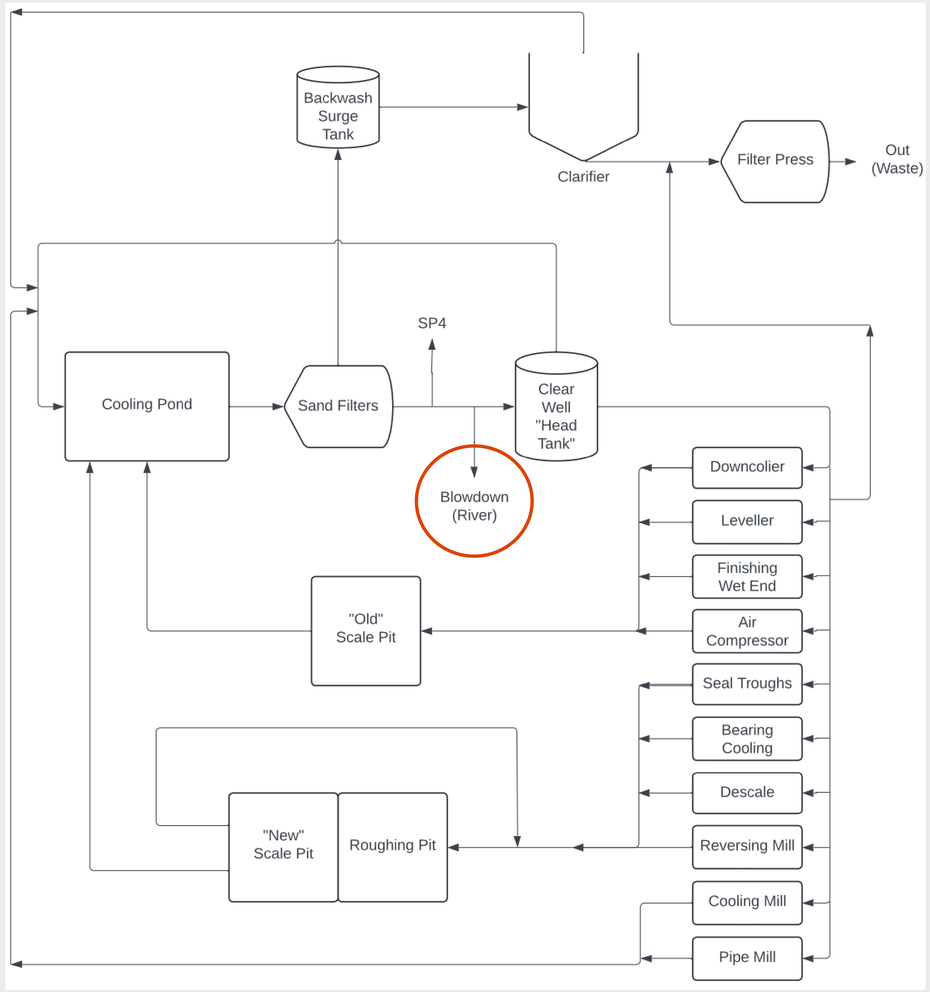
EVRAZ: WASTEWATER TREATMENT MONITORING

PROJECT SUMMARY

- EVRAZ is a steel manufacturing company located on the bank of the Willamette River
- EVRAZ has a water right which allows them to draw from, and a permit to return water to the Willamette river
- To prevent environmental damage and be compliant with regulatory requirements, they must monitor certain parameters and contaminants: pH, Total suspended solids (TSS), turbidity, oil and grease
- The current system relies on sending samples to a lab, which is slow and provides poor resolution at the time EVARZ is returning water to the river
- The goal of this project is to identify meters that can provide continuous measurements for pH, TSS and turbidity



Types of Monitoring:

- pH – pH monitoring is used to determine the acidity and alkalinity of the water before releasing it to the Willamette.
- TSS – total suspended solids monitoring is used to determine how much solids are in the water waste stream.
- Turbidity – Turbidity is the cloudiness of a liquid, caused by small particles in in the fluid.
- Oil and grease – Tests to determine the concentration of oil mixed with the water.

Sustainability and Safety of EVRAZ:

- Largest recycler in Western Canada and Colorado
- Front line safety culture
- 75% lower greenhouse gas emissions than steel making average
- Provides materials for wind turbines and carbon captures
- 100% of steel products are infinitely recyclable

SITE VISIT

Met with EVRAZ Engineers Debbie Silva, Michael Chin and Sunanda Chunder as well as the waste stream technicians. Toured the steel manufacturing and wastewater stream.

TYPES OF METERS

Type of meter	Image
Bluelab: Inline pH meter	
Apera: Inline pH meter	
Chemtrac: TSS and Turbidity meter	
ABB: TSS and Turbidity meter	
Hanna: Benchtop Turbidity meter	
Hanna: Benchtop pH meter	
Orono: Benchtop Oil and Grease Tester	

Oregon State University