



CIP Project Updates Wastewater Engineering

June 13, 2023 | Philip Kora, P.E.

Agenda

- CIP #: 211008 – Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines
- CIP #: 211007 – PS-2 Bar Racks Replacement and Grit Collection System Improvements

Wastewater CIP Project STATUS



CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

Project Manager: Darrel Field

Project Delivery Method: Design Bid Build

Project Status: Construction Phase

CIP Score: 78.3

We Are Here



Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
•1802543 (Design)	•Hazen and Sawyer	•\$2,322,045	•\$1,992,273.35	•85.8%	•5/22/2019	•12/5/2023	•88.6%
•2002190 (Construction)	•Weiss Construction Co., LLC	•\$9,839,000	•\$7,190,722.25	•73.1%	•4/5/2021	•12/5/2023	•80.6%

Wastewater CIP Project INFO



CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

💧 Project Scope of Work / Goals

- 💧 Install ferric chloride tank, pumps and piping to PS-1 to allow continuing phosphorus reduction for permit compliance.
- 💧 Chemically remove vivianite clogging of sludge line from Complex B.
- 💧 Install temporary sludge line to maintain operation during cleaning.

💧 Significance / Need / Background

- 💧 The existing ferric chloride system was in poor condition, requiring replacement.
- 💧 Clogging of the sludge line significantly challenged the ability to remove solids as needed for permit compliance.

Wastewater CIP Project PHOTOS

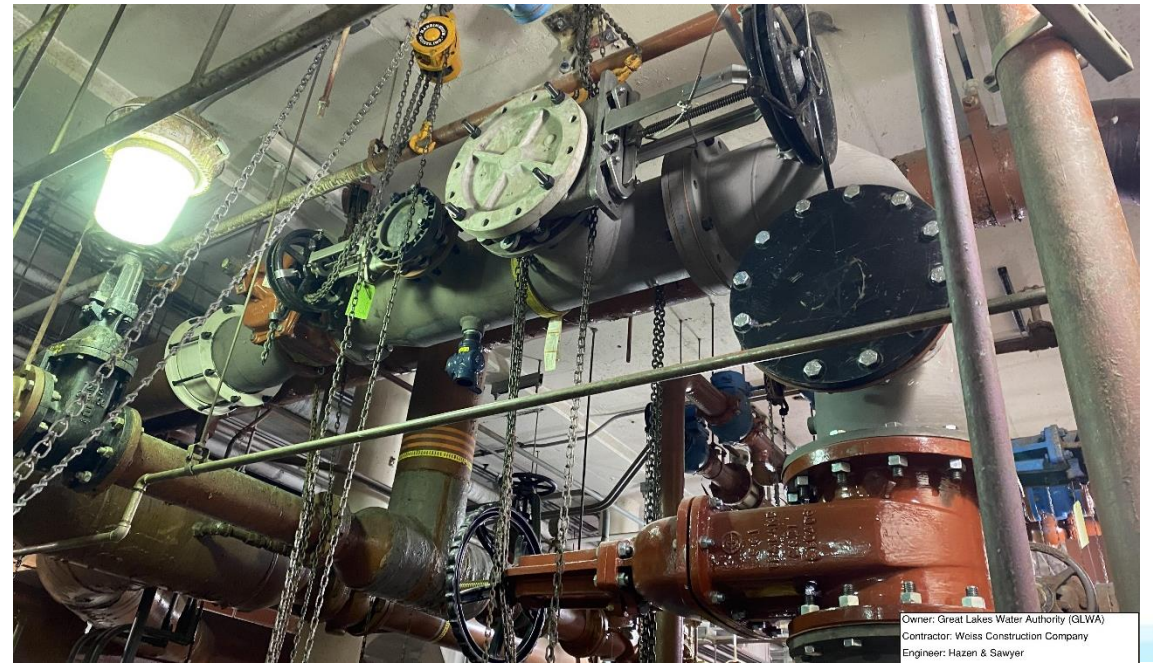


CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

January 2022
Vivianite Mineral Buildup
In Removed Complex B Piping



January 2022
Complex B
Sludge Piping Installation



Owner: Great Lakes Water Authority (GLWA)
Contractor: Weiss Construction Company
Engineer: Hazen & Sawyer

Wastewater CIP Project PHOTOS



CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

Complex B Sludge Piping Reconfigured for Cleaning



Contract: 2002190 - Rehab of FeCl at PS-1 & Complex B Sludge Lines

April 2022
Installing Ferric Chloride Pipeline From Chemical Building to Pump Station 1



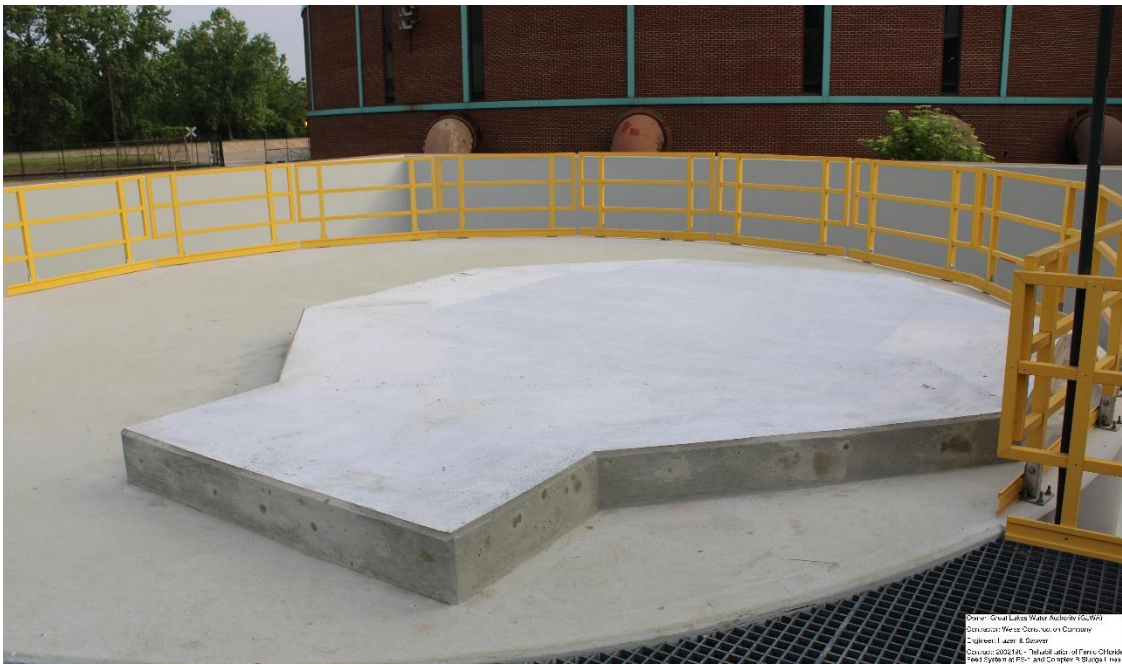
Owner: Great Lakes Water Authority (GLWA)
Contractor: Weiss Construction Company
Engineer: Hazen & Sawyer
Contract: 2002190 - Rehabilitation of Ferric Chloride Feed System at PS-1 and Complex B Sludge Lines
Date Taken: April 12, 2022

Wastewater CIP Project PHOTOS



CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

June 2022
Place Ferric Chloride
Tank Pad



Owner: Great Lakes Water Authority (GLWA)
Contractor: Weiss Construction Company
Engineer: Hazen & Sawyer
Project: 2021-2022 - Rehabilitation of Ferric Chloride Feed System at PS-1 and Complex B Sludge Line

July 2022
Ferric Chloride Tank
Delivery



Owner: Great Lakes Water Authority (GLWA)
Contractor: Weiss Construction Company
Engineer: Hazen & Sawyer

Wastewater CIP Project PHOTOS



CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

July 2022
Ferric Chloride Tank
Installed



March 2023
Ferric Chloride Pump Skids
Piping and Wiring Being Installed



Wastewater CIP Project PHOTOS



CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

April 2023
Jacking Temporary Sludge Line
Under Rail Spur



April 2023
Temporary Sludge Line
Installation to Allow Chemical Cleaning



Wastewater CIP Project PHOTOS



CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

May 2023
Ovation Control System Panels Installed and Being Tested



Contract: 2002190 - Rehal FeCl & Complex B Sludge
Location: Ovation Room

May 2023
Ferric Chloride Pump VFDs Installed and Being Tested



Contract: 2002190 - Rehab of FeC Sludge Lines
Location: PS2 Chemical Facility H: Pump Skid's Control Panel's

Wastewater CIP Project PHOTOS



CIP #: 211008 Rehab. Ferric Feed to PS-1 & Complex B Sludge Lines

Pre-Contract
Old Ferric Chloride Tanks



May 2023
Old Ferric Chloride Tanks
Being Removed



Contract: 2002190 - Rehab of FeC
Complex B Sludge Lines

Location: PS1 Ferric Demo

Wastewater CIP Project STATUS



CIP #: 211007

PS-2 Bar Racks Replacement and Grit Collection System Improvements

Project Manager: Jason Williams

Project Delivery Method: Design Bid Build (DBB)

Project Status: Final Design Phase

CIP Score: 70.60

We Are Here



Contract	Contractor	Contract Amount	Earned Value	% Complete	Start	End	% Elapsed Time
•1904337 (Design)	•Hazen and Sawyer	•\$11,307,128.58	•\$8,082,299.28	•71.48%	•10/20/2020	•05/19/2027	•39.7%
•2300154 (Construction)	•TBD	•TBD	•\$0	•0%	•DATE	•DATE	•TBD

Wastewater CIP Project INFO



CIP #: 211007

PS-2 Bar Racks Replacement and Grit Collection System Improvements

💧 Project Scope of Work / Goals

💧 Screenings and Grit Removal Improvements

- 💧 Long-term system reliability
- 💧 Significantly higher screenings and grit removal efficiencies than existing conditions
- 💧 Simplified operations and maintenance (O&M)
- 💧 Reduce hauling costs by washing and compacting screenings

💧 Significance / Need / Background

- 💧 PS2 Rack & Grit improvements will improve the performance of all downstream processed, reduce maintenance costs and increase life of downstream equipment

Wastewater CIP Project PHOTOS



CIP #: 211007

PS-2 Bar Racks Replacement and Grit Collection System Improvements

Pre Contract Photos



Proposed



1/4" Primary Bar Screens (10 Total)

Wastewater CIP Project PHOTOS



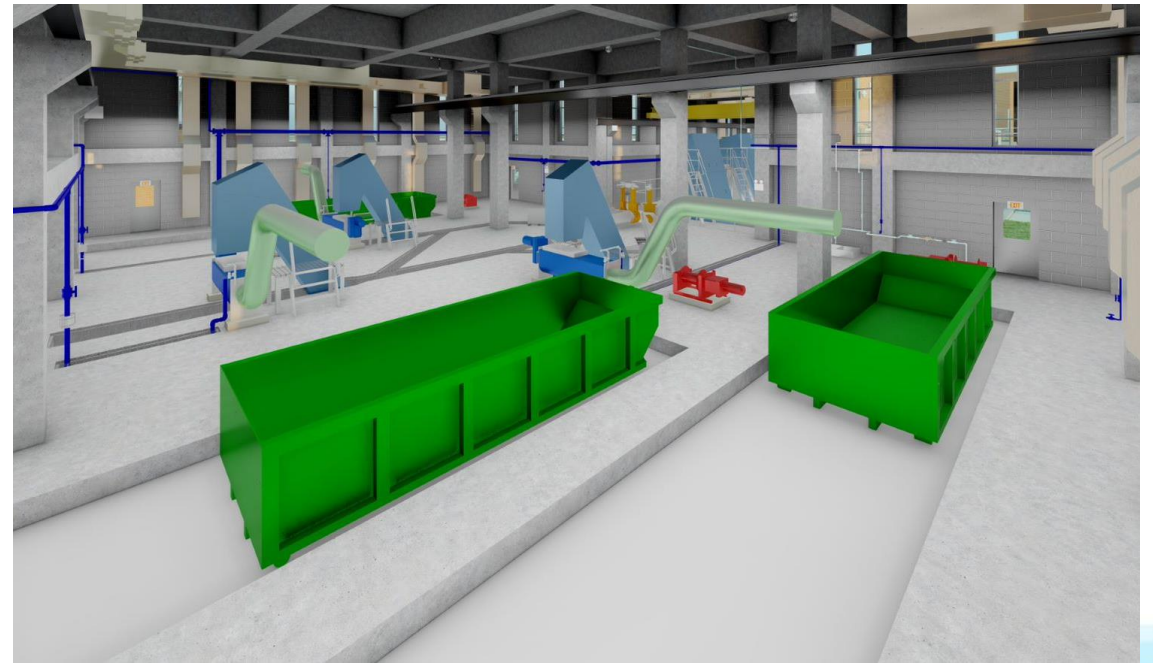
CIP #: 211007

PS-2 Bar Racks Replacement and Grit Collection System Improvements

Pre Contract Photos



Proposed



1/4" Secondary Bar Screens and Washer Compactors (3 Total)

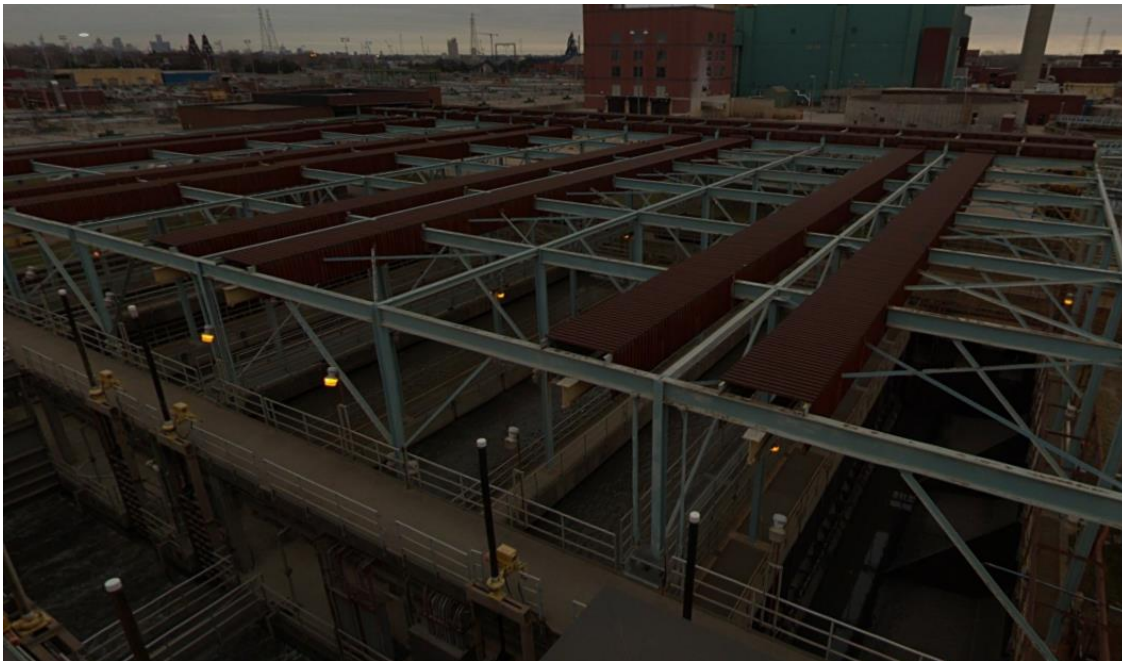
Wastewater CIP Project PHOTOS



CIP #: 211007

PS-2 Bar Racks Replacement and Grit Collection System Improvements

Pre Contract Photos



Proposed



Stirred Vortex Grit Collectors (8 Total)

Wastewater CIP Project PHOTOS



CIP #: 211007

PS-2 Bar Racks Replacement and Grit Collection System Improvements

Pre Contract Photos



Proposed



Grit Collector Pump Gallery

Wastewater CIP Project PHOTOS



CIP #: 211007

PS-2 Bar Racks Replacement and Grit Collection System Improvements

Pre Contract Photos



Proposed



New Grit Processing Facility

Wastewater CIP Project PHOTOS



CIP #: 211007

PS-2 Bar Racks Replacement and Grit Collection System Improvements

Pre Contract Photos



Proposed



Grit Processing Classifiers (6 Total)

Questions and Contact



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