

APRIL 2023


**Jacobs**

# Nampa Wastewater Treatment Plant Group F – Recycled Water Upgrades Progressive Design-Build Update Report

## Costs

Invoice to Date	Authorized Value	Contract Value
\$103,923,724	\$167,587,686	\$178,914,601

## Timeline



**8,000+**  
feet of yard piping  
installed



**3 of 3**  
standby generators  
installed onsite



**8,548**  
feet of medium-  
voltage cable  
installed



**378** requests  
for information  
reviewed and  
responses completed



Secondary Clarifier 4  
and Aeration Basin 4  
backfilled  
**95%**



The ultraviolet (UV) channel walls for Facility 450 – Clean Water Facility are being poured. The UV system design uses low-pressure high-output lamps with an inclined lamp configuration to generate germicidal UV-C wavelength light that inactivates pathogens in the water as they pass the submerged lamps. The new UV disinfection system provides pathogen inactivation to meet Class A Recycled Water disinfection requirements as well as the National Pollutant Discharge Elimination System permit requirements for discharge to Indian Creek.



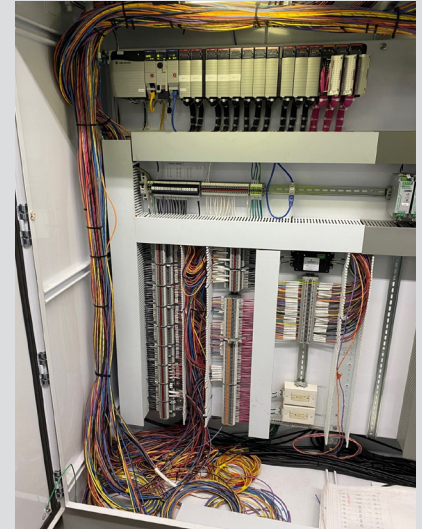
Rebar is being placed for the elevated walkways in Aeration Basin 4. The walkways provide access to the different zones within the basin for maintenance and for process sampling. Aeration Basin 4 has the same bioreactor configuration as the existing basins, with an anaerobic zone, a flexible aerated zone (FAZ), and an aerobic zone for biological nutrient removal. Mixing in the anaerobic and FAZ cells is provided by submerged medium-speed mixers, and aeration and mixing in the aerobic zones and FAZ is provided by centrifugal blowers and membrane and ceramic diffusers.

## Nampa Wastewater Treatment Plant

There is a significant amount of automation at the treatment plant to assist the operators and maintenance technicians achieve their mission to protect the community and the river. One of the primary automation tools is supervisory control and data acquisition (SCADA). SCADA includes programmable logic controllers (PLCs), software, computers, and communications to automate the treatment process and manage the operational data. SCADA improves the efficiency of the operators and provides more reliable outcomes.

Reliable communications between each of the dispersed PLCs and computers is an important element of the resiliency of the plant. Nampa uses a fiber-optic network to connect each of the operator's control stations and PLCs (shown in the photo).

During the Group F project, Nampa has selected a ring topology to provide a self-healing fiber communications ring around the plant (refer to the yellow ring in the diagram that follows). A ring topology is a network in which each node (facility) is connected to its adjacent node in a ring fashion so that data travel around the ring until they reach their destination. If any single pathway in a ring is disrupted or broken (such as during an excavation in the yard), each node can communicate with the rest of the system in the other direction on the ring. Additionally, ring networks are the easiest to build and to scale by adding a new node into the system.

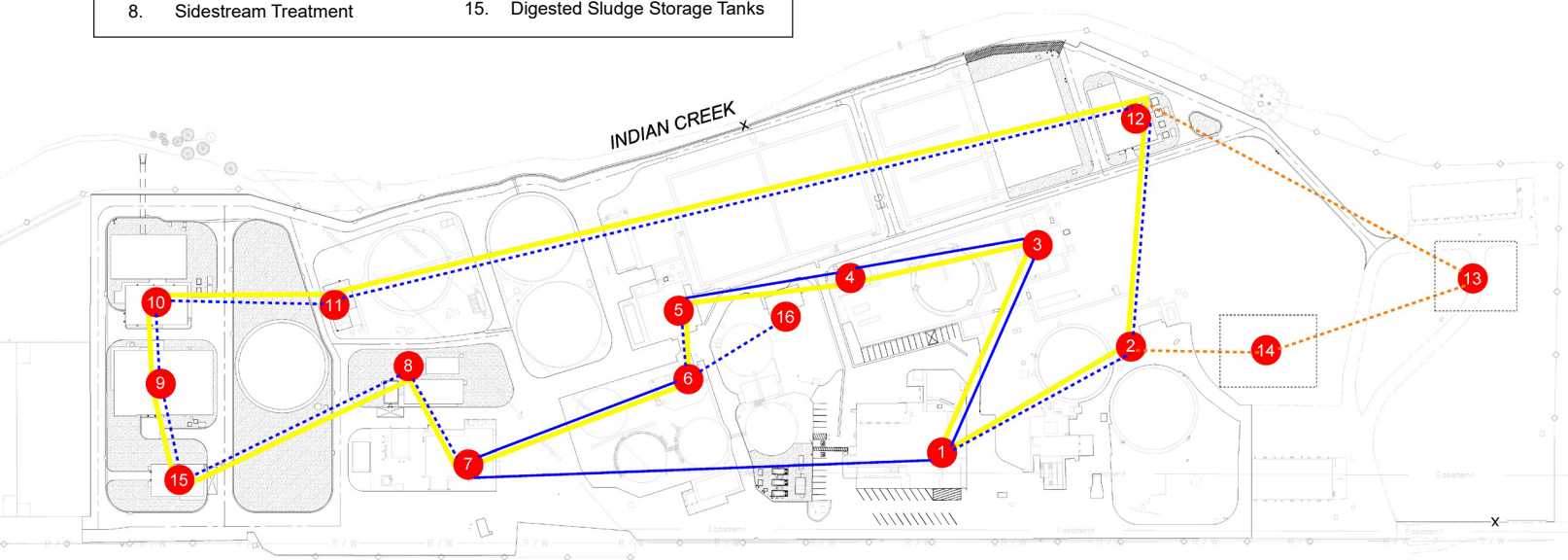


A control cabinet at the plant that includes the programmable logic controller and wires from the field instruments

### Facility Legend

- |                                  |  |
|----------------------------------|--|
| 1. Administration Building       | 9. Tertiary Filtration                   |
| 2. Primary Sludge Pump Station 2 | 10. UV Disinfection                      |
| 3. Primary Effluent Pump Station | 11. Return Activated Sludge Pump Station |
| 4. Primary Sludge Pump Station 1 | 12. Blower Building 2                    |
| 5. Blower Building 1             | 13. Future Maintenance Shop              |
| 6. Digester Control Building     | 14. Future Headworks                     |
| 7. Solids Handling Facility      | 15. Digested Sludge Storage Tanks        |
| 8. Sidestream Treatment          |  |

- Single-fiber Ring
- Single-mode Fiber (Existing)
- ... Single-mode Fiber (New Group F)
- ... Future







**Indian Creek  
Outfall**

Construction start:  
September 2023

Construction end:  
January 2024

0% complete

**Facility 254  
Aeration Basin 4**

Construction start:  
March 2022

Construction end:  
January 2024

80% complete

**Facility 272  
Blower Building 2**

Construction start:  
September 2022

Construction end:  
March 2024

28% complete

**Facility 730  
Digested Sludge  
Transfer Facility**

Construction start:  
August 2022

Construction end:  
September 2023

28% complete

**Facility 740  
Digested Sludge  
Handling Facility**

Construction start:  
June 2022

Construction end:  
July 2023

53% complete

**Facility 450  
Clean Water Facility**

Construction start:  
June 2022

Construction end:  
May 2024

50% complete

**Facility 350  
Filter Facility**

Construction start:  
June 2022

Construction end:  
June 2024

60% complete

**Facility 304  
Secondary Clarifier 4**

Construction start:  
January 2022

Construction end:  
April 2023

94% complete

**Facility 360  
Filter Support Building**

Construction start:  
March 2022

Construction end:  
February 2024

72% complete

**Facility 902  
Standby Power 2**

Construction start:  
May 2022

Construction end:  
March 2023

92% complete



NAMPA GROUP F PHASE 2

PROGRESS BILLING NO. 017							
Description	Original Contract Value	Change Order Value	Current Contract Value	% Compl.	To-Date Total	Previous Total	Current Progress Billing
<b>LUMP SUM CONSTRUCTION DATE ACTIVITIES</b>							
<b>DESIGN-BUILDER GENERAL CONDITIONS</b>	\$ 28,956,108.00	\$ -	\$ 28,956,108.00	59.99%	\$ 17,369,930.35	\$ 16,898,965.75	\$ 470,964.60
01 - Design-Builder General Conditions	\$ 28,956,108.00	\$ -	\$ 28,956,108.00	59.99%	\$ 17,369,930.35	\$ 16,898,965.75	\$ 470,964.60
<b>ENGINEERING SERVICES DURING CONSTRUCTION</b>	\$ 5,611,142.00	\$ -	\$ 5,611,142.00	44.94%	\$ 2,521,713.20	\$ 2,353,378.94	\$ 168,334.26
03 - Engineering Services During Construction	\$ 5,611,142.00	\$ -	\$ 5,611,142.00	44.94%	\$ 2,521,713.20	\$ 2,353,378.94	\$ 168,334.26
<b>PROCUREMENT AND PLANNING</b>	\$ 12,089,195.00	\$ -	\$ 12,089,195.00	80.55%	\$ 9,737,428.98	\$ 8,658,004.28	\$ 1,079,424.70
Process Equipment	\$ 10,216,202.00	\$ -	\$ 10,216,202.00	78.60%	\$ 8,029,991.00	\$ 6,950,566.30	\$ 1,079,424.70
RSCI Subcontractor	\$ 1,000,000.00	\$ -	\$ 1,000,000.00	97.50%	\$ 975,000.00	\$ 975,000.00	\$ -
ESI Subcontractor	\$ 179,930.00	\$ -	\$ 179,930.00	86.39%	\$ 155,440.18	\$ 155,440.18	\$ -
Ewing Subcontractor	\$ 300,000.00	\$ -	\$ 300,000.00	98.00%	\$ 293,992.44	\$ 293,992.44	\$ -
Lea Electric Subcontractor	\$ 393,063.00	\$ -	\$ 393,063.00	72.00%	\$ 283,005.36	\$ 283,005.36	\$ -
<b>CONSTRUCTION</b>	\$ 93,567,820.48	\$ -	\$ 93,567,820.48	60.40%	\$ 56,518,572.90	\$ 52,816,703.76	\$ 3,701,869.14
010 - Maintenance of Plant Operations (MOPOS)	\$ 795,513.16	\$ -	\$ 795,513.16	38.46%	\$ 305,966.60	\$ 305,966.60	\$ -
050 - Demolition	\$ 2,224,262.25	\$ -	\$ 2,224,262.25	97.78%	\$ 2,174,834.22	\$ 2,174,834.22	\$ -
020 - Yard Piping	\$ 12,041,916.96	\$ -	\$ 12,041,916.96	85.80%	\$ 10,332,046.55	\$ 9,650,474.05	\$ 681,572.50
065 - Site Electrical	\$ 8,894,862.54	\$ -	\$ 8,894,862.54	64.23%	\$ 5,713,008.04	\$ 5,268,264.91	\$ 444,743.13
254 - Aeration Basins 4	\$ 7,222,595.25	\$ -	\$ 7,222,595.25	79.58%	\$ 5,747,693.64	\$ 5,629,995.01	\$ 117,698.63
271 - Blower Building 1	\$ 51,579.85	\$ -	\$ 51,579.85	47.65%	\$ 24,577.97	\$ 24,577.97	\$ -
272 - Blower Building 2	\$ 7,498,606.50	\$ -	\$ 7,498,606.50	28.01%	\$ 2,100,010.86	\$ 2,062,608.07	\$ 37,402.79
301 - Secondary Clarifier 1	\$ 126,058.25	\$ -	\$ 126,058.25	0.00%	\$ -	\$ -	\$ -
302 - Secondary Clarifier 2	\$ 125,446.32	\$ -	\$ 125,446.32	0.00%	\$ -	\$ -	\$ -
303 - Secondary Clarifier 3	\$ 125,446.32	\$ -	\$ 125,446.32	0.00%	\$ -	\$ -	\$ -
304 - Secondary Clarifier 4	\$ 3,049,996.39	\$ -	\$ 3,049,996.39	94.11%	\$ 2,870,207.88	\$ 2,763,869.41	\$ 106,338.47
330 - RAS Pump Station Rehab	\$ 971,470.92	\$ -	\$ 971,470.92	35.12%	\$ 341,165.19	\$ 300,655.15	\$ 40,510.04
350 - Filter Facility	\$ 16,586,692.46	\$ -	\$ 16,586,692.46	60.16%	\$ 9,978,860.63	\$ 9,516,459.79	\$ 462,400.84
360 - Filter Support Building	\$ 2,918,980.26	\$ -	\$ 2,918,980.26	72.13%	\$ 2,105,531.75	\$ 1,966,940.62	\$ 138,591.13
450 - Clear Water Facility (UV Building)	\$ 17,405,334.23	\$ -	\$ 17,405,334.23	49.56%	\$ 8,625,905.89	\$ 7,966,259.44	\$ 659,646.45
730 - Sludge Transfer and Standpipes	\$ 5,857,002.59	\$ -	\$ 5,857,002.59	28.06%	\$ 1,643,604.07	\$ 1,148,548.33	\$ 495,055.74
740 - Digested Sludge Handling	\$ 5,279,172.42	\$ -	\$ 5,279,172.42	52.98%	\$ 2,797,012.18	\$ 2,522,148.13	\$ 274,864.05
750 - Co-Thickening Solids Handling	\$ 672,141.33	\$ -	\$ 672,141.33	35.12%	\$ 236,041.83	\$ 192,285.85	\$ 43,755.98
901 - Generator Building 1	\$ 99,671.69	\$ -	\$ 99,671.69	30.00%	\$ 29,902.84	\$ 28,617.08	\$ 1,285.76
902 - Generator Building 2	\$ 1,621,070.79	\$ -	\$ 1,621,070.79	92.05%	\$ 1,492,202.77	\$ 1,294,199.14	\$ 198,003.63
<b>COMMISSIONING</b>	\$ 2,261,878.00	\$ -	\$ 2,261,878.00	17.76%	\$ 401,775.00	\$ 342,978.66	\$ 58,796.34
06 - Commissioning	\$ 2,261,878.00	\$ -	\$ 2,261,878.00	17.76%	\$ 401,775.00	\$ 342,978.66	\$ 58,796.34
<b>INSTRUMENTATION, CONTROLS, AND PROGRAMMING</b>	\$ 4,643,478.00	\$ -	\$ 4,643,478.00	58.53%	\$ 2,717,827.67	\$ 2,553,912.90	\$ 163,914.77
07 - Instrumentation, Controls, and Programming	\$ 4,643,478.00	\$ -	\$ 4,643,478.00	58.53%	\$ 2,717,827.67	\$ 2,553,912.90	\$ 163,914.77
<b>Lump Sum Construction Total</b>	\$ 147,129,621.48	\$ -	\$ 147,129,621.48	60.67%	\$ 89,267,248.10	\$ 83,623,944.29	\$ 5,643,303.81
<b>ALLOWANCE AND CONTRACT CHANGE ORDERS</b>							
<b>ALLOWANCES</b>	\$ 20,222,913.37	\$ -	\$ 20,222,913.37	1.58%	\$ 318,801.44	\$ 377,055.10	\$ (58,253.66)
09 - Allowances	\$ 20,222,913.37	\$ -	\$ 20,222,913.37	1.58%	\$ 318,801.44	\$ 377,055.10	\$ (58,253.66)
<b>CONTRACT PRICE AMENDMENT</b>	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -
11 - Contract Price Amendment	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -
<b>Allowances and Contract Change Orders Total</b>	\$ 20,222,913.37	\$ -	\$ 20,222,913.37	1.58%	\$ 318,801.44	\$ 377,055.10	\$ (58,253.66)
<b>PASS THROUGH COSTS</b>							
<b>ESCALATION</b>	\$ 3,624,260.15	\$ -	\$ 3,624,260.15	80.20%	\$ 2,906,656.65	\$ 2,652,958.44	\$ 253,698.21
Escalation	\$ 3,624,260.15	\$ -	\$ 3,624,260.15	80.20%	\$ 2,906,656.65	\$ 2,652,958.44	\$ 253,698.21
<b>PERMITS</b>	\$ 250,000.00	\$ -	\$ 250,000.00	41.65%	\$ 104,132.46	\$ 104,132.46	\$ -
Permits	\$ 250,000.00	\$ -	\$ 250,000.00	41.65%	\$ 104,132.46	\$ 104,132.46	\$ -
<b>OWNER CONTINGENCY</b>	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -
Owner Contingency (left over from Escalation)	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -
<b>Pass Through Total</b>	\$ 3,874,260.15	\$ -	\$ 3,874,260.15	77.71%	\$ 3,010,789.11	\$ 2,757,090.90	\$ 253,698.21
<b>CONSTRUCTION PROGRESS BILLING</b>							
<b>Phase 2 Amendment Total</b>	\$ 171,226,795.00		\$ 171,226,795.00		\$ 92,596,838.65	\$ 86,758,090.29	\$ 5,838,748.36
<b>Less Retention (5%)</b>					\$ -	\$ -	\$ -
<b>Lump Sum Billing Total</b>					\$ 92,596,838.65	\$ 86,758,090.29	\$ 5,838,748.36
<b>PHASE 1 DESIGN</b>							
<b>DESIGN, ENGINEERING, AND PRECONSTRUCTION</b>	\$ 11,406,915.00	\$ (80,000.00)	\$ 11,326,915.00	100%	\$ 11,326,884.89	\$ 11,326,884.89	\$ -
02 - Design, Engineering, and Preconstruction	\$ 11,406,915.00	\$ (80,000.00)	\$ 11,326,915.00	100%	\$ 11,326,884.89	\$ 11,326,884.89	\$ -
<b>PHASE 1 DESIGN (No Retention)</b>	\$ 11,406,915.00	\$ (80,000.00)	\$ 11,326,915.00	100%	\$ 11,326,884.89	\$ 11,326,884.89	\$ -
<b>Progress Billing Total</b>	\$ 182,633,710.00	\$ -			\$ 103,923,723.54	\$ 98,084,975.18	\$ 5,838,748.36

See attached continuation sheets for additional breakdowns



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## Safety

### Statistics

- Project total hours: 337,503
- Incident recordable rate: 0.0
- DART: 0.00
- Worked days without recordable: 322
- Avg. on-site workers: 120
- BZO count: 35

### Areas of Focus

- Speeding on Site
- Silica dust



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## Schedule Milestones

2023		2024			
Q2	Q4	Q1	Q2	Q3	Q4
Complete - Commission Clarifier 4	Complete - RAS building completed	Complete - Start of Commissioning - Aeration Basin 4 completed - Blower Building 2 completed	Complete - Construction work completed	Complete - Commission 350 & 360 Filter Facility - Commission for Clean Water Facilities 450 A&B	Complete - Acceptance Test: 10/31 - Project Complete

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## Schedule – Critical Path and Challenges

### Critical Path

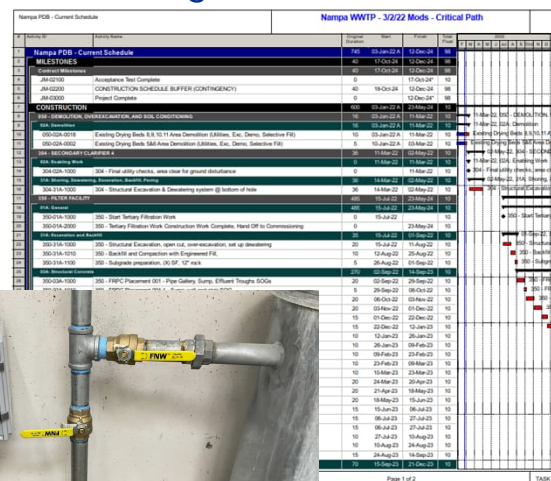
- Building 450B is the Critical path.

### Challenges

- Recycled Water Pipeline
- Electrical Equipment

MOPO's: 72.35% complete

- Upcoming MOPO's:
  - Power Pole tie-in
  - Tie-in stand by power 2



4



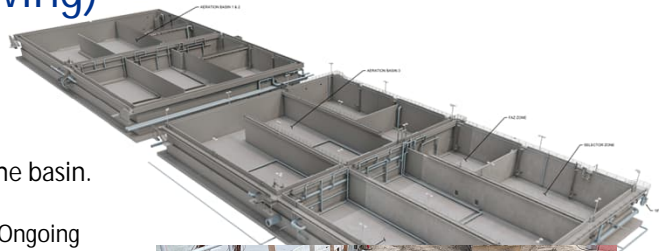
## 254 Aerator Basin 4 (Ewing)

### Overview:

- Outer walkway slabs placed
- Prepping for inner walkway slabs
- Backfill in progress
- Installing mechanical piping around the basin.

### QA/QC

- Rebar placement for elevated walkway – Ongoing
- 3<sup>rd</sup> party rebar inspection for elevated walkway
- Backfill operation for perimeter of structure ongoing and compaction testing performed by 3<sup>rd</sup> party



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## 272 Blower Building (Ewing)

### Overview:

- Masons installing block

### QA/QC

- Masonry Block placement initiated
- 3<sup>rd</sup> party rebar and grout inspection – ongoing
- City inspection for all rebar placement



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## 304 Secondary Clarifier 4 (RSCI)

### Overview:

- Installing Clarifier Mechanism
- Back fill nearly complete
- Placing Launder

### QA/QC

- Backfill close to completion, ongoing compaction testing by 3<sup>rd</sup> party
- Installation of Process Equipment ongoing
- Initiated placement of launder slabs and inspected by 3<sup>rd</sup> party
- City inspection for all rebar placement

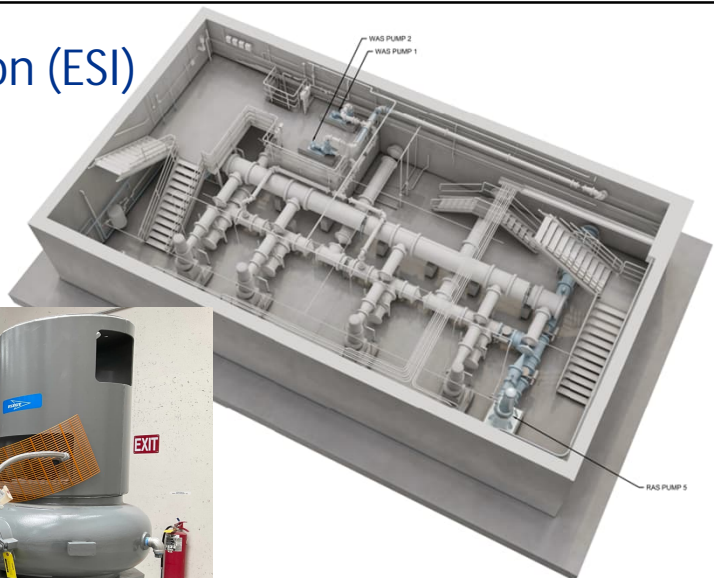


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## 330 Ras Pump Station (ESI)

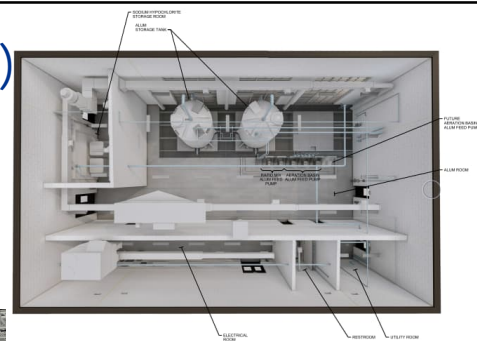
### Overview:

- RAS pump 5 Piped
- Plumbing in of chemical pump
- Plumbing in Eyewash station
- Waiting for RAS pump 5 VFD.



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## 450 Clean Water Facility (RSCI)

### Building A Overview:

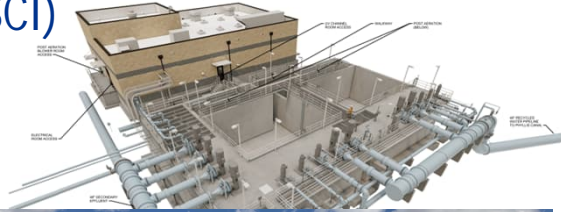
- On going electrical work
- Prepping for leak test
- Prepping NE Platform

### Building B Overview:

- UV channels placements on going.
- Prepping slabs and walls.

### QA/QC

- 3<sup>rd</sup> party rebar inspections for vertical walls for both Post Aeration Basin and UV channels – Ongoing
- 3<sup>rd</sup> party concrete sampling/testing for vertical walls for both Post Aeration Basin and UV channels – Ongoing
- Backfill in progress between Filter #350 and #450A, compaction testing performed by 3<sup>rd</sup> party
- City inspection for all rebar placement



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## 730 Sludge Transfer Facility (RSCI)

### Overview:

- Masonry complete
- On going electrical work
- Installing Trusses & Roof



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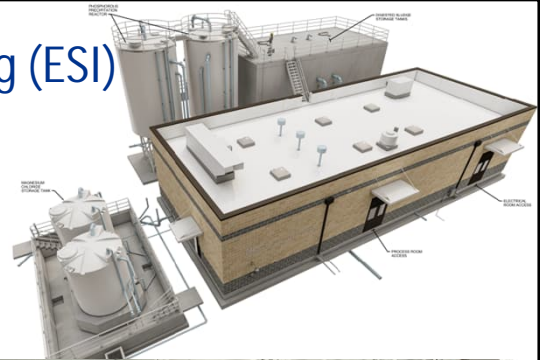
## 740 Digested Sludge Handling (ESI)

### Overview:

- DS tanks coated
- On going roofing activities
- Prepping to place concrete fill in the DS tank
- Painting in the mechanical and Electrical rooms

### QA/QC

- Concrete tank interior coating completed. All testing completed and passed
- Process yard piping DS and chemical feed lines installation - ongoing



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## 750 Solids Handling Facility (ESI)

Overview: June 22 – May 23

- Waiting for VFDs to be delivered.

New pumps



Current Pumps



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## 902 Generators (ESI)

### Overview:

- Prepping Switch gear for energization
- Prepping to energize 902



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## Site Electrical (ESI)

### Complete:

#### Medium & Low Voltage:

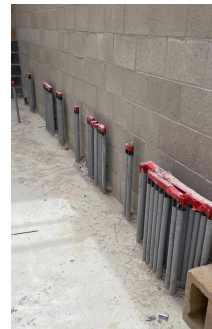
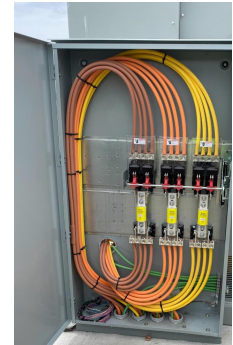
- 902 transformers set and terminations complete
- 902 load bank terminations complete
- Facility 360 lighting installed



### In Progress:

#### Medium & Low Voltage:

- Coordination study in progress
- Idaho Power facility study in progress
- 902 switchgear to be tested
- DB-03MV AND DB-02C from facility 360 to facility 350
- DB-14MV conduit



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## Yard Piping

Complete:

- 48" SE pipe to Building 450 from SE splitter box
- 10" 4W S. of 740

In progress:

- 12" storm drain behind 740
- 30" RAS N. of AB 4.
- 12" 4W on N. end of plant
- 8" DS S. of 740
- 18" BWS E. 450
- 48" SE from 350 to 450
- Prepping 12" SD N. of AB 4



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## Quality Assurance:

### 3<sup>rd</sup> Party Testing & Inspection

- Full time onsite inspector

### Yard Piping

- Various yard piping Dig/Lay/Bury in progress, compaction testing performed by 3<sup>rd</sup> party

### QA/QC Activities

- Preinstallation meetings for ongoing activities
  - RSCI Facilities
    - #730 Digested Sludge Transfer Facility
    - #350 Filter Facility
    - #450 Clean Water Facility
- On-going pre-checklist coordination for concrete pours and review of completed work prior to concrete placement



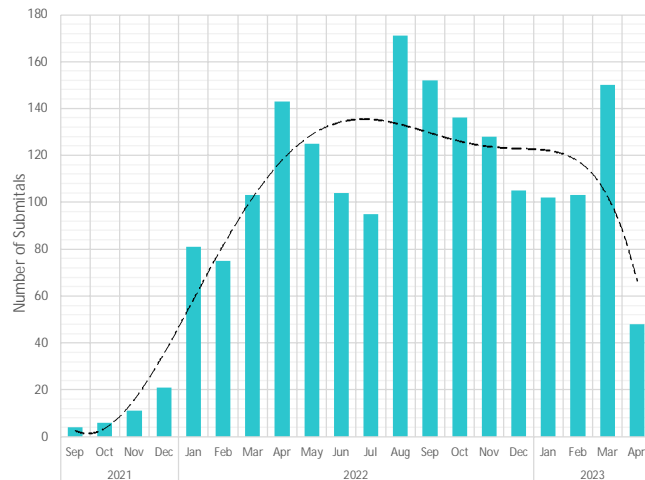
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## Submittals

### Document Management Summary

Item	Submittals
Total received/prepared	1863
Total responded to	1828
Total pending	35
Average turn-around (days) from last report	8.1
Average turn-around (days)	8.0

Submittal Volume by Month



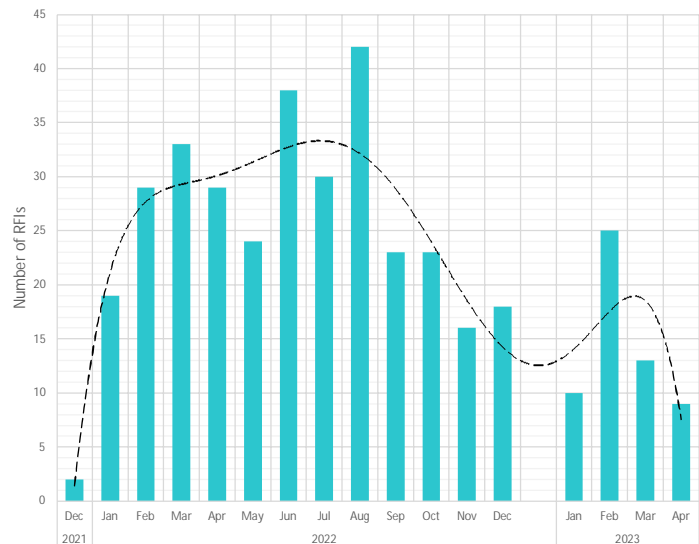
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## RFI's

### Document Management Summary – Jul. 2022

Item	RFI
Total received/prepared	383
Total responded to	378
Total pending	5
Average turn-around (days) from last report	4.9
Average turn-around (days)	4.9
RFI – Request for Information	

RFI Volume by Month



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## Changes/Allowance Approval

Description	Value (Change Amount)
C.P.A	#18,752,333.44

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Open Discussion



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