Project Heartland – Aligned Coal City Technology Campus

Planned Unit Development Submission: General Fill and Flush Plan

Applicant: Aligned Data Centers | Draft prepared October 5, 2026 for PUD Docs #2 resubmittal

General Flush Plan - Water Consumption

- Water Consumption Summary for a 100,000-Gallon Closed Loop system (see table below).
- Fill and Flush activity occurs over a 2-week period for each 100,000 Gallon Closed Loop System
- The Fill an Flush operation occurs 1x during initial setup of the closed loop system
- There will be 33 fill and flush procedures in total for the proposed 11-building campus
- DI water can be created onsite using municipal water supply or purchased separately and trucked in
- Complete fill and flush cycle can be performed with a trucked in supply of DI water and trucked out wastewater, if deemed necessary by AHJ's and utility operators

Municipal Water - Activity	Planning Basis	Estimated Water Usage
Initial Pre-Flush / Feed-and-Bleed	Up to 3 system-volume turns	Up to 300,000 gal
Final City Water Flush / Cleaner Removal	2.0–2.5 system-volume turns	200,000–250,000 gal
DI Water - Activity	**Planning Basis**	**Estimated Water Usage**
DI Water Rinse	0.5–1.0 system-volume turn	50,000–100,000 gal
Total Water Use – Municipal + DI	**Planning Basis**	**Estimated Water Usage**
Total Planning Allowance	5.5–6.5 system-volume turns	550,000–650,000 gal

Total Water Use – DI (Trucked Only)	Planning Basis	Estimated Water Usage
If initial Municipal Water Pre-Flush was skipped (all water trucked in scenario - DI Water)	Approx. 3.0–3.5 system-volume turns	Approx. 300,000–350,000 gal

Flush Water Disposal Procedure (typical)

- Work with wastewater treatment operator to pre-permit acceptable PCT6009 dosage amounts, acceptable discharge limits, and acceptable flow rate.
- At construction, document and provide confirmation that PCT6009 was applied in accordance with the manufacturer's recommended dosage.
- After the feed-and-bleed dilution process - Sample and provide documentation that the final concentration of PCT6009 is within the pre-determined acceptable limit for discharge to wastewater treatment.
- After the feed-and-bleed dilution process - Sample and provide documentation that pH and phosphate levels are within the acceptable discharge limits.
- Provide verification that the discharge flow rate is controlled and monitored throughout the discharge process.

General Flush Plan - Procedure

Step 1 – Pre-Flush: Circulation Through Filtration

- Circulate each valve position at 3–5 ft/s, with 5 ft/s as the target velocity, for approximately 12–24 hours per valve position.
- Circulate through 100-micron bag filtration.
- For planning purposes, anticipate less than approximately 3 system-volume turns.
    - Example: For a 100,000-gallon loop, we would expect to achieve the required pre-flush condition before approximately 300,000 gallons has been fed and bled.

Step 2 – Pre-Flush Feed and Bleed

- Feed and bleed with city water until:
    - Total Iron <2 ppm
- Once the target is achieved, add the cleaner/passivation treatment:
    - PCT6009 – approximately 3.33 gallons per 1,000 gallons of system volume.

Step 3 – Cleaner Circulation

- Circulate each valve position at 3–5 ft/s, targeting 5 ft/s at the applicable piping sections.
- Maintain circulation for approximately 24–48 hours per valve position.
- Circulate through inline 5-micron bag filtration during the cleaning period.

Step 4 – Final Flush / Cleaner Removal and DI Rinse

- Feed and bleed with city water until:
    - Total Iron <2 ppm
    - pH and conductivity are within approximately 5–15% of the makeup water
- The city-water feed-and-bleed portion is typically completed within approximately 2.0–2.5 system-volume turns.
- Once these setpoints are achieved, the DI-water rinse begins.
- Feed and bleed with DI water until:
    - Total Hardness <25 ppm
    - Chlorides <25 ppm
    - Total Iron remains <2 ppm
- The DI rinse is generally completed within approximately 0.5–1.0 system-volume turn.
- Once the final flush setpoints are achieved, add the final treatment:
    - PCT6103 corrosion inhibitor – approximately 4.95 gallons per 1,000 gallons
    - PCT3020 non-oxidizing biocide – approximately 0.4 gallons per 1,000 gallons
- Circulate the final treatment overnight.

Step 5 – Final pH Adjustment

- Prior to introducing the DCAs, adjust the loop pH as required based on field measurements using PCT6002.425.