



## ENGINEERING CLARIFICATION

**EC TITLE:** Rotary Lobe Backwash Waste Clarification Settled Solids Pump Specification Update  
**PROJECT:** 3 Kings Water Treatment Plant  
**EC NO.:** 21  
**DATE:** 5/19/2020  
**STATUS:** Acknowledged

### SECTION 1: BY CONTRACTOR

**QUESTION:**

Further input was recently provided by MRI, the supplier of the backwash waste clarification packaged system, on the required removal rate of solids from the clarifiers. The Backwash Waste Settled solids pumps are oversized for the application.

**DRAWING NO.:**  
**SPECIFICATION SECTION:** 44 42 56.14Lobe Pumps  
**POTENTIAL COST IMPACT:**  
**POTENTIAL SCHEDULE IMPACT:**

**PROPOSED SOLUTION:**

The Rotary Lobe Pump Specification, Section 44 42 56.14 Data Sheet 02, shall be updated to reduce the size of the Backwash Waste Clarification Settled Solids Pumps based on input from MRI. An update to the one line diagram of these pumps was provided to show the appropriate HP, this will not effect conduit size.

**COMMENTS:**

**INITIATOR:** Menk, Sean/SLC  
**PRIORITY:** Normal  
**REQUESTED RESPONSE DATE:** 6/2/2020

### SECTION 2: BY REVIEWER

**RESPONSE:**

**COMMENTS:**

**REVIEWED BY:** Sam Conant  
**REVIEWED DATE:** 5/27/2020



**LOBE PUMP DATA SHEET, 02**

Tag Numbers: PMP-310-128-01, PMP-310-130-02

Pump Name: Backwash Waste Clarification Settled Solids Pumps 1 and 2

Manufacturer and Model Number: (1) Boerger

(2) Vogelsang

(3) Swaby Lobeline

**SERVICE CONDITIONS**

Corrosive \_\_\_\_\_

Solids Size (Maximum hard solid size/Maximum soft solid size): \_\_\_\_\_ / \_\_\_\_\_

Liquid Pumped (Material and Percent): Backwash Waste Solids, Max solids 2%

Pumping Temperature (Celsius): Max 40 Min 4

Vapor Pressure @ 60 Degrees F: \_\_\_\_\_ Liquid pH: \_\_\_\_\_

Abrasive (Y/N) \_\_\_\_\_ Possible Scale Buildup (Y/N): \_\_\_\_\_

Net Positive Inlet Pressure Available (NPIPA) (ft): 21.2

Altitude (ft msl): 6851 Area Classification: \_\_\_\_\_ Location (indoor/outdoor): Indoor

**PERFORMANCE REQUIREMENTS AT PRIMARY DESIGN POINT**

Capacity (US gpm): Rated ~~150~~ 70

Total Dynamic Head (ft): Rated ~~25~~ 20

Maximum Shutoff Pressure (psig): \_\_\_\_\_

Constant (Y/N): N Adjustable (Y/N): Y

Maximum Power (BHP): ~~2~~ 0.6

**EC #21**

**PERFORMANCE REQUIREMENTS AT SECONDARY DESIGN POINT**

Capacity (US gpm): ~~150~~ 50

Total Dynamic Head (ft): ~~6~~ 0 (SEE REMARKS)

**DRIVE MOTOR** (See Section 26 20 00, Low-Voltage AC Induction Motors.)

Horsepower: ~~5~~ 1 Voltage: 230/460 Phase: 3 Synchronous Speed (rpm) \_\_\_\_\_

Service Factor: 1.0 \_\_\_\_\_ Inverter Duty: Yes \_\_\_\_\_

Enclosure: EXP \_\_\_\_\_ ODP \_\_\_\_\_ TEFC X \_\_\_\_\_ TENV \_\_\_\_\_

**REMARKS** SYSTEM MAY APPROACH GRAVITY FLOW UNDER ANCILLARY OPERATING CONDITIONS. THE INTENT IS FOR PUMPS TO OPERATE AT 50 GPM TO AS LOW A HEAD AS POSSIBLE. FLOW CONDITIONS WILL BE DEPENDENT ON UPSTREAM AND DOWNSTREAM WATER SURFACE ELEVATIONS.