ODYSSEY
MANUFACTURING CO.

December 5, 2024

Mr. Jim Ramer
City of Flagler Beach
Water Treatment Plant
4680 Seminole Woods Blvd.
Palm Coast, FL 32137

Re: **PROPOSAL TO SUPPLY REPLACEMENT SULFURIC ACID TANKS FOR THE CITY OF FLAGLER BEACH WTP**

Dear Jim,

As a follow-up to your request, Odyssey Manufacturing Co. is pleased to provide the following proposal to furnish and install replacement sulfuric acid tanks for the City of Flagler Beach Water Treatment Plant (WTP).

Current Situation

Odyssey installed two 3,050-gallon double-walled 93% sulfuric acid tanks at the City of Flagler Beach WTP in October 2012. The tanks measure 96" in diameter and are 138" tall. These tanks typically last 10 to 12 years. We would recommend budgeting to replace these tanks in FY 2025.

Discussion of Proposed Solution

Based on a discussion of all of your options, the City of Flagler Beach chose to downsize the tanks to 2,550-gallon each (which still allows full tanker deliveries of 3,200 gallons) and to raise the tanks up with new housekeeping pads to allow them to be fully drained. As you know, the plant only uses about 10 – 15 gpd of 93% sulfuric acid so the tanks could be down-sized and still achieve the required regulatory storage amount of greater than thirty (30) days. Per our discussion, by staying with 93% acid, all of the piping must remain in kynar (PVDF). All of the proposed work would be done in such a manner using temporary tanks to keep the sulfuric acid system operational during the construction. The work includes removal and legal disposal of the existing tanks.

Odyssey proposes to furnish and install two Assmann 2,550-gallon HDLPE double-walled tanks rated for 2.2 specific gravity. The tanks measure 96" in diameter and are 119" tall. The top of the tank will have a 2" fill line, a 4" fitting for an ultrasonic level sensor, a 24" safe surge man way and a 3" vent. We will install a 1" flanged fitting on the bottom of the outer tank and install a valve and pipe to the sump to allow the operator to check for leaks from the primary to the secondary tanks. The vent line will be run to an existing desiccant system. The top sidewall will have a 3" overflow fitting running to an existing sump. The bottom sidewall fitting will have a 2" Hastelloy C double-flanged fitting tied to a 2" isolation ball valve. We will downsize the bottom feed piping to 1" out of the valve to a 1" flexible connection to another 1" valve to the feed equipment. There will be a 1" line with a valve run off of the feed header for each tank to the existing sump to allow each tank to be drained. The feed header will have a "T" with a ½" line for a sight-glass. All piping shall be kynar piping with the exception of the vent and overflow lines which shall be Schedule 80 CPVC to save money. The tanks have an twelve-week lead time. The tanks have a three-year parts and labor warranty. As part of the

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work, we will install a tank restraint system consisting of floor L-brackets and SS316 cables. The cost of this option is $51,800.

At one point, you were having trouble draining the tanks down. Since then, we re-piped the system to eliminate a lot of the twists and turn and hopefully this is not an issue anymore. Since the tanks in Options #2 through #4 are shorter than the existing tanks, as an option we can increase the height of the existing housekeeping pads for the tanks if you still feel this is necessary. My recommendation is to only raise the height of the existing concrete pads by 12". We will use a temporary tank to feed the sulfuric acid during the concrete work. The new pads will contain 4,000 psi concrete. We will dowel in #5 rebar in a 12" grid on the existing pad and tie this to a 12" x 12" grid about 4" off of the top of the existing housekeeping pad. The cost to increase the height of these housekeeping pads is $7,900.

As you know, Odyssey is a licensed plumbing and general contractor who specializes in chemical system design, installation and service work. We have installed over 3,500 chemical systems in Florida including five in neighboring Bunnell and eight in neighboring Palm Coast and four in the City of Flagler Beach just to name a few. We are the only entity in Florida who owns kynar fusion welders and stocks kynar piping and have three of them, so we are able to easily do the work.

Thank you for your consideration. Please do not hesitate to contact me at (813) ODYSSEY or cellular (813) 335-3444 if I can be of further assistance.

Sincerely,

Patrick H. Allman
General Manager

C: (1) Ehab Hashem, Flagler Beach