

**Indian River County, Florida
Solid Waste Disposal District
Board Memorandum**

Date: April 28, 2022

To: Jason E. Brown, County Administrator

From: Sean C. Lieske, Director of Utility Services

Prepared By: Himanshu H. Mehta, PE, Managing Director, Solid Waste Disposal District

Subject: Change Order No. 1 to Agreement with Biogas Engineering for a High Pressure Skid System

Descriptions and Conditions:

On April 5, 2022, the Solid Waste Disposal District (SWDD) approved the agreement with Biogas Engineering to fabricate the High-Pressure Skid (HPS) system for a not-to-exceed cost of \$789,000.

The objective of the HPS system is to send pressurized landfill gas (LFG) to both the Leachate Evaporation system, which will be constructed approximately ½ mile from the new HPS, and the Renewable Natural Gas (RNG) project by Nopetro Eco District, LLC (NED) that will be located approximately ½ mile away on the neighboring Indian River EcoDistrict property.

The original design plan was to send “wet” gas to the respective systems and use a series of gravity sumps to collect the moisture in the gas called condensate. A separate pneumatic air-line would be needed to pump the condensate into a separate liquid line back to one of the on-site lift stations. Although this conceptually worked, the 30% design was indicating that these gravity sumps and the corresponding lines would need to be constructed at a depth of 9 to 12 feet (ft.) below surface. Given the high water table of 3 to 6 ft. below surface, the construction cost of this segment of the project would be very expensive. After further discussion with BGE, a change in design to utilize a chiller to “dry” the gas would eliminate the gravity sump system along with the extra liquid and air-lines.

Since the installation of the chiller would provide an equal benefit to the Evaporation project and the RNG project, staff was able to receive the attached letter of support from NED to reimburse SWDD 50% of the engineering, purchase and fabrication cost of the chiller upon construction commencement of their project.

Staff requested the attached Change Order No. 1 from BGE to facilitate this change in direction.

Analysis:

BGE has provided Change Order No. 1 to provide equipment to dehydrate the LFG prior to it being sent into the pipeline. This change-order covers the cost of providing the necessary equipment to achieve this request, including the cost to engineer, size, and integrate this equipment into the HPS system. The design

and equipment provided will dehydrate the LFG by cooling it so that condensate will not be generated in the pipeline. This change will allow the condensate sumps to be removed along the pipeline.

In addition, NED has agreed to share in the 50% capital cost of the chiller system. As part of this agreement, NED has also recognized that it would be prudent for them to install a hydrogen sulfide (H₂S) removal system prior to the chiller, as it is best to do so when the LFG is at high temperature and contains moisture. Staff supports NED's request to have them install this on our property since the footprint of our HPS is going to be sized on a concrete pad that has space for both the chiller and the H₂S removal system. Since any LFG going through the H₂S removal system uses up the media within it, staff supports NED's request to proportionately share in the O&M costs associated with the media. Any condensate generated on SWDD's property as a result of the chiller will be routed to one of our on-site lift stations and then ultimately treated in the Evaporation system.

Upon approval of Change Order No. 1 for \$292,570, the total authorization to BGE for the fabrication of the HPS system with the chiller is now \$1,081,570.

Funding:

The landfill gas flare skid improvements are considered a "closure activity" and, as such, is funded from an escrow account long established per Florida Department of Environmental Protection (FDEP) requirements. Funding for the landfill gas flare skid improvements in the amount of \$1,081,570 is available in the SWDD/Accrued Closure – I, II & Infill account, number 411-239006, which is funded from SWDD assessments and user fees.

Project Portion	DESCRIPTION	ACCOUNT	AMOUNT
Change Order	SWDD/Accrued Closure – I, II & Infill	411-239006	\$ 292,570
Original	SWDD/Accrued Closure – I, II & Infill	411-239006	\$ 789,000
Total			\$1,081,570

Recommendation:

Solid Waste Disposal District (SWDD) staff recommends that its Board approve Change Order No. 1 with Biogas Engineering to include a chiller in the fabrication of the high-pressure skid system for a not-to-exceed cost of \$292,570; and authorize the Chairman to execute the same, after approval by the County Attorney.

Attachment:

1. BGE Change Order No. 1
2. Letter of Support from NED