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June 26, 2012

Mr. Todd Saxberg
Truckee Meadows Water Reclamation Facility
8500 Cleanwater Way
Reno, NV 89502

Subject: Proposal to Perform a Digester Gas Conditioning System Predesign for the Truckee Meadows Water Reclamation Facility

Dear Mr. Saxberg:

At your request, we have prepared the following Scope of Work for the Digester Gas Conditioning System Predesign for the Truckee Meadows Water Reclamation Facility (TMWRF).

SCOPE OF WORK

On May 11, 2012 Applied Filter Technology provided TMWRF with a proposal for a digester gas treatment system. The system is intended to reduce sulfur in all of the digester gas used throughout the plant, the flare, the boiler, and the cogeneration engine. The plant is being required by the local air pollution control authority to reduce total sulfur emissions. In addition, Siloxanes present in the gas will need to be removed in order to reduce their impact on the boiler and cogeneration engine operation. In order to treat the gas going to the flare from both the acid and methane digesters as well as that going to the boiler and cogeneration engine, the gas piping will require significant modifications as the piping currently separates these flow streams in widely different locations.

The purpose of this project is to identify the most cost-effective H2S control for the digester gas system and to prepare preliminary installation requirements and costs for the selected H2S and Siloxane removal systems at TMWRF. The following outlines specific tasks that will be performed.

1) Attend and conduct a combination site visit/kickoff meeting at TMWRF to discuss project goals, gather digester gas data, evaluate required modifications, discuss work plan, and review project schedule.

2) Define and analyze up to three H2S removal technologies including advanced iron sponge, water scrubbing, and biological filtration. Predesign level cost estimates for installing each of these systems at TMWRF will be developed and a 20-year life cycle cost analysis will be conducted on each system in order to select the most cost-effective system to install at TMWRF.

3) Provide predesign level cost estimates for installation of a packaged gas treatment system to remove moisture and Siloxane compounds from the combined, H2S-treated digester gas at TMWRF.

4) Prepare and submit an electronic (PDF file) copy of a project memorandum summarizing the key findings and recommendations of Tasks 1 to 3.

COST AND SCHEDULE

Our estimated cost to perform the Scope of Work is attached. We will begin our services immediately after receiving a purchase order and written notice to proceed from TMWRF and will complete the predesign work within four weeks.

Please call us if you have any questions concerning this proposal.

Sincerely,

CAROLLO ENGINEERS, INC.

Rick Chan

Rick Chan, P.E.
Vice President

LABOR AND BUDGET ESTIMATE

CITY OF SPARKS - TRUCKEE MEADOWS WATER RECLAMATION FACILITY
DIGESTER GAS CONDITIONING SYSTEM PREDESIGN

Task	Task Description	Rick Chan $258	Tom Mossinger $250	Support Engineer $190	CAD $140	WP $108	Total Hours	Labor Cost
1	Site visit to meet with staff, gather data, and assess requirements	0	8	8	0	0	16	$3,520
2	Define and analyze up to three H2S removal technologies	1	16	48	0	0	65	$13,378
4	Define Siloxane removal system configuration and costs	1	8	16	0	0	25	$5,298
5	Prepare memorandum of recommendations	2	4	36	10	2	54	$9,972
	Project Totals =	4	36	108	10	2	160	$32,168

(1) Labor rate includes all direct cost, overhead, communication, and other material costs.