



BOARD OF SUPERVISORS AGENDA ITEM REPORT
CONTRACTS / AWARDS / GRANTS

Requested Board Meeting Date: October 18, 2016

or Procurement Director Award

Contractor/Vendor Name (DBA): Greeley and Hansen, LLC

Project Title/Description:

Struvite Recovery Facility Alternative Delivery Project.

Purpose:

Amendment of Award: Contract No. CT-WW-14-110. This Contract Amendment increases the Scope of Services to validate the economic viability of the project and increases the contract award by \$104,000.00.

Administering Department: Regional Wastewater Reclamation.

Procurement Method:

Pursuant to the Direct Select authority of A.R.S. § 34-103 and Board of Supervisors Policy D29.1 (C) (I) the Board of Supervisors awarded a contract for Solicitation No. 105687 on October 8, 2013 in the amount of \$298,000.00 for a contract term of 10/08/2013 through 09/30/2015. The contract award included the option to extend the contract termination date for purposes of project completion and the termination date was previously extended in Contract Amendment No. One (1) through June 30, 2016. The original contract contained projections of plant loading and economic impacts based on assumptions of performance of the Tres Rios WRF prior to start-up of actual treatment operations. Contract Amendment No. Two (2) added tasks to the Scope of Services and added funding to perform additional study of process loading and economic impacts and to confirm whether continuation of this project is economically viable. Contract Amendment No. Three (3) added additional time to complete the Amendment Two (2) tasks. This amendment adds additional tasks to the Scope of Services in order to verify the economics of the project and adds funding to compensate the consultant for this additional work. There is no change to the contract termination date.

Attachment: Contract Amendment No. Four (4).

Program Goals/Predicted Outcomes:

Support County in the validation and award of the Tres Rios WRF Struvite Recovery Project. With the intended delivery method of Design-Build we require specialized knowledge of the struvite recovery process and how to implement the design and construction within the existing facility.

Public Benefit:

The successful award and implementation of the Tres Rios WRF Struvite Recovery Project will result in a departmental operational cost savings of \$1,187,000.00 per year and overall projected savings plus revenue of \$18 million over 20 years.

Metrics Available to Measure Performance:

Successful delivery of the Design-Build project within the proposed project schedule.

Retroactive:

No

Procure Dept 10-04-16 PM02:25

To: CWB- 10-5-16 (11)
pgs. 11

Original Information

Document Type: _____ Department Code: _____ Contract Number (i.e., 15-123): _____

Effective Date: _____ Termination Date: _____ Prior Contract Number (Synergen/CMS): _____

Expense Amount: \$ _____ Revenue Amount: \$ _____

Funding Source(s): _____

Cost to Pima County General Fund: _____

Contract is fully or partially funded with Federal Funds? Yes No Not Applicable to Grant Awards

Were insurance or indemnity clauses modified? Yes No Not Applicable to Grant Awards

Vendor is using a Social Security Number? Yes No Not Applicable to Grant Awards

If Yes, attach the required form per Administrative Procedure 22-73.

Amendment Information

Document Type: CT Department Code: WW Contract Number (i.e., 15-123): 14-110

Amendment No.: Four (4) AMS Version No.: Ver. 14

Effective Date: 10/18/2016 New Termination Date: _____

Expense Revenue Increase Decrease Amount This Amendment: \$104,000.00

Funding Source(s): Regional Wastewater Reclamation Department Obligations

Cost to Pima County General Fund: \$0.00

Contact: Keith E. Rogers Keith E. Rogers 09-29-2016

Department: Procurement May 2016 9/29/16 Telephone: 724-3542

Department Director Signature/Date: _____ 9/30/16

Deputy County Administrator Signature/Date: _____ 10/4/16

County Administrator Signature/Date: _____ C. Schubert 10/4/16
(Required for Board Agenda/Addendum Items)

PIMA COUNTY WASTEWATER MANAGEMENT DEPARTMENT

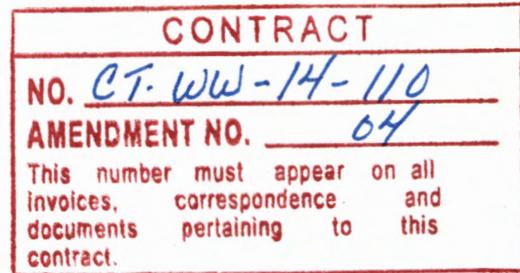
PROJECT: Struvite Recovery Facility Alternative Delivery Project

CONSULTANT: Greeley and Hansen, LLC
2800 North 44th Street, Suite 650
Phoenix, AZ 85008

CONTRACT NO.: CT-WW-14-110

AMEND. NO.: Four (4)

FUNDING: Regional Wastewater Reclamation Department Obligations



CONTRACT TERM: 10/08/13 – 09/30/15
TERMINATION DATE PRIOR AMENDMENT: 06/30/17
TERMINATION THIS AMENDMENT: 06/30/17

ORIG. CONTRACT AMOUNT: \$298,000.00
PRIOR AMENDMENTS: \$ 95,000.00
AMOUNT THIS AMENDMENT: \$104,000.00
REVISED CONTRACT AMOUNT: \$497,000.00

CONSULTING CONTRACT AMENDMENT

WHEREAS, COUNTY and CONSULTANT entered into a Contract for services, as referenced above, dated October 8, 2013; and

WHEREAS, COUNTY and CONSULTANT have agreed that additional work is required to verify the economics of the project; and

WHEREAS, COUNTY and CONSULTANT have agreed to the Scope of Services and Fee Schedule for this additional work

NOW, THEREFORE, it is agreed as follows:

ADD TO EXHIBIT A: SCOPE OF SERVICES STRUVITE RECOVERY FACILITY ALTERNATIVE DELIVERY,

Add: Exhibit A: Scope of Services Struvite Recovery Facility Alternative Delivery – Amendment No. Four (4) (7 pages), as an attachment to this amendment.

ADD TO EXHIBIT B: CONSULTANT FEE SCHEDULE,

Add: Exhibit B: Struvite Recovery Facility Alternative Delivery - Level Of Effort – Amendment Four (4) (1 page) and Exhibit B: Struvite Recovery Facility Alternative Delivery - Project Fee – Amendment Four (4) (1 page), as attachments to this amendment.

The effective date of this Amendment shall be October 18, 2016.

All other provisions of the Contract, not specifically changed by this Amendment, shall remain in effect and be binding upon the parties.

IN WITNESS WHEREOF, the parties have affixed their signatures to this Amendment on the dates written below.

PIMA COUNTY

CONSULTANT:

Chair, Board of Supervisors

Signature

Date

Name and Title (Please Print)

Date: Oct 3, 2016

ATTEST:

Clerk of the Board

APPROVED AS TO FORM:

Deputy County Attorney

CHARLES WESSELHOFT

Printed Name

Date: **OCT 03 2016**

**Scope of Services Struvite Recovery Facility Alternative Delivery
Amendment No. 4
Exhibit A**



Scope of Services Struvite Recovery Facility Alternative Delivery – Amendment No. 4

**Pima County
Regional Wastewater Reclamation Department**

September 19, 2016

**Scope of Services Struvite Recovery Facility Alternative Delivery
Amendment No. 4
Exhibit A**

Table of Contents

Introduction 1

Scope Of Services Changes 2

Schedule 5

Budget 5

List of Tables

Table 1 Labor and Total Costs5

Attachments:
Estimated Level of Effort
Estimated Compensation

**Scope of Services Struvite Recovery Facility Alternative Delivery
Amendment No. 4
Exhibit A**

Introduction

Struvite Recovery Facility was identified by the Pima County Regional Wastewater Reclamation Department (RWRD) as a potential new process to manage and reduce phosphorus loads that are recycled within the liquid treatment process at the Tres Rios Water Reclamation Facility (WRF). After the technical and economic analyses, a Struvite Recovery with WAS Pre-Treatment Project (Project) was recommended for implementation at the Tres Rios WRF. Implementation of the Project greatly reduces the potential for Struvite scaling and fouling in the solids processing systems, struvite accumulation in digesters, and provides a useful commercial product for the agricultural market. Moreover, the system significantly reduces or eliminates ferric chloride chemical addition to bind the phosphates to prevent Struvite scaling in the solids processing systems.

To assist RWRD with the development of Project Request for Qualification documents and evaluate responsive submissions, the services of Greeley and Hansen was authorized by the Board of Supervisors on October 8, 2013 under Contract No. CT-WW-14****110. The amount of the original contract with approved amendments is \$393,000, which includes Amendment Nos. 1, 2 and 3. Contract Amendment No. 4, requests \$104,000 for additional services as described below to complete the assistance with the procurement of design and construction services for the Project. With the additional task the contract limit would increase to \$497,000.

During the development of the project delivery procurement documents for the Struvite Recovery Project, a separate procurement for the struvite recovery equipment/technology was initiated to assure all proposers on the remaining portions of the project were utilizing the same technology and that the performance guarantees remained with the technology supplier. Also, during the negotiations for the procurement of the Struvite recovery equipment addition efforts are required to review of cost information provided by the technology supplier, and review and response to comments prepared by the technology supplier. The separate procurement process was not anticipated in the original scope of the project.

Further, with ongoing research and technology developments in sidestream and mainstream nutrient recovery and removal processes, addition study is required to determine if the technology to be provided for the Struvite Recovery Project was best suited for the Project. There are other Struvite recovery technologies when combined with sidestream nitrogen removal may be more viable for Pima County. An evaluation and assessment of the recent nutrient recovery and removal technologies will determine if adjustments in the project technology and scope are necessary.

Under Contract Amendment No. 3, the term of the contract was extended to June 30, 2017. This amendment does not request a time extension.

For completeness the original tasks and the new Project task are generally described below.

- Develop technical information for equipment procurement
- Review drafts
- Review technology supplier comments

Scope of Services Struvite Recovery Facility Alternative Delivery Amendment No. 4

Exhibit A

- Review technology supplier costs
- Assess fertilizer price trends
- Review current technologies

Scope Of Services Changes

With approval of this amendment the Project services will be comprised of the six tasks (**Tasks 1-6**) previously authorized by Pima County Regional Wastewater Reclamation Department, and **new Tasks 7, 8 and 9**. The scope of services included in the first six tasks is unchanged and the tasks are summarized below. The description of the new Tasks 7, 8 and 9 scope of services follows the summarized description of the original tasks.

TASK 1 Preparation of DB Documents

Develop the procurement documents for the Struvite Recovery System through a Progressive Design-Build process. The Design-Build team is to include a design professional, contractor and struvite recovery vendor. Generally, this Project is limited to the area within and around the decommissioned Energy Recovery Building.

TASK 2 Evaluation Assistance for DB Submittals

Evaluate the submittals from responsive and responsible Proposers. Assist RWRD in identifying strengths, weakness and deficiencies of the submissions.

TASK 3 Repurpose Energy Recovery Facility

For repurposing of the off-line Energy Recovery Building to install the Struvite Recovery Facility develop a description of the work in the RFQ to remove existing equipment, electrical gear and mezzanine to clear the area for the new equipment and systems. In addition, the description is to include removal of a portion of the existing roofing system and construction of a new roofing system at a higher elevation to accommodate the new Struvite Recovery System. After demolition and new roof work is complete, the Design-Build team will have the building shell ready to install new process, lighting, electrical, heating, ventilation and air conditioning systems.

TASK 4 WAS Pretreatment

For the RFQ describe the installation of the WAS Pretreatment System.

TASK 5 Centrate / Filtrate Pumping and Yard Piping Modifications

**Scope of Services Struvite Recovery Facility Alternative Delivery
Amendment No. 4
Exhibit A**

Describe of the new pump systems and yard piping to convey centrate and filtrate to the Struvite Recovery System, and a gravity sewer to transport the struvite recovery system effluent to the headworks pumping station.

TASK 6 Update Process Data and Economic Payback

Confirm the system performance and economic payback based on the operation of the new Agua Nueva WRF in service. Since the Tres Rios WRF new process system was in startup mode and the Agua Nueva WRF was not commissioned, the original Struvite Recovery Facility payback was based on the design basis of the Tres Rios WRF and Agua Nueva WRF modified for current flows. The updated performance and economic payback are to be developed based on actual influent flows, loadings and process removals at the plants. The loading and removal values are to be determined by laboratory testing at the Pima County Central Laboratory.

NEW TASK 7 Equipment / Technology Procurement

With the procurement of the equipment and technology for the Struvite Recovery Project separated from the erection of the equipment and construction of the support facilities, additional effort is required to prepare a separate performance specifications and coordinate the equipment acquired under the separate procurement with support facilities contract. In addition, during negotiations responses to comments from the equipment / technology supplier will be required as well as a check on the value of the equipment and systems provided.

Activities

- Prepare the technical parameters for the procurement of the Struvite recovery equipment / technology.
- Assist in development of the list of equipment and systems to be furnished by the Technology provider.
- Assess the market value of the equipment and systems to be furnished by the Technology provider.
- Review and comment on the technical aspects in the draft procurement documents prepared by Pima County
- Review and comment on proposed technical modifications to the draft procurement documents offered by the equipment and Technology provider.
- Reevaluate the Economic Payback Analysis from value of the equipment and chemical savings and sales of product.
- Participate with RWRD in negotiations with the equipment and technology provider

Deliverables

- Provide the technical basis of the equipment and technology to be procured
- Provide an assessment of the equipment and technology costs
- Provide an updated Economic Payback Analysis

**Scope of Services Struvite Recovery Facility Alternative Delivery
Amendment No. 4
Exhibit A**

NEW TASK 8 Technology Update

With the rapid development of technologies for sidestream nutrient recovery and removal, assess the new technologies regarding Struvite recovery and the possibility of the coupling of Struvite recovery with nutrient removal technologies. The assessment will assist in the determination of whether the procurement of the equipment and technology for the Struvite recovery Project remains viable.

Activities

- Research the sidestream nutrient recovery and removal technology advances since 2013, which provided the original basis for the Struvite Recovery Project.
- Determine if and where the new technologies are being implemented.
- Prepare an assessment of whether the advanced technologies have merit over the current direction undertaken by RWRD.
- Evaluate possible impacts of adding a nutrient (ammonia) removal technology in series with the Struvite recovery.
- Develop conceptual costs for implementation of the new technologies.

Deliverables

- Provide presentation materials on the current commercially used technologies for Struvite recovery and nutrient removal sidestream removal.
- Provide information on the full scale applications of the new sidestream technologies.
- Provide return on investment analysis for select technologies

NEW TASK 9 Compilation of ROMP Related Files and Documents

Delivery of GH/P ROMP related files/documents in electronic format in a hard drive. The electronic files and documents will be cataloged in a searchable format for ease of retrieval.

Activities

- Gather ROMP related reports, studies and memoranda
- Compile documents by projects as follows
 - Regional Optimization Master Plan (ROMP), November 2007
 - System Wide Odor Control Plan, November 2007
 - ROMP CIP Implementation Program
 - General
 - Tres Rios WRF
 - Agua Nueva WRF
 - Roger Road WRF Decommissioning And Repurposing
 - Plant Interconnect
 - SCADA
 - Central Laboratory
 - Laboratory Addition
 - Miscellaneous
- Transfer files and documents onto an electronic medium

Deliverables

- Electronic hard drive with cataloged and searchable ROMP files and documents.

Scope of Services Struvite Recovery Facility Alternative Delivery Amendment No. 4

Exhibit A

Project schedule and budget modifications that include Tasks 7, 8 and 9 are provided below.

Schedule

The Project schedule was modified under Amendment No. 3 to June 30, 2017. There is no request for additional time in this amendment request.

Budget

Estimated level of effort and compensation for the Project including new Tasks 7 and 8 have been developed and is summarized in **Table 1**. Breakdown of the costs are provided in the attachments.

**Table 1
Labor and Total Costs**

Tasks	Labor Cost	Total Cost*
Procurement Documentation for Struvite Recovery Facility (Tasks 1-6)	\$ 390,083	\$ 393,000
New Task 7 Equipment / Technology Procurement	\$ 68,667	\$ 68,700
New Task 8 Technology Update	\$ 27,287	\$ 27,300
New Task 9 Compilation of ROMP Related Files and Documents	\$ 7,921	\$ 8,000
TOTAL	\$ 493,958	\$ 497,000

* Includes associated other direct costs with no markup.

The above costs are based on the conditions set forth under the original Contract for this Project. The above costs are inclusive of fee.

In accordance with the Contract, services will be provided on a direct labor cost basis with an indirect labor cost multiplier of 1.786 and a fee of 12 percent. No markups will be allowed on other direct costs, and travel allowance will be in accordance with Pima County guidelines for consultant services.

ATTACHMENTS

- Level of Effort
- Project Fee

Pima County Regional Wastewater Reclamation Department
 Struvite Recovery Facility Alternative Delivery - Amendment No. 4
 Level of Effort

No.	Task Description	Labor Classification						Totals	
		Project Director	Project Manager	Senior Engr/Arch	Project Engr/Arch	Staff Eng/Arch	Technician/Drafting		Admin Support
1. Preparation of DB Documents									
1.1	Develop Scope of Work for DB	1	46	24	7	40	23	10	138
1.2	Prepare Preliminary Specifications	2	24	30	5	14	4	2	109
1.3	Prepare Performance Criteria	2	18	22	11	9	9	4	75
1.4	Finalize the Scope	1	14	1	1	0	0	3	20
1.5	Review and Submit for Approval	1	20	0	0	0	0	1	21
1.6	Submit Revised / Approved	1	3	13	3	0	15	2	32
	Subtotal	2	116	117	26	64	47	44	638
2. Evaluation Assistance for DB Submittals									
2.1	Evaluate Qualifications	0	44	0	2	0	0	4	112
2.2	Evaluate Proposals	2	28	20	46	23	0	22	203
	Subtotal	2	72	20	50	23	0	26	315
3. Repurpose Energy Recovery Facility									
3.1	Review Existing permit / utility records	1	25	4	44	4	0	1	103
3.2	Assess Alternatives	2	24	3	0	0	18	0	57
3.3	Review System Development	1	4	30	40	37	24	16	142
3.4	Review Schedule (2)	2	14	0	0	30	0	0	67
	Subtotal	2	67	37	84	71	18	17	268
4. WAS Pretreatment									
4.1	Process WAS Process/Flow Control Plan	1	1	10	11	0	14	3	39
4.2	Review Solids System Schematic	0	1	15	10	0	0	4	30
4.3	Review Flowchart	0	5	4	5	12	0	2	38
	Subtotal	1	7	29	26	12	14	7	107
5. Centrate / Filtrate Pumping & Yard Piping Modifications									
5.1	Review Pumping System Criteria	1	8	13	10	11	0	0	113
5.2	Review Yard Piping Modifications	1	8	1	9	12	16	0	121
5.3	Review Schematic	0	20	4	13	24	4	2	67
	Subtotal	2	36	18	32	47	20	2	301
6. Update Process Data and Payback									
6.1	Develop Update Flow Schematic	1	47	11	113	25	0	18	315
6.2	Update Process Schematics	1	5	1	52	11	0	7	89
6.3	Update Economic Payback Analysis	2	17	1	21	7	0	1	52
	Subtotal	2	69	13	186	43	0	26	472
7. Equipment / Technology Procurement									
7.1	Procurement (Manufacturing) Technical Evaluation	1	40	0	40	4	0	16	137
7.2	Procurement (Manufacturing) Financial Evaluation	0	20	23	10	4	0	4	58
7.3	Procurement (Manufacturing) Technology Eval.	1	14	40	20	2	0	4	80
	Subtotal	2	74	63	70	10	0	24	259
8. Technology Update									
8.1	Research/Support Recovery of Refuse Technology	1	11	20	20	4	0	4	60
8.2	Research/Support Cost Studies for Alternative	1	4	10	3	0	0	4	31
8.3	Research/Support Alternative Schematic	0	4	2	19	3	0	18	47
	Subtotal	2	19	32	42	7	0	26	144
9. RDMF Document / File Completion									
9.1	Finalize RDMF, Complete RDMF Permit Application	1	0	0	14	0	0	40	75
9.2	Finalize Documents for Electronic File Upload / Submit to SWRCB	2	0	0	0	0	0	4	4
	Subtotal	1	0	0	14	0	0	44	79
TOTAL LABOR EFFORT		16	589	766	734	340	297	196	3021

**Pima County Regional Wastewater Reclamation Department
 Struvite Recovery Facility Alternative Delivery - Amendment No. 4
 Project Fee**

No.	Task Description	Program Director	Project Manager	Senior Engr/Arch	Project Engr/Arch	Staff Engr/Arch	Technician/Drafting	Admin Support	Totals
1	Preparation of DB RFQ Documents	\$523	\$51,262	\$39,188	\$10,163	\$8,369	\$3,658	\$2,740	\$115,903
2	Evaluation Assistance for DB Submittals	\$523	\$25,631	\$18,059	\$9,560	\$3,140	\$0	\$1,744	\$58,657
3	Repurpose Energy Recovery Facility	\$523	\$16,739	\$20,226	\$9,565	\$8,110	\$10,898	\$1,495	\$67,556
4	WAS Pretreatment	\$262	\$6,277	\$10,835	\$8,967	\$2,090	\$1,868	\$872	\$31,171
5	Centrate /Filtrate Pumping & Yard Piping Modifications	\$523	\$6,800	\$5,779	\$8,967	\$12,030	\$6,690	\$125	\$40,914
6	Update Process Data and Economic Payback	\$785	\$18,046	\$7,043	\$42,146	\$5,620	\$0	\$2,242	\$75,882
7	Equipment / Technology Procurement	\$523	\$20,923	\$28,894	\$14,347	\$2,485	\$0	\$1,495	\$68,667
8	Technology Update	\$523	\$8,369	\$8,307	\$5,978	\$2,615	\$0	\$1,495	\$27,287
9	ROMP Documents / File Compilation	\$0	\$1,569	\$0	\$4,484	\$0	\$0	\$1,868	\$7,921
	Total Labor	\$2,364	\$106,709	\$94,087	\$47,222	\$33,739	\$23,114	\$6,976	\$493,958
					Other Direct Costs (Travel, subsistence and printing)				\$3,042
							Total		\$497,000