

AGENDA ITEM

June 4, 2019

Subject: Black & Veatch Agreement Amendment 1

Department: Administration

This ordinance will approve the attached Amendment No. 1 to an agreement with Black & Veatch concerning the Water Treatment Plant upgrades. Water testing and ground excavation were removed from the original scope of services. Alliance will be performing these tasks resulting in a contract reduction.

BILL NO. 2019-024

ORDINANCE NO.

A SPECIAL ORDINANCE OF THE CITY OF NEVADA, MISSOURI, AUTHORIZING THE EXECUTION OF AMENDMENT NO. 1 TO AN AGREEMENT WITH BLACK & VEATCH FOR AN ENGINEERING STUDY CONCERNING WATER TREATMENT PLANT UPGRADES.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF NEVADA, MISSOURI THAT:

Section 1. Amendment No. 1 from Black & Veatch attached hereto as Exhibit "A" and incorporated herein by reference is approved as a contractual obligation of the City of Nevada, Missouri.

Section 2. The City Manager and the City Clerk are hereby authorized and directed to execute said agreement on behalf of the City of Nevada, Missouri, and to affix the municipal seal thereto and attest the same.

PASSED, APPROVED and ADOPTED by the City Council of the City of Nevada, Missouri, this _____ day of _____, 2019.

(SEAL)

Attest:

George Knox, Mayor

Johnna Williams, Deputy City Clerk

City of Nevada, Missouri
Water Treatment Plant Improvements - Preliminary Design Services
25-May-19

Task/Level of Effort	Project Dir.	Project Mgr.	Eng. Mgr.	Process Engr.	Technician	Architect	Structural Eng.	Geotech.	Mech HVAC & Plumbing	Elect. Eng.	I&C Eng.	Chem Feed Eng.	Quality Control Eng.	Estimator	Project Admin., Accountant, & Project Controls	Total Staff Days	Salary Based Fee*	Reimbursable Expenses	Subconsultants		Mgt. of Subconsultants 5%	Total Fee
																			Geotechnology (Geotech.)	Allgeier Martin & Associates (Surveying)		
Preliminary Design Services																						
1. Project Administration & Management	0.5	3													3	6.5	\$9,660	\$0	---	---	\$0	\$9,660
2. Project Initiation Meeting	0.75	0.75		1												2.5	\$4,570	\$130	---	---	\$0	\$4,700
3. Preparation of Design Memorandum & Preliminary Drawings		10	35	10	13.25	6.125	1.25	1	5.125	5.125	10	11	1.5		3	112.4	\$149,425	\$163	---	---	\$0	\$149,588
4. Geotechnical Investigations & Laboratory Testing		0.25						2								2.3	\$2,940	\$184	\$15,218	---	\$761	\$19,103
5. Site Survey		0.25			0.5											0.8	\$980	\$0	---	\$10,580	\$529	\$12,089
6. Project Review Meeting	0.75	0.75	1	1												3.5	\$6,090	\$130	---	---	\$0	\$6,220
7. Development of Preliminary Opinion of Probable Construction Cost		0.5	0.75											4		5.3	\$7,820	\$0	---	---	\$0	\$7,820
8. Regulatory Agency Review Meeting		1.25		1.5												2.8	\$4,560	\$130	---	---	\$0	\$4,690
9. City Council Work Session/Meeting		1.5		1.5												3.0	\$5,100	\$130	---	---	\$0	\$5,230
Totals	2	18.25	36.75	15	13.75	6.125	1.25	3	5.125	5.125	10	11	1.5	4	6	138.9	\$191,145	\$867	\$15,218	\$10,580	\$529	\$219,100

Amendment No. 1 to
Agreement for Engineering Services
Scope of Services

Owner: City of Nevada, Missouri
Engineer: Black & Veatch Corporation
Project: Water Treatment Plant Improvements Project – Preliminary Design Services

Engineer will provide Preliminary Design Services for the City of Nevada, Water Treatment Plant Improvements Project. The water treatment plant improvements are identified in the report entitled “Water Treatment Plant Facility Assessment & Improvements Study” dated June 2018. A summary of the proposed improvements are as follows:

- Reverse osmosis system including feed pumps; skids; feed, permeate and concentrate piping and valves; static mixer; and flow meter. The system will include two 100% capacity and three stage reverse osmosis skids.
- Reverse osmosis system permeate flush system consisting of a transfer pumping units; flush tank; flushing pumps; and associated piping, valves and appurtenances.
- Reverse osmosis clean-in-place system consisting of an acid, base and neutralization tank; circulation pumps; cartridge filters; and associated piping, valves and appurtenances. The clean-in-place system will be housed in a new building. The building will also house the sodium hydroxide and sodium hypochlorite storage and feed systems.
- Sodium hypochlorite storage and feed system consisting of bulk storage tanks; transfer pumping units; day tank; metering pumps; and associated piping, valves and appurtenances. The sodium hypochlorite storage and feed system will be housed in a new building. The building will also house the reverse osmosis clean-in-place system and the sodium hydroxide storage and feed system. The existing chlorine gas storage and feed system will be demolished.
- Sodium hydroxide storage and feed system consisting of a bulk storage tank; transfer pumping units; day tank; metering pumps; and associated piping, valves and appurtenances. The sodium hydroxide storage and feed system will be housed in a new building. The building will also house the reverse osmosis clean-in-place system and the sodium hypochlorite storage and feed system.

- Sulfuric acid storage and feed system consisting of a bulk storage tank located outdoors in a modified arrangement; transfer pumping units; day tank; metering pumps; and associated piping valves and appurtenances. Facility improvements to comply with Building Codes will include the replacement of windows adjacent to the storage area to provide a 2-hour fire barrier; a wall on the south side of the containment area to provide a 2-hour fire barrier to provide separation between the west building egress doors; and a chemical containment curb and emergency shower and eyewash within the Sulfuric Acid Feed Room.
- Degasifier system consisting of a fiberglass reinforced plastic packed tower; cast-in-place concrete wetwell; and associated piping, valves and appurtenances. The degasifier system will be located outdoors adjacent to the treated water reservoir.
- Dry media adsorption scrubber system consisting of two carbon media vessels; two blowers; and associated piping, valves and appurtenances. The dry media adsorption scrubber system will be located outdoors adjacent to the degasifier system.
- Replacement of the piping and valves in the Plant Influent Pressure Regulating & Pressure Relief Valve Vault located north of the water treatment plant.
- Replacement of the isolation gates/valves within the treated water reservoir that serve to isolate the cells.
- Electrical system upgrades including the replacement of Motor Control Center No. 1 (MCC-1), lighting transformer, and lighting panel LP-A and all conductors on the load side of the MCC which is located in the High Service Pump Room; replacement of the switchboard and Motor Control Center No. 2 (MCC-2) and all conductors on the load side of the MCC which is located in the west Electrical & Maintenance Room; and the replacement of indoor light fixtures with LED fixtures.
- Plant control system upgrades including hardware; software; programable logic controllers (wells, water treatment plant and elevated tanks); and magnetic flow meters, pressure transmitters and level transmitters.

The Preliminary Design Services are as follows:

1. Project Administration and Management. Perform general project administrative activities including the preparation of monthly project status reports, monitoring of the project schedule and budget and regular communications with Alliance Water Resources and the City.

2. **Project Initiation Meeting.** Conduct a project initiation meeting to review the project scope of services, schedule and staffing plan; clarify the City's goals and objectives for the project; and review the items included in a data request memorandum.
3. **Geotechnical Investigations.** Provide, through a subcontract, geotechnical engineering services including exploratory work and laboratory and field testing including professional interpretations of exploratory and test data. The services will include:
 - a. Geotechnical exploratory work, such as soil borings, exploratory pits, penetration tests, soundings, subsurface explorations, laboratory tests of soil and rock samples that are required to provide information for design, and other field and laboratory tests and analyses that are required to provide design information.
 - b. A geotechnical report by a qualified geologist or geotechnical firm interpreting the data collected from the exploratory work and testing and making assessments of the site conditions that can be anticipated from this initial exploratory work.
4. **Surveying Services.** Provide through a subcontract, the necessary field design surveys for the preparation of construction drawings and specifications. Surveys will determine site topography, contours, utility locations within limits of new facilities using survey data of visible above-ground features and professional judgment, all existing plant structures, buildings, and above grade facilities, including plant boundaries and site contours to within one foot contour intervals.
5. **Design Memorandum.** Prepare a Design Memorandum. The Design Memorandum will include the following items:
 - General project scope and background
 - Raw water quality characteristics and treated water quality goals
 - Water treatment plant capacity
 - Applicable codes and standards
 - Local utility requirements
 - Summary of available/existing data on site conditions including subsurface conditions, flood elevations and drainage requirements.
 - Drafting standards

- Design criteria (written & tabular form) for all new facilities & systems – civil, process, building mechanical, mechanical process (chemical storage & feed), structural, architectural, electrical and instrumentation & controls.

The Design Memorandum will include the following preliminary drawings:

General

- Process Flow Schematic

Sitework

- Overall Site Plan

Reverse Osmosis Clean-in-Place System and Chemical Storage & Feed Building

- Operating Floor Plan – Architectural
- Operating Floor Plan – Mechanical Process

Sulfuric Acid Storage Area & Feed Room

- Enlarged Storage Area Plan
- Operating Floor Plan – Mechanical Process

Reverse Osmosis Area

- Lower Level Floor Plan – Mechanical Process

Electrical

- Power Distribution Functional Diagram(s)

Instrumentation & Controls

- Control Block Diagram

6. Project Review Meeting. Submit three (3) draft hard copies and an electronic copy of the Design Memorandum and preliminary drawings to the City for review. Conduct a meeting with the City and Alliance Water Resources to review the documents, obtain comments and address questions that arise. Revise the Design Memorandum and preliminary drawings to address the comments received and submit three (3) final hard copies and an electronic copy of the Design Memorandum and preliminary drawings to the City.

7. Preliminary Opinion of Probable Construction Cost. Develop a preliminary opinion of probable construction cost for the water treatment plant improvements. Transmit the opinion of probable construction cost to the City for review and comment. Update the opinion of probable construction cost to reflect comments received.
8. Regulatory Agency Review. Submit the Design Memorandum to the Missouri Department of Natural Resources. Conduct a meeting with the City, Alliance Water Resources and the Missouri Department of Natural Resources to review the documents. It is anticipated that the meeting will be conducted in Jefferson City, Missouri.
9. City Council Work Session/Meeting. Participate in a City Council Work Session/Meeting to provide an overview of the Preliminary Design documents and address any questions that may arise.