

	SUBJECT: APPENDIX J – SOLE SOURCE JUSTIFICATION FORM	Approval Date 1/1/2018
	DIVISION AND POLICY NUMBER PURCHASING	Revision Date N/A

COMMODITY OR SERVICE _____

VENDOR _____

AMOUNT OF PURCHASE \$ _____

REQUESTORS NAME _____

DEPARTMENT _____

DEPARTMENT DIRECTOR's Approval _____

FINANCE DEPARTMENT's Approval _____

TOWN MANAGER's (or Designee) Approval _____

PURCHASING POLICY EXCEPTION ITEM	CHECK ONE
1. Item(s) or service has been formally awarded to a vendor by the State of Colorado, MAPO, or other cooperative purchasing group and the product meets the needs of the Town of Castle Rock.	<input type="checkbox"/>
2. The product or service is of a unique nature, or allows for standardization with existing equipment and will provide exceptional value to the Town of Castle Rock.	<input type="checkbox"/>
3. Emergency purchases where the well-being of the citizens, employees or Town property may be endangered if the purchase is delayed.	<input type="checkbox"/>
4. Town of Castle Rock currently has a contract in place with a vendor for like products or services and the compatibility and/or continuity of those products or services are paramount to the success of the department or Town function.	<input type="checkbox"/>

Per Municipal Code 3.02.060:

Purchases over \$1,000 and up to \$5,000 require three (3) verbal bids unless approved by the Town Manager on the basis of sole source, emergency or unresponsive bidder.

Purchases over \$5,000 and up to \$75,000 require three (3) informal written bids unless approved by the Town Manager on the basis of sole source, emergency or unresponsive bidders.

Purchases over \$75,000 require formal written sealed bids unless waived by the Town Council on the basis of sole source, emergency or unresponsive bidders.

The requesting department must provide written justification in addition to the one bid/quote to the Finance Department for review and forward it to the Accounting Manager. **Attach additional sheets as necessary.**



Rocky Mountain Region
13027 County Road 18, Unit C
Fort Lupton, CO 80621
(303) 857-7540
Fax (303) 857-3826

February 11, 2020

Castle Rock Water
175 Kellogg Court
Castle Rock, CO 80109

ATTN: Heather Justus

Project: Hydro Resources ASR – Power Generation System - Cost Estimate

Ms. Justus,

Hydro Resources (HR) is pleased to present the following proposal for installing permanent pump equipment for Wells 232 & 233 which will include Hydro's downhole generation equipment and Siemens control system. HR has a history of performing successful well constructions and pump installations for Castle Rock and neighboring communities. HR wishes to outline our understanding of the scope of work.

Before reviewing the project details, HR would first like to stress our commitment to the Town of Castle Rock to providing a company committed to making Health & Safety our number one priority on this project. HR has broken down the proposal into the following units:

- I. Project Background**
- II. Equipment Description**
- III. Cost Summary**

I. Project Background

Hydro Resources completed an engineering collaboration with Colorado State University with focus on generating clean electrical power during delivery of treated potable water from surface reservoirs into aquifers. The purpose is to utilize the surface water injection process to generate electrical power through utilization of Hydro Resources' patented downhole control valve and electrical system optimization. The technology not only has a goal of revenue from power generation, but carbon footprint reduction and goals in line with Colorado's renewable energy vision.

The recently completed hydraulic lab study demonstrated the potential for the technology to efficiently generate power for a water utility. The lab-proven technology now requires the next step of testing in an actual well pumping and injection system. Hydro Resources goal is to partner with Castle Rock for a field application of the technology. The collaboration on this project would involve installation of new permanent control and well equipment for Castle Rock with HR providing cost sharing for the implementation and maintenance during the technology proving process. During the testing for this system, HR would be responsible for all the maintenance and labor costs associated with modifications and testing of the system. HR anticipates that the integration of this new technology will require some troubleshooting and modifications (perhaps pulling the pump, changing pumping parameters, etc).

The HR team has developed design parameters for the electrical controls and downhole equipment based on optimizing a successful power generation model for a well application. Hydro Resources' plan is based upon the

implementation of pumping equipment in new Wells 232 & 233 including installation of a variable frequency drive, installation of a generator valve controller and a power controller RTU. HR has worked with Siemens to optimize a drive that will efficiently accommodate Castle Rock's pumping needs.

II. Equipment Description

HR is providing the following equipment list to provide complete pump installations for Wells 232 & 233. The equipment has been enhanced for ASR applications to include stainless steel where applicable. The pump equipment is listed below:

Item	Castle Rock 232 Proposed Pump Equipment	Castle Rock 233 Proposed Pump Equipment
1	Provide/Install 12" Baski Pitless	Provide/Install 12" Baski Pitless
2	SM25000-17 Summit Pump End	SM18500-13 Summit Pump End
3	525HP/2640/128A Summit Motor	500HP/3305/83A Summit Motor
4	Summit Seal Section	Summit Seal Section
5	2375' of Cable #2SOL Rnd 5kv 25GLV	1,675' of Cable #2SOL Rnd 5kv 25GLV
6	2,225' of 6 5/8" Column Pipe 304SS w/316SS Coup.	1,525' of 6 5/8" Column Pipe 304SS w/316SS Coup.
7	ASR Valve (Hydro Design) 3050ft Duplex 2205 Tubing, Hydraulic Gear	ASR Valve (Hydro Design) 3050ft Duplex 2205 Tubing, Hydraulic Gear
8	500PSI Dynotek Transducer, SS Cable 1 1/4" PVC, 1/4" Dbl Airline	500PSI Dynotek Transducer, SS Cable 1 1/4" PVC, 1/4" Dbl Airline
9	10" Motor Cooling Shroud 304SS	10" Motor Cooling Shroud 304SS
10	Downhole Sensor	Downhole Sensor

Service entrance power, transformer, permitting, engineering, installation of electrical is not included. Piping materials, metering vault, enclosure foundation support and underground excavation work is not included. The final pump equipment design and pricing will be based upon the pump test results following the well drilling of Wells 232 & 233.

HR's preferred control system utilizes a Siemens GH180 600 HP VFD and associated controls. This option would eliminate the need for a step transformer for conversion of 480V input to a 4142V output. Further, it eliminates a component that would contribute a 3% to 5% loss across the total system efficiency.

Siemens GH180 600 HP VFD Integration with HR ASR Power Generation System

- Provide and install Siemens GH180 600 HP VFD for each well inside one continuous enclosure
- Provide PLC Controller
- Provide HR ASR Downhole Hydraulic Generation Valve
- Provide hydraulic power unit for valve and associated fittings
- Provide appropriate telemetry
- Provide miscellaneous electrical wiring and components for the installation

III. Cost Summary

HR is providing the following breakdown of costs for complete installation of pump equipment in Wells 232 & 232 and the controls to operate the system:

Item No.	Description	Total Cost
1	Provide & Install Well 232 Pitless Unit	\$ 21,500.00
2	Provide Complete Well 232 Pump Assembly including 500 HP Summit Pump & Motor, 1675' of 6 5/8" 304SS column pipe, ASR Valve, Transducer, downhole sensor, etc.	\$ 580,535.00
3	Well 232 labor for mobilization, installation, startup, and demobilization	\$ 23,900.00
4	Provide & Install Well 233 Pitless Unit	\$ 21,500.00
5	Provide Complete Well 233 Pump Assembly including 500 HP Summit Pump & Motor, 2225' of 6 5/8" 304SS column pipe, ASR Valve, Transducer, downhole sensor, etc.	\$ 441,000.00
6	Well 233 labor for mobilization, installation, startup, and demobilization.	\$ 19,900.00
7	Provide and install Qty. 2 Siemens GH180 600HP VFDs and support electronics in a single enclosure.	\$ 1,185,000.00
Total Project Cost		\$ 2,293,335.00

HR has excluded exterior modifications and outside system modifications that may be required. HR will provide full submittals for all pumping equipment and controls. Hydro Resources will continue to work with Castle Rock to properly design all components of the ASR Generation System prior to final design and implementation. We are confident that the Town of Castle Rock will be impressed with our professional water supply services and look forward to the opportunity to team with the community on this exciting project. Please contact our office at your earliest convenience with any questions or concerns you may have.

Sincerely,

Hydro Resources

Jason Barnum

Jason Barnum
Business Development Manager
Rocky Mountain and West Regions
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