crestline village
WATER DISTRICT

Memo

To: Board of Directors
From: Jordan Dietz, Assistant General Manager
Date: October 20, 2020
Subject: Managers Report

The Electra Well which was drilled at the end of 2017 was found through water quality analysis to have high amounts of Gross Alpha Radiation caused by groundwater flowing across plates of Subsurface Uranium. This well is thought to be capable of producing and sustaining at least 30 gallons per minute.

AdEdge Technologies has provided an updated and finalized quote of **$42,000.00.**

This quote includes the costs associated with the delivery and installation of the removal system, minus taxes. Excluded are the costs of site-related structures to house the equipment, and any plumbing components relating to the well itself.

Recommendation: This is an information only item. AdEdge has calculated the lifespan of the resin in the vessels at the given flow rate before exchanging vessels is required. We are waiting for them to provide the per-vessel replacement cost so that staff may calculate the buy-back and ongoing expenses versus the cost of imported water.

Sent: Thursday, October 1, 2020 3:00 PM
Subject: RE: AdEdge Proposal for U removal

Jordan,
No problem. As soon as that department gets back to me, I'll send an email.

Regards,

Chuck
Charles J Guzelli
Technical Sales Manager - West | **AdEdge Water Technologies**
21781 Ventura Blvd. #604
Woodland Hills, CA 91364
mobile: 818-966-8474
cguzelli@adedgetechnologies.com
www.adedgetech.com

From: jwdietz@cvwater.com <jwdietz@cvwater.com>
Sent: Thursday, October 1, 2020 6:00 PM
To: Chuck Guzelli <cguzelli@adedgetechnologies.com>
Cc: 'Charles Guzelli' <cguzelli@gmail.com>
Subject: RE: AdEdge Proposal for U removal

Thank you for the updated information and quote. I look forward to the pricing per canister, and greatly appreciate you reaching out.

I will let you know if we have any further inquiries.

Jordan Dietz
Assistant General Manager

From: Chuck Guzelli <cguzelli@adedgetechnologies.com>
Sent: Thursday, October 1, 2020 1:32 PM
To: jwdietz@cvwater.com
Cc: 'Charles Guzelli' <cguzelli@gmail.com>
Subject: AdEdge Proposal for U removal
Importance: High

Dear Jordan:
Please find AdEdge FIRM proposal for Uranium removal at Crestline WD. The price is **$42,000.00** no freight or taxes included. The first change out in a Lead Vessel will occur 1-1/2 years after start-up. The resin can last longer, but a law in CA prevents having more than 15lbs of material in any one container. I'm still waiting on individual pricing on a replacement Canister and will forward that later.

Thank you for the opportunity and we are looking forward in providing this system to Crestline Water District. If you have any questions, please let me know.
Regards,
Chuck

Intelligent thinking.....clean water

Crestline WD; Crestline, CA - Electra Well - 30gpm - U

Site Profile

Contact Information

End User / Utility:	Crestline Water District	**Date:**	10/1/2020
Site / Well Identity / Location:	Crestline, CA	**Project Contact:**	Jordan Dietz
Local Engineer / Firm:	NA	**Contact Phone:**	909-338-1727 ext. 224
Target Date for Installation:	TBD	**Contact Email:**	jwdietz@cvwater.com
Funding Source:	Private	**Rep Contact:**	C-M Equipment - Mike Anderson
Treatment Goals:	reduce gross alpha, uranium	**Rep Phone:**	415 250 8122
		Rep Email:	mike@andersonz.com

Site Information

System Type / Application:	Municipal	
Population Served:	500	
Number of Connections:		(for municipal applications)
Number of Wells:	1	
Max Flowrate (gpm):	30 GPM	(design flowrate)
Ave Flowrate (gpm):	20 GPM	
Ave Gallons per Day:	32,400	
Ave Well Runtime (hr/day):	18	
Operating Pressure (psi):	110	
Discharge Options Available:	Not Available	
System Redundancy Required:	No	
Existing Treatment or Disinfection:	ClO2 Feed	
Available Electrical Supply:	480 v 3phase	
Atm Storage Tank Present / Size:	None	
Hydropneumatic Tank Present / Size:	None	
Building Present / Available Space:	TBD will build as needed	
Additives (Phosphates, Fluoride, etc.):		

Site Specific Notes:

Existing CLO2 injection for Disinfection should be moved post-treatment.

Assumed that all uranium is contributing to 100% of gross alpha at site.

Bed volume projection is based on 15 lb site disposal limit.

FLOW

Well Head > Treatment > ClO2 > Distribution

Other Contaminants in lab report - Sample 2-21-18

Potassium

Zinc

Site Shipping Address:

Prepared by:	**Reviewed by:**

Additional Water Quality Information:

	Parameters		Water Chemistry	Parameters	
pH	7.8		**Ammonia**		mg/L NH_3-N
Total Arsenic	ND	mg/L As	**Nitrate**	0.46	mg/L NO_3-N
Arsenic (III)		mg/L As(III)	**Sodium**	15	mg/L Na
Total Sulfides		mg/L Total Sulfides	**Chloride**	6.4	mg/L Cl
Alkalinity	97	mg/L (as $CaCO_3$)	**Sulfate**	3.1	mg/L as SO_4
Bicarbonate	120	mg/L (as $CaCO_3$)	**Fluoride**	ND	mg/L F
Hardness	76	mg/L (as $CaCO_3$)	**Total Dissolved Solids**	140	mg/L TDS
Calcium	27	mg/L Ca	**Total Suspended Solids**		mg/L TSS
Magnesium	2.4	mg/L Mg	**Gross Alpha**	65	pCi/L
Phosphate		mg/L PO_4	**Combined Radium**		pCi/L Ra 226/228
Silica		mg/L SiO_2	**Uranium**	65	pCi/L
Vanadium	ND	mg/L V	**Turbidity**	1	NTU
Iron	ND	mg/L Fe	**Temperature**		°F
Manganese	ND	mg/L Mn	**Dissolved Oxygen**		mg/L DO
TOC		mg/L TOC	**Chromium VI**	ND	mg/L Cr(VI)

rev 01.11.18

MOD92-IX Uranium

AdEdge Packaged System:	MOD92-IX-1447EX-6-MVH-LL	**Treatment Goals:**	Uranium ≤ 0.02 mg/L	
Number of Vessels:	6 - 14 in Diameter x 47 in Ht	**Hydraulic Loading Rate:**	9.4 gpm/sqft	
Configuration:	Series	**Flow Rate:**	30 gpm	
Media Type:	AD92	**Avg gallons/day:**	32,400 gal/day	
Total Qty of Media (cu ft)	19.5 cuft	**Hydraulic Utilization %:**	75%	
System footprint:	TBD	**Bed Volume:**	248,599	
Backwash Frequency:	Not Applicable	**Est. Gallons before replace:**	18,130,329 gallons	
		Est. Media life (Lead Vessel):	1.5 years	(est frequency of changeout)

System Costs

	Capital Costs		EST. Annualized O&M	
Packaged MOD92-IX System:	Included	**Replacement Media and Disposal:**	$5,193	(New Lead Vessel, Media, and Disposal)
Equipment Shop Drawings:	Included	**OPEX $/1000 gal treated:**	**$0.44**	
AdEdge Startup & Training:	Included			
Engineering / Permitting:	By Others			
Site Installation:	By Others			
Freight, taxes (if applicable):	Not Included			
Total Capital costs:	**$42,000**			

AdEdge Water Technologies - Scope of Supply

Crestline WD; Crestline, CA - Electra Well - 30gpm - U

AdEdge Ion Exchange System for Uranium Removal

Chuck Guzelli, Technical Sales Manager - West
818-966-8474
cguzelli@adedgetechnologies.com

10/1/2020

Parameter	Design
Model	MOD92-IX-1447EX-6-MVH-LL

Item	Detail	Design	Supply	Install
	MOD92-IX-1447EX-6-MVH-LL, Modular Composite Fiber System, Manual Operation System with Vessels and Valving designed to run in series. System is shipped Pressure and Flow Tested, and Ready for Installation.	**AdEdge**	**AdEdge**	**Others**
A	**Composite Pressure Vessels and Media** Six (6) 14-inch x 47-inch Composite Vessels Vessels Arranged for Series Operation (3 Lead - 3 Lag) Sch 80 PVC Internal Inlet Distributor and Sch 80 Hub and Lateral Design Uranium Exchange Media (AD92), 3.25 cuft/vessel	**AdEdge**	**AdEdge**	**Others**
B	**Process Valves, Piping, and Instrumentation** 304SS Hydraulic Panel with System Inlet/Outlet Pressure Gauges and Sample Ports, One (1) per system Inlet/Outlet Isolation Valves per Train 2-inch Inlet/Outlet Connections Two (2) 0 to 200 psi Pressure Gauges on Each Train One (1) Rotameter on Each Parallel Train in the System for Flow Balancing One (1) Diaphragm Valve on Each Parallel Train in the System Local Sample and Isolation Valves **Field piping to be completed by installer*	**AdEdge**	**AdEdge**	**Others**
C	**Bag Filtration for Fines Removal** One (1) 2" BFN-12 Stainless Steel Bag Filter Housing Rated @150 psi Pressure Gauge and Sample Valve Five (5) 5-Micron Polyfelt Bag Filters Skid Mounted with Bypass/Blend and Flow Meter	**AdEdge**	**AdEdge**	**Others**
D	**Included Field Services and Miscellaneous** O&M Manuals (+1 Hardcopy, +1 Electronic Copy) including Engineering Drawings, Design Report, and Control Description System Commissioning Plan and Coordination of Installation with Installer (Pre-Startup) System Startup and Comissioning On-Site Including Media Loading Supervision and Initial Media Flush Two (2) x 8 hour Days Included for Start-Up and Training; Additional Work Billed on Time and Materials Basis Operator Training During System Startup	**AdEdge**	**AdEdge**	**NA**
E	**Factory Testing** Factory Acceptance Testing in accordance with AdEdge QC procedures and SOPs Hydraulic and Mechanical Testing to Ensure System Meets Requirements Pressure Testing per AdEdge Standard Procedures to Test for Leaks	**AdEdge**	**AdEdge**	**NA**
F	**Warranty and Maintenance** Standard 1-year Equipment Warranty	**NA**	**AdEdge**	**NA**
G	**Freight for Media, Sub-Fill, and System**		**Not Included**	
H	**Taxes (end use, sales or duty taxes as applicable)**		**Not Included**	

Notes, Clarifications and Exceptions

1. AdEdge will coordinate closely with Installer and the Engineer on all equipment and design related items
2. System will be shipped on a flatbed trailer / dry van for offloading by personnel other than AdEdge personnel with appropriate equipment and trained operator
3. No seismic engineering or seismic related design or equipment modifications are considered in the pricing; can be incorporated as appropriate for the project
4. Costs of metal components, especially steel, in our system are subject to change due to the volatilities of market pricing and imposed taxes and tariffs, therefore AdEdge reserves the right to adjust pricing to pass along any such increases.
5. AdEdge will request a 48-hour delivery window for treatment equipment delivery. AdEdge will closely coordinate with the customer/contractor during system shipment.
6. Treatment System does not meet American Iron & Steel (AIS) requirements. AIS requirements can be met upon request at an additional cost.
7. Delays / Schedule: AdEdge has presented its offer and firm pricing in this Purchase Agreement for a system that will be fabricated within provided project specific schedule. If after execution of the contract, Purchaser delays the equipment fabrication for whatever reason beyond four (4) months (including that from late payments) AdEdge reserves the right to assess reasonable escalation charges in the form of a change order to the project at the rate of 1% of the contract value per month for each month the project is delayed after four (4) months and/or adjust prices to pass on materials cost increases which exceed 5% incurred due to customer fabrication delays over four (4) months

Items Supplied By Others / Contractor

- **A** *Interconnecting pipe to the system, appropriate electrical connections to AdEdge Equipment*
- **B** *Pressurized water supply for use during start-up*
- **C** *Non-AdEdge system related site, civil, or structural engineering or support costs from Owner*
- **D** *Safety equipment as required for media loading, startup/commissioning*
- **E** *Offloading, storage and placement of all equipment and media*
- **F** *Site work and any building structure / facility or shade structure to be provided; HVAC*
- **G** *Construction of structural concrete pad as necessary for treatment equipment provided by AdEdge*
- **H** *Anchoring Equipment, tanks and other equipment to the building's foundation/structural pads*
- **I** *Dedicated power supply to AdEdge equipment; Interconnecting control and instrumentation wiring to control panel*
- **J** *Interface with Regulators / Permitting and all permits for successful completion of the project*

Confidentiality Notice