



June 27, 2018

Mr. Arjuna Weragoda, P.E.  
Indian River County Utilities  
1801 27<sup>th</sup> Street  
Vero Beach, FL 32960

**RE: *South County Water Treatment Plant  
Deepening of Existing South Plant Wells  
Bid/Contract No. 2016031 – All Webbs Enterprises, Inc.  
KHA Project No. 044572039***

Dear Mr. Weragoda,

As you are aware, the construction of the replacement well S-4R has identified improved water quality and well performance deeper in the Floridan aquifer, significant enough to warrant deepening of the other wells which are currently cased shallower. Therefore, a request for pricing from the well contractor, All Webbs Enterprises, Inc (AWE), was submitted to include deepening of the wells which were already slated for rehabilitation. The attached pricing was provided by AWE for the additional deepening of 3 or 4 wells, (S-2, S-3, S-5, or/and S-6). A summary of the following costs are provided as follows:

Rehabilitation (base bid) – 3 wells:	\$551,380 (\$594,800 - \$43,421 (S-4 Credit))
1) Deepen 3 rehab'd wells (2,3,5):	\$365,463
2) Deepen \$ rehab 4 wells (rehab'd + S-6):	\$551,160
TOTAL to deepen & Rehab	
1) \$ 916,843	\$305,614/well (3 wells)
2) \$1,102,540	\$275,635 /well (4 wells)

Based on these costs, it is more cost effective to deepen 4 wells than just 3, most likely due to economies of scale and the ability to continue using the rates AWE provided in 2016. Our recommendation is to issue a change order for the 4 wells, since the cost per well is less and saves approximately \$119,916 overall.

Additionally, attached is a matrix (Exhibit A) which captures the scopes related to South Oslo wellfield which is related to and an important element to upgrade the whole system. It also includes associated operating cost savings for some of the improvements with a return on investment (ROI) approximation. With these proposed well deepening improvements, it can be expected to reduce operating costs of up to \$36,000 per year, resulting in a ROI of approximately 15 years.

To date, AWE is more than 3 months behind, so their proposed December 2018 completion date includes some of this lateness. AWE has confirmed they plan on meeting the Dec 2018 substantial completion date.

The total contract for AWE would result in:

Base Contract:	\$1,477,360
CO#1 (S-4):	\$1,051,783
<u>Deepen CO#2:</u>	<u>\$ 551,160</u>
TOTAL CONTRACT:	\$3,080,303

Based on our review of the pricing and the inevitable operating costs savings that IRCU will experience, our recommendation is to deepen all four (4) wells that are slated to be rehabilitated. A copy of the draft change order #2 is attached as well, which includes the final costs and contract time adjustments.

Let us know if additional information is needed. Please do not hesitate to contact me at (561) 845-0665 if you have any questions.

Sincerely,

**KIMLEY-HORN AND ASSOCIATES, INC.**



Mark D. Miller, P.E.  
Vice President

Attachment: AWE Proposals  
Change Order #2  
Exhibit A

CC: Vince Burke, P.E., Utilities Director

South Oslo Road Wellfield & Plant Improvements									
Item #	Project/Task Description	Capital Cost Priority 1	Capital Cost Priority 2	Capital Cost Priority 3	Benefit			Comment	
					Operating Cost Savings/year <sup>1,2,3</sup>	Operating Cost Savings/1000 gal	ROI Period [yr]		
<b>WELLS</b>									
1	Deepen 4 wells (S-2,3,5,6)	\$551,160			\$ 36,100	\$ 0.028	15.3	Improve water quality AND well yield/performance - reduces membrane operating pressures and well pumping requirements	
2	Replace Well S/S with VFD's - 2 additional (S-4, S-7 already done)	\$170,399			\$ 54,079	\$ 0.037	3.2	Cost savings include energy savings from increased pump efficiency and reduced head loss without throttling valve	
3	Implement F.O. to wells, CP replace		\$271,000	301,500	\$ 54,079	\$ 0.037	5.0 (VFD's only)	Implement FO to each well, including S/S's on wells S-1, S-2 & S-3 (Priority 3), VFD's on S-5 & S-6 (Priority 2) and replace control panels	

\* Engineering, permitting not included

**Assumptions:**

- 1 1000 mg/L of TDS equates to 10 psi plant pressure
- 2 Power cost of \$0.10 per kWh
- 3 Savings calculated for 4 MGD ADF
- 4 Rehab'd well specific capacities 75 gpf/ft



**Cost Proposal for Indian River County South WTP Including Deepening of Wells S-3R, S-5, S-6**

Item	Description	UOM	Unit Rate	Qty.	Total
1	Additional Bonds and Insurance for Deepening Work (4 Wells)	LS	\$22,500	1	\$22,500
2	S-6 Drilling Rig Mobilization and Demobilization including Electrical	LS	\$99,214	1	\$99,214
3	S-3 Drilling Rig Mobilization and Demobilization including Electrical	LS	\$69,575	1	\$69,575
4	S-5 Drilling Rig Mobilization and Demobilization including Electrical	LS	\$73,214	1	\$73,214
12	Conduct Step Drawdown Test (3 Wells)	EA	\$3,000	3	\$9,000
15	Perform Site Restoration ( Crushed Concrete Temporary Pad Removal)	EA	\$8,500	4	\$34,000
16	Drill Nominal 15-inch Borehole (Each Well to 850 ft, Total 3 Wells, S-3R 179 ft, S-5 128 ft, S-6 176 ft)	FT	\$110	486	\$53,460
18	Additional Bacteriological Sampling and Analysis (10 Additional Samples per Well)	EA	\$150	30	\$4,500
			<b>TOTAL</b>		\$365,463

Additional Contract Time: 180 Calendar Days (60 Days Per Well)  
 Estimated Completion Date: December 18, 2018 (Start date: June 18th, 2018)



**Cost Proposal for Indian River County South WTP Including Deepening of Wells S-2, S-3R, S-5, S-6 and Acid Treatment of Well S-2**

Item	Description	UOM	Unit Rate	Qty.	Total
1	Additional Bonds and Insurance for Deepening Work (4 Wells)	LS	\$22,500	1	\$22,500
2	S-6 Drilling Rig Mobilization and Demobilization including Electrical	LS	\$99,214	1	\$99,214
3	S-3 Drilling Rig Mobilization and Demobilization including Electrical	LS	\$69,575	1	\$69,575
4	S-5 Drilling Rig Mobilization and Demobilization including Electrical	LS	\$73,214	1	\$73,214
5	S-2 Drilling Rig Mobilization and Demobilization including Electrical	LS	\$70,507	1	\$70,507
6	Complete Removal and Re-installation of Pump Discharge Apparatus with Disinfection (S-2)	EA	\$15,000	1	\$15,000
7	Geophysical Logging (Complete Set) (S-2)	EA	\$8,500	1	\$8,500
8	Perform Complete Video Log (Initial) (S-2)	EA	\$3,500	1	\$3,500
9	Complete Setup and Removal for Acidization Including Removal of Spent Acid (S-2)	EA	\$7,900	1	\$7,900
10	Well Acidization (S-2)	EA	\$4.50	4,000	\$18,000
11	Pump Develop Well (S-2)	HR	\$250	60	\$15,000
12	Conduct Step Drawdown Test (4 Wells)	EA	\$3,000	4	\$12,000
13	Perform Complete Video Log (Final) (S-2)	EA	\$2,000	1	\$2,000
14	Formation Water Disposal (S-2)	EA	\$10,000	1	\$10,000
15	Perform Site Restoration ( Crushed Concrete Temporary Pad Removal)	EA	\$8,500	4	\$34,000
16	Drill Nominal 15-inch Borehole (Each Well to 850 ft, Total 4 Wells)	FT	\$110	595	\$65,450
17	Well Maintenance Contingency Allowance (S-2)	EA	\$20,000	1	\$20,000
18	Additional Bacteriological Sampling and Analysis (8 Additional Samples per Well)	EA	\$150	32	\$4,800
			<b>TOTAL</b>		\$551,160

Additional Contract Time: 380 Calendar Days  
 Estimated Completion Date: December 18, 2018