
**COLORADO CITY METROPOLITAN DISTRICT
COLD SPRING WATER TREATMENT PLANT IMPROVEMENTS**

TO: Planholders
FROM: Ben Johnson, PE
DATE: 9/11/2009
PROJECT NUMBER: 6450002

SUBJECT: Addendum No. 2 to the Cold Spring Water Treatment Plant Improvements
Project Manual

The following items are amended to the Subject Project Manual

- AD-1. Section 00210, Instructions to Bidders, Article 16.01, REPLACE**
Paragraphs B and C with the following:
“B. For determination of the apparent low Bidder, Bids will be compared on the basis of the aggregate amount of the Base Bid, less (in the reverse order of priority listed on the Bid form) the deductive alternative Bid prices providing the most features of the Work within the funds determined by the Owner to be available before Bids are opened.
C. The listed order of priority for alternatives will be followed only for the determination of the apparent low Bidder. After the determination of the apparent low Bidder as stated, award in the best interest of the Owner may be made to said Bidder on its Base Bid and any combination of its deductive alternative Bids for which Owner determines funds will be available at the time of award, provided that the award on any such combination of Base Bid and deductive alternative Bids does not exceed the amount offered by any other Bidder for the same combination.”
- AD-2. Section 00410, Bid Form, p. 4, Article 6.01, ADD Paragraph C, stating:**
“C. Form A – DBE Subcontractor Solicitation Information (found on p. 16 of the “State of Colorado, Construction Bidding Requirements for State Revolving Loan Fund Projects, American Recovery and Reinvestment Act,” which is attached to the Supplementary Conditions.)
- AD-3. Section 02821, Fencing, Paragraph 2.2.B.6, DELETE Paragraph in its entirety and ADD Paragraph 2.2.B.6 stating:**
“6. Mesh Size: Provide two-inch mesh.”
- AD-4. Section 11110, Vertical Lineshaft Pumps, Paragraph 2.2.A.1, DELETE Paragraph 2.2.A.1.b. in its entirety and ADD the following to the end of Paragraph 2.2.A.1:**
“b. Peerless
c. Goulds

- d. Flowserve
- e. or equal”

AD-5. Section 1115, Packaged Vertical Centrifugal Pump Stations, Paragraph 2.2.A., DELETE paragraph 2.2.A.2 in its entirety and ADD the following to the end of Paragraph 2.2.A.:

- “2. Metron, Inc.
- 3. Pure Water Solutions, Inc.
- 4. Or equal.”

AD-6. Section 1115, Packaged Vertical Centrifugal Pump Stations, Paragraph 2.2.B., DELETE paragraph 2.2.B.2 in its entirety and ADD the following to the end of Paragraph 2.2.B.:

- “2. Goulds
- 3. Or equal.”

AD-7. Section 1116, Vertical Centrifugal Pumps, Paragraph 2.2.A., DELETE paragraph in its entirety.

AD-8. Section 1116, Vertical Centrifugal Pumps, Paragraph 2.2.B., DELETE paragraph 2.2.B.2. in its entirety and ADD the following to the end of paragraph 2.2.B:

- “2. Goulds
- 3. Or equal.”

AD-9. Section 11420, Peristaltic Tube Metering Pumps, Paragraph 2.2.A., DELETE paragraph 2.2.A.2 in its entirety and ADD the following to the end of paragraph 2.2.A.:

- “2. Watson-Marlow Bredel
- 3. Or equal.”

AD-10. Section 13400, Process Monitoring and Control System (PMCS), Appendix B, DELETE Appendix B, page 2 in its entirety and REPLACE with the attached pdf titled, “13400 – Appendix B – Addendum.”

AD-11. Section 11110, Vertical Lineshaft Pumps, Paragraph 2.1.D., DELETE Paragraph 2.1.D.1. in its entirety and REPLACE with the following:

- “1. Pumps shall comply with the following minimum conditions:

Design Conditions	Pump No. 1
Location	Existing Wet Well
Fluid Pumped	Raw Water
Number of Pumps Required	2
Number of Stages per Pump	2
Design Flow (1st design point) (gpm)	200
* Design Total Head (1st design point) (ft)	22.7
Minimum Bowl Efficiency at Design (1st design point) (percent)	76
***Motor (Hp)	2
Max Operating Speed (rpm)	1750
Pump Column Diameter (in)	6

Design Conditions	Pump No. 1
Pump Shaft Minimum Diameter (in)	1
Discharge Nozzle Dia. (in)	6
** Available NPSH at Design (1st design point) (ft)	3.9
*** Flow at 2nd Design Point (gpm)	100
Head at Zero Flow (ft)	19
Type of Lubrication (water or oil)	Water
Maximum Liquid Elev. in Suction Well (ft)	6223.00
Minimum Liquid Elev. in Suction Well (ft)	6220.00
Elevation of Suction Well Floor (ft)	6218.00
Fluid Temperature (degrees C)	8 – 20
Fluid pH	7.5
Drive Type	VFD
Motor Voltage/Phase/Hertz	460/1.5/60

* At maximum speed. Does not include entrance, pump, column, and discharge head losses.

** Required NPSH shall be for size impeller furnished. If impeller is trimmed, provide the curve for the impeller as trimmed.

*** Flow at the 2nd Design Point total head shall be within ten percent of value specified.

**** Pump horsepower requirements shall not exceed stated horsepower at all points on pump curve.”

AD-12. Section 11110, Vertical Lineshaft Pumps, Paragraph 2.3.A., DELETE
Paragraph 2.3.A.5 in its entirety and REPLACE with the following:

“5. Pump Shafts: Shall be 416 stainless steel conforming to ASTM A582. Shaft diameter shall be sized for total axial thrust and weight of all rotating parts supported by shaft and horsepower transmitted. Maximum combined shear stress shall not exceed 30 percent of elastic limit in tension or be more than 18 percent of ultimate tensile strength of shafting material.”

AD-13. Section 11110, Vertical Lineshaft Pumps, Paragraph 2.3.A., DELETE
Paragraph 2.3.A.8. in its entirety and REPLACE with the following:

“8. Discharge Column Pipe: The column pipe thickness shall be as recommended by the manufacturer. Pipe shall be furnished in sections of nominal 10-foot lengths. Ends of each section shall be machined parallel and threads machined so that ends will butt, to ensure proper alignment when assembled. Friction pipe loss shall not exceed five feet of head per 100 feet of length, at pump’s rated capacity.”

AD-14. Section 11110, Vertical Lineshaft Pumps, Paragraph 2.3.A., DELETE
Paragraph 2.3.A.9. in its entirety and REPLACE with the following:

“9. Discharge Head Assembly: Provide discharge head assembly with a shaft-packing box. Steel shafting passing through packing boxes shall be stainless steel. Head shaft shall be suitable for reversing ends to renew stuffing box wearing surface.

- a. Provide water-flushed mechanical seal type as specified below:
 - 1) Champion Type 1100, or equal.
 - 2) Seal face material to be silicon carbon vs. silicon carbide.

- 3) Rotating metal parts shall be Type 316 stainless steel.
- 4) O-rings for mechanical seals shall be neoprene, or equal.
- 5) Provide needle valve and pressure gage on stuffing box inlet.
Provide Type L copper piping to convey flushing water discharge to approved drain location.”

- AD-15. Section 11110, Vertical Lineshaft Pumps, Paragraph 2.3.A., DELETE**
Paragraph 2.3.A.16 in its entirety.
- AD-16. Section 11110, Vertical Lineshaft Pumps, Paragraph 2.3.B., DELETE**
Paragraph 2.3.B.10. in its entirety and REPLACE with the following:
“10. Motor thrust bearings shall be rated for continuous operation and a total load consisting of the weight of the motor rotor, pump impellers and lineshafting plus the hydraulic thrust imposed by the pump at rated operating conditions. Bearings shall have a minimum B-10 life of 20,000 hours. Conform to applicable standards of ABMA.”
- AD-17. Section 11110, Vertical Lineshaft Pumps, Paragraph 3.3.A.3, DELETE**
Paragraph 3.3.A.3.c. in its entirety.
- AD-18. Section 11343, Ultraviolet Disinfection System, Paragraph 1.3.A.,**
DELETE Paragraph 1.3.A.5. in its entirety and REPLACE with the following:
“5. Drawings and information for control panels and instruments in accordance with the applicable Division 13, Process Monitoring and Control System Sections. This includes panel wiring drawings and hardware submittals.”
- AD-19. Section 11343, Ultraviolet Disinfection System, Paragraph 2.1.B.1.,**
DELETE Paragraph 2.1.B.1.e in its entirety.
- AD-20. Section 11343, Ultraviolet Disinfection System, Paragraph 2.3.C.,**
DELETE Paragraphs 2.3.C.4 and 2.3.C.5. in their entirety.
- AD-21. Section 11343, Ultraviolet Disinfection System, Paragraph 2.3.D.,**
DELETE Paragraph 2.3.D.3 in its entirety and REPLACE with the following:
“3. The sensor shall be removable from the UV reaction chamber.”
- AD-22. 11343, Ultraviolet Disinfection System, Paragraph 2.3.F.,**
DELETE Paragraph 2.3.F.4 in its entirety and REPLACE with the following:
“4. The control panel must be provided with sufficient cooling/ventilation for the ballasts, and the air in and outlet openings must be protected by dust filters.”
- AD-23. Section 11343, Ultraviolet Disinfection System, Paragraph 2.3.G.,**
DELETE Paragraphs 2.3.G.2 in its entirety and REPLACE with the following:
“2. The ballast shall have a sufficient cooling system.”
- AD-24. Section 11343, Ultraviolet Disinfection System, Paragraph 2.3.H.1.,**
DELETE Paragraph 2.3.H.1.a.i. in its entirety and replace with the following:
“i. UV lamp operating hours”
- AD-25. Section 11343, Ultraviolet Disinfection System, Paragraph 2.3.H.1.,**
DELETE Paragraph 2.3.H.1.a.iii. in its entirety and replace with the following:
“iii. UV dose in mJ (if function activated)”
- AD-26. Section 11343, Ultraviolet Disinfection System, Paragraph 2.3.H.2.,**
DELETE Paragraph 2.3.H.2.b. in its entirety.

AD-27. Section 11343, Ultraviolet Disinfection System, Paragraph 2.3.H.3.,

DELETE Paragraph 2.3.H.3.a. in its entirety and replace with the following:

“a. Each UV system must have a manually operated mechanical cleaning system for the quartz sleeve(s) and the UV sensor measuring window(s).”

AD-28. Section 11343, Ultraviolet Disinfection System, Paragraph 2.4.,

DELETE Paragraph 2.4.A. in its entirety and replace with the following:

“A. Furnish and deliver the following spare parts carefully boxed or packaged and plainly marked for reorder.

1. One (1) complete set of replacement lamps.
2. Two (2) quartz sleeves with O-rings.
3. One (1) UV intensity sensor.”

PRODUCT DATA SHEET

MALCOLM PIRNIE		Coriolis Mass Flow Meter		
TAG NO.		FIT120		
PID Dwg No.:	1	I-2		
Spec. No.:	2	Sec 13400		
STD INTS. Dwg No.:	3			
PROCESS				
Location:	4	Sodium Hypochlorite Feed Pumps		
Service:	5	Sodium Hypochlorite Flow		
Vessel/line No.:	6			
Fluid:	7	Sodium Hypochlorite		
Temp min/max:	8	5-25 deg. C		
Press min/max:	9	0-300 kPa(g)		
Flow min/max:	10	0 - 0.5 gph		
Spec Gravity:	11	1.155		
Up/Down Stream:	12	10/5		
SENSOR				
Measuring Element:	13	Single Straight Measuring Tube		
Body Size:	14	25.4 mm dia. (1")		
End Conn/rate:	15	150 lb./ RF		
Liner Material:	16	Teflon		
Body Material:	17	CPVC		
Cleaning:	18	Self Draining		
TRANSMITTER				
Analogue Output:	19	2nos. 4-20 mA isolated (600 Ω) For Flow & Density		
Relay Output:	20	2nos. Max 60 VAC/0.5 A AC		
Power Supply:	21	120 VAC 60 hz		
Enclosure:	22	Remote Nema 4X		
Local Indication:	23	2 line backlit dsply/user config.		
Flow Calibr.Range:	24	User programmable		
Density Calibr.Range:	25	User programmable		
Accuracy:	26	+/- 0.15 % of rate		
Sensor Cable:	27	10m Cable incl.		
Options:	28			
ELECTRICAL				
Approval:	29	UL or FM		
Enclosure:	30	Nema 4X		
Class/Div/Group:	31	Class 2 Div 1		
NOTES				
	32	1) All manufacturers recommendations for installation and calibration must be met		
MANUFACTURE				
Manufacturer:	33	1st Named Krohne	2nd Named	3rd Named
Supplier:	34			
Model Number:	35			
Serial No.:	36			
Zero/Low:	37	Provide ISO Certified Calibration Certificate		
Span/High:	38			
Date:	39			
Signature:	40			