

*** All present are expected to conduct themselves in accordance with our City's Core Values ***



OFFICIAL NOTICE AND AGENDA

of a meeting of a City Board, Commission, Department Committee, Agency, Corporation, Quasi-Municipal Corporation or Sub-unit thereof.

Notice is hereby given that the BOARD OF PUBLIC WORKS of the City of Wausau, Wisconsin will hold a regular or special meeting on the date, time and location shown below.

Meeting of the:	BOARD OF PUBLIC WORKS OF THE CITY OF WAUSAU
Date/Time:	Friday, November 4, 2022 at 10:30 a.m.
Location:	City Hall (407 Grant Street, Wausau WI 54403) - COUNCIL CHAMBERS
Members:	Eric Lindman, Maryanne Groat, Anne Jacobson

AGENDA ITEMS FOR CONSIDERATION (All items listed may be acted upon)

1. Discussion and possible action on Work Change Directive #16 with Miron Construction for the Drinking Water Treatment Facility.

ERIC LINDMAN, PE
Director of Public Works & Utilities

Members of the public who do not wish to appear in person may view the meeting live over the internet, live by cable TV, Channel 981, and a video is available in its entirety and can be accessed at <https://tinyurl.com/WausauCityCouncil>. Any person wishing to offer public comment who does not appear in person to do so, may e-mail lori.wunsch@ci.wausau.wi.us with "Board of Public Works public comment" in the subject line prior to the meeting start. All public comment, either by email or in person, if agendaized, will be limited to items on the agenda at this time. The messages related to agenda items received prior to the start of the meeting will be provided to the Chair.

This Notice was posted at City Hall and transmitted to the Daily Herald newsroom on 11/02/22 @ 2:45 p.m. Questions regarding this agenda may be directed to the Engineering Department at (715) 261-6740.

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 (ADA), the City of Wausau will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs or activities. If you need assistance or reasonable accommodations in participating in this meeting or event due to a disability as defined under the ADA, please call the ADA Coordinator at (715) 261-6590 or ADAServices@ci.wausau.wi.us to discuss your accessibility needs. We ask your request be provided a minimum of 72 hours before the scheduled event or meeting. If a request is made less than 72 hours before the event the City of Wausau will make a good faith effort to accommodate your request.

Distribution List: City Website, Media, Committee Members, Mayor, Council Members, City Clerk

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ADDENDUM

AGENDA ITEMS FOR CONSIDERATION (All items listed may be acted upon)

2. Discussion and possible action on an amendment to the agreement with Becher Hoppe regarding the Drinking Water Treatment Facility.

ERIC LINDMAN, PE
Director of Public Works & Utilities

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This Notice was posted at City Hall and transmitted to the Daily Herald newsroom on 11/03/22 @ 8:30 a.m. Questions regarding this agenda may be directed to the Engineering Department at (715) 261-6740.

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CHANGE ORDER NO. 09

CHANGE ORDER	COMMENCEMENT OF
DATE OF ISSUANCE <u>November 4, 2022</u>	CONTRACT TIME <u>November 4, 2022</u>

OWNER City of Wausau

CONTRACTOR Miron Construction Co., Inc.

PROJECT Drinking Water System Treatment Facility Project CONTRACT NO. 2017.007/13245

ENGINEER Becher-Hoppe Associates, Inc, Donohue & Associates, Inc., Clark Dietz, Inc.

YOU ARE DIRECTED TO MAKE THE FOLLOWING CHANGES IN THE CONTRACT DOCUMENTS:

DESCRIPTION:

1. ADD CHEMICAL TUBING TO TREATMENT SYSTEM AS DESCRIBED IN WCD 016.
2. MODIFY CONTRACT MILESTONES, CONTRACT TIMES, LIQUIDATED DAMAGES AS FOLLOWS:

SECTION 00520 AGREEMENT. MODIFY ARTICLE 4, PARAGRAPH 4.02 TO READ AS FOLLOWS.

- A. THE WORK WILL BE SUBSTANTIALLY COMPLETED ON **DECEMBER 9, 2022**, IN ACCORDANCE WITH ARTICLE 4 OF THE GENERAL CONDITIONS. THE WORK SHALL BE COMPLETED AND READY FOR FINAL PAYMENT IN ACCORDANCE WITH ARTICLE 15 OF THE GENERAL CONDITIONS ON **FEBRUARY 9, 2023**. SUBSTANTIAL COMPLETION DEFINITION SHALL BE AS DESCRIBED IN WORK CHANGE DIRECTIVE 016.

SECTION 00520 AGREEMENT. MODIFY ARTICLE 4 PARAGRAPH 4.03 AS DESCRIBED BELOW.

- A. PARAGRAPH 4.03.A.1. CHANGE THE PAYMENT AMOUNT TO REFLECT THE FOLLOWING SCHEDULE:
 - I. 12/09/2022 – 12/16/2022 \$1,000 PER CALENDAR DAY
 - II. 12/17/2022 – 12/23/2022 \$2,500 PER CALENDAR DAY
 - III. 12/24/2022 AND BEYOND \$5,000 PER DAY
 - IV. DAMAGES LISTED AS I. THROUGH III. ARE FOR THE RESPECTIVE TIME PERIODS AND NOT ADDITIVE.

REASON FOR CHANGE ORDER:

1. See Attachment 1 – WCD 016
2. Contractor requires, and Owner/Engineer approves, revision of contract completion dates to ensure optimization of treatment processes. It is imperative the new treatment facility provides drinking water to the distribution system by December 31, 2022; therefore, liquidated damages are adjusted to reflect this need.

ATTACHMENTS:

ATTACHMENT 1:

WCD 016

ATTACHMENT 2:

CONTRACTOR SUPPORTING DOCUMENTATION FOR WCD 016 COSTS

CHANGE IN CONTRACT PRICE
Original Contract Price:
\$ <u>37,909,534.23</u>
Net increase (decrease) from previous Change Orders:
\$ <u>306,756.05</u>
Net increase (decrease) of this Change Order:
\$ <u>98,900.89</u>
Revised Contract Price:
\$ <u>38,315,191.17</u>

CHANGE IN CONTRACT TIMES
Original Contract Times: <i>(days or dates)</i>
Substantial Completion: <u>790 days</u>
Ready for Final Payment: <u>October 15, 2022</u>
Net increase (decrease) from previous Change Orders: <i>(days)</i>
Substantial Completion: <u>October 4, 2022</u>
Ready for Final Payment: <u>November 18, 2022</u>
Net increase (decrease) of this Change Order: <i>(days)</i>
Substantial Completion: <u>N/A</u>
Ready for Final Payment: _____
Revised Contract Times: <i>(days or dates)</i>
Substantial Completion: <u>December 9, 2022</u>
Ready for Final Payment: <u>February 9, 2023</u>

CONTRACTOR agrees that this Change Order includes any and all costs associated with or resulting from the change ordered herein, including all impacts, delays, and accelerated costs. Other than the dollar amount and time allowance listed above, there shall be no other dollar or time compensation as a result of this Change Order.

THIS DOCUMENT SHALL BECOME AN AMENDMENT TO THE CONTRACT AND ALL
STIPULATIONS AND COVENANTS OF THE CONTRACT SHALL APPLY HERETO.

RECOMMENDED:

APPROVED:

ACCEPTED:

 By: _____
 ENGINEER *(signature)*

 By: _____
 OWNER *(signature)*

 By: _____
 CONTRACTOR *(signature)*

Date: _____

Date: _____

Date: _____

Change Order 9, Attachment 1

Work Change Directive No. 016_R1

Date of Issuance: 11/03/2022

Effective Date: 11/04/2022

Owner: City of Wausau, WI

Owner's Contract No.:

Contractor: Miron

Contractor's Project No.:

Engineer: Donohue / Becher Hoppe

Engineer's Project No.:

Project: Wausau DWTF

Contract Name:

Contractor is directed to proceed promptly with the following change(s):

1. Provide ¾" chemical feed tubing for the following:
Coagulant (2 lines)
Sodium Silicate (1 line)
Sodium Hydroxide (3 lines)
2. Contractor will be allowed additional time and associated general condition costs to complete systems demonstration. Reference Attachment 1.

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

- ☐ Non-agreement on pricing of proposed change.
- ☒ Necessity to proceed for schedule or other Project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price \$ \$98,900.89 [increase] [decrease].

Contract Time See ATTACHMENT 1 [increase] [decrease].

- ☐ Lump Sum ☐ Unit Price
- ☒ Cost of the Work ☐ Other (see attached)

RECOMMENDED:

AUTHORIZED BY:

RECEIVED:

By:

By:

By:

Engineer (Authorized Signature)

Owner (Authorized Signature)

Contractor (Authorized Signature)

Title:

Title:

Title:

Date:

Date:

Date:

Approved by Funding Agency (if applicable)

By:

Date:

Title:

Work Change Directive 016

ATTACHMENT 1

Contract Time: Contract time, project milestones, and liquidated damages shall be adjusted as follow:

Substantial Completion: 12/09/2022

Substantial completion will be considered achieved when the Contractor has completed the 7-day system demonstration and requirements per the specifications as it relates to the Water Plant Building. Note: Certain items listed below will not be required to achieve substantial completion but tied to final completion.

The following items are agreed to not be required to achieve substantial completion:

- Hands-on training –
 - Owner to start operating the water plant alongside the contractor starting Nov 11th (without manufacturer attendance) to learn the operations of the plant. Additional training will be provided during post startup services which will be scheduled for a period of time after substantial completion as determined by the Owner and availability of the manufacturers.
- Disinfection of Building 100 Plumbing System
- Disinfection of 24-inch Raw Watermain from Bugbee Avenue to East Wausau Drive. (by Owner)
- Connect 24" FW to 24" Raw Water Main in the intersection of Marten St. and Bugbee Ave.
- Connect 24" FW to Existing 24" FW in front of existing Drinking water Treatment Facility.
- Connect 24" FW to existing 6-inch water main on Devoe St.
- Connect 12" Raw Water Main to existing 16-inch water main in the Gemini- Crocker intersection.
- Connect 24" Water Main to 14" water main.
- PLCs work at plant and wellhouses
- Change Order work not required to achieve Substantial Completion (or prevent the plant from operating)– completion of the work to be coordinated with the Owner:
 - WCD 13 Aqua Ammonia Vent Piping- 2 days
 - WCD 14 Aqua Ammonia Supply Piping-2 days
 - WCD 15 Solenoids on (6) Chemical Systems (Reference RFI#124, 2 days each)
 - RFI #111 6" BWS Piping Modifications (2 days)
 - RFI #124 Chemical Tank Expansion Joints (Coagulant and Permanganate Bulk tanks empty- 2 days each)
 - RFP-41- Well 9 Sanitary and Water Service – pending approval (1 day)

Drinking Water Treatment Facility Providing Water to City Water Distribution System: 12/31/2022

Final Completion: 02/09/2023

Liquidated Damages:

12/09/2022 – 12/16/2022	\$1,000 per calendar day
12/17/2022 – 12/23/2022	\$2,500 per calendar day
12/24/2022 and beyond	\$5,000 per day

Note: Liquidated damages listed above are for each time period. They are not additive.

Change Order 9, Attachment 2



Change Order Summary

Project: Wausau DWTP	
Project #: 2434	
Proposal Date: 10/27/2022	
Change Order #: PCI0104	
Revision:	
Description of Work: WCD 16 Only w/ 3 Man Crew	
Total CO Amount:	49,449.21

Item Description	Calc Type	Quantity	Unit of Measure	Unit Price or Rate	PCT %	Total Amount
WCD 16 Material	Lump Sum	1.00	Lump Sum	7,579.00		7,579.00
Delivery Costs	Lump Sum	1.00	Lump Sum	500.00		500.00
Sales Tax	Percent	8,079.00			0.00%	-
TOTAL M - Material						8,079.00
(1) Foreman Crew 1	Unit Price	64.00	Hour	102.68		6,571.52
(2) Journeyman Crew 1	Unit Price	128.00	Hour	88.54		11,333.12
Foreman Lodging	Unit Price	2.00	Week	700.00		1,400.00
Tool Costs	Percent	19,304.64			5.50%	1,061.76
TOTAL L - Labor						20,366.40
TOTAL S - Subcontract						-
Scissors/Man Lift Rental	Unit Price	2.00	Week	253.00		506.00
Scissors/Man Lift Rental	Unit Price	2.00	Week	325.00		650.00
Discharge Hose	Unit Price	16.00	Week	510.00		8,160.00
Equipment Delivery/Haul Cost	Unit Price	4.00	Each	150.00		600.00
Equipment Fuel Costs	Percent	9,916.00			15.00%	1,487.40
Equipment Tax	Percent	11,403.40			15.00%	1,710.51
TOTAL E - Equipment						13,113.91
	Unit Price	1.00	Lump Sum	0.00		0.00
TOTAL G - General Conditions						0.00
Project Management	Unit Price	16.00	Hour	90.00		1,440.00
TOTAL P - Project Management						1,440.00
Overhead & Profit - Materials	Percent	8,079.00			15.00%	1,211.85
Overhead & Profit - Labor	Percent	20,366.40			15.00%	3,054.96
Overhead & Profit - Equipment	Percent	13,113.91			15.00%	1,967.09
Overhead & Profit - General Conditions	Percent	0.00			15.00%	-
Overhead & Profit - Project Management	Percent	1,440.00			15.00%	216.00
TOTAL O - Overhead & Profit						6,449.90
TOTAL B - Bond & Insurance						-

49,449.21

This proposal only covers the direct costs of labor, materials and equipment to execute the changed work described in the proposal.

At the present time, we cannot assess or evaluate the overall impact of the changed work on our original scope of work.

We thereby reserve our rights to claim for any indirect costs which may arise in the future as a result of delays to the work, out of sequence work, inefficiencies, extended contract completion, labor and material escalation and / or acceleration and extended warranties.

BID NAME: WCD 16 Chemical Feed Tubing (PEX)	Prepared By : AJL	Initials	Date
LOCATION: [REDACTED]	Priced By :	[REDACTED]	10-27-22
BID NUMBER: [REDACTED]	Return By :	[REDACTED]	

ENTER DATE & TIME IN 'MM-DD-YY_H:MM' FORMAT

	PAGE NAME / SYSTEM	MATERIAL	LABOR	EQUIPMENT
	SHEET # 1 - WCD 16 Chemical Feed	\$ 7,579		
	SHEET # 2			
	SHEET # 3			
	SHEET # 4			
	SHEET # 5			
	SHEET # 6			
	SHEET # 7			
	SHEET # 8			
	SHEET # 9			
	SHEET # 10			
	SHEET # 11			
	SHEET # 12			
	SHEET # 13			
	SHEET # 14			
	SHEET # 15			
	SHEET # 16			
	SHEET # 17			
	SHEET # 18			
	SHEET # 19			
	SHEET # 20			
	SHEET # 21			
	SHEET # 22			
	SHEET # 23			
	SHEET # 24			
	SHEET # 25			
	SHEET # 26			
	SHEET # 27			
	SHEET # 28			
	SHEET # 29			
	SHEET # 30			
	SHEET # 31			
	SHEET # 32			
	SHEET # 33			
	SHEET # 34			
	SHEET # 35			
	SHEET # 36			
	SHEET # 37			
	SHEET # 38			
	LABOR SUBTOTAL:		0.0	
	LABOR CORRECTION FACTOR: 1.00		WITH A LCF OF 1 =	
	TOTAL:	\$ 7,579	0	\$ 0

Uponor AquaPEX white coils

Project information

Job name :	Location :
Engineer :	Date submitted:
Contractor :	Submitted by:
Manufacturer's representative :	Approved by :

Technical data

Material	PEX
Temp/pressure ratings	73 °F (23 °C) at 160 psi (11 bar)
	180 °F (82 °C) at 100 psi (6.9 bar)
	200 °F (93 °C) at 80 psi (5.5 bar)

Product information and application use

Uponor AquaPEX White is used for hot and cold domestic potable water distribution and residential fire safety as well as radiant heating/cooling and hydronic piping systems containing no ferrous corrodible components or where ferrous components are isolated from the piping.



Part name	Part no.	Inner diameter coil [inch]	Outer diameter coil [inch]	Coil width [inch]	Inner diameter pipe [inch]	Outer diameter pipe [inch]	Weight per UOM [lbs/UOM]
1 1/4" Uponor AquaPEX White, 300-ft. coil:	F1021250:	27:	45:	18.5:	1.054:	1.375:	106:
1 1/2" Uponor AquaPEX White, 300-ft. coil:	F1021500:	27:	45:	19:	1.244:	1.625:	133:
2" Uponor AquaPEX White, 300-ft. coil:	F1022000:	26.5:	51:	15:	1.629:	2.125:	204.6:
3" Uponor AquaPEX White, 300-ft. coil:	F1023000:	62.5:	83:	33:	2.398:	3.125:	384:
1/4" Uponor AquaPEX White, 100-ft. coil:	F1040250:	10.5:	16:	2.5:	0.241:	0.375:	4:
1/2" Uponor AquaPEX White, 100-ft. coil:	F1040500:	15.75:	23.5:	3.5:	0.475:	0.625:	6:
3/4" Uponor AquaPEX White, 100-ft. coil:	F1040750:	15.75:	32:	3:	0.671:	0.875:	10:
1" Uponor AquaPEX White, 100-ft. coil:	F1041000:	22.7:	32:	6.5:	0.862:	1.125:	20:
2" Uponor AquaPEX White, 200-ft. coil:	F1052000:	27:	46:	13:	1.629:	2.125:	136.4:
1/2" Uponor AquaPEX White, 300-ft. coil:	F1060500:	19.7:	32:	4:	0.475:	0.625:	18:
5/8" Uponor AquaPEX White, 300-ft. coil:	F1060625:	15.75:	32:	6.5:	0.574:	0.75:	28:
3/4" Uponor AquaPEX White, 300-ft. coil:	F1060750:	22:	32:	8:	0.671:	0.875:	34:
1" Uponor AquaPEX White, 300-ft. coil:	F1061000:	22.7:	32:	16:	0.862:	1.125:	56:
1 1/4" Uponor AquaPEX White, 100-ft. coil:	F1061250:	27:	45:	6:	1.054:	1.375:	34:
1 1/2" Uponor AquaPEX White, 100-ft. coil:	F1061500:	27:	45:	6:	1.244:	1.625:	44:
2" Uponor AquaPEX White, 100-ft. coil:	F1062000:	26.5:	44:	9:	1.629:	2.125:	68.2:
2 1/2" Uponor AquaPEX White, 100-ft. coil:	F1062500:	64:	80:	16:	2.011:	2.625:	88:
3" Uponor AquaPEX White, 100-ft. coil:	F1063000:	62.5:	80:	19:	2.398:	3.125:	128:
3/8" Uponor AquaPEX White, 400-ft. coil:	F1090375:	15.75:	32:	4.5:	0.35:	0.5:	20:
1/2" Uponor AquaPEX White, 500-ft. coil:	F1100500:	15.75:	32:	6.5:	0.475:	0.625:	27.6:
3/4" Uponor AquaPEX White, 500-ft. coil:	F1100750:	15.75:	32:	10.5:	0.671:	0.875:	54:
1" Uponor AquaPEX White, 500-ft. coil:	F1101000:	22.7:	40:	13.8:	0.862:	1.125:	93:
3/8" Uponor AquaPEX White, 1,000-ft. coil:	F1120375:	15.75:	32:	6.5:	0.35:	0.5:	44:
1/2" Uponor AquaPEX White, 1,000-ft. coil:	F1120500:	15.75:	32:	10.5:	0.475:	0.625:	54:
5/8" Uponor AquaPEX White, 1,000-ft. coil:	F1120625:	15.75:	32:	16:	0.574:	0.75:	86:

ProPEX rings

Project Information

Job name :	Location :
Engineer :	Date submitted:
Contractor :	Submitted by:
Manufacturer's representative :	Approved by :

Technical data

Material PEX

Product information and application use

Uponor ProPEX® rings are required to make a proper ProPEX connection. The ProPEX ring with stop includes a leading edge chamfer and stop edge.



Part name	Part no.	A [inch]	B [inch]	C [inch]	Weight per UOM [lbs/UOM]
ProPEX Ring, 3/8:	Q4690302:	0.732:	0.486:	0.54:	0:
ProPEX Ring with Stop, 1/2:	Q4690512:	0.879:	0.879:	0.63:	0.01:
ProPEX Ring with Stop, 5/8:	Q4690625:	1:	1:	0.787:	0.01:
ProPEX Ring with Stop, 3/4:	Q4690756:	1.128:	1.128:	0.866:	0.01:
ProPEX Ring with Stop, 1:	Q4691000:	1.42:	1.42:	1.102:	0.02:
ProPEX Ring with Stop, 1 1/4:	Q4691250:	1.664:	1.664:	1.349:	0.03:
ProPEX Ring with Stop, 1 1/2:	Q4691500:	1.91:	1.91:	1.605:	0.04:
ProPEX Ring with Stop, 2:	Q4692000:	2.626:	2.626:	1.968:	0.13:
ProPEX Ring with Stop, 2 1/2:	Q4692500:	3.25:	3.25:	2.605:	0.23:
ProPEX Ring with Stop, 3:	Q4693000:	3.865:	3.865:	3.12:	0.4:

Installation

Square cut the Uponor PEX tubing. Remove excess material. Slide the ProPEX ring over the end of the tubing (maximum 1/16" over-hang for rings without stop). When using the ProPEX ring with stop, slide the ring on the tubing with the chamfered edge first until the end of the tubing contacts the stop edge. Expand the tubing and ring. If using the ProPEX Manual Expander Tool, rotate the tool a quarter turn after each expansion to prevent the formation of grooves. Remove the expansion tool and fully seat the tubing and ring against the shoulder of the fitting. Make ProPEX connections at temperatures above 5°F/-15°C. For more information, refer to the Uponor ProPEX Connections Instructional Guide.

Related applications

PEX-a Plumbing Systems
AquaSAFE™ Fire Safety Systems
Hydronic Radiant Heating and Cooling Systems
Snow Melting Systems
Turf Conditioning Systems
Permafrost Prevention Systems

Codes

IMC|UPC|IBC|IRC|NBC of Canada|IPC|UFGS|NPC of Canada|UMC|NSPC:

Standards

ASTM F1960|ASTM E119|UL 263|ASTM E84|ASTM F2023|ASTM E814|ULC S115|ASTM F877|CSA B137.5|ULC S102.2|CSA B214|NSF-61|ULC S101|NSF-14|ASTM F876*:

Listings

IAPMO-ES|ICC-ES-PMG|cNSFus-pw|cNSFus-rfh|CCMC|PPI TR-4|CSA|UL|U.P.Code|cQAlus P321|HUD MR 1269|BMEC*:

Notes

Degree of crosslinking: 70% to 89%

Footnotes

* Some SKUs in this family have additional codes, standards, or listings. Please see uponor.com for complete information.

Contact information

Uponor Inc.
5925 148th Street West
Apple Valley, MN 55124
T 800.321.4739
F 952.891.2008

Uponor Ltd.
6510 Kennedy Road
Mississauga, ON L5T 2X4
T 888.594.7726
F 800.638.9517

ProPEX EP male threaded adapters

Project Information

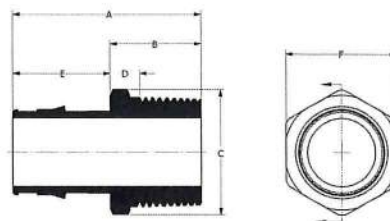
Job name :	Location :
Engineer :	Date submitted:
Contractor :	Submitted by:
Manufacturer's representative :	Approved by :

Technical data

Material	Engineered Polymer
Temp/pressure ratings	73 °F (23 °C) at 160 psi (11 bar)
	180 °F (82 °C) at 100 psi (6.9 bar)
	200 °F (93 °C) at 80 psi (5.5 bar)

Product information and application use

The ProPEX® engineered polymer (EP) male threaded adapter combines durable polymer material with the reliable ASTM F1960 connection professionals have come to depend on for a solution that stands the test of time.



Part name	Part no.	A [inch]	B [inch]	C [inch]	D [inch]	E [inch]	F [inch]	G [inch]	Cv	Weight per UOM [lbs/UOM]	End Type 1
ProPEX EP Male Threaded Adapter, 1" PEX x 1" NPT:	Q4621010:	2.5:	1.3:	1.47:	0.422:	1.2:	1.325:	0.735:	19.9:	0.06:	ProPEX 1" :
ProPEX EP Male Threaded Adapter, 1/2" PEX x 1/2" NPT:	Q4625050:	1.826:	1.1:	0.95:	0.358:	0.726:	0.86:	0.475:	5:	0.02:	ProPEX 1/2" :
ProPEX EP Male Threaded Adapter, 3/4" PEX x 3/4" NPT:	Q4627575:	2.062:	1.1:	1.18:	0.358:	0.962:	1.06:	0.59:	11.3:	0.03:	ProPEX 3/4" :

Part name	Part no.	End Type 2
ProPEX EP Male Threaded Adapter, 1" PEX x 1" NPT:	Q4621010:	MNPT 1" :
ProPEX EP Male Threaded Adapter, 1/2" PEX x 1/2" NPT:	Q4625050:	MNPT 1/2" :
ProPEX EP Male Threaded Adapter, 3/4" PEX x 3/4" NPT:	Q4627575:	MNPT 3/4" :

Installation

Use a minimum of three wraps of PTFE thread-seal tape. If using thread-sealant paste in addition to tape, consult the paste manufacturer for compatibility with polymer fittings. To avoid cross-threading, turn the fitting counterclockwise against the female threads until the threads drop into place. Then, tighten accordingly.

Related applications

PEX-a Plumbing Systems
Plumbing Systems
Pre-Insulated Pipe Systems

Codes

UPC|IRC|IPC|NPC of Canada:

Standards

ASTM F1960|CSA B137.5|NSF-61|NSF-14|NSF-372|ASTM F877:

Listings

U.P.Code|cNSFus-pw:

Footnotes

Contact Information

Uponor Inc.
5925 148th Street West
Apple Valley, MN 55124
T 800.321.4739
F 952.891.2008

Uponor Ltd.
6510 Kennedy Road
Mississauga, ON L5T 2X4
T 888.594.7726
F 800.638.9517

MrPEX Tubing – Chemical Resistance

The table below provides a good indication on our PEX tubing's compatibility with various chemicals. The list is based upon a combination of literature studies, testing, and experiences and is provided for guidance only, and without any warranty.

Our PEX Tubing is pressure rated (and warranted) for water. The rating is 160 psi @ 73°F; 100 psi @ 180°F; and 80 psi @ 200°F. The Tubing is not rated at 140°F (one of the temperatures we provide resistance for), but the rating at that temperature would be approximately 130 psi. The Table enclosed provides maximum recommended inside pressure as a percentage of these pressure ratings. Note that we do not recommend using PEX Tubing with Chemicals at temperatures over 180°F. Although PEX Tubing is considered fully resistant to many chemicals, we recommend a reduction of the maximum pressure applied at 180°F to 80%. Refer to the table for other suggested minimum pressure reductions. Where a percentage of 0% appears, this means that the material is OK for pressureless applications at actual temperature. When concentration is provided as "technical grade" or "commercial grade," this refers to the concentration that the chemical is typically available in, in the actual industry.

NOTE: PEX Tubing is not resistant to UV light, so extended exposure (more than a few weeks) to direct sunlight must be avoided.

NOTE: The Table only indicates the resistance to the actual Chemical. It does not provide information about the possible diffusion of the chemical into the material, or through the material.

Chemical	Concentration	73 F	140 F	180 F
Acetaldehyde 40%	< 40%	100%	90%	50%
Acetamide	Any	100%	100%	80%
Acetic Acid	< 60%	100%	100%	80%
Acetic Anhydride	Technical Grade	100%	50%	0%
Acetone	Technical Grade	100%	50%	0%
Acetylene	Any	100%	100%	80%
Acryl Nitrile	Any	100%	100%	80%
Allyl Alcohol	Technical Grade	100%	100%	80%
Aluminum Salts Solutions	Saturated	100%	100%	80%
Ammonia (Gas & Liquid)	Technical Grade	100%	100%	80%
Ammonium Salt Solutions	Saturated	100%	100%	80%
Amyl Acetate	Technical Grade	100%	50%	0%
Amyl Alcohol	Technical Grade	100%	50%	0%
Aniline	Technical Grade	100%	50%	0%
Aqua Regalis (Acid Mix)	Any	Do Not Use	Do Not Use	Do Not Use
Ascorbic Acid	Technical Grade	100%	100%	80%
Barium Salts Solutions	Saturated	100%	100%	80%
Beer	Commercial Grade	100%	100%	80%
Benzene	Technical Grade	100%	30%	0%
Benzoic Acid	Saturated	100%	100%	80%
Boric Acid	Technical Grade	100%	100%	80%
Bromine	Any	Do Not Use	Do Not Use	Do Not Use
Butadiene	< 40%	100%	100%	80%
Butanol	Technical Grade	100%	100%	80%
Butter	Any	100%	100%	80%

Continued...

MrPEX Tubing – Chemical Resistance

Chemical	Concentration	73 F	140 F	180 F
Butyl Acetate	Concentrated	100%	90%	50%
Butyric Acid	Concentrated	100%	90%	50%
Calcium Salts Solution	Saturated	100%	100%	80%
Calcium Chloride	Saturated	100%	100%	80%
Calcium Hypochlorite	Technical Grade	50%	10%	0%
Calcium Nitrate	Saturated	100%	100%	80%
Carbon Dioxide	Any	100%	100%	80%
Carbon Disulphide	Technical Grade	50%	Do Not Use	Do Not Use
Carbon Tetrachloride	Technical Grade	50%	Do Not Use	Do Not Use
Chlorinated Water	< 3%	100%	100%	80%
Chlorine	Concentrated	Do Not Use	Do Not Use	Do Not Use
Chlorobenzene	Technical Grade	100%	90%	50%
Chloroform	Technical Grade	50%	Do Not Use	Do Not Use
Chromic Acid	Saturated	100%	90%	50%
Chromium Salts Solutions	Saturated	100%	100%	80%
Citric Acid	Saturated	100%	100%	80%
Coconut Oil	Concentrated	100%	100%	80%
Coffee	Commercial Grade	100%	100%	100%
Copper Salts Solutions	Saturated	100%	100%	80%
Corn Oil	Saturated	100%	100%	80%
Cotton Seed Oil	Saturated	100%	100%	80%
Cyclohexane	Any	Do Not Use	Do Not Use	Do Not Use
Cyclohexanol	Saturated	100%	100%	80%
Cyclohexanone	Technical Grade	100%	90%	50%
Deca Hydro Naphthalene	Technical Grade	50%	Do Not Use	Do Not Use
Detergents	Any	100%	100%	80%
Dibutyl Ether	Technical Grade	100%	100%	80%
Dibutyl Phthate	Technical Grade	100%	90%	50%
Dichloroethylene	Any	Do Not Use	Do Not Use	Do Not Use
Diesel Oil	Concentrated	50%	10%	0%
Diglycol Acid	Technical Grade	100%	100%	80%
Dimethyl Amine	Technical Grade	Do Not Use	Do Not Use	Do Not Use
Dimethyl Formamide	Technical Grade	100%	90%	50%
Dioxane	Technical Grade	100%	100%	80%
Ethanol (Ethyl Alcohol)	Technical Grade	100%	100%	80%
Ethyl Acetate	Technical Grade	100%	50%	0%
Ethyl Ether	Technical Grade	50%	10%	0%
Ethylene Chloride	Concentrated	Do Not Use	Do Not Use	Do Not Use
Ethylene Diamine	Concentrated	100%	100%	80%
Ethylene Glycol 100%	Technical Grade	100%	100%	80%
Fatty Acid	Technical Grade	100%	50%	0%
Fluorides	Technical Grade	100%	100%	80%

Continued...

MrPEX Tubing – Chemical Resistance

Chemical	Concentration	73 F	140 F	180 F
Flourine	Any	Do Not Use	Do Not Use	Do Not Use
Formaldehyde	< 40%	100%	100%	80%
Freon F12	Technical Grade	50%	10%	0%
Glycerine	Technical Grade	100%	100%	80%
Glycol	< 40%	100%	100%	80%
Hydrochloric Acid	Concentrated	100%	100%	80%
Hydrofluoric Acid	< 40%	100%	100%	80%
Hydrogen Peroxide	< 90%	100%	100%	80 %
Hydrogen Sulphide	Technical Grade	100%	100%	80%
Ink	Any	100%	100%	80%
Iodine (in solution)	Any	Do Not Use	Do Not Use	Do Not Use
Iron Salts Solution	Saturated	100%	100%	80%
Lactic Acid	Technical Grade	100%	100%	80%
Lead Acetate	Saturated	100%	100%	80%
Maleic Acid	Saturated	100%	100%	80%
Mercury	Technical Grade	100%	100%	80%
Mercury Salts Solution	Saturated	100%	100%	80%
Methanol (Methyl Alcohol)	Technical Grade	100%	100%	80%
Methyl Chloride	Any	Do Not Use	Do Not Use	Do Not Use
Methyl Ethyl Ketone	Technical Grade	100%	100%	80%
Milk	Commercial Grade	100%	100%	100%
Mineral Oil	Technical Grade	100%	100%	80%
Motor Oil	Technical Grade	100%	50%	0%
Naphta	Technical Grade	100%	100%	80%
Nitric Acid	< 30%	100%	50%	0%
Nitric Acid	> 30%	Do Not Use	Do Not Use	Do Not Use
Nitrogen	Any	100%	100%	100%
Nitrobenzene	Concentrated	Do Not Use	Do Not Use	Do Not Use
Oil	Technical Grade	100%	50%	0%
Oleum	Technical Grade	Do Not Use	Do Not Use	Do Not Use
Olive Oil	Technical Grade	100%	50%	0%
Oxalic Acid	Saturated	100%	100%	80%
Ozone	Technical Grade	50%	10%	Do Not Use
Paraffine Oil	Commercial Grade	100%	100%	80%
Perchloric Acid	< 20%	100%	100%	80%
Perchloric Acid	< 70%	100%	50%	0%
Phenol	< 70%	100%	90%	50%
Phosphoric Acid	< 70%	100%	100%	80%
Phthalic Acid	< 50%	100%	100%	80%
Potassium Salts Solution	Saturated	100%	100%	80%
Propionic Acid	Technical Grade	100%	50%	0%
Pyridine	Technical Grade	100%	50%	0%

Continued...

MrPEX Tubing – Chemical Resistance

Chemical	Concentration	73 F	140 F	180 F
Silicone Oils	Any	100%	100%	80%
Silver Nitrate	< 70%	100%	100%	80%
Silver Salts Solution	Saturated	100%	100%	80%
Sodium Salts Solution	Saturated	100%	100%	80%
Sodium Hydroxide	Saturated	100%	100%	80%
Sodium Hypochlorite	< 15%	50%	10%	Do Not Use
Stearic Acid	Saturated	100%	50%	0%
Sulphuric Acid	< 70%	100%	100%	80%
Sulphuric Acid	> 70%	50%	10%	Do Not Use
Tallow	Concentrated	100%	90%	50%
Tannic Acid	Technical Grade	100%	100%	80%
Tartaric Acid	Saturated	100%	100%	80%
Tetrachloro Methane	Concentrated	50%	10%	Do Not Use
Tetrahydro Furane	Technical Grade	50%	10%	Do Not Use
Tin Salts Solution	Saturated	100%	100%	80%
Toluene	Technical Grade	50%	10%	Do Not Use
Trichloro Ethylene	Technical Grade	50%	10%	Do Not Use
Turpentine	Commercial Grade	Do Not Use	Do Not Use	Do Not Use
Urea	Technical Grade	100%	100%	80%
Vaseline	Commercial Grade	100%	100%	80%
Wine (and Vinegar)	Commercial Grade	100%	100%	80%
Xylol	Technical Grade	50%	10%	Do Not Use
Zinc Salts Solution	Saturated	100%	100%	80%



Project Modification
Pricing Worksheet

200140	Wausau Drinking Water Treatment Plant
WCD #16 - Chemical Feed Tube Replacement	
Provide gas and electric services through completion of WCD 16 and associated final DWTF testing and connection	
Prepared by:	Jack Kilgore
Date:	10/27/22

Labor Rate:	Project Specific
Equip Rate:	Equip

ID	Division	Cost Code	Item Description	Cost Type	Quantity	Unit of Measure	Labor Rate			Labor			Materials			Equipment			Total
							Units Per Hour	Hours Per Unit	Hour Type	Total Hours	Hourly Rate	Total \$	Unit Cost	Total \$	Equipment Type	Billing Usage	Unit Cost	Total \$	
1	01	015005	Construction Electric and Gas Usage	M	4.00	MO							\$ 10,000.00	\$ 40,000.00			\$	\$	\$ 40,000.00
2																	\$	\$	\$ -
3																	\$	\$	\$ -
4																	\$	\$	\$ -
5																	\$	\$	\$ -
6																	\$	\$	\$ -
7																	\$	\$	\$ -
8																	\$	\$	\$ -
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14																	\$	\$	\$ -
15																	\$	\$	\$ -
16																	\$	\$	\$ -
17																	\$	\$	\$ -
18																	\$	\$	\$ -
19																	\$	\$	\$ -
Total Labor:																			\$ -
Labor Inflation 0%																			\$ -
Total Material:																			\$ 40,000.00
Total Purchase Orders:																			\$ -
Sales Tax@ 0.0%																			\$ -
Total Equipment:																			\$ -
Total Miron C/O:																			\$ 40,000.00

Effective June 1, 2022 through May 31, 2023



POTENTIAL CHANGE ITEM (PCI) PROPOSAL REQUEST

Building Excellence

PROJECT NAME:	Wausau Drinking Water Treatment Plant
ADDRESS:	
PROJECT NUMBER:	200140
DATE:	10/27/2022
PCI #	

CHANGE DESCRIPTION:

Provide gas and electric services through completion of WCD 16 and associated final DWTF testing and connection

SELF-PERFORMED WORK:

TOTAL LABOR:

\$ -

TOTAL MATERIAL:

\$ 40,000.00

SALES TAX @ 0%:

\$ -

TOTAL EQUIPMENT:

\$ -

SUBTOTAL: \$ 40,000.00

OVERHEAD, PROFIT, & MARKUP 15.00%

\$ 6,000.00

TOTAL CONTRACTOR COST WITH MARKUP

\$ 46,000.00



330 N. 4th Street, Wausau, WI 54403-5417
715-845-8000 | becherhoppe.com

AUTHORIZATION FOR ADDITIONAL SERVICES

No. 4

This document is a supplement to the original Agreement between Becher-Hoppe Associates, Inc. and the Client listed below.

Client Name: City of Wausau- Wausau Water Works

Client Address: 407 Grant Street, Wausau, WI 54401

Project Name: Water Treatment Facility Evaluation

Project Number: 2017.007

Original Agreement Date: November 3, 2022

Description of Additional Services:

- Deduction of contract amount by \$23,273.15 per attached Donohue subconsultant amendment proposal to cover reasonable costs for replacement of chemical feed tubing with larger diameter tubing. Donohue also agrees to provide consulting services on the project within their scope of services from 8/16/22 until 12/9/22 at no cost to the City (estimated cost of \$112,051.50) as a showing of good faith.

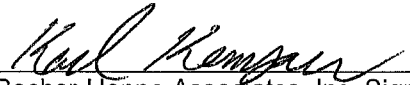
Summary of Contract

Agreement	Description	Overall Contract
Original Proposal	Water treatment facility evaluation	\$ 119,000
Additional Services No. 1	Conduct pilot study	\$ 66,000
Additional Services No. 2	Additional pilot, preliminary / final design and bidding services for relocated water treatment facility	\$ 2,227,775
Additional Services No. 3	Construction Phase Engineering Services	\$ 2,210,350
Additional Services No. 4	Deduction for reasonable costs associated with chemical feed tubing replacement.	(\$ 23,273.15)
	TOTAL	\$ 4,599,851.85

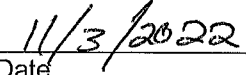
Basis and Amount of Additional Compensation:

☒ Time and Expenses Per Hourly Rates	(\$23,273.15)
☐ Lump Sum, Expenses Included	\$
☐ Fixed Fee Plus Expenses	\$
☐ Other:	\$

Additional Services as listed above will proceed upon return of a fully executed authorization.


Becher-Hoppe Associates, Inc. Signature


Title


Date

Client Approval Signature

Title

Date

Return to: Becher-Hoppe Associates, Inc.
330 N. 4th Street
Wausau, Wisconsin 54403-5417
kkemper@becherhoppe.com

Phone: 715-845-8000

**CONSTRUCTION PHASE ENGINEERING SCOPE AND TIMING DOCUMENT
AMENDMENT NO. 4 TO THE ORIGINAL ENGINEERING SERVICES AGREEMENT**

Water Treatment Facility Evaluation (Project)
Original Agreement Executed March 7, 2017

SCOPE OF SERVICES

No change.

COMPENSATION ADJUSTMENT

Donohue's contract amount will be adjusted down by \$23,273.15. The basis for this deduction is delineated and sourced in the table below.

Proposed Deduct

Project Management	14	Hr	x	\$90.00	-\$1,260.00	[1], [6]
Foreman	50	Hr	x	\$102.68	-\$5,134.00	[1], [6]
Journeyman	100	Hr	x	\$88.54	-\$8,854.00	[1], [6]
Materials					-\$3,989.52	[2]
Tools					-\$1,000.00	[1]
Subtotal					-\$20,237.52	
Contractor Markup				15%	-\$3,035.63	[3]
Total Deduct	164	Hr			-\$23,273.15	

Proposed Increase

Contractor Time Extension	16.5	Wks	x	\$6,791.00	\$112,051.50	[4], [5]
Goodwill, Speed, and Efficiency Deduct					-\$112,051.50	
Total Increase					\$0.00	

Total Amendment Amount	-\$23,273.15
-------------------------------	---------------------

Source

- [1] Miron-proposed change order. Tubing for coagulant, sodium silicate, and sodium hydroxide.
- [2] Quote from 351 Able Wausau | 401 South Fourth Street, Wausau, WI | 10-31-22
- [3] Contract Documents
- [4] Construction contract (Miron) substantial completion extension from Aug 16 - Dec 9, 2022
- [5] Donohue's average weekly charges Aug - Oct, 2022
- [6] Hours reflect the schedule provided by Miron on Nov 2, 2022.

PROJECT TIMING

The Contract Times in the original Construction Documents are as follows: Start = June 17, 2020; Substantial Completion = August 16, 2022; and Final Completion = October 15, 2022.

Donohue will provide the Scope of Services outlined in Amendment No. 3 in accordance with the anticipated revised Contract Times based on the schedule Miron proposed on November 2, 2022: Substantial Completion = December 9, 2022 and February 13, 2023.

CITY OF WAUSAU RESPONSIBILITIES

This Amendment constitutes the “other arrangement for payment” for the chemical feed tube claim referenced in the November 2, 2022 email from Kevin Long (Quarles & Brady, LLP) to Stephen Opatik (Becher Hoppe). An excerpt of that email is shown below.

“...The City will track the costs and provide you with documentation regarding same. Unless other arrangements for payment of the claims are made, the City will reflect the cost incurred due to the claims as backcharges against invoices from Becher Hoppe that are pending or are tendered in the future. Please don't hesitate to reach out with any questions or concerns, or have your counsel do so.”