

ERIE COUNTY WATER AUTHORITY  
 AUTHORIZATION FORM  
 For Approval/Execution of Documents  
 (check which apply)

**Contract:** \_\_\_\_\_ **Project No.:** 202000155  
**Project Description:** Furnish and Deliver Decant Pumps and Mixers

**Item Description:**

Agreement     Professional Service Contract     Amendment     Change Order  
 BCD     NYSDOT Agreement     Contract Documents     Addendum  
 Recommendation for Award of Contract     Recommendation to Reject Bids  
 Request for Proposals  
 Other \_\_\_\_\_

**Action Requested:**

Board Authorization to Execute     Legal Approval  
 Board Authorization to Award     Execution by the Chairman  
 Board Authorization to Advertise for Bids     Execution by the Secretary to the Authority  
 Board Authorization to Solicit Request for Proposals  
 Other \_\_\_\_\_

**Approvals Needed:**

**APPROVED AS TO CONTENT:**

<input checked="" type="checkbox"/> Sr. Production Engineer	<u><i>Richard Degan</i></u>	Date: <u>12/30/2020</u>
<input checked="" type="checkbox"/> Chief Operating Officer	<u><i>Russell J. Fells</i></u>	Date: <u>12/30/2020</u>
<input checked="" type="checkbox"/> Executive Engineer	<u><i>Jeanard F. Kovalick</i></u>	Date: <u>12/30/2020</u>
<input checked="" type="checkbox"/> Director of Administration	<u><i>Savanya L. Estie</i></u>	Date: <u>12/30/2020</u>
<input checked="" type="checkbox"/> Risk Manager	<u><i>Molly J. Musarra</i></u>	Date: <u>12/30/2020</u>
<input checked="" type="checkbox"/> Chief Financial Officer	<u><i>Karen A. Bendeck</i></u>	Date: <u>12/30/2020</u>
<input checked="" type="checkbox"/> Legal	<u><i>Margaret A. Murphy</i></u>	Date: <u>12/30/20</u>

**APPROVED FOR BOARD RESOLUTION:**

Secretary to the Authority *[Signature]* Date: 12/30/20

**Remarks:** Unit price contract. Pending receipt of revised COI before 1/7/2020 Board Meeting-.MJM. (Requirements met needs some boxes checked)

**Resolution Date:** \_\_\_\_\_ **Item No:** \_\_\_\_\_



# ERIE COUNTY WATER AUTHORITY

## INTEROFFICE MEMORANDUM

December 29, 2020

To: To: Terrence D. McCracken, Secretary to the Authority

From: David M. Patton, Senior Production Engineer *DMP*

Subject: Furnish and Deliver Decant Pumps and Mixers  
ECWA Project No. 202000155

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On November 10, 2020, the Authority received two (2) bids for the above referenced contract, including PCS Pump and Process, Inc. and Fluid Kinetics, Inc. The bids have been reviewed, a mathematical check has been performed, and confirmation of proposed pump and mixer manufacturer and model has been completed. Enclosed please find a copy of the bid tabulation sheet for your use and information.

PCS Pump and Process, Inc. has provided insurance documentation, approved by Claims Representative/Risk Manager. Due to the contract being a "supply" only contract, there are no MWBE requirements for this project.

Accordingly, we recommend the award of the decant pumps and mixers replacement contract to PCS Pump and Process, Inc. in the amount of \$145,704.61, subject to legal review. The contract is funded by approved 2021 capital budget line items (i.e. 101471 & 101472) in a total amount of \$230,000.00.

Attached please find the following documents:

1. ECWA Authorization Form.
2. ECWA Recommendation for Award of Contract form.
3. Bid Tabulation.

DMP:jmf

Attachments

cc: L.Kowalski

MWmer

L.Leste

B.Stoll

SPWA-207-2002-X-12

**Project: Furnish and Deliver Decant Pumps and Mixers**  
**Project No.: 202000155**  
**Bid Opening: November 10, 2020 at 11:00 a.m.**

BID ITEM	DESCRIPTION	QUANTITY	UNIT	PCS Pump and Process, Inc. 41 Plymouth Street Fairfield, New Jersey 07004		Fluid Kinetics, Inc. P.O. Box 655 Orchard Park, New York 14127	
				UNIT COST	TOTAL	UNIT COST	TOTAL
1	Submersible Centrifugal Solids Handling Pump and Motor	3	EA	\$25,921.68	\$77,765.04	\$52,473.00	\$157,419.00
2	Submersible Mixer, Motor and Mounting/Guide Rail Assembly	4	EA	\$12,831.00	\$51,324.00	\$19,543.00	\$78,172.00
3	Pump Accessories	1	LS	\$16,615.57	\$16,615.57	\$19,165.00	\$19,165.00
<b>PROPOSED TOTAL COST TO EXPEND -&gt;</b>				<b>\$145,704.61</b>		<b>\$254,756.00</b>	

**ERIE COUNTY WATER AUTHORITY  
RECOMMENDATION FOR AWARD OF CONTRACT**

Contract:	_____	Project No.:	<u>202000155</u>
Project Description:	<u>Furnish and Deliver Decant Pumps and Mixers.</u>		
	_____		
	_____		

**CONTRACT AWARD**

Contractor/Supplier: PCS Pump and Process, Inc.

Award Amount: \$145,704.61

**BID SUMMARY**

Date Advertised for Bids:	<u>10/06/2020</u>	Date of Bid Opening:	<u>11/10/2020</u>
	Bidder		Total Bid Amount
	<u>PCS Pump and Process, Inc.</u>		<u>\$145,704.61</u>
	<u>Fluid Kinetics, Inc.</u>		<u>\$254,756.00</u>
	_____		_____
	_____		_____
	_____		_____
	_____		_____
	_____		_____
	_____		_____
	_____		_____
	_____		_____

Attachments:       Bid Tabulation       Consultant's Recommendation

**APPROVALS (Select applicable)**

WMBE APPROVAL  
Affirmative Action Officer \_\_\_\_\_ Date \_\_\_\_\_

INSURANCE APPROVAL  
Claims Rep/Risk Manager *Molly Jo Musarra* Date 12/30/202

NYS CERTIFIED APPRENTICESHIP PROGRAM APPROVAL  
Coordinator of Employee Relations \_\_\_\_\_ Date \_\_\_\_\_

Remarks: I have signed pending receipt of revised insurance certificate, DB 120.1 and C 105.2 prior to the 1/7/2021. Vendor has been responsive-MJM

\_\_\_\_\_

\_\_\_\_\_



**Furnish and Deliver  
Decant Pumps and Mixers**

**Project No. 202000155**

**Erie County Water Authority**  
**3030 Union Road**  
**Cheektowaga, New York 14227**



**MATERIALS AND SUPPLIES CONTRACT  
FOR DECANT PUMPS AND MIXERS**

This Agreement, effective January 7, 2021 (“Effective Date”), is by and between

**ERIE COUNTY WATER AUTHORITY**  
295 Main Street, Room 350  
Buffalo, New York 14203

hereinafter referred to as the “Authority,” and

**PCS Pump and Process Inc.**  
41 Plymouth St.  
Fairfield, NY 07004

hereinafter referred to as the “Supplier.”

The Authority seeks to enter into a contract with the Supplier to furnish and deliver (a) three (3) submersible centrifugal solids handling pumps and motors; (b) four (4) submersible mixers, motors and mounting/guide rail assemblies, and (c) pump accessories upon the terms and conditions stated in this Agreement

In consideration of the mutual promises set forth in this Agreement, the Authority and the Supplier agrees as follows:

**ARTICLE 1 – THE PROCUREMENT**

**1.01** The Supplier shall furnish and deliver (a) three (3) submersible centrifugal solids handling pumps and motors; (b) four (4) submersible mixers, motors and mounting/guide rail assemblies, and (c) pump accessories (collectively, the “Pumps”) as set forth below:

- A. Three (3) Fairbanks 6” 5433 Submersible Centrifugal Solids Handling Pumps and 75 HP Motors.
- B. Four (4) Wilo TR40-1.89-8/16 mixers with Wilo 4.4 HP motors at 828 RPM, and Wilo M2/80 Frame Assemblies.
- C. Ashcroft Duragauge Model: 1379

**1.02** The Supplier shall furnish and deliver the Pumps upon the following terms and conditions:

- A. All pump and motor assemblies shall be delivered to the Authority’s Sturgeon Point Water Treatment Plant located at 722 Sturgeon Point Road, Derby, New York 14047 prior to **June 30, 2021**.

- B. In response to the Authority's Invitation to Bid, the Supplier submitted and signed Bid Documents and a Proposal, a copy of which is attached to, and incorporated in, this Agreement as Appendix A.
- C. Bid Specifications set forth in the Invitation to Bid are incorporated in this Agreement as Appendix B.

**1.03** This Agreement shall remain in effect until all materials or supplies are delivered or until June 30, 2021, whichever is sooner.

- A. The parties may agree in writing to extend this Agreement under the same terms and conditions including, but not limited to, price if the Supplier has not delivered the number of units contemplated by this Agreement.
- B. Prior to June 30, 2021, the parties may also agree in writing to increase the number of units for any materials or supplies to be sold by the Supplier to the Authority upon the following conditions:
  - i. The units of materials or supplies are within the original specifications of this Agreement; and
  - ii. All units will be delivered prior to June 30, 2021.
- C. Paragraphs A and B of this section must comply with the requirements of Article V of this Agreement.

## **ARTICLE 2 – COMPLIANCE**

**2.01** The Authority and the Supplier shall comply with all applicable federal, state or local laws and regulations and all applicable Authority policies and procedures.

**2.02** The Supplier shall comply with the provisions set forth in Public Authorities Law §§ 2875, 2876, and 2878 of the laws of the State of New York.

**2.03** In response to the Authority's Invitation to Bid, the Supplier signed and submitted, in accordance with the provisions set forth in the State Finance Law, Forms A, B, and C, a copy of which is attached to, and incorporated in, this Agreement as Appendix A.

**2.04** By executing this Agreement, the Supplier affirms under the penalties of perjury that there was no collusion in the bid submitted to the Authority, upon which forms the basis of this Agreement.

**2.05** The Supplier shall comply with the provisions of State Finance Law § 139-L of the laws of the State of New York. In response to the Authority's Invitation for Bids, the Supplier submitted and signed the Sexual Harassment Bidding Certification, a copy of which is attached to, and incorporated in, this Agreement, as Appendix A.

**2.06** The Supplier shall comply with the provisions of the Shield Act, codified at General Business Law § 899-aa of the laws of the State of New York.

**2.07** While on Authority property, the Supplier's employees and representatives shall comply with the specific applicable security and access rules established by the Authority's Security Officer.

### **ARTICLE 3 – PRICING & DELIVERY SCHEDULE**

**3.01** The parties agree the prices on which this Agreement is based shall be F.O.B. to the point of delivery. The Authority requires and the Supplier agrees all freight, cartage, rigging, postage or other transportation charges shall be paid by the Supplier and not charged to the Authority.

**3.02** The Supplier agrees the unit price for materials and supplies under this Agreement shall remain firm until all materials and goods are delivered. The Supplier understands no cost increase shall be charged for any reason whatsoever.

**3.03** The Supplier guarantees to the Authority the price offered for materials and supplies will be no higher than those offered to any other governmental or commercial consumer.

- A. If the Supplier has a New York State or a Federal GSA contract for any of the items covered under this Agreement or any similar items, the Supplier shall supply such items, if acceptable to the Authority, when the price for such item is no higher than the quoted price in this Agreement.
- B. If the Supplier offers any CASH discount, the Suppliers agree to invoice the Authority for a price not higher than offered under the CASH discount.

**3.04** The Supplier shall deliver such material and supplies prior to June 30, 2021 after receipt of an Authority purchase order. The Supplier's failure to timely delivery an order shall constitute a material breach of this Agreement for which the Authority may seek and recover damages, including attorney fees and other expenses.

**3.05** The Authority is exempt from taxation. The Suppliers shall not invoice the Authority for any state or local excise, sales, use, freight or transport or any other form of tax unless the laws of the State of New York specifically levies such tax on a public benefit corporation.

### **ARTICLE 4 – PAYMENT FOR MATERIALS AND SUPPLIES**

**4.01** The Supplier agrees to accept a net price payment of \$ 145,704.61 for furnishing and delivering the following materials and supplies:

Item No.	Quantity	U/M	Catalog No./Description	Unit Price	Total Price	
1	3	ea.	Submersible Centrifugal Solids Handling Pump and Motor	\$25,921.68	\$77,765.04	
Manufacturer & Model	Pump	Fairbanks 6'' 5433				
	Motor	Fairbanks- 75 HP				
2	4	ea.	Submersible Mixer, Motor and Mounting/Guide Rail Assembly	\$12,831.00	\$51,324.00	
Manufacturer & Model	Mixer	Wilo TR40-1.89-8/16				
	Motor	Wilo 4.4 HP at 828 RPM				
	Assembly	Wilo M2/80 Frame				
3	1	LS	Pump Accessories	\$16,615.57	\$16,515.57	
Manufacturer & Model	Ashcroft Duragauge Model 1379					
<b>TOTAL NET BASE BID DELIVERED INSIDE</b>					<b>\$145,704.61</b>	

**4.02** The net price payment above includes all freight, cartage, rigging, postage or other transportation charges. No additional charges for delivery may be added to the Lump Sum Payment.

**4.03** The Supplier agrees and understands the Authority will not pay interest or late charges or refund discount amounts taken after the discount period. All materials and supplies shall be priced as of the date of invoice or delivery, whichever is lower.

## **ARTICLE 5 – GENERAL PROVISIONS**

**5.01 *Subcontract and Assignments:*** The Supplier may not subcontract or delegate any of the obligations of the Supplier without the express written consent of the Authority’s Chief Operating Officer and General Counsel. The Authority and the Supplier bind themselves and their successors, administrators and assigns to the terms of this Agreement. The Supplier shall not assign, sublet or transfer its interest in the Agreement without the written consent of the Authority.

**5.02 *Amendments:*** No modification or variation from the terms of this Agreement shall be effective unless it is in writing and authorized by a resolution of the Board of Commissioners of the Authority and signed by all parties.

**5.03 *Right to Terminate:*** The Authority reserves the right to terminate the Supplier’s procurement at any time, without cause, based on seven (7) days’ written notice. The Supplier

shall not be entitled to lost profit and shall furnish and deliver only such materials and supplies, after notification of termination, as the Authority directs.

**5.04 Indemnification:**

- A. To the fullest extent permitted by law, the Supplier agrees to indemnify and hold the Authority harmless from all third party claims, liabilities, damages and costs (including all reasonable attorney's fees, and cost of defense) to which the Authority, its officers, directors and employees may be subject to, arising out of the death or bodily injury to any person or the destruction or damage to any property to the extent caused by the negligent acts, errors or omissions, or willful misconduct of the Supplier's performance under this Agreement and those of its subcontractors or anyone for whom the Supplier is legally liable.
- B. To the fullest extent permitted by law, the Authority agrees to indemnify and hold the Supplier harmless from all third party claims, liabilities, damages and costs (including all reasonable attorney's fees and cost of defense) to the extent caused by the negligent acts, errors or omissions of the Authority, its contractors, engineers, or anyone for whom the Authority is legally liable.

**5.05 Insurance:**

- A. The Supplier shall secure and maintain such insurance as will protect itself from claims under the Workers' Compensation Act; claims for damages because of bodily injury, including personal injury, sickness or disease, or death of any of its employees or of any person other than its employees; and from claims for damages because of injury to or destruction of property including loss of use resulting therefrom in the amounts indicated on Appendix C.
- B. The Supplier shall provide and maintain insurance that will provide coverage for claims arising out of the negligent performance of this Agreement.
- C. The Supplier shall provide Certificates of Insurance certifying the coverage required by this provision.
- D. The Supplier shall provide the name of an employee who will be responsible for providing the Authority with current and updated Certificates of Insurance. The Authority will require the name of the employee, the employee's phone number and email address.

**5.06 Warranty:** Unless otherwise stated in this Agreement, the Supplier agrees that the warranties as prescribed by the laws of the State of New York are and will remain in effect; that this warranty and the time to exercise said warranty in effect at the time of the breach, if any, caused by any breach or by any hidden or latent defect will be as prescribed by the laws of the State of New York. The Supplier's obligation under this section is independent of any other obligations stated in this Agreement.

**5.07 New York Law and Jurisdiction:** Notwithstanding any other provision of this Agreement, any dispute concerning any question of fact or law arising under this Agreement which is not disposed of by agreement between the Supplier and the Authority shall be governed, interpreted and decided by a court of competent jurisdiction of the State of New York in accordance with the laws of the State of New York.

**5.08 Conflicts of Interest:** The Supplier represents that it has advised the Authority in writing prior to the date of signing this Agreement of any relationships with third parties, including competitors of the Authority, which would present a conflict of interest with the rendering of the services, or which would prevent the Supplier from carrying out the terms of this Agreement or which would present a significant opportunity for the disclosure of confidential information. The Supplier will advise the Authority of any such relationships that arise during the term of this Agreement. The Authority shall then have the option to terminate the Agreement without being subject to further obligations under its terms, except for the payment for material and supplies already furnished by the Supplier. So long as the Supplier reports such a conflict as required by this section, the Supplier will have no further obligations under the terms of this Agreement.

**5.09 Additional Conditions:** The Supplier and the Authority acknowledge that there may be additional conditions, terms and provisions which shall apply specifically to the delivery of materials and supplies to be furnished. The parties agree to negotiate in good faith to agree upon such additional terms.

**5.10 Entire Agreement:** This Agreement constitutes the entire understanding of the parties and no representations or agreements, oral or written, made prior to its execution shall vary or modify the terms herein. This Agreement supersedes all prior contemporaneous communications, representations, or agreements, whether oral or written with respect to the subject matter hereof and has been induced by no representations, statements or agreements other than those herein expressed. No subsequent agreement made between the parties shall be binding on either party unless reduced to writing and signed by an authorized officer of the party sought to be bound by such agreement.

**5.11 Independent Status:** Nothing contained in the Agreement shall be construed to render either the Authority or the Supplier, an owner, member, officer, partner, employee or agent of the other, nor shall either party have authority to bind the other in any manner, other than as set forth in this Agreement, it being intended that the Supplier shall remain an independent contractor responsible for its own actions. The Supplier is retained by the Authority only for the purpose and to the extent set forth in this Agreement.

**5.12 Doing Business Status:** The Supplier represents it is qualified to do business in the State of New York and has registered with the New York Secretary of State.

**5.13 Gratuities, Illegal or Improper Schemes:**

- A. The Supplier shall prohibit its agents, employees and consultants from using their positions for personal financial gain, or from accepting any personal advantage from anyone under circumstances which might reasonably be interpreted as an attempt to influence the recipients in the conduct of their official duties.

- B. The Supplier or its employees shall not, under circumstances which might be reasonably interpreted as an attempt to influence the recipients in the conduct of their duties, extend any gratuity or special favor to employees of the Authority.
- C. The Authority may terminate this Agreement or any purchase order, if it is determined that gratuities in the form of entertainment, gifts or otherwise were offered or given by a Supplier, the Supplier's agent or representative to any Authority official or employee with a view towards securing favorable treatment with respect to the awarding of this Agreement or the performance of the Agreement or purchase order.
- D. The Authority may also terminate this Agreement or purchase order if it is determined that the Supplier engaged in any other illegal or improper scheme promotive of favoritism or unfairness incidental to the bidding process or the performance of the Agreement or purchase order. If it is determined that said improper or illegal acts occurred, the Authority shall be entitled to terminate the Agreement or purchase order and/or exercise any other remedy available to it under existing law.

**5.14 Notice:** Any notices required by this Agreement or otherwise shall be delivered by United States Postal mail or personal delivery upon the addresses hereinbefore stated. Any change in such addresses shall be required to be in writing to the other party and acknowledged as such.

## **ARTICLE 6 – SEVERABILITY**

**6.01** Any provision or part of the Agreement held to be void or unenforceable by a court of competent jurisdiction shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the parties, which agrees that the Agreement shall be reformed to replace such stricken provisions or part thereof with a valid enforceable provision that comes as close as possible to expressing the intent of the stricken provision. The validity and enforceability of all other provisions of this Agreement shall not otherwise be affected.

## **ARTICLE 7 – EXECUTORY CLAUSE**

**7.01** The parties agree and understand that this Agreement shall be executory to the extent of funds have been budgeted and appropriated by the Authority. The Authority shall not submit any purchase order without first determining whether funds have been budgeted and appropriated to pay for such procurement. If the Authority's Comptroller rejects or holds an invoice submitted by the Supplier due to a lack of funds in the appropriate budget line, the Supplier's only remedy would be (1) to await for a budget transfer to be approved, or (2) to accept a return of the materials and supplies F.O.B. to the point of delivery to the Supplier. The Authority shall not be subject to any further liability.

## **ARTICLE 8 – TERMINATION**

**8.01** The Authority reserves the right to terminate this Agreement in the event it is found that the Certification filed by the Supplier in accordance with New York State Finance Law §139-k was intentionally false or intentionally incomplete. Upon such finding, the Authority may exercise its termination right by providing written notification to the Supplier in accordance with the written notification terms of this Agreement.



**ERIE COUNTY WATER AUTHORITY**

By \_\_\_\_\_  
Jerome D. Schad, Chair

**PCS PUMP AND PROCESS, INC.**

By \_\_\_\_\_  
Peter Tabone, President

STATE OF NEW YORK     )  
COUNTY OF ERIE        ) ss:

On the \_\_\_\_\_ day of \_\_\_\_\_, in the year 2020, before me personally came Jerome D. Schad, to me known, who, being by me duly sworn, did depose and say that he resides in Amherst, New York, that he is the Chair of the Board of Commissioners for the Erie County Water Authority described in the above instrument; and that he signed his name thereto by order of the Board of Commissioners.

\_\_\_\_\_  
Notary Public

STATE OF NEW YORK     )  
COUNTY OF ERIE        ) ss:

On the \_\_\_\_\_ day of \_\_\_\_\_, in the year 2020, before me personally came Peter Tabone, to me known, who, being by me duly sworn, did depose and say that he resides in Fairfield, New Jersey, that he is the President of the Corporation described in the above instrument; and that he signed his name thereto by order of the Board of Directors of said Corporation.

\_\_\_\_\_  
Notary Public

**APPENDIX A**

**Bid Documents and Proposal**

**DOCUMENTS AND PROPOSAL**

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**BID DESCRIPTION: FURNISH AND DELIVER DECANT PUMPS AND MIXERS**

PROJECT No.: 202000155

OPENING DATE: Tuesday November 10, 2020    TIME: 11:00 a.m.

NAME OF BIDDER: PCS Pump and Process, Inc.

PERSON AUTHORIZED TO ENTER INTO CONTRACT FOR BIDDER:

NAME: Peter Tabone

TITLE President

SUBMISSION DATE: 11/6/2020

ADDRESS: 41 Plymouth St., Fairfield NJ 07004

PHONE: 973-575-7464

PERSON EMPLOYED BY THE BIDDER, WHO WILL BE RESPONSIBLE FOR OBTAINING BONDS AND/OR INSURANCE COVERAGE

NAME: Peter Tabone

TITLE President

ADDRESS: 41 Plymouth St., Fairfield NJ 07004

PHONE: 973-575-7464

EMAIL: PTabone@PCSPump.com

**BID ITEMS & BID SHEET**

**BID DESCRIPTION: FURNISH AND DELIVER DECANT PUMPS AND MIXERS**

PROJECT No.: 202000155

Ship to: ERIE COUNTY WATER AUTHORITY  
 STURGEON POINT WATER TREATMENT PLANT  
 Attention: David M. Patton, Senior Production Engineer  
 Address: 722 Sturgeon Point Road, Derby, New York 14047

1. Bidder shall identify the manufacturer and model number in the Bidder's Proposal for all items for which a bid is submitted. Bidders shall take note that it is mandatory to provide all information requested for all Goods included under the Bid Item for which a bid is submitted.
2. Bids submitted shall be based on the manufacturers specified. Consideration of substitutes, if proposed, shall be per Bid Specifications (pages 6-31).
3. Deliver all bid items to the following address: ECWA Sturgeon Point Water Treatment Plant, 722 Sturgeon Point Road, Derby, New York 14047.
4. All bid items, and accessories shall be delivered prior to June 30, 2021.

Item No.	Quantity	U/M	Catalog No./Description	Unit Price	Total Price
1	3	ea.	Submersible Centrifugal Solids Handling Pump and Motor		
Manufacturer & Model		Pump	Fairbanks Nijhuis 6"5433UD	\$ 25,921.68	\$ 77,765.04
		Motor	Fairbanks - 75 HP		
2	4	ea.	Submersible Mixer, Motor and Mounting/Guide Rail Assembly		
Manufacturer & Model		Mixer	Wilo TR40-1.89-8/16	\$ 12,831.00	\$ 51,324.00
		Motor	Wilo 4.4HP 828 RPM		
		Assembly	Wilo R2/80 Frame		
3	1	LS	Pump Accessories		
Manufacturer & Model		Ashcroft Duragauge 1779		\$ 16,615.57	\$ 16,615.57
<b>TOTAL NET BASE BID DELIVERED INSIDE</b>					<b>\$ 145,704.61</b>



**NOTE:** Bid results are available on the Erie County Water Authority website, [www.ecwa.org](http://www.ecwa.org) (under Doing Business tab, select option Business Opportunities). No bid results will be given over the telephone.

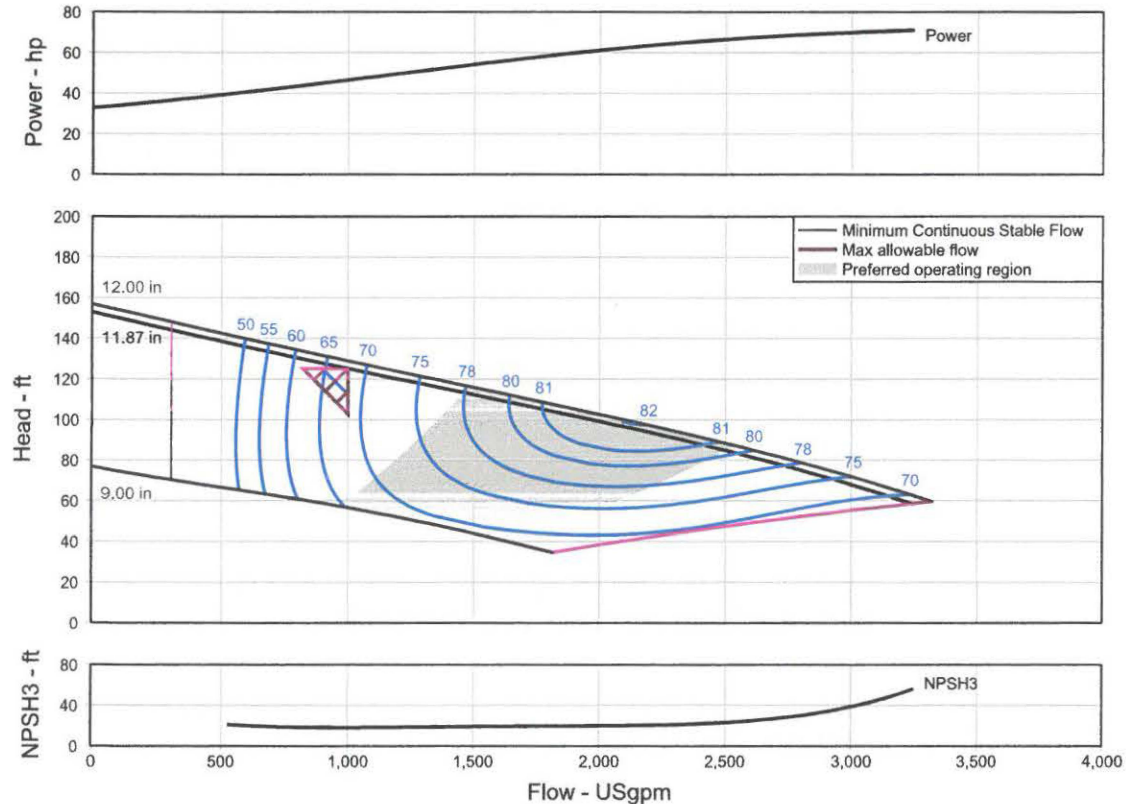
The Bidder agrees to supply all material/equipment/labor above-described at the above-quoted price and in accordance with all applicable Bid Specifications.

NAME OF BIDDER: PCS Pump And Process, Inc.

AUTHORIZED SIGNATURE:  DATE: 11/6/2020

Item number	: 001	Size	: 6" 5433 (W, MT, WD)
Service	:	Stages	: 1
Quantity	: 2	Based on curve number	: 6-54x3-1800-T6C1C
Quote number	: 20-260 - Erie County	Date last saved	: 30 Jun 2020 7:14 AM

Operating Conditions		Liquid	
Flow, rated	: 1,000.0 USgpm	Liquid type	: Water
Differential head / pressure, rated (requested)	: 125.0 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 125.1 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Solids diameter limit	: 3.00 in
NPSH available, rated	: Ample	Solids concentration, by volume	: 0.00 %
Site Supply Frequency	: 60 Hz	Temperature, max	: 68.00 deg F
<b>Performance</b>		Fluid density, rated / max	: 1.000 / 1.000 SG
Speed criteria	: Synchronous	Viscosity, rated	: 1.00 cP
Speed, rated	: 1780 rpm	Vapor pressure, rated	: 0.34 psi.a
Impeller diameter, rated	: 11.87 in	<b>Material</b>	
Impeller diameter, maximum	: 12.00 in	Material selected	: Cast Iron
Impeller diameter, minimum	: 9.00 in	<b>Pressure Data</b>	
Efficiency	: 67.91 %	Maximum working pressure	: 66.17 psi.g
NPSH required / margin required	: 18.25 / 0.00 ft	Maximum allowable working pressure	: 85.00 psi.g
nq (imp. eye flow) / S (imp. eye flow)	: 50 / 166 Metric units	Maximum allowable suction pressure	: N/A
Minimum Continuous Stable Flow	: 300.0 USgpm	Hydrostatic test pressure	: 125.0 psi.g
Head, maximum, rated diameter	: 152.9 ft	<b>Driver &amp; Power Data (@Max density)</b>	
Head rise to shutoff	: 22.18 %	Driver sizing specification	: Max Power
Flow, best eff. point	: 2,090.0 USgpm	Margin over specification	: 0.00 %
Flow ratio, rated / BEP	: 47.85 %	Service factor	: 1.00
Diameter ratio (rated / max)	: 98.92 %	Power, hydraulic	: 31.59 hp
Head ratio (rated dia / max dia)	: 97.07 %	Power, rated	: 46.52 hp
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00	Power, maximum, rated diameter	: 71.14 hp
Selection status	: Acceptable	Minimum recommended motor rating	: 75.00 hp / 55.93 kW



**INFORMATION REQUIRED FROM BIDDERS**  
**AT TIME OF CANVASS OF BIDS**

To facilitate correct drawing and execution of contract, bidder shall supply full information concerning legal status:

FIRM NAME PCS Pump and Process, Inc.

ADDRESS OF PRINCIPAL OFFICE: STREET 41 Plymouth Street

CITY Fairfield

AREA CODE 913 PHONE 575-7464 STATE NJ ZIP 07004

Check one: CORPORATION  PARTNERSHIP  INDIVIDUAL

INCORPORATED UNDER THE LAWS OF THE STATE OF New Jersey

If foreign corporation, state if authorized to do business in the State of New York:

YES  NO

TRADE NAMES: \_\_\_\_\_

ADDRESS OF LOCAL OFFICE: STREET \_\_\_\_\_

CITY \_\_\_\_\_

AREA CODE \_\_\_\_\_ PHONE \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

NAMES AND ADDRESSES OF PARTNERS:

Peter Tabone 21 Florence Dr., Florham Park, NJ 07932

\_\_\_\_\_

\_\_\_\_\_

IDENTIFICATION #: (COMPLETE ONE):

Federal Employer Identification Number: 22-3714238

Social Security Number: \_\_\_\_\_



**INFORMATION REQUIRED FROM BIDDERS**  
**REGARDING PROPOSED CONTRACT DOCUMENTS**

**Question 1:**

The BIDDER represents that it has reviewed the Proposed Contract Documents beginning at page 49.

CHECK ONE:

- YES, BIDDER has reviewed the Proposed Contract Documents.
- NO, BIDDER has not reviewed the Proposed Contract Documents.

Failure to review the Proposed Contract Documents will result in the BIDDER being deemed NONRESPONSIVE by the Authority and therefore, ineligible to be awarded the Contract.

**Question 2:**

The BIDDER accepts the terms of the Proposed Contract Documents as drafted and agrees to execute the Contract as drafted if awarded the Bid.

CHECK ONE:

- YES, BIDDER accepts the Proposed Contract Documents.
- NO, BIDDER proposes the following amendment(s) to the Proposed Contract Documents:

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\*Insert Additional Page(s) if necessary.



**Question 3:**

Is the proposed Amendment a Condition of the Bid Proposal? If the Authority rejects the proposed Amendment would the Bidder withdraw its Bid?

CHECK ONE:

YES, the Amendment is a Condition of the Bid Proposal.

*IF the Amendment is a Condition of the Bid Proposal and the Authority rejects the Amendment, the Authority will deem the Bid withdrawn and will proceed to award the Bid to the next lowest, responsible bidder.*

NO, the BIDDER would like to negotiate the terms of the Amendment prior to the execution of the Contract.

Please Answer Question 3 for each proposed Amendment to the Proposed Contract Documents and insert additional pages if necessary to provide such answers.

NAME OF BIDDER: PCS Pump And Process, Inc.

AUTHORIZED SIGNATURE:  DATE: 4/6/2020

**NON-COLLUSIVE BIDDING CERTIFICATION**

as mandated by Public Authority Law § 2878

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
- (3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

**NOTICE**

(Penal Law § 210.45)

IT IS A CRIME, PUNISHABLE AS A CLASS A MISDEMEANOR UNDER THE LAWS OF THE STATE OF NEW YORK, FOR A PERSON, IN AND BY A WRITTEN INSTRUMENT, TO KNOWINGLY MAKE A FALSE STATEMENT, OR TO MAKE A FALSE STATEMENT, OR TO MAKE A STATEMENT WHICH SUCH PERSON DOES NOT BELIEVE TO BE TRUE.

**BID NOT ACCEPTABLE WITHOUT FOLLOWING CERTIFICATION:**Affirmed under penalty of perjury this 6 day November, 2020TERMS Net 30 DELIVERY DATE AT DESTINATION June 30th 2021FIRM NAME PCS Pump And Process, Inc.ADDRESS 41 Plymouth St., Fairfield NJ 07007

ZIP \_\_\_\_\_

AUTHORIZED SIGNATURE P. T...TYPED NAME OF AUTHORIZED SIGNATURE Peter TaboneTITLE President TELEPHONE No. 973-575-7464

**FORMS A, B, and C**

## STATE FINANCE LAW REQUIREMENTS

The Erie County Water Authority (the “Authority”) is a government entity, as that term is defined in State Finance Law §§ 139-j(1)(a) and 139-k(1)(a). When the Authority seeks to procure goods or services by means of an Invitation or Notice to Bid, or a Request for Proposals, the State Finance Law imposes certain restrictions on anyone who may wish to offer goods or services to the Authority as an Offerer, as that term is defined in §§ 139-j(1)(h) and 139-k(1)(h).

During the Restricted Period, as defined in §§ 139-j(1)(f) and 139-k(1)(f), when bids or proposals are being solicited, the Authority will designate a contact person with whom the Offerer may contact for information and other authorized purposes as set forth in §139-j of the State Finance Law. The designated contact is identified in the Notice to Bidders, or in the Request for Proposal. An Offerer is authorized to contact the Authority’s designated contact for such purposes set forth in § 139-j(3).

Pursuant to the State Finance Law, the Authority is also required to make certain findings before making any determinations as to the qualifications and eligibility of those seeking a procurement contract, as that term is defined in State Finance Law §§ 139-j(1)(g) and 139-k(1)(g). Certain findings of non-responsibility can result in rejection for contract award and in the event of two findings of non-responsibility occurring within a 4-year period, the Offerer will be debarred from obtaining procurement contracts with the Authority. Further information about these requirements can be found in §§139-j and 139-k of the New York State Finance Law and the Erie County Water Authority’s Procurement Disclosure Policy.

The following forms will be used by the Authority to make such findings:

Form A - Offerer’s Affirmation of Understanding of, and Agreement to Comply with, the Authority’s Permissible Contact Requirement During the Restricted Period.

Form B - Offerer’s Certification of Compliance with State Finance Law.

Form C - Offerer’s Disclosure of Prior Non-Responsibility Determinations.

FORM A**Offerer's Affirmation of Understanding of, and Agreement to Comply with, the Permissible Contact Requirements During the Restricted Period****Instructions:**

The Erie County Water Authority (the "Authority") is a government entity, as that term is defined in State Finance Law §§ 139-j(1)(a) and 139-k(1)(a). The Authority must obtain a written affirmation of understanding and agreement to comply with procedures regarding permissible contacts with the Authority in the restricted period for a procurement contract in accordance with State Finance Law §139-j and §139-k. It is required that this affirmation be obtained as early as possible in the procurement process, but no later than when the Offerer submits its proposal.

Offerer affirms that it understands and agrees to comply with the procedures of the Authority relative to permissible contacts as required by State Finance Law §139-j(3) and §139-j(6)(b).

By: P. Tabone Date: 11/6/2020

Name: Peter Tabone

Title: President

Contractor Name: PCS Pump And Process, Inc.

Contractor Address: 41 Plymouth St., Fairfield NJ 07004

\_\_\_\_\_

\_\_\_\_\_

**FORM B**

**Offerer's Certification of Compliance  
With State Finance Law §139-k(5)**

**Instructions:**

The Erie County Water Authority (the "Authority") is a government entity, as that term is defined in State Finance Law §§ 139-j(1)(a) and 139-k(1)(a). The Authority must obtain a Certification that the information submitted for a procurement contract is complete, true, and accurate regarding any prior findings of non-responsibility, such as non-responsibility pursuant to State Finance Law §139-j. The Offerer must agree to sign the Certification, under penalty of perjury, and to provide the Certification to the Authority. The Certification should be obtained as early as possible in the process, but no later than when an Offerer submits its proposal.

**Offerer Certification:**

*I certify that all information provided to the Authority relating to the awarding of a procurement contract is complete, true, and accurate.*

By: P. T... Date: 11/6/2020

Name: Peter Tubone

Title: President

Contractor Name: PCS Pump And Process, Inc.

Contractor Address: 46 Plymouth St., Fairfield NJ 07004

**FORM C****Offerer's Disclosure of Prior  
Non-Responsibility Determinations****Background:**

The Erie County Water Authority (the "Authority") is a government entity, as that term is defined in State Finance Law §§ 139-j(1)(a) and 139-k(1)(a). New York State Finance Law §139-k(2) obligates the Authority to obtain specific information regarding prior non-responsibility determinations with respect to State Finance Law §139-j. In accordance with State Finance Law §139-k, an Offerer must be asked to disclose whether there has been a finding of non-responsibility made within the previous four (4) years by any Governmental Entity due to: (a) a violation of State Finance Law §139-j; or (b) the intentional provision of false or incomplete information to a Government Entity.

The terms "Offerer" and "Governmental Entity" are defined in State Finance Law §§139-j(1) and §139-k(1). These sections also set forth detailed requirements about the restrictions on contacts during the procurement process. A violation of State Finance Law §139-j includes, but is not limited to, an impermissible contact during the restricted period (for example, contacting a person or entity other than the designated contact person, when such contact does not fall within one of the exemptions).

As part of its responsibility determination, State Finance Law §139-k(3) mandates consideration of whether an Offerer fails to timely disclose accurate or complete information regarding the above non-responsibility determination. In accordance with law, no Procurement Contract shall be awarded to any Offerer that fails to timely disclose accurate or complete information under this section, unless a finding is made that the award of the Procurement Contract to the Offerer is necessary to protect public property or public health safety, and the Offerer is the only source capable of supplying the required Article of Procurement, as that term is defined in State Finance Law §§ 139-j(1)(b) and 139-k(1)(b), within the necessary timeframe. See State Finance Law §139-j(10)(b) and §139-k(3).

**Instructions:**

The Authority must include a disclosure request regarding prior non-responsibility determinations in accordance with State Finance Law §139-k in its solicitation of proposals or bid documents or specifications or contract documents, as applicable, for procurement contracts. The attached form is to be completed and submitted by the individual or entity seeking to enter into a Procurement Contract. It shall be submitted to the Authority no later than when the Offerer submits its proposal.

**FORM C (Continued)**

**Offerer's Disclosure of Prior Non-Responsibility Determinations**

Name of Individual or Entity Seeking to Enter into the Procurement Contract:

PCS Pump And Process, Inc.

Address: 41 Plymouth St., Fairfield NJ 07004

Name and Title of Person Submitting this Form: Peter Tabone, President

Contract Procurement Number: 202000155

Date: 11/6/2020

1. Has any Governmental Entity made a finding of non-responsibility regarding the individual or entity seeking to enter into the Procurement Contract in the previous four years? (Please circle): No Yes

If yes, please answer the next questions:

2. Was the basis for the finding of non-responsibility due to a violation of State Finance Law §139-j (Please circle): No Yes

3. Was the basis for the finding of non-responsibility due to the intentional provision of false or incomplete information to a Governmental Entity? (Please circle) No Yes

4. If you answered yes to any of the above questions, please provide details regarding the finding of non-responsibility below.

Governmental Entity: \_\_\_\_\_

Date of Finding of Non-Responsibility: \_\_\_\_\_

Basis of Finding of Non-Responsibility: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Add additional pages as necessary)

**FORM C (Continued)**

5. Has any Governmental Entity or other governmental agency terminated or withheld a Procurement Contract with the above-named individual or entity due to the intentional provision of false or incomplete information? (Please circle): NO Yes

6. If yes, please provide details below.

Governmental Entity: \_\_\_\_\_

Date of Termination or Withholding of Contract: \_\_\_\_\_

Basis of Termination or Withholding:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Add additional pages as necessary)

Offerer certifies that all information provided to the Erie County Water Authority with respect to State Finance Law §139-k is complete, true, and accurate.

By: P. Tabone Signature Date: 11/6/2020

Name: Peter Tabone

Title: President



**Contract Termination Provision****Instructions:**

A Contract Termination Provision will be included in each procurement contract governed by State Finance Law §139-k. New York State Finance Law §139-k(5) provides that every procurement contract award subject to the provisions of State Finance Law §§139-k and 139-j shall contain a provision authorizing the governmental entity to terminate the contract in the event that the certification is found to be intentionally false or intentionally incomplete. This statutory contract language authorizes, but does not mandate, termination. “Government Entity” and “procurement contract” are defined in State Finance Law §§ 139 j(1) and 139-k(l).

This required clause will be included in a covered procurement contract.

A sample of the Termination Provision is included below. If a contract is terminated in accordance with State Finance Law §139-k(5), the Erie County Water Authority (the “Authority”), as a governmental entity, is required to include a statement in the procurement record describing the basis for any action taken under the termination provision.

**Sample Contract Termination Provision**

The Erie County Water Authority (the “Authority”), as a governmental entity, reserves the right to terminate this contract in the event it is found that the certification filed by the Offerer in accordance with New York State Finance Law §139-k was intentionally false or intentionally incomplete. Upon such finding, the Authority may exercise its termination right by providing written notification to the Offerer in accordance with the written notification terms of this contract.

SECTION 139-L OF THE STATE FINANCE LAW  
STATEMENT RELATING TO SEXUAL HARASSMENT POLICY

1. "Bidder" has the same meaning as the term, "Offerer," as that term is defined in State Finance Law § 139-k(1)(h), and includes anyone who submits a bid or proposal.
2. Every proposal or bid hereafter made and submitted to the Erie County Water Authority, where competitive bidding or a sealed proposal is required by statute, rule or regulation, for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement subscribed by the Bidder and affirmed by such Bidder as true under penalty of perjury:

SEXUAL HARASSMENT BIDDING CERTIFICATION

- (a) "By submission of this bid/proposal, EACH BIDDER AND EACH PERSON SIGNING ON BEHALF OF ANY BIDDER CERTIFIES, AND IN THE CASE OF A JOINT BID EACH PARTY THERETO CERTIFIES AS TO ITS OWN ORGANIZATION, under penalty of perjury, that the Bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all its employees. Such policy shall, at a minimum, meet the requirements of Section two hundred one-g of the Labor Law."
3. A bid/proposal shall not be considered for award nor shall any award be made to a Bidder who has not complied with subdivision one of this section; provided, however, that if in any case the Bidder cannot make the foregoing certification, the Bidder shall so state and shall furnish with the bid/proposal a signed statement which sets forth in detail the reasons therefore.

The undersigned CERTIFIES, under penalty of perjury, that he is authorized to make this bid/proposal and execute this statement on sexual harassment; that he is familiar with the statements contained in ¶2(a) of this document, as well as the provisions of State Finance Law §139-L and Labor Law §201-g, and such statements are true and have been complied with by the Bidder.

PCS Pump And Process, Inc  
(Name of Individual, Partnership or Corporation)

By P. T. Peter Tabe  
(Person authorized to sign)

(SEAL)

**APPENDIX B**  
**Bid Specifications**

**BID SPECIFICATIONS****BID DESCRIPTION: FURNISH AND DELIVER DECANT PUMPS AND MIXERS**

PROJECT No.: 202000155

**SECTION 1 - SHOP DRAWING SUBMITTAL AND CORRESPONDENCE PROCEDURE****1.01 GENERAL**

- A. The submittal of Shop Drawings shall conform to requirements of General Conditions and procedures described in this Section, unless waived by the OWNER.

**1.02 SUBMITTAL ADMINISTRATIVE REQUIREMENTS**

- A. Submittals of Shop Drawings shall be made to the OWNER at the address listed below:  
 David M. Patton, Sr. Production Engineer  
 Erie County Water Authority  
 3030 Union Road  
 Cheektowaga, New York 14227  
[dpatton@ecwa.org](mailto:dpatton@ecwa.org)
- B. Letter of Transmittal for Submittals:
1. Provide separate letter of transmittal with each submittal. Each submittal shall be for one Specification Section.
  2. At the beginning of each letter of transmittal and each letter of inquiry, provide a reference heading indicating the following:
    - a. OWNER's Name: Erie County Water Authority
    - b. Project Name: Furnish and Deliver Decant Pumps
    - c. Contract No.: \_\_\_\_\_
    - d. Transmittal No.: \_\_\_\_\_
    - e. Section No.: \_\_\_\_\_
  3. For submittals with proposed deviations from requirements of the Contract Documents, the letter of transmittal shall specifically describe each proposed variation.
- C. All Shop Drawings submitted shall bear SUPPLIER's stamp of approval and signature, as evidence that submittal has been reviewed by SUPPLIER and verified as complete and in accordance with the Contract Documents. Submittals without this SUPPLIER's stamp of approval will not be reviewed by the OWNER and will be returned to the SUPPLIER.

1. SUPPLIER's stamp shall contain the following:

“Project Name: \_\_\_\_\_

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Item/Submittal Title: \_\_\_\_\_

Specification Section: \_\_\_\_\_

Submittal No. and Review Cycle: \_\_\_\_\_

I hereby certify that the shop drawing has satisfied Supplier's obligations under the Contract Documents relative to Supplier's review and approval of this submittal.

Approved By (for SUPPLIER): \_\_\_\_\_”

- D. The SUPPLIER shall initially submit to OWNER a full electronic submittal file. Initial submittal does not require paper copy, only final approved submittal shall be provided with two (2) full paper copies, along with the electronic final copy.
- E. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
  1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Engineer.
  4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
    - a. Project name.
    - b. Date.
    - c. Name of firm or entity that prepared submittal.
    - d. Names of subcontractor, manufacturer, and/or supplier.
    - e. Indication of full or partial submittal.
    - f. Transmittal number numbered consecutively.
    - g. Remarks.
- F. Processing Time: Allow time for submittal review, including time for resubmittals, as follows:
  1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. OWNER

will advise SUPPLIER when a submittal being processed must be delayed for coordination.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.

### 1.03 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Submit electronic submittals via email as PDF electronic files.
  - a. Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
  - a. Manufacturer's catalog cuts.
  - b. Manufacturer's product specifications.
  - c. Standard color charts.
  - d. Statement of compliance with specified referenced standards.
  - e. Testing by recognized testing agency.
  - f. Application of testing agency labels and seals.
  - g. Notation of coordination requirements.
  - h. Availability and delivery time information.
4. For equipment, include the following in addition to the above, as applicable:
  - a. Wiring diagrams showing factory-installed wiring.
  - b. Printed performance curves.
  - c. Operational range diagrams.
  - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

## APPENDIX B

- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- F. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- G. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- H. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- I. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- J. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- K. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

### 1.04 OWNER'S REVIEW

- A. Submittals not required in the Contract Documents will not be reviewed by OWNER and will not be recorded in OWNER'S submittal log. All hardcopies of such submittals will be returned to SUPPLIER.
- B. Submittals, Results of OWNER'S Review: Each submittal will be given one of the following dispositions:
  - 1. Approved: Upon return of submittal marked "Approved", order, ship, or fabricate materials and equipment included in the submittal (pending OWNER'S approval or acceptance, as applicable, of source quality control submittals) or otherwise proceed with the Work in accordance with the submittal and the Contract Documents.

## APPENDIX B

2. Approved as Corrected: Upon return of submittal marked “Approved as Corrected”, order, ship, or fabricate materials and equipment included in the submittal (pending OWNER’s approval or acceptance, as applicable, of source quality control submittals) or otherwise proceed with the Work in accordance with the submittal and the Contract Documents, provided it is in accordance with corrections indicated.
3. Approved as Corrected – Resubmit: Upon return of submittal marked “Approved as Corrected – Resubmit”, order, ship, or fabricate materials and equipment included in the submittal (pending OWNER’s approval or acceptance, as applicable, of source quality control submittals) or otherwise proceed with the Work in accordance with the submittal and the Contract Documents, provided it is in accordance with corrections indicated. Provide to OWNER record re-submittal with all corrections made. Receipt of corrected re-submittal is required before materials or equipment covered in the submittal will be eligible for payment.
4. Revise and Resubmit: Upon return of submittal marked “Revise and Resubmit”, make the corrections indicated and re-submit to OWNER for approval.
5. Not Approved: This disposition indicates material or equipment that cannot be approved. Upon return of submittal marked “Not Approved”, repeat initial submittal procedure utilizing approvable material or equipment.



SECTION 2 – CENTRIFUGAL PUMP GENERAL REQUIREMENTS

## 2.01 DESCRIPTION

## A. Scope:

1. This Section includes the general provision for furnishing all centrifugal pump and motors, as specified herein, for installation by OWNER.

## 2.02 QUALITY ASSURANCE

## A. Manufacturer's Qualifications:

1. Manufacturer shall have a minimum of ten years of experience producing substantially similar equipment and shall be able to show evidence of at least five installations in satisfactory operation for at least ten years.
2. The manufacturer of the pumping units shall have a quality management system in place and shall be ISO 9001:2015 certified and ISO 14001:2015 environmental management system.

## B. Component Supply and Compatibility:

1. The centrifugal pump equipment manufacturer shall review and approve or prepare all Shop Drawings and other submittals for all components furnished.
2. All components shall be specifically constructed for the specified service conditions and shall be integrated into the overall assembly by the centrifugal pump equipment manufacturer.

## C. Vibration, when measured in the direction of maximum amplitude on the pump and motor bearing housings, shall not exceed limits given in the latest ANSI/HI nomograph for the applicable pump type.

## 2.03 REFERENCES

## A. Design, manufacturing and assembly of elements of the equipment herein specified shall be in accordance with, but not limited to, published standards of the following, as applicable:

1. American Society for Testing and Materials (ASTM).
2. American Bearing Manufacturers Association, (ABMA).
3. American National Standards Institute, (ANSI).
4. American Water Works Association, (AWWA).
5. Hydraulic Institute, (HI).
6. National Sanitation Foundation, (NSF).

## 2.04 SUBMITTALS

## A. Action Submittals: Submit the following:

1. Product Data:
  - a. Manufacturer's literature, illustrations, specifications and engineering data including: dimensions, materials, size, weight, performance data and curves showing overall pump efficiencies, required net positive suction head, allowable suction lift, flow rate, head, brake horsepower, motor horsepower, speed and shut-off head.
2. Shop Drawings
  - a. Fabrication, assembly, installation and wiring diagrams.
3. Warranty.
4. pump tests for Certified all pumps.
5. Manufacturer's certified rating curves, to satisfy the specified design conditions, showing pump characteristics of discharge, head, brake horsepower, efficiency and guaranteed net positive suction head required (NPSHR).
  - a. Variable speed curves shall be provided showing at least four speeds plotted equally from maximum rpm to minimum rpm. Minimum rpm shall be no less than that required to obtain minimum flow. Curves shall show the full recommended range of performance and include shut-off head.
  - b. This information shall be prepared specifically for the pump proposed. Catalog sheets showing a family of curves will not be acceptable.

## B. Bid Statement:

1. A statement shall be provided with the bid indicating that the pump manufacturer has reviewed the pump conditions and that the manufacturer's pumping units will operate without NPSH, entrance, and other hydraulically related problems. If the manufacturer does not believe the units will operate properly, they shall state so and list what modifications must be made before they can guarantee correct performance.

## C. Operation and Maintenance Data:

1. Submit complete installation, operation and maintenance manuals including test reports, maintenance data and schedules, description of operation and spare parts information.
2. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
  - a. Standard printed maintenance instructions and bulletins.
  - b. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  - c. Identification and nomenclature of parts and components.

- d. List of items recommended to be stocked as spare parts.
3. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
  - a. Test and inspection instructions.
  - b. Troubleshooting guide.
  - c. Precautions against improper maintenance.
  - d. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - e. Aligning, adjusting, and checking instructions.
  - f. Demonstration and training videotape, if available.
4. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
5. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
6. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
7. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
8. Warranty: Include copies of warranties and lists of circumstances and conditions that would affect validity of warranties.

#### 2.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and handle the pumps and motors in accordance with the manufacturer's recommendations.
- B. Deliver the pumps to the following address:
  1. ECWA Sturgeon Point Water Treatment Plant: 722 Sturgeon Point Road, Derby, NY 14047.
- C. Pumps shall be delivered prior to June 30, 2021.

#### 2.06 WARRANTY

- A. The pumps shall be guaranteed to be free from defects in materials and workmanship for a period of two (2) years, from the date the pumps are delivered and approved.

## 2.07 SOURCE QUALITY CONTROL

## A. Pump Shop Test (Certified Pump Test):

1. All pump casings shall be hydrostatically tested to twice the discharge head or 1-1/2 times the shutoff head, whichever is greater.
  2. Running Test: All complete and coated, as applicable, pump assemblies shall be operated from zero to maximum capacity as shown on the approved curve. Results of the test shall be shown in a plot of test curves showing head, flow, horsepower, efficiency, and current. Readings shall be taken at a minimum of five evenly spaced capacity points including shut-off, design point and minimum head for which pump is designed to operate.
  3. Each test shall be witnessed by a Registered Professional Engineer, who may be an employee of the manufacturer. The Registered Professional Engineer shall sign and seal all copies of curves and shall certify that hydrostatic tests were performed.
  4. Each pump specified herein shall be factory tested in accordance with the latest edition of the Hydraulic Institute Standards.
  5. Pumps shall not be shipped until the OWNER has approved the test reports.
- B. All gears, bearing surfaces, machined surfaces and other surfaces which are to remain unpainted shall receive a heavy application of grease or other rust-resistant coating. This coating shall be maintained during storage and until the equipment is placed into operation.

SECTION 3 – SUBMERSIBLE CENTRIFUGAL SOLIDS HANDLING PUMP

## 3.01 EQUIPMENT PERFORMANCE

## A. System Description:

1. Pumps shall be submersible end suction, close-coupled, single stage centrifugal solids handling type.
2. Each pump shall be designed and constructed for its intended service, and for continuous operation under complete submersion, partial submersion, and dry conditions.
3. Pump shall be clockwise rotation when viewed from the driver end looking at pump.

## B. Design and Performance Criteria: The pump(s) shall be designed for and operated continuously under normal service under the following operating conditions:

<b>DESIGN CONDITIONS</b>	<b>PUMP NO. 1</b>
Location	Decant Basin
Liquid Pumped	WTP Residuals
<sup>1</sup> Flow at 1 <sup>st</sup> Design Point (gpm)	1,000
<sup>1</sup> Total Head at 1 <sup>st</sup> Design Point (ft.)	125
<sup>1</sup> Minimum Pump Efficiency at 1 <sup>st</sup> Design Point (%)	68
<sup>2</sup> Max. Required NPSH at 1 <sup>st</sup> Design Point (ft.)	18.5
<sup>3</sup> Flow at 2 <sup>nd</sup> Design Point (gpm)	1,500
Total Head at 2 <sup>nd</sup> Design Point (ft.)	107
Minimum Pump Efficiency at 2 <sup>nd</sup> Design Point (%)	73
<sup>2</sup> Required NPSH at 2 <sup>nd</sup> Design Point (ft.)	20.5
Max. Head at Zero Flow (ft)	185
Min. Sphere Size/Diameter, (in.)	3.0
Suction Size (in.)	6
Discharge Size (in.)	6
Temperature, (°F)	35 – 75
Motor Nominal Voltage	460V / 60 Hz
Max. Pump/Motor Speed (rpm)	1,800
<sup>4</sup> Max. Motor Size (HP)	75
Motor Drive	VFD

DESIGN CONDITIONS	PUMP NO. 1
<p><b>Notes:</b></p> <p><sup>1</sup> At maximum speed.</p> <p><sup>2</sup> Required NPSH shall be for size impeller furnished. If impeller is trimmed, provide curve for impeller as trimmed.</p> <p><sup>3</sup> Flow at Second Design Point total head shall be within ten percent of flow value specified.</p> <p><sup>4</sup> At all points on pump curve, pump horsepower requirements shall not exceed specified motor horsepower.</p>	

### 3.02 MANUFACTURERS

A. Pump Products and Manufacturers: Provide pumps from one of the following manufacturers:

1. Flygt/Xylem N-Pump Series.
2. Fairbanks NIJHUIS Model.
3. Sulzer Type ABS XFP.
4. Or approved equal.

### 3.03 PUMP DETAILS OF CONSTRUCTION

A. General:

1. The pumps, motors, drives, couplings and base plates shall be designed and built for 24-hour continuous service at any and all points within the specified range of operation, without overheating, without damaging cavitation, and without excessive vibration or noise.
2. Each major piece of equipment shall be furnished with a stainless-steel nameplate (with embossed data) securely mounted to the body of the equipment. As a minimum, the nameplate for the pumps shall include the manufacturer's name and model number, serial number, rated flow capacity, head and speed. As a minimum, nameplates for motors shall include the manufacturer's name and model number, serial number, horsepower, speed, input voltage, amps, number of cycles, power and service factors.

B. Volute Casing:

1. Type: One-piece, constant velocity equalizing pressure, with smooth fluid passages large enough to pass any solids that may enter the impeller.
2. Material: Extra thick walls of close-grained cast-iron, as per ASTM A48 Class 30/35B, with Bulzona 1321 ceramic coating (See Section 3.05 for details).
3. The volute shall be of end suction, side flanged tangential discharge design. The discharge flange shall be 125 pounds, ANSI drilling and of the size as specified herein.
4. The internal volute insert ring shall provide effective sealing between the pump volute and the multi-vane, semi-open impeller. The volute wear ring shall be of the axial or face type.

5. Four mounting pads shall be cast integrally and on the periphery of the volute.
6. The volute/casing shall be hydrostatically tested at 1.5 times the design shut-off head.

C. Cooling System:

1. Each pump/motor unit shall be provided with an integral, self-supplying cooling system. The water jacket shall provide heat dissipation for the motor regardless of whether the motor unit is submerged in the pumped media or surrounded by air.
2. The cooling system shall not require the provision of an external source of water.
3. The cooling system shall be completely sealed against the pumped media and be completely separated from the air-filled motor housing.
4. The internals to the cooling system shall be non-clogging by virtue of their dimensions.
5. The cooling system shall provide for continuous submerged or completely non-submerged pump operation in liquid or in air having a temperature of up to 40°C (104°F), in accordance with NEMA standards.

D. Impeller:

1. Type: One-piece, semi-open, single suction, semi-open multi-vane solids handling non-clog type.
2. Impeller & Insert Material shall be one of the following:
  - a. Cast iron, ASTM A48; Class 35B, with Bulzona 1321 ceramic coating (See Section 3.05 for details).
  - b. Wear resistant, high chromium cast/hard-iron, ASTM A 532 IIIA (25% Cr).
  - c. Duplex stainless steel, ASTM CD-4MCuN.
3. Impeller shall be specifically designed with smooth water passages to prevent clogging by stringy or fibrous materials and shall be capable of passing solids having a maximum sphere size of 3.5 inches.
4. The impeller blades shall be self-cleaning upon each rotation as they pass across a sharp relief groove in the insert ring and shall keep the impeller blades clear of debris. The clearance between the insert ring and the impeller leading edges shall be adjustable.
5. The impeller is to be dynamically balanced and secured to the shaft by means of key and impeller cap screws. The arrangement shall be such that the impeller cannot be loosened from torque in either forward or reverse rotation.
6. The impeller shall be mounted on the motor shaft. Couplings shall not be accepted.
7. Impeller shall be trimmed to specifically meet the conditions of operation.

E. Wear Rings:

1. Axial-type removable wear rings are to be provided on both the impeller and volute (fronthead) for reduction of recirculation.
2. Wear rings shall be as follows:

- a. Volute/Fronthead: Stainless steel, ASTM A743 CA40 (300 – 350 BHN).
- b. Impeller: Stainless steel, ASTM A743 CA15 (190 – 241 BHN).
3. Wear ring clearance adjustment shall be attained through impeller adjustment shims.

F. Shaft:

1. Pump and motor shaft shall be a solid continuous shaft. The pump shaft shall be an extension of the motor shaft. Couplings will not be acceptable. The pump shaft shall be of carbon steel ASTM A 572, Type 416 Stainless Steel or A 276 Type 420. Carbon steel shafts shall be completely isolated from the pumped liquid
2. Shaft diameter shall be designed for long life and minimal vibration. The section of shaft fitting between radial and thrust bearings shall be of sufficient section to limit deflection at the impeller centerline to not more than 6 mils when the pump is operating at maximum speed operation, high flow, low head condition and at 50% speed operation.
3. Shaft protection sleeve shall be A 276 type 420 or equal. Sleeve shall be required if needed to protect a non-stainless steel shaft from the pumped liquid.
4. The shaft shall be accurately machined and sized to transmit the maximum power required while maintaining its alignment under all operating conditions.
5. Shaft deflection shall be less than 0.002” at any point of operation on the pump curve.

G. Shaft Seal Arrangement:

1. Each pump shall be provided with a positively driven dual, tandem mechanical shaft seal system consisting of two seal sets, each having an independent spring.
2. The lower primary seal, located between the pump and seal chamber, shall contain one stationary and one positively driven rotating corrosion and abrasion resistant tungsten-carbide ring.
3. The upper secondary seal located between the seal chamber and the seal inspection chamber shall be a leakage-free seal. The upper seal shall contain one stationary and one positively driven rotating corrosion and abrasion resistant tungsten-carbide seal ring.
4. The rotating seal ring shall have small back-swept grooves laser inscribed upon its face to act as a pump as it rotates, returning any fluid that should enter the dry motor chamber back into the lubricant chamber.
5. The seal springs shall be isolated from the pumped media to prevent materials from packing around them, limiting their performance. Any leakage passing the sealing shall not pass the bearings.
6. Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-leak seal shall be easily accessible from the outside. The seal system shall not rely upon the pumped media for lubrication. Seal lubricant shall be non-hazardous.



#### H. Bearing Frame Assembly:

1. The pump shaft shall rotate on two bearings.
2. Motor bearings shall be permanently grease lubricated and have a nominal L10 lifetime of 50,000 hours.
3. The upper bearing shall be a single deep groove ball bearing.
4. The lower bearing shall be a two-row angular contact bearing to compensate for axial thrust and radial forces. Single row lower bearings are not acceptable.
5. The upper bearing shall be designed for VFD operation.

#### I. Pump Baseplate:

1. Manufacturer to provide a heavy duty structural fabricated steel base, with openings large enough to permit flow to pump suction and bolted directly to the volute for each pump as specified.
2. The base shall be designed to support the assembled weight of the pump, motor and shafting and be of sufficient strength and rigidity to prevent undue stress and vibration to the unit.
3. Each base shall be furnished with suitable bolt and holes to facilitate mounting to basin floor.

#### J. Lifting Bail:

1. A heavy-duty stainless-steel lifting bail shall be included and be of adequate strength to lift the entire pump and motor assembly by a crane.

### 3.04 MOTOR

#### A. General:

1. Pump(s) shall be driven by completely sealed and jacketed, electric submersible squirrel cage induction motors with a maximum NEMA HP nameplate rating as specified herein.
2. Motors shall be 460V nominal voltage, inverter duty rated for use with variable frequency drives, per NEMA MG-1 Section IV Part 31.
3. Motors shall be of sufficient size so that there will be no overload on the motor above rated nameplate horsepower under any condition of operation from shut-off to zero head, unless otherwise specifically permitted in this Section.
4. Submersible equipment shall be UL Listed for Class I, Division 1, Groups C and D explosion-proof hazardous locations as defined by the National Electric Code.

#### B. Details of Construction:

1. All electrical parts shall be housed in an air-filled cast iron; watertight enclosure, which is sealed by the use of O-rings and rabbeted joints with extra-large, overlaps.

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2. The motor jacket shall be sealed to the motor housing with O-rings. A portion of the liquid being pumped shall be used to cool the motor. The liquid shall enter the motor cooling jacket internally via a self-cleaning, rotating flow-control disc to prevent solids from entering and accumulating in the mechanical seal and cooling water jacket. The cooling jacket shall be designed so that on start-up there is a means to purge the air from the jacket as the cooling water enters.
  3. The stator winding and lead shall be insulated with moisture-resistant Class F insulation for continuous duty in 40 degree C ambient. The motor shall be designed for continuous duty capable of ten (1) starts per hour. Automatic reset, normally closed thermal overloads shall be imbedded in the motor windings to provide overheating protection. Motor winding thermostats must be connected to an electric controller per local and state codes and the National Electric Code.
  4. Motor shaft shall be one-piece, 416 stainless steel. Carbon steel shafts or shaft sleeves are not acceptable. Rotor is to be dynamically balanced to meet NEMA vibration limits; all external hardware is to be stainless steel.
  5. Cable leads shall be designed to enter at the top of the motor and allow the cable-to-motor connection to be accomplished in the field without soldering. All power and control lead wires are to be double sealed and shall enter the motor in such a manner that cable-wicking will not occur. The sealing system shall consist of a rubber grommet followed by epoxy that is high in adhesive qualities and has a low coefficient of expansion. A cable strain relief mechanism shall be an integral part of this sealing system. Cable sealing system shall be capable of withstanding an external pressure test of 1,200 psi, as well as a cable assembly pull test as required by Underwriters Laboratories. Singular grommet or other similar sealing systems are not acceptable.
  6. Motor shall be supplied with a minimum **50-feet** of multi-conductor type “SOW-A” or “W” power cable and control cable, from motor to upper level. Cable sizing shall conform to NEC specifications and be UL Listed.
  7. Power and control leads shall be terminated on a sealed terminal board. The terminal board and its bronze lugs shall be O-ring sealed.
  8. Motors shall be in accordance with all current applicable standards of NEMA, IEEE, AFBMA, NEC, and ANSI.
- C. Motor Protective Devices:
1. Provide thermal sensors to monitor stator temperatures.
    - a. Furnish stator with three thermal switches, embedded in the end coils of the stator winding (one which in each stator phase).
    - b. Thermal switches shall be used in conjunction with, and supplemented to, external motor overcurrent protection.
    - c. Thermal switches shall be normally closed contacts for automatic reset and wired in series.
  2. Provide moisture detection sensors to monitor moisture in either the seal or stator cavity.

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- a. Moisture detection sensor shall consist of a motor embedded sensor probe and test resistor and induction relay.
  - b. Relay shall be suitable for 120-volt operation and shall include a test switch and lamp and two normally open and one normally closed dry load contacts.
  - c. Relay shall capable of be mounting in the motor junction terminal box provided by OWNER.
3. Switch wire leads shall exit the motor casing along with the motor cable and be properly sealed for a submersible application.
  4. Switch contacts shall be rated 10 amps at 120 VAC, minimum.

### 3.05 SURFACE PREPARATION AND PAINTING

- A. Exterior (only) of all pumps, motors, frames, baseplates, appurtenances, etc., shall receive manufacturer's standard epoxy coating system, prior to shipment. Owner to select and approve color.
- B. Interior of pump and impeller, for all standard cast iron (ASTM A48; Class 35B) surfaces, shall receive 2-layers of Belzona 1341N (Supermetalgilde) coating, as per coating manufacturer recommendations.
  1. Coating shall be a two-part high strength coating specifically for the protection of metal surfaces from corrosion and erosion.
  2. The total thickness in the dry state should be a minimum of 400 microns.
  3. Prior to coating all surfaces shall be blasted according acc. to ISO 8501-1 Sa 2 ½. Surface roughness: medium G (50-85 µm, Ry5) acc. to ISO 8503-2.
  4. Coating system shall be solvent free and not shrink during curing.
  5. Physical Properties (@ 60 degF/7-days cure):
    - a. Abrasion (ASTM D4060):  $\leq 76 \text{ mm}^3$  loss per 1,000 cycles.
    - b. Compressive Strength (ASTM D695):  $\geq 8,300$  psi.
    - c. Compressive Modulus (ASTM D695):  $\geq 1.66 \times 10^5$  psi.
    - d. Flexural Strength (ASTIM D790):  $\geq 6,500$  psi.
    - e. Flexural Modulus (ASTIM D790):  $\geq 6.15 \times 10^5$  psi.
    - f. Hardness (Shore D, ASTM D2240):  $\geq 80$ .
    - g. Hardness (Barcol, ASTM D2583):  $\geq 73$ .
    - h. Tensile Shear Adhesion to Mild Steel (ASTM D-1002):  $\geq 3,800$  psi.
  6. Coating applicator/contractor shall have a minimum of five years of experience in blasting and painting pump volutes and impellers with similar coatings to those referenced in this section. Company specializing in performing the work of this Section shall provide a minimum five years' documented experience demonstrating five successful projects and a letter of approval by coating manufacturer.

SECTION 4 – SUBMERSIBLE MIXER AND GUIDE RAIL ASSEMBLY

## 4.01 EQUIPMENT PERFORMANCE

## A. System Description:

1. This section includes the submersible mixers complete and operational with mixer, motor, adjustable slide guiderail, hoist and accessories as specified herein.
2. Each mixer shall be designed and constructed for its intended service, and for continuous operation under complete submersion, partial submersion, and dry conditions.

B. Design and Performance Criteria: The mixer(s) shall be designed for and operated continuously under normal service under the following operating conditions:

<b>DESIGN CONDITIONS</b>	<b>PUMP NO. 1</b>
Location	Decant Basin
Liquid Pumped	WTP Residuals
Minimum Mixer Pumping Rate, (gpm)	4,500
Maximum Impeller/Propeller Diameter (in)	16.0
Number of Impeller/Propeller Blades	3
Minimum Mixer Thrust (N)	800
Maximum Impeller/ Propeller Speed (rpm)	830
Maximum Motor, (HP)	4.0
Maximum Sphere Size/Diameter, (in.)	3.0
Maximum Solids Percent (%)	5.0

## 4.02 MANUFACTURERS

A. Pump Products and Manufacturers: Provide pumps from one of the following manufacturers:

1. Wilo USA LLC, Model TR40, with jet ring.
2. Flygt/Xylem Model 4640, with jet ring.
3. Sulzer Type ABS XRW, with jet ring.
4. Or approved equal.

## 4.03 MIXER

## A. General:

1. Mixer shall be of the close-coupled, submersible type. Units shall be capable of keeping solids in suspension.

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2. Mixer shall be capable of continuous operation with the mixer blade both partially or completely submerged and capable of continuous operation for two hours with all components completely unsubmerged.
3. Mixer shall be able to be raised and lowered and shall be easily removed for inspection or service without the need for personnel to enter the tank.
4. All mating surfaces of the major castings requiring a watertight seal shall be machined and fitted with FPM (Viton) O-rings. No secondary sealing compounds, rectangular gasket, elliptical O-rings, grease, or other devices shall be used.
5. All nuts, bolts, washers, and other fastening devices supplied with the mixers shall be AISI 316 stainless steel.

### B. Housing:

1. All major components of the mixing unit (i.e. stator housing, seal housing, and cable entry) shall be manufactured from close-grained ASTM A48 Class 35 (GG25) or higher cast iron.

### C. Propeller:

1. Propeller shall be 3-blade dynamically balanced, single non-clogging backward curved design.
2. Propeller Material, shall be one of the following:
  - a. Cast iron, ASTM A48; Class 35B, with Belzona 1321 ceramic coating (See Section 3.05 for details).
  - b. Wear resistant, high chromium cast/hard-iron, ASTM A 532 IIIA (25% Cr).
  - c. Duplex stainless steel, ASTM CD-4MCuN.
3. Propeller shall be capable of handling solids, fibrous materials, heavy sludge and other matter.
4. The propeller blades shall be thicker on the leading edge than the trailing edge and thicker towards the hub than at the tip to allow the propeller to free itself from rags as it turns. The blades shall be smooth, finished throughout, and shall be free from sharp edges.
5. Provide each mixer assembly with a removable Type 316-SS jet ring, with a full 360 degrees around the propeller to increase hydraulic mixing efficiency.
6. Provide each mixer assembly with a removable Type 316-SS vortex shield to be used to safely achieve operation with 1.25-foot minimum submergence level from surface to propeller tip, without vibration and/or cavitation damage to propeller blades.

### D. Shaft and Bearings

1. The propeller shaft shall be Type 420 or 431 stainless steel.
2. The propeller shaft shall use angular contact bearing.
3. Mixers shall have two sets of ball bearings support the motor shaft. The shaft shall be supported by a single row angular contact ball bearing and a single row

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cylindrical roller bearing, plus a heavy-duty single row angular contact ball bearing on the propeller side.

4. Bearings shall be pre-loaded by a bearing loading nut to reduce shaft deflection and increase bearing life and seal life.
5. All bearings shall be designed for a minimum B-10 rated life of 100,000 hours.

E. Shaft Seals:

1. Provide mixer with a lapped end face type mechanical seal (propeller shaft) and two lip seals (gear box), running in oil reservoirs for cooling and lubrication.
2. Mechanical seal between the propeller and propeller shaft oil chamber shall contain one stationary and one positively driven rotary tungsten carbide face ring.
3. Seals between the shaft and gear box and gear box and motor chamber shall be of the lip style.
4. Provide mixer with two oil chambers for the shaft sealing system. Locate drain and inspection plugs, each with positive anti-leak seal, to be easily accessible from the outside.

F. Stainless steel nameplates giving the manufacturer's model and serial number, rated capacity, head, speed and all other pertinent data shall be attached to the mixer.

4.04 MOTOR

A. Equipment Performance:

<b>Motor Parameter</b>	<b>Value</b>
Motor horsepower	4.0 HP
Motor type	Explosion proof, squirrel cage, induction, shell-type
Motor speed (nominal)	855 rpm
Motor efficiency	75.5%
Design	NEMA Design B
Duty	Continuous
Insulation	Class H
Voltage	460V, 3 phase, 60 Hertz
Service factor	1.15
Motor enclosure	Stainless steel ASTM A48, Class 40 or Class 35B
Protection	Integral motor winding thermostats (minimum 1 per phase winding), seal fail sensor
Starts per hour	15 evenly spaced

B. General:

1. Motors shall be a squirrel cage induction, shell type design, housed in an air-filled, watertight chamber.
2. Motors shall be rated continuous duty suitable for constant speed operation on a 460-480 volt, 3 phase 60 Hertz supply.

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3. Provide motor of proper size to drive the mixer continuously without exceeding nameplate horsepower.
4. Motors shall have a 1.15 service factor, and shall comply with the latest ANSI, NEMA, ABMA and IEEE Standards as a minimum.
5. Locked rotor current shall be as specified in NEMA standards.
6. Motors shall have a stainless-steel nameplate which shall provide the following: type, frame, insulation, class, HP, full load current, RPM, centigrade degree rise, manufacturer's name and serial number, model number, voltage, locked rotor KVA code, bearing numbers and a connection diagram.
7. The stator winding shall be insulated with moisture resistant Class H insulation which will resist a temperature of 180 degrees C.
8. The rotor bars and short circuit rings shall be made of aluminum.
9. The stator housing shall be equipped with a moisture detection device wired to the interface relay located in the control panel.
10. Cable entry water seal design shall not require specific torque to ensure a watertight and submersible seal. Cable entry shall be comprised of a single cylinder elastomer grommet, flanked by washer, all having a close tolerance fit against the cable outside diameter and the entry inside diameter and compressed by the entry body containing a strain relief function, separate from the function of sealing the cable. Assembly shall bear against a shoulder in mixer top.
11. Junction chamber and motor compartment shall be separated by a terminal board which shall protect the motor interior from foreign material gaining access through the mixer top. Connection between the cable conductors and stator leads shall be made with threaded compressed type binding posts permanently affixed to the terminal board. Epoxies, silicones, or other secondary sealing systems are not acceptable.

### C. Motor Protective Devices:

1. Provide thermal sensors to monitor stator temperatures.
  - a. Furnish stator with three thermal switches, embedded in the end coils of the stator winding (one which in each stator phase).
  - b. Thermal switches shall be used in conjunction with, and supplemented to, external motor overcurrent protection.
  - c. Thermal switches shall be normally closed contacts for automatic reset and wired in series.
2. Provide moisture detection sensors to monitor moisture in either the seal or stator cavity.
  - a. Moisture detection sensor shall consist of a motor embedded sensor probe and test resistor and induction relay.
  - b. Relay shall be suitable for 120-volt operation and shall include a test switch and lamp and two normally open and one normally closed dry load contacts.
  - c. Relay shall capable of be mounting in the motor junction terminal box provided by OWNER.

3. Switch wire leads shall exit the motor casing along with the motor cable and be properly sealed for a submersible application.
4. Switch contacts shall be rated 10 amps at 120 VAC, minimum.

D. Power Cable:

1. Provide a minimum **40-foot** length submersible hypalon jacketed, Type SPC cable (power plus ground plus control), UL listed and labeled. No splices will be allowed in the cable.
2. Size conductors in accordance with NEC Standards.
3. Power cable, moisture detection sensor cable and motor thermal overload sensor cable shall be attached together and protected by common protective sheath.
4. The cable shall be fitted with a 3/4-inch heavy duty flexible protective hose that shall be secured to the upper guide holder assembly and pulled tight. The protective hose shall safeguard the power cable from abrasion and/or piercing objects in the fluid.
5. Cables shall terminate with conductor sleeves that bundle the entire group of strands of each phase to improve termination at the pump control panel. The sleeves shall be provided to confirm that all strands of each conductor is terminated properly.
6. Cables shall conform to industry standards for loads, resistance under submersion against sewage and be of stranded construction. The cables shall enter the mixer motor through a heavy duty galvanized cast iron entry assembly which shall be provided with an external clamp assembly to protect against tension once secured providing a strain relief function as part of standard construction.
7. Cables for each mixer shall pass through the galvanized cast iron strain relief component and then through a series of stainless steel discs and Buna-N grommet that is sandwiched between the discs to control compression of the grommet.
8. The entry shall be comprised of the cast iron fitting that will include the Buna-N strain relief grommet couple with a poured conductor section. In the poured section, sealant shall be used to wick into each conductor strand that has the insulation removed in this area to provide a leak proof seal for the power and sensor cords.

#### 4.05 MIXER ACCESSORIES

A. Mixer Mount/Guide Rail Assembly:

1. A stainless-steel mixer mount assembly shall be used to mount the mixer during operation and to guide the unit during installation and removal from service.
2. The assembly shall consist of a bottom pivot assembly, a minimum 2-inch by 2-inch mixer mast assembly, fixing bracket, and guide holder assembly made of Type 316 stainless steel.
3. The bottom assembly shall be bolted to the floor of the tank and provide support for the guide mast.
  - a. It shall include a hole to accept the guide mast bottom pivot.



- b. The guide mast must be strong enough to support the mixer thrust force.
- 4. The upper guide holder assembly shall secure the system to the basin wall and shall include:
  - a. The upper guide holder shall provide the lateral support of the guide rail while allowing the guide mast to be positioned at any angle over a 180-degree arc and “locked” in place.
  - b. The lateral angle of the mixer guide rail shall be capable of being repositioned without the need for personnel to enter the tank.
- 5. The upper bracket or mixer mast shall be fitted with a special receptacle designed to securely hold and support the portable lifting davit while the mixer is raised, lowered, installed, or removed from the tank.
- 6. The assembly shall also include a stainless-steel support cable assembly and a square 316 stainless steel mast.
  - a. The mast shall also be provided with cable holders for use with the mixer electric power cable (one every 5 feet) to prevent the electric cable from being entangled in the mixer propeller during operation.
  - b. In addition, the mast shall be constructed with a positioning locking plate which will work in conjunction with a lock pin on the upper guide holder to positively lock the mast in place at various operating angles.
  - c. The mast shall allow the mixer, when raised from the tank with a davit crane, to be removed from the mixer mast.

#### 4.06 SURFACE PREPARATION AND PAINTING

- A. Exterior (only) of all mixers, motors, frames, baseplates, appurtenances, etc., shall receive manufacturer’s standard epoxy coating system, prior to shipment. Owner to select and approve color.
- B. Mixer impeller, for all standard cast iron (ASTM A48; Class 35B) surfaces, shall receive 2-layers of Belzona 1341N (Supermetalgilde) coating, as per coating manufacturer recommendations.
  - 1. Coating shall be a two-part high strength coating specifically for the protection of metal surfaces from corrosion and erosion.
  - 2. The total thickness in the dry state should be a minimum of 400 microns.
  - 3. Prior to coating all surfaces shall be blasted according acc. to ISO 8501-1 Sa 2 ½. Surface roughness: medium G (50-85 µm, Ry5) acc. to ISO 8503-2.
  - 4. Coating system shall be solvent free and not shrink during curing.
  - 5. Physical Properties (@ 60 degF/7-days cure):
    - i. Abrasion (ASTM D4060):  $\leq 76 \text{ mm}^3$  loss per 1,000 cycles.
    - j. Compressive Strength (ASTM D695):  $\geq 8,300$  psi.
    - k. Compressive Modulus (ASTM D695):  $\geq 1.66 \times 10^5$  psi.
    - l. Flexural Strength (ASTM D790):  $\geq 6,500$  psi.

- m. Flexural Modulus (ASTM D790):  $\geq 6.15 \times 10^5$  psi.
  - n. Hardness (Shore D, ASTM D2240):  $\geq 80$ .
  - o. Hardness (Barcol, ASTM D2583):  $\geq 73$ .
  - p. Tensile Shear Adhesion to Mild Steel (ASTM D-1002):  $\geq 3,800$  psi.
6. Coating applicator/contractor shall have a minimum of five years of experience in blasting and painting pump volutes and impellers with similar coatings to those referenced in this section. Company specializing in performing the work of this Section shall provide a minimum five years' documented experience demonstrating five successful projects and a letter of approval by coating manufacturer.

SECTION 5 – PUMP ACCESSORIES

## 5.01 PRESSURE GAUGE – BOURDON TUBE

- A. Liquid pressure gauges shall be used to indicate pressure of potable water and non-potable water. Gauges shall operate at the specified accuracy when the liquid is at any temperature between 35°F and 150°F.
- B. Gauges shall be of the bourdon tube type, diaphragm seal.
- C. Gauges shall meet the requirements of ANSI B40.1, Accuracy Grade 2A ( $\pm 0.5\%$  of span). Gauges shall be calibrated to read zero at atmospheric pressure.
- D. Quantity and Ranges:

<b>PRESSURE RANGE</b>	<b>LOCATION</b>	<b>QUANTITY</b>	<b>DIAPHRAGM SEAL</b>
Vacuum (30"Hg) – 15 psi	Filter Effluent	11	N
Vacuum (30"Hg) – 60 psi	Decant Pumps	5	Y
0 – 30 psi	Caustic, KMnO4	4	Y
0 – 60 psi	Sample Pumps & Filter BW Supply	15	N
0 – 300 psi	Chlorine Booster & HSP Pumps	11	N

- E. Construction Features:
1. Case shall be solid front design, with pressure relief back, constructed of black-epoxy coated aluminum.
  2. Dial size shall be 4-1/2 inches. Dials shall be white coated aluminum with black markings.
  3. Window shall be acrylic material.
  4. Bourdon tube and socket shall be Type 316L-SS.
  5. Movement shall be adjustable rotary type, Type 400-SS, with Teflon coated pinion gear and segment. Movement shall include built-in overload and underload stops.
  6. Filling Liquid: Silicone.
- F. Diaphragm Seal:
1. Provide diaphragm seals for the gauges indicated in table above.
  2. Gauges and diaphragm seals shall be of same manufacturer and shall be shipped as complete units, factory filled with silicone fluid and calibrated to the ranges specified and tested prior to shipment.
  3. Diaphragm, O-ring and gaskets shall be Teflon.

APPENDIX B

4. Diaphragm seal shall be clamped securely between the top and bottom housing with clamp rings, ensuring a positive seal.
  5. Working Pressure Rating: Equal to or greater than the attached gauge.
  6. Connection size: Equal to gauge connection size.
  7. Seal shall be provided with a fill/bleed connection to allow filling the seal and instrument simultaneously after evacuation and allows the fill to flow into the completed unit.
  8. Provide a clean-out ring which holds the diaphragm captive in the upper housing to allow the upper housing assembly to be removed for recalibration or cleaning of the process side housing without the loss of filling liquid or change in calibration.
- G. Products and Manufacturers: Provide one of the following
1. Ashcroft Model 1379 Duragauge Pressure Gauge, with Type 300 Clamped Diaphragm Seal.
  2. Or approved equal.

**END OF BID SPECIFICATIONS**

## APPENDIX C

### FURNISH AND DELIVER DECANT PUMPS AND MIXERS

#### ECWA Project No.: 202000155

#### Insurance Specs:

The following minimum insurance requirements shall apply to vendors providing services to the Erie County Water Authority (the "Authority"). If a service or project, in the opinion of the Authority, represents an unusual or exceptional risk, the Authority may establish additional insurance requirements for that service or project. All insurance required herein shall be obtained at the sole cost and expense of the contractor, including deductibles and self-insured retentions, and shall be in full force and effect on the contract commencement date and for the duration of the contract. These requirements include but are not limited to the minimum insurance requirements.

#### Insurance Requirements:

**a. Workers Compensation:**

Part 1: Workers Compensation: Statutory

Part 2: Employers Liability: \$1,000,000.

Note: If New York State domiciled employees are used, coverage to be New York Statutory for both Parts 1 and 2

**b. New York Disability Benefits Liability:** Statutory coverage if New York State domiciled employees are used.

**c. Commercial General Liability:**

- \$2,000,000. General Aggregate
- \$2,000,000. Products/Completed Operations Aggregate
- \$1,000,000. Each Occurrence
- \$1,000,000. Personal Injury/Advertising Liability
- Erie County Water Authority to be scheduled as an Additional Insured for both on-going and completed operations (attach Additional Insured endorsement to Certificate of Insurance)
- Insurance to be primary and non-contributory

**d. Automobile Liability:**

- \$1,000,000. Each Accident
- Erie County Water Authority to be scheduled as an Additional Insured.

**e. Umbrella Liability:**

- \$1,000,000. Each Occurrence
- \$1,000,000. Aggregate
- Erie County Water Authority to be scheduled as an Additional Insured

Certificates of Insurance to be provided to the Authority prior to start of work as follows:

ACORD 25 including copy of Additional Insured Endorsement Note: If coverage provided for NYS domiciled employees require Forms C 105.2 and DB 120.1 for Workers Compensation and NYS DBL.

Certificates of Insurance, on forms approved by the New York State Department of Insurance, must be submitted to the Authority prior to the award of contract. Renewals of Certificates of Insurance, on forms approved by the New York State Department of Insurance, must be received by the Authority 30 days prior to the expiration of the insurance policy period.

Certificates of Insurance and renewals, on forms approved by the New York State Department of Insurance, must be submitted to the Authority prior to the award of contract. Each insurance carrier issuing a Certificate of Insurance shall be rated by A. M. Best no lower than "A-" with a Financial Strength Code (FSC) of at least VII. The Supplier shall name the Authority, its officers, agents and employees as additional insured on a Primary and Non-Contributory Basis, including a Waiver of Subrogation endorsement (form CG 20 26 11 85 or equivalent), on all applicable liability policies. Any liability coverage on a "claims made" basis should be designated as such on the Certificate of Insurance. Such insurance shall continue through the term of this Agreement and vendor shall purchase at his sole expense either 1) an Extended Reporting Endorsement (also, known as Tail Coverage); or 2) Prior Acts Coverage from new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) demonstrate through Certificates of Insurance that vendor has Maintained continuous coverage with the same or original insurer. Coverage provided under items; 1), 2), or 3) will continue as long as the law allows.

To avoid confusion with similar insurance company names and to properly identify the insurance company, please make sure that the insurer's National Association of Insurance Commissioners (N.A.I.C.) identifying number or A. M. Best identifying number appears on the Certificate of Insurance. Also, at the top of the Certificate of Insurance, please list the project number.

Acceptance of a Certificate of Insurance and/or approval by the Authority shall not be construed to relieve the outside vendor of any obligations, responsibilities or liabilities.

Certificates of Insurance should be e-mailed to [mmusarra@ecwa.org](mailto:mmusarra@ecwa.org) or mailed to Ms. Molly Jo Musarra, Claim Representative/Risk Manager Erie County Water Authority, 295 Main Street – Room 350, Buffalo, New York 14203-2494, or If you have any questions you can contact Ms. Musarra by e-mail or phone (716) 849-8465.