COUNTY OF ROCKLAND
Department of General Services
Purchasing Division

Contract Award Notification

Title: **Pumps – Premium Efficiency Solids Handling Pumps–Hydromatic, FURA Inc., or Approved Equal–Furnish and Deliver**

Contract Period: September 24, 2022 through, September 23, 2023 with 2 one-year options

Original Date of Issue: September 20, 2022

Date of Revision:

BID No: **RFB-RC-2022-120**

Catalog: **Wastewater**

Authorized Users: County Agencies, All Political Subdivisions

Address Inquiries To:

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Description
This contract is to furnish & deliver specified pumps.

Contract #	Vendor Number	Contractor & Address	Telephone No.
Bid 22-120	0000020669	Pro Pump Corp 707 Woodfield Rd. West Hempstead, NY 11552 Contact: David Weill dw@propumpnyc.com	718-249-2325

COUNTY OF ROCKLAND
DGS – PURCHASING DEPARTMENT
BLDG. A, 6TH FLOOR, 50 SANATORIUM ROAD
POMONA, NY 10970
TELEPHONE NO.: 845-364-3820
FAX NO.: 845-364-3809

VENDOR: PRO PUMP CORP

LINE NO.	DESCRIPTION	ITEM NUMBER	EST. QTY.	UNIT	UNIT PRICE	EXTENDED PRICE	MFG. (Mandatory Field)	PRODUCT CODE/MODEL MANDATORY FIELD
1	**Furnish and Deliver Hydromatic S6LXP5000FC Premium Efficiency Solids Handling Pumps, MFG - FURA, Inc. -Series - 7S Pump type, Pump type - G418E2C1-S100YA2, Code - 7009492, or approved equal**	**72017000001**	**1**	**EACH**	**$ 29,745.00**	**$ 29,745.00**	**FURA**	**6418E2C1-S100YA2**

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SPECIFICATIONS

1. **SCOPE**

1.1. Furnish and deliver Hydromatic SXLXP5000FC Premium Efficiency Solids Handling Pump, FURA, Inc. Series 7S Pump Type G418E2C1S100YAT Code 709492, or approved equal to the Rockland County Sewer District #1 or another County of Rockland Agency. Pump shall be 50HP, 460V, 3PH, 35' Cord, 11.63" Impeller.

1.1.1. The quantities listed are estimated. Order will be placed on an as needed basis.

1.1.1.1. Pricing shall remain firm for a period of one (1) year with two (2) additional one (1) year terms. Option years are exercised by mutual agreement between the contractor and the County. See price Adjustment Clause.

1.1.2. Pricing submitted shall be FOB Destination 4 Rt. 340 Orangeburg, NY 10962.

1.2. Pump shall be equipped with stainless steel nameplate, stating the unit is accepted for use in Standard Location or NEC class 1, division 1, groups C, D hazardous locations with third party, Factory Mutual, approval.

1.3. The pump shall be non-overloading throughout the entire range of operation without employing service factor. The pump shall reserve a minimum service factor of 1.30. The performance curve submitted for approval shall state in addition to head and capacity performance, the pump efficiency, solid handling capacity, and reflect motor service factor.

2. **PRICE ADJUSTMENT**

The County recognizes this product or service has a price component that may have a commodity with changing costs. The Contractor/Supplier may request a Price Adjustment no more frequently than once each quarter (3-month period).

A Price Adjustment request must be made in writing and include the reason for the request, documentation supporting the request (ie, commodity increases), the current pricing, and the requested revised pricing.

The County will review the Price Adjustment request. If the Price Adjustment is deemed reasonable the Price Adjustment request will be accepted by written acknowledgement. If the request is not accepted the County may entirely reject the request or may counter with revised pricing. In either case the County will provide a written explanation in support of the decision.

The Director of Purchasing may use available indexes (e.g. CPI or PPI) to determine if the requested Price Adjustment is reasonable. Typically, a Price Adjustment that exceeds 5% will not be approved unless very unusual and significant changes have occurred in the industry.

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In the event industry costs decline, the County shall have the right to receive, from the Contractor, a reasonable reduction in prices/pricing that reflect such cost changes in the industry. The County will make a written request to the Contractor for a Price Adjustment in writing with supporting documentation.

3. **BRAND NAME**

3.1. The use of a brand name is for the purpose of describing a standard of quality, performance and characteristics desired and is not intended to limit or restrict competition.

4. **APPROVED EQUAL OR EQUIVALENT PRODUCTS**

4.1. If proposing an equivalent pump, bidder shall submit an item by item listing and explanation of any differences between their product specifications and performance and the specified model, this includes complying with all of the detailed specifications, technical data, curve data, and electrical data provided. Product and service warranties must be included with bid. Failure to comply with this section will result in your bid being rejected from further consideration for award.

4.2. If bidders submit or bid for equivalent or approved equal products, they must submit manufacturer's product description and specifications. These specifications must include <u>all</u> functionality and parts of the specified model. Failure to comply with this section will result in your bid being rejected from further consideration for award.

4.3. Bidders must list five entities currently using the proposed pump on the certification of experience page in the bid package. Proposed pump requiring adapters will not be acceptable. Failure to comply with this requirement will result in your bid being rejected from further consideration for award.

4.4. Bidder must be able to demonstrate within one week after notice and guarantee in writing that the item bid is interconnectable with existing equipment.

5. **DETAILED SPECIFICATION SECTIONS 5-18 -** BIDS PROPOSING "OR EQUAL" PUMP SHALL PROVIDE A SIDE BY SIDE COMPARISON MEETING OR EXCEEDING THIS DATA.

6. **CONSTRUCTION**

6.1. Castings – Cord Cap / Motor Housing / Bearing Housing / Seal Plate shall be ASTM A48 Class 30 Cast Iron

6.2. Shaft shall be 416 Stainless Steel

6.3. Impeller--- ASTM A48 Cast Iron Class 30 or ASTM B584---836 Ductile Iron Class 65

6.4. Fasteners / Hardware shall be 302 Stainless Steel with optional 316 Stainless Steel

6.5. Elastomers – O---Rings / Mechanical Seals / Cord Grip Grommets shall be Nitrile with optional Fluoropolymer Elastomer

6.6. Mechanical Seals shall be Tungsten Carbide / Silicon Carbide Power Cable shall be type SOOW or W while Control Cable shall be SOOW

6.7. Lifting Bail shall be welded or forged 300 Series Stainless

7. ELECTRICAL POWER CORD

7.1. The pump shall be double protected with a compression fitting and an epoxy potted area at the power cord entry to the pump. The power cable entry into the cord cap assembly shall first be made with a compression fitting. Each individual lead shall be stripped down to bare wire installed in a socket and enclosed in an over molding. Mating pins shall be provided and attached to the individual Teflon lead wires and enclosed in another over molding which will be affixed to the cord cap. This area of the cord cap shall then be filled with an epoxy compound potting. This assembly will prevent water contamination from gaining entry even in the event of wicking or capillary action. The cord cap assembly were bolted to the motor housing shall each be sealed with a Nitrile O---ring on a beveled edge to assure proper sealing. Strain relief shall be integral to the power cable and must be clamped over molding and vulcanized to the outer jacket of the cable. A stator lead sealing gland or terminal board shall not be relied upon to prevent moisture from contaminating the motor. The power cable will be domestic type SOOW, 4---wire rated at 90C below 30 amps or type W, 4---wires rated at 90 C above 30 amps. The control cable type will be SOOW, 5---wires. The cable size will be based on rated horsepower amps and NEC ampacities ratings at the cables rated temperature for intermittent / continuous duty. Both the power and control cables will contain a grounding wire of the same size as the current carrying wire.

8. MOTOR

8.1. The motors shall meet premium efficiency in accordance with IEC 60034---30, level IE3 and NEMA MG1 [NEMA 12.60 Enclosed motor].

8.2. Motor rating tests shall be conducted in accordance with CSA C390---10 requirements and shall be certified accurate and correct by a third-party certifying agency. A certificate shall be available upon request. The motors are submerged in non---toxic, oil filled, cool running design providing significantly reduced operating temperatures.

8.3. Pump designs requiring a secondary cooling apparatus shall be deemed unapproved and not equal. Air filled pump designs shall not be considered equal or approved.

8.4. Motor will be of the squirrel-cage induction design, NEMA type A or B for 3 Phase [Per NEMA MG1 1.19] & NEMA type L for 1 Phase [Per NEMA MG1 1.20].

8.5. The copper stator windings shall be insulated with moisture resistant Class H insulation materials, rated for 180° C (356° F). [Per NEMA MG1 1.66].

8.6. The service factor shall be 1.3 in wet pit service and 1.0 for VFD operation (as defined by MG1 standard). The motor shall have a voltage tolerance of +/--- 10% from nominal, and a phase to phase voltage imbalance tolerance of 1%.

8.7. The rotor bars and short circuit rings shall be made of cast aluminum.

8.8. The motor shall be designed for continuous duty. The maximum continuous temperature of the pumped liquid shall be 40 C (104 F), and intermittently up to 50 C (122 F). Each of the three phases will have a UL/FM approved thermostat or thermistor. The winding operating temperature at rated horsepower and service factor will be a maximum of 130 C @ 40 C ambient.

8.9. The motor shall be capable of handling up to 15 (>=20kW) and 20 (<20kW) evenly spaced starts per hour without overheating. [Per NEMA MG1 12.54].

8.10. The motor shall meet the requirements of NEMA MG1 Part 30 and 31 for operation on PWM type Variable Frequency Drives. The rotors will have high efficiency laminated steel with die cast bars and shorting rings. The stators will have high efficiency laminated steel (if required to meet premium efficiency), with inverter duty rated, Class H magnet wire & insulation materials. Each of the three phases will have a UL/FM approved thermostat or thermistor set for 130C +/---5.

9. BEARINGS

9.1. The upper bearing shall be a heavy duty radial single row ball bearing while the lower bearing shall be a double row heavy duty angular contact ball bearing of the thrust limiting design. Minimum of 50,000 hours of B10 bearing life for radial & thrust bearings while operating across entire hydraulic operating range of the pump. Any Pumps having rated B10 life only at the BEP shall not be considered equal or approved. Bearing shall be lubricated for life from the factory and will be accomplished through the non---toxic, low viscous, dielectric oil in the frame. Pump designs requiring periodic scheduled bearing service shall not be considered equal or approved. Single row or sleeve lower bearings shall not be acceptable.

10. SHAFT

10.1. The pump shaft shall be an integral, one-piece unit adequately designed to meet the maximum torque required at any normal start up condition or operating point in the system. Shafts of carbon steel, chrome plated or spin welded shafts shall not be considered adequate or equal. Material of shaft shall be 416 stainless steel conforming to ASTM 8582. At BEP, the maximum shaft deflection at lower seal shall not exceed .002”.

11. FLUID END

11.1. The impeller shall be ASTM Class 30 Cast Iron or ASTM Class 65 Ductile Iron with optional SST available. The impeller mounting is to be a slip fit onto a tapered shaft and a drive key. The impeller

shall be attached to the shaft by a SST fastener and impeller washer. The impeller is to be balanced to ISO1944 standard. Impeller designs that rely on fins or pins protruding into the suction path to assist in the handling of fibrous material shall not be considered equal. Impellers shall be of the radial single or two vane type or a vortex impeller having the ability to pass a wide range of solids. Any impeller design requiring mechanical bypass mechanism located in the volute in order to handle solids shall not be considered equal or acceptable.

11.2. The volute shall be ASTM Class 30 also with optional SST. It will consist of a centerline discharge one-piece design. The passages are to be large enough to pass the same solid size as the impeller. The discharge and inlet flanges shall be ANSI Class 125 and be integrated into the volute case. The wear rings shall be replaceable radial wear rings constructed of 85---5---5---5 bronze that come standard in the volute case with optional SST available in 304, 316 or 410.

12. **SEALS**

12.1. Each pump must be equipped with a switchable seal design allowing for the use of either tandem mechanical seals or a cartridge dual seal design without voiding the agency rating of the pump. Pumps utilizing one seal technology shall not be considered equal or approved. In the standard tandem mechanical seal configuration, the lower seal shall be of the type 2 design and constructed of Tungsten Carbide and be replaceable without disassembly of the seal chamber and without the use of special tools. The upper seal shall of the type 2100 design and constructed of Tungsten Carbide. Each seal will not require routine maintenance or adjustment. For ease of maintenance both the lower and upper seals shall be locally available and of a standard design. For ease of service the pumps shall be available with a drop in cartridge seal constructed of Tungsten Carbide. The cartridge seal design shall fit into the seal chamber with a switchable seal plate allowing for retrofit in the field. Units equipped with opposing mechanical seals shall not be acceptable.

13. **SHAFT GROUNDING RING**

13.1. The pump shall be capable of being equipped with an optional shaft grounding ring. This shaft current mitigation technology uses proprietary conductive filaments to protect bearings from stray shaft currents by providing a low impedance path to ground, drawing the currents safely away from the bearings. Pumps not utilizing a current diverter technology shall not be considered equal or acceptable.

14. **EQUIPMENT MONITORING**

14.1. The integrity of the mechanical seal system shall be continuously monitored during pump operation and stand by time. Two electrical probes shall be provided in a sensing chamber positioned between the primary and secondary mechanical seal for detecting the presence of water contamination within the chamber. The sensing chamber shall be fitted with environmentally safe nontoxic oil. A solid-state relay mounted in the pump control panel or in a separate enclosure shall send a low voltage, low amperage signal to the probe, continuously monitoring the conductivity of the liquid in the sensing chamber. If sufficient water enters the sensing chamber through the primary mechanical seal, the probe shall sense the increase in conductivity and

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signal the solid-state relay in the control panel. The relay shall then energize a warning light on the control panel, or optionally, cause the pump to shut down. This system shall provide an early warning of mechanical seal leakage, thereby preventing damage to the submersible pump and allowing scheduled rather than emergency maintenance. Systems utilizing float switches or any other monitoring devices located in the stator housing rather than in a sensing chamber between the mechanical seals are not considered to be early warning system and shall not be considered equal.

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15. **SERVICEABILITY**

15.1. The complete rotating assembly shall be capable of being removed from the volute without disturbing the suction piping, discharge piping, and volute. The motor housing, seal housing with seal plate and impeller still attached to the shaft shall be capable of being lifted out of the volute case from the top as one assembly. For ease of repair, the motor stator shall be securely held in place by an end ring so it can be easily removed without the use of heat or a press. No special tools shall be required for pump and motor disassembly. Stators held in place by heat shrink fit shall not be acceptable.

16. **TESTING**

16.1. All pumps shall be built in a dedicated domestic factory with fifty years of continuous operation. All pumps shall be visually inspected to confirm that it is built in accordance with the specification as to HP, voltage, phase and hertz. The motor seal and housing chambers shall be meggered for infinity to test for moisture content or insulation defects. Pump shall be allowed to run dry to check for proper rotation. Discharge piping shall be attached, the pump submerged in water, and amp readings shall be taken in each leg on each phase to verify balanced stator windings. The pump shall be removed from the water, meggered again, dried and the motor housing filled with dielectric oil. Volutes can receive hydrostatic testing to ensure high quality castings are being provided. All pumps shall receive standard Hydraulic Institute (HI) non---witnessed testing at a third---party agency---certified test lab. Pump motors can be tested on a factory dynamometer capable of simultaneously measuring torque and rotational speed. Testing conducted off site shall not be considered equal or approved.

17. **PAINT**

17.1. The pump shall be painted with waterborne hybrid acrylic/alkyd paint. This custom engineered, quick dry, low VOC paint shall provide superior levels of corrosion and chemical protection. Optional coatings are available through the factory of chlorinated rubber, coal tar epoxy and polyamide epoxy.

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18. **MINIMUM SPECIFICATIONS – TECHNICAL DATA – BIDS PROPOSING "OR EQUAL" PUMP SHALL PROVIDE A SIDE BY SIDE COMPARISON MEETING OR EXCEEDING THIS DATA**

Performance:

CAPACITY	815 GPM
HEAD	113 FT THD

Physical Data:

DISCHARGE SIZE	6"
SOLIDS SIZE	3-1/4"
IMPELLER TYPE	BALANCED, ENCLOSED, 2 VANE
CABLE LENGTH	35' STANDARD WITH OPTIONAL QUICK CHANGE CONNECTOR
PAINT	PAINTED AFTER ASSEMBLY. DARK GREEN, WATER REDUCIBLE ENAMEL, ONE COAT, AIR DRIED.

Temperature:

MAXIMUM LIQUID	104° F LABELED/140° F UNLABELED
MAXIMUM STATOR	356° F (180° C)
OIL FLASH POINT	309° F
HEAT SENSOR OPEN:	275° F MAX./257° F MIN.
CLOSED:	204° F MAX.

Technical Data:

MOTOR		PREMIUM EFFICIENT NEMA MG1, IEC 60034 -30 LEVEL IE3			
POWER CORD TYPE		W OR SOOW, WATER RESISTANT, 600V, 90° C			
SENSER CORD TYPE		SOOW, 18-5, WATER RESISTANT, 600V, 90° C, 5.5 AMPS			
MATERIALS OF CONSTRUCTION	MOTOR HOUSING	CAST IRON	ASTM	A-48	CLASS 30
	CASING	CAST IRON	ASTM	A-48	CLASS 30
	IMPELLER	DUCTILE IRON	ASTM	A-536	CLASS 65
	CASING WEAR	BRONZE	ASTM	B-584-836	ALLOY 115
	MOTOR SHAFT	416 STAINLESSS STEEL			
	HARDWARE	300 SERIES STAINLESS STEEL			
	O-RINGS	NITRILE			
MECHANICAL SEALS STANDARD		UPPER - SIC TYPE 2100, LOWER - SIC TYPE 2			
OPTIONAL		CARTRIDGE SEAL			
UPPER BEARING		(RADIAL) SINGLE ROW - BALL			
LOWER BEARING		(THRUST) DOUBLE ROW, ANGULAR CONTACT - BALL			

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19. **MINIMUM SPECIFICATIONS – ELECTRICAL DATA - BIDS PROPOSING "OR EQUAL" PUMP SHALL PROVIDE A SIDE BY SIDE COMPARISON MEETING OR EXCEEDING THIS DATA**

R.P.M.					1750													
MOTOR TYPE					ENCLOSED, OIL COOLED INDUCTION, VFD SUITABLE													
MOTOR DESIGN NEMA TYPE					A (3ø)													
GENERAL INSULATION CLASS					H													
STATOR WINDING CLASS					H													
MAXIMUM STATOR TEMPERATURE RATING					356°F (180°)													
MOTOR PROTECTION					BI-METALLIC, TEMPERATURE SENSITIVE DISC, SIZED TO OPEN AT 130°C AND AUTOMATICALLY RESET @ 93–71°C DIFFERENTIAL, THREE IN SERIES													
ELECTRICAL RATINGS					HEAT SENSOR	24VDC 5AMPS	115VAC 5AMPS	230VAC 5AMPS										
					SEAL FAIL	300VAC 5mA												
VOLTAGE TOLERANCE					±10%													
20	208	3	H	1.3	60.2	72.1	402	18.1	160.0	21.6	93	*93	*92	*90	*92	0.85	0.833	0.8	0.74
	230				54.4	65.2	402												
	460				27.2	32.6	201												
	575				21.8	26.1	157												
25	208	3	H	1.3	75.2	88.5	402	23.5	160.0	27.1	93.6	*93.6	*92	*90	*92	0.85	0.854	0.82	0.78
	230				68	80	402												
	460				34	40	201												
	575				27.2	32.0	157												
30	230	3	G	1.3	80.2	96.2	434	26.6	172.7	31.9	93.6	*93.6	*92	*90	*92	0.836	0.856	0.851	0.82
	460				40.1	48.1	217												
	575				32.1	38.5	178												
40	460	3	H	1.3	54.7	63.7	345	34.5	274.6	43.5	94.1	*94.1	*93	*91	*93	0.842	0.842	0.82	0.75
	575				43.8	51.0	265												
50	460	3	G	1.3	70.5	98.5	387	43.0	308.0	56.1	94.5	*94.5	*93	*91	*93	0.874	0.877	0.865	0.82
	575				56.4	78.8	310												

*Motor Efficiency does not include seal and oil losses per IEC60034-30 5.1.3 Full Load Amps and Service Factor Amps do include these losses

20. AWARD

20.1. Bid will be awarded to the lowest responsive responsible bidder whose proposal and proposed pump meets the stated requirements.