CITY OF SAN LEANDRO

INVITATION FOR BIDS

SUBMIT BID TO:	**FOR FURTHER INFORMATION CONTACT:**
City of San Leandro Purchasing Department 835 East 14th Street San Leandro, CA 94577	Sally M. Perez Interim Purchasing Agent (510) 577-3472 fax (510) 577-3312 sperez@sanleandro.org

BID NO:	**DATE MAILED:**	**THIS BID MUST BE DELIVERED TO THE CITY BEFORE:**
14-15.034	May 20, 2015	3:00 p.m., Tuesday, June 16, 2015

QTY.	**DESCRIPTION**	**UNIT PRICE**	**EXTENSION**
ONE (1) EACH	ONE (1) DIGESTER RECIRCULATION HORIZONTAL END SUCTION PUMP AND MOTOR Bid No. 14-15.034 **Notice to Bidders** Provide one (1) digester recirculation horizontal end suction pump and motor in accordance with the specifications attached to this bid. Make/Model: _____ Specify Warranty: _____ Delivery Date: _____ All specifications are minimum requirements, unless otherwise noted. All bidders must submit with their proposal sufficient literature to show compliance with specifications. Any deviations from specifications must be clearly indicated in writing at the time the proposal is submitted. The City reserves the right to waive minor variations in specifications bid. Questions related to this bid may be submitted in writing to the Purchasing Agent at the address above or via email to: sperez@sanleandro.org Do not include sales tax in your bid. Sales tax will be added to the purchase order and remitted with invoice payment. State your earliest delivery date as requested. This date may be an important factor in award determination. Sealed bids shall be received at the Finance/Purchasing Office, City Hall, 2nd Floor, 835 E. 14th Street, San Leandro, CA up to 3:00 p.m., Tuesday, June 16, 2015 at which time they will be publicly opened and read.	$ _____ EACH DELIVERY CHARGE *(if not included in price)*	$_____ TOTAL $_____ $_____ GRAND TOTAL

Any bid may be withdrawn at any time prior to the time fixed for the opening of bids only by written request for the withdrawal of the bid filed with the City. The request shall be executed by the bidder or bidder's duly authorized representative. The withdrawal of a bid does not prejudice the right of the bidder to file a new bid. Whether or not bids are opened exactly at the time fixed in the public notice for opening bids, a bid will not be received after that time nor may any bid be withdrawn after the time fixed in the public notice for opening of bids.

As stated in Public Contract Code Section 5100 to 5108, inclusive (State Contract Act) concerning relief of bidders and in particular to the requirement therein, that if the bidder claims a mistake was made in his bid, the bidder shall give the City written notice within five (5) days after the opening of the bids of the alleged mistake, specifying in the notice, in detail how the mistake occurred.

All bidders shall verify if any addendum for this project has been issued by the City. It is the bidder's responsibility to ensure that all requirements of contract addendum are included in the bidder's submittal.

The award will be made to the lowest responsible bidder whose bid complies with the specifications in a manner satisfactory to the City's best interests as determined by the City. The right is reserved, as the interest of the City may require, to reject any or all bids, or to waive any informality or minor irregularity in the bids.

Payment shall be within 30 days following acceptance of bid items.

To bid, complete and return a copy of the Request and any other required forms, in a sealed envelope. The envelope shall be marked with the project name and bid number. The bid must be received by the date and time shown in order to be considered. Deliver envelope to: City of San Leandro Purchasing Dept., 835 E. 14th Street, San Leandro, CA, 94577. Please note that there is a one-day delay in mail delivery to City Hall by the U.S. Postal Service.

Delivery of materials shall be to:

Water Pollution Control Plant
3000 Davis Street
San Leandro, CA 94577

Firm_____ Date: _____

Address_____ Phone:_____

_____ FAX:_____

By (Signature) _____ Print Name: _____

Title: _____

Sally M. Perez Interim
Purchasing Agent

ONE (1) DIGESTER RECIRCULATION HORIZONTAL END SUCTION PUMP AND MOTOR
Bid No. 14-15.034
Notice to Bidders

SPECIFICATIONS

PART 1 - GENERAL

1.01 THE REQUIREMENT

A. The vendor shall provide horizontal process end suction centrifugal pump and appurtenances, complete for service and duty use. Duty is defined as 24 hour, 7 days per week cycle under severe operating conditions.

1.02 DEFINITIONS

A. Pump Head, Total Dynamic Head (TDH), flow capacity, pump efficiency, Net Positive Suction Head available (NPSHa), and Net Positive Suction Head required (NPSHr):

B. Suction head: Gauge pressure available at pump intake flange or bell in feet of fluid above atmospheric; average when using multiple suction pressure taps, regardless of variation in individual taps.

1.03 SYSTEM DESCRIPTION

A. Horizontal end suction pump and components: Pump, motor driver, baseplate, belts, sheaves, and guard as specified.

B. Design requirements:
   1. Pump performance characteristics:
      a. As specified in the Pump Schedule.
      b. Performance tolerance shall be within ANSI 14.6 2011 Grade 2B.
   2. Motor characteristics: As specified in the Pump Schedule.

1.04 SUBMITTALS

A. Complete Shop Drawings and product information shall be submitted and approved prior to fabrication. Electronic copies are acceptable in either PDF or Microsoft Office document format.

B. Complete set of Operation and Maintenance manuals including full parts breakdown. Delivery of product will not be considered complete until acceptable O&M manuals have been submitted. Electronic copies are acceptable in either PDF or Microsoft Office document format.

C. Torsional analysis: Startup, checks, and operates the pump system over its entire speed range. If the pump is driven by a variable speed drive, the pump and motor shall be tested at 100 RPM increments from minimum pump manufacturers recommended speed to motor nameplate speed. Unless otherwise indicated, vibration shall be within the amplitude limits recommended by the Hydraulic Institute standards at a minimum of 4 pumping conditions defined by the City of San Leandro WPCP Project Manager.

1.05 QUALITY ASSURANCE

A. In the event any pumping system fails to meet the indicated requirements, the pump shall be modified or replaced and re-tested as above until it satisfies the requirements.

B. Pump manufacturer is required to furnish and coordinate pump, motor, baseplate, belts, sheaves, and guard as specified and to provide written installation instructions and check out requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. All components shall be secured to rigid pallets suitable for use with forklift. Components shall be wrapped in recycled plastic to ensure atmospheric elements do not contaminate materials during delivery or temporary storage.

1.07 WARRANTY

A. Supplier to provide warranty that the equipment provided shall be free of defects in workmanship and materials after eighteen (18) months from delivery of the product.

1.08 MAINTENANCE

A. Special tools: Deliver 1 set for every furnished pump type and size needed to assemble and disassemble pump system. Spare parts: Provide 1 of the following for each size or type of pump; deliver as specified:
   1. Set of casing seal gaskets or o-rings.
   2. Set of bearings.
   3. Set of bearing frame seal gaskets and o-rings.
   4. Spare replacement mechanical seal.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Pump: One of the following or equal:

1. Sulzer End Suction APT Series Process Pump
2. Approved equal

2.02 MATERIALS

A. General: When materials are referenced in this Section or on the pump schedule, the compositions shall be the UNS Alloys, Types, or Grades in this Article unless specified or scheduled otherwise.

B. Cast iron: ASTM A 48, Class 35 B minimum.

C. Stainless steel: ASTM A 890, Grade 3A Duplex Stainless or UNS Alloy as specified or scheduled.

D. Stainless steel: SS 2324 Duplex Stainless as specified or scheduled.

E. Fasteners: Stainless steel, ASTM F 593 or ASTM F 594, type or grade as specified.

2.03 PUMP CASING

A. TYPE: The casing shall be end suction with top centerline, self-venting discharge and 125# ANSI flanges. The casing will be of back-pull-out design to allow complete disassembly without disturbing the piping or driver. The casing is to be supported by rigid integral cast feet for maximum resistance and distribution of unanticipated loads. It will be radially split and rabbetted to the stuffing box cover and adapter to assure proper alignment. The casing will be sealed by use of a confined gasket between the casing and cover. Material: As scheduled.

B. Design working pressure: Minimum 145 psig.

C. Hydrostatic test: 5-minute hydrostatic test minimum 1.5 times Design Working Pressure.

2.04 IMPELLER

A. Type: The impeller shall be of ASTM A890 Grade 3A duplex stainless steel and be of open design, statically and dynamically balanced to ISO 1940 G6.3. The impeller will be mounted to the shaft by means of an integral spiral cut shaft key allowing the assembly and disassembly by turning no more than 540 degrees rotation. The impeller will be locked in place with an impeller bolt with integral locking washer. The impeller will be specifically designed to handle liquids containing up to 70% air entrainment.

B. Water passages: Smooth, able to prevent clogging by stringy or fibrous and to pass spherical solids of size scheduled.

C. Rotation: Clockwise looking from driver.

2.05 WEAR PLATE

A. Material: ASTM A 890, Grade 3A duplex stainless steel.

B. Replaceable and externally adjustable to maintain proper clearances between the wear plate and the impeller.

C. Include cutting grooves to prevent plugging between the impeller and side plate.

2.06 PUMP SHAFT

A. Material: 2324 duplex stainless steel, turned, ground, and polished.

B. Strength: Able to withstand minimum 1.5 times maximum operating torque and other loads.

C. Deflection: Maximum 0.002 inches at the face of the seal box under operating conditions.

2.07 MECHANICAL SEAL

A. Mechanical seal assembly shall be a heavy duty cartridge type design to include a replaceable shaft sleeve.

B. The seal shall contain multiple balance springs that are externally mounted from the process fluid, and seal faces shall be Carbon/Silicon Carbide.

C. The seal shall be John Crane Type SB1 or equivalent heavy duty cartridge type with readily accessible repair or replacement kits

2.08 BEARING UNIT

A. The bearing unit is to be sealed by use of INPRO VBX, or equal, isolators to protect the bearings and lubricating oil from external contamination. A bulls-eye sight glass will be

provided to monitor the oil level. In addition the bearing housing will be supplied with a constant level oiler with stainless steel guard. The bearings are to be shoulder mounted to the shaft and fixed in the bearing housing to eliminate any axial shaft movement. Each bearing housing is to be drilled to accept optional temperature and vibration probes for use in predictive maintenance.

B. The radial bearing (inboard) is to be a cylindrical roller design with a minimum L_{10} life of 100,000 hours. The axial (thrust) bearing will consist of two 40° angular contact bearings mounted back-to-back to provide a minimum of 100,000 hours L_{10} life.

2.09 BASEPLATE ASSEMBLY

A. The baseplate shall be a 4-point tube steel base for use with right-hand motor mounting. The tube structure will be galvanized to prevent long-term corrosion. The structure will have a 4-point mounting layout with foundation screws for anchoring the assembly. The base assembly shall completely house the pump and motor within its layout and include an OSHA guard to enclose the belts & pulleys.

2.10 BELT DRIVE ARRANGEMENT

A. The drive arrangement shall include suitable v-belts and sheaves to produce necessary pump speed using a fixed speed motor.

2.11 MOTOR

A. Motors: Features as specified and as scheduled:

1. Provide motors that are rated suitable for continuous operation in ambient temperature at project site conditions.
2. Manufacturer: One of the following or equal:
   a. Siemens
   b. General Electric
   c. Toshiba International Corp., Industrial Div.
3. Horsepower:
   a. As scheduled.
   b. Listed motor horsepower is the minimum to be supplied. Increase motor horsepower if required to prevent motor overload while operating at any point on the supplied pump operating head-flow curve, including runout.
4. The motor shall be capable of continuous operation.
5. Provide Thermostats for temperature protection.
6. Provide Bearing Isolators for bearing protection.
7. Provide Grounded Shaft for protection against bearing currents.
8. Severe Duty rated motors:
   a. Squirrel cage induction motor, TEFC Premium Efficient.
   b. NEMA Design B with 1.15 SF.
   c. Class B Temperature Rise, Class F Insulation.
   d. Designed for 40°C Ambient Temperature.
   e. Severe Duty Cast Iron Frame, End Brackets, Fan Cover, and Conduit Box.
   f. UL Listed for NEMA MG 1, Part 31 – 300 HP and Below.

2.12 SOURCE QUALITY CONTROL

A. Witnessing: Source or factory testing shall be witnessed by the ENGINEER or OWNER when scheduled; provide advanced notice of source testing as specified.

B. Equipment performance test: Test level as scheduled; test as specified.

C. Driver test: Test driver as part of pump test.

PART 3 – EXECUTION

3.01 FIELD QUALITY CONTROL

A. Witnessing: All field testing shall be witnessed by the ENGINEER; provide advanced notice of field testing as specified.

B. Inspection and checkout: As specified.

C. Equipment performance test: Test level as scheduled; test as specified.

D. Operational testing: As specified: Temperature, noise, and vibration testing specified within the general equipment performance and pump performance test sections is not required for wet pit installations.

3.02 MANUFACTURER'S FIELD SERVICES

A. Require manufacturer to inspect system before initial start-up and certify that system has been correctly installed and prepared for start-up as specified.

B. Training: Minimum 8 hours onsite training and classroom review of pump component specifics, routing maintenance, and operational procedures.

3.03 GENERAL DESCRIPTION

A. Identification

Pump Name	Digester Recirculation Pump
Equipment Number	
Quantity	1
Location	

B. Operating Conditions: The WORK of this Section shall be suitable for long term operation under the following conditions:

Duty	Continuous
Drive	Fixed Speed
Ambient environment	Outdoors, Humid, Corrosive.
Ambient temp, deg.F	40 - 110
Ambient relative humidity %	0-100

Fluid service	Water with 2% Sludge
Fluid temp, deg.F	40-110
Fluid pH range	6.8-7.4
Fluid specific gravity	.9-1.1
Fluid viscosity, cP	5.0
Project site elevation	56 Feet ASL

3.04 PUMP SCHEDULE

Tag Numbers	
General Characteristics:	
Service	2% Sludge
Quantity	1
Minimum Pumped Fluid Degrees Fahrenheit	40
Normal Pumped Fluid Degrees Fahrenheit	100
Max. Pumped Fluid Degrees Fahrenheit	110
Installation Configuration	Horizontal End Suction Back Pullout
Pump Characteristics:	
Impeller Type	Open
Speed Control	Fixed
Maximum Pump Speed, RPM	750
Rated Design Point: (at Maximum rpm)	
Flow, gpm	6,120
Head, Feet	13.5
Minimum Hydraulic Efficiency, Percent	77
Maximum Active Input Horsepower	28
Other Conditions:	
Minimum Suction Static Head, Feet	23.5
Maximum Suction Static Head, Feet	27.0

Motor Characteristics:	
Quantity	1
Horsepower Rating, HP	40
Maximum Driver Speed, RPM	1,200
Inverter Rated	No
Voltage/Phases/hertz	460/3/60
Service Factor	1.15
Motor Efficiency (At 100 Percent Load) Minimum	94%
Enclosure Type	TEFC, Severe Duty
NEMA Design Type	B
Insulation Class	F
120V Space Heaters	YES
Thermostat Protection	YES
Source Quality Control Testing:	
Test Witnessing	Witnessed
Performance Test	Certified Performance Curve
Vibration Test Level	N/A
Noise Test Level	N/A
Field Quality Control Testing:	
Performance Test Level	1 Field Test; Min 4 Duty Points
Vibration Test Level	HI STD
Noise Test Level	HI STD