

October 3, 2019

To:

SUBJECT: REQUEST FOR SEALED BIDS FOR TRAILER-MOUNTED ELECTRIC MOTOR-DRIVEN PUMP

The Leucadia Wastewater District (District) is accepting sealed bids for one (1) towable trailer-mounted electric motor-driven pump that meets or exceeds the attached specifications.

The bid will be submitted on the bid form provided in Attachment (A). The bid will indicate estimated delivery date for the towable trailer-mounted electric motor-driven pump. Additional sheets may be attached to the form. Bids shall be mailed or delivered to the District at 1960 La Costa Avenue, Carlsbad, CA, 92009 and shall be received no later than **2:00 p.m. (local) on Thursday, October 17, 2019**. Please label the bottom left corner of envelope with "Bids for Trailer-Mounted Electric Motor-Driven Pump". The trailer-mounted electric motor-driven pump will include all standard factory equipment and all optional equipment as specified in this Request for Bids (see Attachment (C)).

The bid should show a cost breakdown to include, but not limited to, trailer-mounted electric motor-driven pump base price, price of any option packages, total price for all options specified, sales tax, and delivery charges, if any. The trailer-mounted electric motor-driven pump will be 2019/2020 production models. The trailer-mounted electric motor-driven pump will comply with all California laws, regulations and codes.

Attachment (B) is a template of the purchase agreement the successful bidder will execute to complete the purchase. It is included for your review.

Please refer to Attachment (C) for the Trailer-Mounted Electric Motor-Driven Pump Specifications.

Pending approval of purchase by LWD Board of Directors at their regular meeting on November 13, 2019, the purchase will be awarded to the responsive and responsible bidder who submits the lowest total bid which includes the purchase price of one (1) new trailer-mounted electric motor-driven pump with California Sales Tax.

The trailer-mounted electric motor-driven pump registration form(s) will be completed and provided by the selected dealer in the name of Leucadia Wastewater District. The pumps Department of Motor Vehicle tag (*if any*) will be a tax-exempt tag and the registration forms will be completed accordingly.

If there are any questions or for further information, please call me at (760) 753-0155 ext. 3008.

Very truly yours,

Jeff Stecker
Field Services Supervisor

Attachment (A)

BID FORM

2019/2020 Model Year Trailer-Mounted Electric Motor-Driven Pump

BID DUE DATE / TIME: 2:00 p.m. (local) on Thursday, October 17, 2019

A. ITEMIZED COST BREAKDOWN OF One (1) Trailer-Mounted Electric Motor Driven Pump

<u>ITEM</u>	<u>PRICE</u>
One, 2019/2020 Trailer Mounted Electric Motor Driven Pump as Specified:	_____
Options: _____	_____
_____	_____
_____	_____
Sub Total	_____
Sales Tax	_____
Delivery	_____
TOTAL BID PRICE OF PUMP	_____

Written Bid Price: _____

Note: Total Bid Price includes sales tax.

Estimated Delivery Date: _____

VENDOR INFORMATION:

Name: _____

Address: _____

Phone: _____

Fax: _____

E-mail: _____

Submitted by: _____
(Signature)

(Date)

(Print Name)

Attachment (B)

LEUCADIA WASTEWATER DISTRICT TRAILER-MOUNTED ELECTRIC MOTOR DRIVEN PUMP PURCHASE AGREEMENT (COMPLETE AFTER AWARD)

This AGREEMENT is made and entered into this ____ day of _____, 2019, by and between the Leucadia Wastewater District ("District"), a California Special District, and _____ ("Vendor").

RECITALS

A. Vendor has submitted to District a proposal to furnish and delivered One (1) Trailer- Mounted Electric Motor Driven Pump and necessary appurtenances ("Equipment") as specified under Article 2, Scope of Work / Terms and Conditions.

B. It is in the best interests of District to purchase the specified Equipment on the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual promises, conditions, and covenants herein contained, the parties hereto agree as follows:

AGREEMENT

ARTICLE 1. GENERAL

1.1 Vendor agrees to furnish and deliver, and District agrees to purchase, the Equipment set forth in Attachment A and incorporated by reference, on the terms and conditions herein specified.

1.2 Vendor shall perform all work necessary to provide the Equipment, as detailed in Article 2 (Scope of Work/terms and Conditions), and shall furnish all labor, materials, equipment, supplies, and incidentals at Vendor's sole cost and expense.

1.3 All services performed by Vendor incidental to this purchase of the Equipment shall be conducted in a professional workmanlike manner. Vendor warrants that it possesses the professional expertise necessary to provide the Equipment required under this Agreement.

ARTICLE 2. SCOPE OF WORK / TERMS AND CONDITIONS

2.1 The Equipment to be furnished and delivered by Vendor, including specific materials and spare parts, is set forth in Attachment A and is incorporated herein by this reference.

2.2 Vendor will be responsible for the proper protective packing/packaging and transportation of the Equipment to the District, F.O.B. Carlsbad, California. All freight

charges will be prepaid by the Vendor and added to and specified in the Vendor's invoice to the District.

2.3 It is the Vendor's ultimate responsibility to deliver the Equipment that complies in all respects with this Agreement and any duly authorized and properly executed written amendments and change orders.

2.4 This document and the District's Purchase Order defines the terms and conditions of this Agreement and are incorporated herein.

ARTICLE 3. TERM/TIME OF PERFORMANCE

Vendor shall not commence any of the work specified in this Agreement until District issues its Purchase Order as authorization to proceed.

ARTICLE 4. COMPENSATION

4.1 Compensation to the Vendor for the Equipment, including Equipment and all applicable taxes, which the District is obligated to pay under the terms and conditions of this Agreement, shall be:

Figure (Written) _____ Dollars

Figure (\$) _____

Price includes all taxes, shipping and delivery charges.

4.2 Compensation to the Vendor for the Equipment as set forth in Section 4.1 above shall be a lump sum payment due within forty five (45) days of delivery and acceptance by the District of all Equipment to be provided under this Agreement.

ARTICLE 5. NOTICE

All notices and payments shall be made in writing and may be given by personal delivery or by U.S. mail, postage prepaid, to the District addresses as follows:

District: Leucadia Wastewater District
1960 La Costa Avenue
Carlsbad, California 92009
Attention: Jeffery Stecker

Vendor: _____

Attention: _____

ARTICLE 6. LEGAL RELATIONS

6.1 Vendor is for all purposes an independent contractor. All qualified personnel provided by the Vendor pursuant to the provisions of Article 1 of this Agreement are to be employed by Vendor for its account only, and in no event shall Vendor or any personnel retained by it be deemed to have been employed by District or engaged by the District for the account of or on behalf of the District. No permitted or required approval by District of personnel, costs, schedules, documents or services of Vendor shall be construed as making District responsible for the manner in which Vendor performs its services. Such approvals are intended only to give District the right to satisfy itself with the quality of work performed by Vendor.

6.2 District's designated representative, Jeffery Stecker, shall administer this Agreement.

6.3 Vendor's designated project manager, _____, is hereby designated to act on behalf of Vendor for all matters relating to this Agreement.

6.4 In the event litigation or arbitration is commenced to interpret or enforce this Agreement, the prevailing party shall be entitled to recover its reasonable attorneys' fees in addition to costs and expenses.

ARTICLE 7. LIMITS OF LIABILITY

Vendor shall be liable for direct and incidental or consequential damages arising from any defects in materials or workmanship; provided, however, that such damages shall be limited to compensation for additional services required and all costs of repair and replacement of Equipment or parts, bodily injury including death, or property of Purchaser or others destroyed or damaged by correction; removal or replacement of defective Equipment or parts.

ARTICLE 8. SUBCONTRACTS

Vendor shall not subcontract or assign any of the work covered by this Agreement, except with the prior written approval of District, and in strict compliance with the terms, provisions and conditions of this Agreement.

ARTICLE 9. TERMINATION OF AGREEMENT

9.1 For Cause. If District determines in its sole and absolute discretion, that Vendor fails to comply with the terms of this Agreement, District may immediately cancel this Agreement upon written notice to Vendor.

9.2 Without Cause. District may cancel this Agreement, without cause, with ten (10) days prior written notice.

9.3 If this Agreement is terminated in whole or in part by the District, a negotiated adjustment in the price provided for in this Agreement shall be made, but (1) no amount shall be allowed for anticipated profit or unperformed services, and (2) any payment due to the Vendor at the time of termination may be adjusted to the extent of any additional costs to the District. The equitable adjustment for any termination shall provide for payment to the Vendor for services rendered, equipment delivered and accepted, and expenses incurred prior to the termination.

ARTICLE 10. MISCELLANEOUS

10.1 Assignment of Title. District agrees to take title of Equipment purchased under this Agreement, and any portion thereof, upon delivery and final acceptance of the Equipment at the Leucadia Wastewater District Facility located at 1960 La Costa Avenue, Carlsbad, California 92009.

10.2 Warranty. All furnished components of the Equipment specified hereinafter, shall be guaranteed against defects in materials and workmanship for the period of one (1) year, including parts and service, following completion of equipment installation. The Vendor hereby agrees to make, at his own expense, all repairs and/or replacements necessitated by defects in materials, workmanship or shipping damage supplied by him that become evident within the warranty period.

A. VENDOR'S CONTINUING OBLIGATIONS:

Vendor's obligation to furnish the Equipment and Special Services and to perform other services in connection therewith in accordance with the Agreement Documents is absolute, and Vendor warrants and guarantees to District that all Equipment, Special Services and other services will be in accordance with the Agreement Documents and free from defects. Prompt notice of all observed defects will be given to Vendor.

B. REMEDYING DEFECTIVE EQUIPMENT:

If at any time after District's acceptance of delivery, and before expiration of the warranty period, the District determines that the Equipment is defective, Vendor shall, upon written notice from and as required by the District, either correct the defects or remove the Equipment and replace them with non-defective Equipment. If Vendor does not do so promptly and to the satisfaction of the District, the District may, accept the defective Equipment instead of requiring correction or removal and replacement, and provided in any case, if Vendor fails to take action as required by the District to correct or resolve the defect, the District may, at Vendor's expense, after ten (10) days' written notice to Vendor, take the necessary actions to remedy any such deficiency instead of requiring removal or replacement. In an emergency where delay would cause serious risk of loss or damage, District may take such action without notice to or waiting for action by Vendor.

10.3 Delivery. Equipment shall be delivered FOB Carlsbad, California, to the Leucadia Wastewater District Facility. The District will require a seven (7) calendar day written advance notice of delivery. If such notice is not provided, the District is not obligated

to accept delivery. Delivery of Equipment shall allow for a reasonable period of time, as determined by the District, for inspection and unloading within the District's normal working hours.

10.4 Preparation for Shipment. All Equipment shall be suitably packaged to facilitate handling and protect against damage during transit and storage. All Equipment shall be boxed, crated, or otherwise completely enclosed and protected during shipment, handling, and storage. All Equipment shall be protected from exposure to the elements and shall be kept thoroughly dry at all times.

Painted surfaces shall be protected against impact, abrasion, discoloration, and other damage. All painted surfaces which are damaged prior to delivery and temporary acceptance of Equipment shall be repainted to the satisfaction of District.

Grease and lubricating oil shall be applied to all bearings and similar items, if any.

Complete and itemized packing lists and bills of material shall be included with each shipment.

10.5 Receipt of Equipment. Orders should be shipped complete whenever possible unless a specific delivery schedule has been previously agreed to. The District reserves the right to determine whether or not it will accept a partial shipment of Equipment. The Vendor is required to consult with the District to obtain partial shipment approval and establish a delivery schedule.

Upon delivery of Equipment, the District shall make a visual inspection of the condition of each piece of Equipment and shall note, in writing, any obvious defects of said Equipment. For shipments delivered which are in a condition not satisfactory to the District, the Vendor shall be notified immediately, at which time the Vendor shall recommend the remedial action to be taken and notify the District of same. If, during delivery, it is obvious that the Equipment to be delivered has been damaged, the District will refuse to accept delivery and will immediately inform the Vendor of this action.

10.6 Equipment Acceptance. Upon delivery and after completion of a visual inspection, temporary acceptance shall be made. Final Equipment acceptance shall be made after a detailed inspection of the Equipment is completed. The detailed inspection will be performed within seven (7) days after delivery to ascertain its compliance with the Specifications. If the Equipment is packaged for storage in a manner that a detailed inspection is not feasible, the detailed inspection and final acceptance shall be delayed until time of installation. Equipment acceptance shall not be construed as absolving the Vendor of responsibility for any item or requirement included in the Agreement.

10.7 Royalties and Patents. The Vendor shall pay all royalty and license fees, unless otherwise specified. He shall defend all suits or claims for the infringement of any patent rights and shall hold the District harmless from loss on account thereof.

10.8 Entire Agreement. This Agreement, including its Attachments and the District's Purchase Order incorporated herein, represents the complete and final understanding of the District and Vendor as to those matters contained herein, and

supersedes any prior oral or written understandings, promises, or agreements with respect to those matters covered hereunder, except as specifically incorporated herein by reference. This Agreement may not be modified or altered except in writing signed by a duly authorized representative of both parties. In the event of any conflict between this Agreement and the Vendor's proposal documents and Vendor's standard business Terms and Conditions, if any, this Agreement shall govern.

10.9 Governing Law, Venue, Severability. This Agreement shall be administered and interpreted under the laws of the State of California, County of San Diego. If any part of this Agreement is found to be in conflict with applicable laws, such part shall be ineffective only to the extent as it is in conflict with said laws, but the remainder of this Agreement shall remain in full force and effect.

10.10 Compliance with Applicable Laws. All work performed and materials used in the execution of this Agreement shall comply with applicable laws, standards, codes and regulations governing such materials, items and work.

10.11 Assignment of Certain Claims. Vendor hereby assigns to District all right, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 (commencing with Section 4 of 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from Vendor's purchase of the Equipment under this Agreement. This Section 10.12 is included to comply with the requirements of Public Contract Code § 7103.5.

WHEREAS, this Agreement was executed by the parties hereto as of the date first written above.

Leucadia Wastewater District: _____:

Signature

Paul J. Bushee
General Manager

Signature

Title

Contractor's Social Security or Federal
Taxpayer Identification Number

Attachment (C)

TRAILER-MOUNTED ELECTRIC MOTOR-DRIVEN PUMP

PART 1 - GENERAL

1.01 PROJECT SCOPE:

- 1.01.1 Requirements for providing one (1) emergency trailer-mounted self-priming electric motor-driven pump with related accessories as specified.
- 1.01.2 The pump set shall be delivered to the owner within 7 weeks of the notice of award. If the pump cannot be delivered within 7 weeks, the acceptable delivery window may be extended to 12 weeks if a rental pump is provided until the specified pump set is delivered. In this case, the rental pump must be delivered within 7 weeks of the notice of the award and the rental period must extend until the originally specified pump set is delivered.
- 1.01.3 The rental pump (if provided) must be a trailer-mounted self-priming engine-driven pump that is certified to meet EPA Tier 4 Standards and satisfies the design requirements of this specification. All costs associated with the rental pump must be included in the bid price.

1.02 GENERAL

- 1.02.1 The specifications herein state the minimum requirements of the Leucadia Wastewater District. It shall be the bidder's responsibility to carefully examine each item of the specification, failure to offer a completed bid or failure to respond to each section of the technical specification (exception yes or no) will cause the proposal to be rejected without review as "non-responsive". All variances, exceptions, and/or deviations shall be fully described in the appropriate section.
- 1.02.2 GENERAL SPECIFICATIONS: Units described shall be new, unused, and of the current year's production. The style of pump being bid must be in production for a minimum of 5 years (Include users list). Unit shall be of the latest design and in current production completely serviced, ready for work, and shall include all standard and optional equipment as specified herein. All bidders must have demonstrated the unit they are bidding prior to bid date.
- 1.02.3 Bidders must have a fully stocked parts and service facility within 100 miles of the Leucadia Wastewater District. The Leucadia Wastewater District shall have the right to inspect the office and shall be the sole judge of its adequacy to fulfill this requirement.

1.03 SYSTEM DESCRIPTION

- 1.03.1 The pump set specified in this section will be used to pump raw sewage.
- 1.03.2 Items under this Section include, but are not limited to, those components and appurtenances listed below for the trailer mounted pump.

- 1.03.2.1 Close coupled centrifugal pump with vacuum priming compressor.
- 1.03.2.2 Continuously operated air ejector priming device requiring no form of periodic adjustment or control.
- 1.03.2.3 Dry running, high pressure oil bath mechanical seals with abrasion-resistant solid silicon carbide faces.
- 1.03.2.4 Solids handling ball type non return valve with renewable flexible rubber seat and quick release access feature.
- 1.03.2.5 Hinged lockable doors provide access to operating controls and service locations.
- 1.03.2.6 Impeller
- 1.03.2.7 Shaft Sleeve and Shaft
- 1.03.3 Pump shall be fitted with a fully automatic priming system capable of repeated priming from a completely dry pump casing.
- 1.03.4 The pump and accessories shall be supplied by the pump manufacturer.
- 1.03.5 The pump offered shall be a manufacturer's standard production model. It shall have been in continuous use by municipal and industrial owners for a minimum of five years. A list of five user contacts including contact names and telephone numbers shall be provided with the bid submittal. Failure to supply a verifiable users list will be cause for rejection of the bid.

1.04 DESIGN REQUIREMENTS

1.04.1 OPERATING SPEED (Maximum)	1800 RPM
MINIMUM SOLIDS HANDLING SIZE	2.80 INCHES
IMPELLER DIAMETER	13-18.7 INCHES
MINIMUM SUCTION SIZE	8 INCHES
DISCHARGE SIZE	12-16 INCHES
DESIGN DUTY POINT	MEET OR EXCEED 3200 GPM AT 100' TDH (INCLUDING A 15' SUCTION LIFT)
SECOND DUTY POINT	MEET OR EXCEED 4600 GPM AT 90' TDH (INCLUDING A 15' SUCTION LIFT)

1.05 QUALITY ASSURANCE

- 1.05.1 Consideration given only to products of manufacturers who demonstrate successful experience in manufacture, operation, and servicing equipment of type, size, and performance equal to that specified. Manufacturer shall provide a minimum of five (5) installations where this type of pump has been provided successfully.
- 1.05.2 Workmanship and Design
 - 1.05.2.1 All parts to be amply proportioned for long, continuous, and uninterrupted service. Provisions to be made for easy lubrication, adjustment, or

replacement of all parts.

1.05.2.2 All materials used in construction of equipment to be of best quality and entirely suitable in every respect for the service specified.

1.05.2.3 All bolting and fasteners in the pump and wetted areas shall be Class 316 stainless steel unless otherwise specifically recommended by the manufacturer for strength or safety reasons and approved by the Engineer.

1.05.3 Shop Testing

1.05.3.1 Shop test pump at the factory prior to shipping.

1.05.3.2 In the event that a pumping unit fails to perform as specified during the test, make all modifications required to place the unit in conformance with the specifications, and retest, at no additional cost to the Owner.

1.05.3.3 In the event that a pumping unit fails a second test, the unit will be rejected without recourse, and must be replaced with a unit equal to that specified, which passes the required tests.

1.05.4 System Testing

1.05.4.1 The trailer mounted sewage pump shall be tested as a complete operating system.

1.05.4.2 The required pump performance testing is specified elsewhere in this section.

1.05.5 Hydrostatic Testing

1.05.5.1 Test pump casing assemblies individually for a minimum of 30 minutes at 50 psi maximum and at maximum allowable speed with the maximum allowable impeller diameter.

1.05.5.2 Conduct prior to performance testing.

1.05.5.3 Provide certified test report sealed by a registered professional engineer that the tests were successfully conducted.

1.05.6 Performance Testing

1.05.6.1 Dynamically balance impeller in accordance with ISO 1940/1:1986 balance quality grade G6.3 as recommended in ANSI/HI 9.6.4.

1.05.6.2 Individually test the trailer mounted unit on water, in conformance with the Hydraulic Institute Standards.

1.05.6.3 All costs for the performance and shop tests shall be included in the bid price.

1.05.6.4 Measure and record the following parameters at the indicated rating points: Head/capacity, Suction pressure, Working pressure.

1.05.6.5 Certify that pump is free from overheating, cavitation, and excessive vibration.

1.05.7 Submission of Test Results

1.05.7.1 All data shall be submitted on 8-1/2 x 11-inch sheets at as large a scale as is practical.

1.05.7.2 Plot curves for all performance data, corrected to standard conditions, from shut off to the minimum specified operating head.

1.05.8 Field Testing

1.05.8.1 Field tests shall be performed under the instruction of the field service engineer. Manufacturer shall have a representative onsite for at least one day.

1.05.8.1 Ensure that all components perform as specified.

1.05.8.2 Operate the pump at the rated condition for not less than one (1) hour.

1.05.8.3 Data from the above testing shall be recorded in maximum 15-minute intervals.

1.05.8.4 Leucadia Wastewater District will supply the generator, source of water, and piping for the field test.

1.05.9 ISO Certification

Documentation that the pump manufacturer and the pump manufacturing site are certified under ISO 9001.

1.06 REFERENCES

Herein specified pump equipment shall meet the design standards of the following organizations as applicable.

1.06.1	ABMA	American Bearing Manufacturer Association
1.06.2	IEEE	Institute of Electrical and Electronics Engineers, Inc.
1.06.3	AISI	American Iron and Steel Institute
1.06.4	ANSI	American National Standards Institute
1.06.5	ASME	American Society of Mechanical Engineers
1.06.6	ASTM	American Society of Testing and Materials
1.06.7	AWS	American Welding Society
1.06.8	HIS	Hydraulic Institute Standards
1.06.9	NBS	National Bureau of Standards
1.06.10	NEMA	National Electric Manufacturers Association
1.06.11	NFPA	National Fire Protection Association
1.06.12	SAE	Society of Automotive Engineers
1.06.13	UL	Underwriters Laboratories, Inc.
1.06.14	FM	Factory Mutual
1.06.15	ANSI/HI	Hydraulic Institute

- 1.06.16 ISO 9000 Quality Management and Quality Assurance Standards
- 1.06.17 ISO 10816 Mechanical Vibration – Evaluation of Machine Vibration by
Measurement on Non-rotating Parts
- 1.06.18 DOT Department of Transportation

1.07 SUBMITTALS AND MISCELLANEOUS REQUIREMENTS

1.07.1 Bid Submittal Requirements

- 1.07.1.1 Provide data on the dry weight of the complete trailer mounted sewage pump
- 1.07.1.2 Catalog pump performance curves showing flow rate versus the following: head at varying speeds, suction lift, horsepower, and required net positive suction head (NPSH required).
- 1.07.1.3 Indicate hydraulic performance limits recommended for stable operation, between which the pumps are to be operated to prevent surging, cavitation, and vibration.
- 1.07.1.4 Minimum and maximum rotative speed of pumps.
- 1.07.1.5 Submit manufacturer's identification numbers, mold numbers, and/or serial numbers for the bearings and the seals for the pump.
- 1.07.1.6 Submit shop test results separately for review and approval by the Engineer prior to the shipping of any equipment.
- 1.07.1.7 Submit bearing L-10 life calculations for all rotating assemblies.
- 1.07.1.8 Motor manufacture, model, and horsepower
- 1.07.1.9 Catalog drawings with dimensions and materials for all equipment items and appurtenances listed in this specification.
- 1.07.1.10 Catalog dimensioned arrangement drawings showing the assembled equipment with all major components.
- 1.07.1.11 Statement of proposed contractual conformance to specified requirements.
- 1.07.1.12 If a rental pump will be provided to the District prior to the delivery of the specified pump, bid submittals shall also include the dry weight, pump performance curve, manufacturer model number, and catalog dimensioned arrangement drawings of the rental unit.

1.07.2 Field Delivery Submittal Requirements

- 1.07.2.1 Section 1.04.D - Shop test results
- 1.07.2.2 Section 1.04.E - Field test results

- 1.07.2.3 Operation and Maintenance Manual- Submit digital copy and three paper copies. Include title page, table of contents and tabs (bookmarks for digital PDF copies) for individual sections. Include manufacturer and representative contact information. Include equipment specifications, start-up procedures, operating procedures, preventative maintenance procedures, parts lists, exploded view drawings, lubricant and oil data, overhaul instructions, electrical control drawings, programming logic diagrams, troubleshooting information, and approved bid submittal from time of award.
- 1.07.2.4 Warranty documentation

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- 2.01.1 Subject to compliance with the Contract Documents, the following manufacturers/suppliers and pump performance curves are acceptable:
 - 2.01.1.1 Model NC350 size 16" X 16" or Model CD300M size 12" X 12" as manufactured by GODWIN PUMPS, Bridgeport, New Jersey.
 - 2.01.1.2 Model PP1212S17, size 12" X 12" as manufactured by PIONEER PUMP, Canby, Oregon.
 - 2.01.1.3 Model PA12A-B-1, size 12" X12" as manufactured by GORMAN-RUPP PUMPS, Mansfield, Ohio.
 - 2.01.1.4 District approved equal.

2.02 EQUIPMENT

- 2.02.1 GENERAL
 - 2.02.1.1 All pump components of sufficient strength and design to withstand operation at shut-off head for a minimum of ten (10) minutes without damage or reduced component life, in the event of control system failure.
 - 2.02.1.2 Structural steel components where required in conformance with ASTM A36.
 - 2.02.1.3 Provide stainless steel nameplates fastened to the equipment with No. 4 (minimum) oval head screws or drive pins. Nameplate shall include: manufacturer's name and contact information, equipment model number, identification tag number, shop order number, drive speed, rated total dynamic head, impeller size, and date of manufacture.
 - 2.02.1.4 The trailer shall be meet all of the requirements for a Department of Transportation (DOT) highway trailer.
- 2.02.2 CASING, SUCTION COVER, SEPARATION TANK: Pump castings shall be cast iron. Pump design shall incorporate a direct suction flow path that is in axial

- alignment with the impeller eye. There shall be no turns, chambers, or valves between the suction flange and the impeller eye.
- 2.02.3 IMPELLERS: Cast chromium steel hardened to minimum Brinell 341 HB. Statically and dynamically balance impeller prior to assembly, such that vibration of complete pumping unit does not exceed the allowable limits defined in Section 1.05.
- 2.02.4 WEARPLATES: Cast Iron wearplates shall be fully adjustable and replaceable. Wearplate clearances shall have no relationship to the ability of the pump to achieve a prime. The pump wearplates shall be of a diameter equal to or greater than the impeller diameter to insure maximum protection to the pump casing. Under no circumstances will wear rings be accepted.
- 2.02.5 BEARINGS AND SHAFTS: Pump shall be fitted with a bearing bracket which contains the shaft and heavy-duty ball or tapered roller bearings of adequate size to withstand imposed loads. Minimum I.S.O. L10 bearing life to be 100,000 hours. Impeller shaft shall be of 1½% chromium alloy and have a minimum diameter of 60mm at the pump seal.
- 2.02.6 SEALS: Seals shall be high pressure, solid silicon carbide mechanical seals. The mechanical seal shall be cooled and lubricated in an oil bath reservoir, requiring no maintenance or adjustment. Pump shall be capable of running dry, with no damage, for periods up to 24 hours. All metal parts shall be of stainless steel. Elastomers shall be Viton.
- 2.02.7 PUMP SUCTION AND DISCHARGE FLANGES: Shall be cast iron ANSI (B16.1) Class 150# suction flat faced and ANSI (B16.1) Class 150# discharge flat faced.
- 2.02.8 PUMP GASKETS: Shall be compressed fiber and/or Teflon.
- 2.02.9 PUMP O-RINGS: Shall be Buna-N.
- 2.02.10 PRIMING SYSTEM: The pump must have a fully automatic priming system. The pump must be capable of running totally dry for periods up to 24 hours, then re-priming and returning to normal pumping volumes. Pump and priming system are capable of priming the pump from a completely dry pump casing. It shall also be capable of operation using extended suction lines. Equipment acceptance shall be contingent upon the pump's ability to run continuously at full speed in a completely dry condition for periods up to 24 hours. The engineer may require a demonstration.
- 2.02.11 CHECK VALVE: Pump shall be supplied with an integral ductile iron swing type check valve mounted on the discharge of the pump allowing unrestricted flow from the impeller. The check valve shall prevent in-line return of flow when the pump is shut off. Elastomers shall be Buna-N rubber and shall be field replaceable.
- 2.02.12 FACTORY PAINTING: Pump shall be shop primed and finish painted at the place of manufacturer. Materials and thickness for priming shall be in accordance with manufacturer's standards.
- 2.02.13 MOTOR: The motor shall include a soft starter or VFD and must be cable of being powered by a Perkins 1206F-E70TTAG4 200kW Diesel Generator with a standby rating of 200kW and 250 kVA. Information on the generator is included in Appendix A. Each motor shall have a sufficient horsepower rating to operate the pump at any point on the pump's curve without overloading the nameplate horsepower rating of the motor, regardless of service factor. The motor shall have a service factor of at

least 1.15. The service factor is reserved for variations in voltage and frequency. The VFD or soft starter must be mounted on the same trailer as the pump.

2.02.14 FRAME AND TRAILER: The frame and trailer shall be made of steel and meet all applicable Department of Transportation highway specifications. It shall be suitable for 50 miles per hour towing and the suspension system shall be sized for the load. Assembled trailer mounted packages shall have a maximum weight less than 20,000 pounds. Appurtenances shall include:

2.02.14.1 Running lights, stop lights, reflectors, license plate holder with light:

2.02.14.2 Braking system

2.02.14.3 Fenders, front and rear support stands, and safety chains

2.02.14.4 Lifting bail(s)

2.02.14.5 Pintle trailer hitch

2.02.14.6 Spare tire and spare tire mount.

2.03 AUTOMATIC STARTING CONTROL SYSTEM

2.03.1 PUMP CONTROL SPECIFICATIONS

The controller shall be weather proof enclosed, and contain an external weatherproof 12-position keypad accessible without the need to remove or open any protective cover or enclosure. It shall be designed to start/stop the pump at a signal supplied by high- and low-level floats or a 4-20 mA transducer. The controller shall provide the following functions without modification, factory recalibration, or change of chips or boards, by simply accessing the keypad.

2.03.1.1 The keypad shall be a capacitive touch sensing system. No mechanical switches will be acceptable. The keypad shall operate in extreme temperatures, with gloves, through ice, snow, mud, grease, etc. and maintain complete weather-tight sealing of the controller.

2.03.1.3 The controller shall function interchangeably from float switches, pressure switch, or transducer, as well as manual start/stop by selection at the keypad. No other equipment or hardware changes are required.

2.03.1.4 The controller will have 16 configurable service timers.

2.03.1.6 The controller shall have only one circuit board with eight built-in relays. Five (5) relays can be named to provide any function, all via the keypad without changing relays, chips, printed circuits, or any hardware or software.

2.03.1.7 The controller shall be micro-processor based with a 4-inch LCD display.

2.03.1.8 The controller shall withstand Vibration of 3 g, 3 axis, frequency swept 10-1000 Hz, in an operating temperature range of 4° to 176°F (-20° to 80°C) and an operating humidity range of 0-95% Non-Condensing.

2.04 REQUIRED OPTIONS

- 2.04.1 FLOAT SWITCHES: One set of NEC Class 1 Division 1 rated high- and low-level float switches connectable to control panel via a single multi-pin plug. Cable length shall be 65-feet minimum.

PART 3 - EXECUTION

3.01 MANUFACTURER'S SERVICES

- 3.01.1 The manufacturer shall furnish the services of a competent factory representative to do the following:
- 3.01.1.1 Inspect the system prior to delivery, supervise the startup and testing of the system, and certify the system has been properly furnished and is ready for operation. Damaged equipment and materials will not be acceptable. Missing or damaged materials or equipment will be replaced at no cost to the owner.
 - 3.01.1.2 Instruct the owner's operating personnel in the proper operation and maintenance of the system for a period of not less than one day.

3.02 TOOLS and SPARE PARTS

- 3.02.1 The manufacturer shall furnish the following with the Trailer-Mounted Electric Motor-Driven Pump System:
- 3.02.1.1 The following spare parts:
 - 1. One (1) pump impeller
 - 2. One (1) set of bearings
 - 3. One (1) pump shaft
 - 4. One (1) set of mechanical seals
 - 5. One (1) set of O rings and gaskets
 - 3.02.1.2 An Operations and Maintenance Manual for the pump.

3.03 WARRANTY

- 3.03.1 The manufacturer shall furnish the following to the owner:
- 3.03.1.2 A Two-year Parts and Labor Warranty issued by the manufacturer on the Trailer-Mounted Electric Motor-Driven Pump System. This warranty must cover all pump parts, including the mechanical seal. During the warranty period, provide services of a trained manufacturer's representative to make all adjustments, repairs, and replace all defective material and equipment at no cost to Owner.

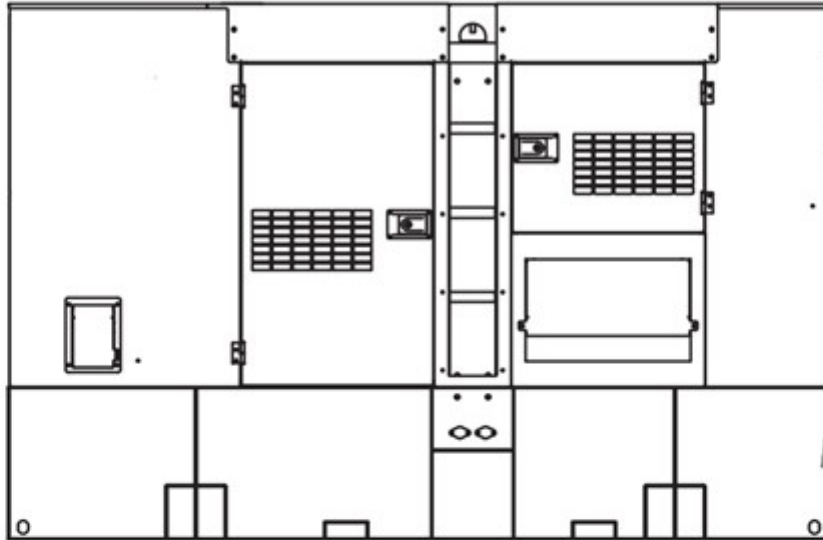
END OF SECTION

APPENDIX A

GENERATOR INFORMATION

POWER OUTPUT

Prime Rating — 180 kW (225 kVA)
 Standby Rating — 200 kW (250 kVA)
 3-Phase, 60 Hertz, 0.8 PF



STANDARD FEATURES

- Heavy duty, 4-cycle, variable speed fan, diesel engine provides maximum reliability.
- Brushless alternator reduces service and maintenance requirements. Class H protection.
 - Open delta alternator design provides virtually unlimited excitation for maximum motor starting capability.
 - Automatic voltage regulator (AVR) provides precise regulation.
- Electronic governor system maintains frequency to $\pm 0.25\%$.
- Full load acceptance of standby nameplate rating in one step
- Soundproof, weather resistant, steel housing provides operation at 72dB (A) at 7meters. Fully lockable enclosure allows safety operation. Outdoor operation available.
- Internal fuel tank with direct observing glass, and fuel level meter display on control panel
 E-coat and powder coat paint provides durability and weather protection.
- Digital engine gauges including oil pressure, water temperature, battery volts, engine speed, and fuel level.
- Analog generator instrumentation including Ampere meter,
- Voltage meter, frequency meter, ammeter phase selector switch, voltmeter phase selector switch. Analog generator instrumentation and regulator adjustment.
- Deepsea/Comap professional generator controller.
 - High visibility LCD display with heated screen and alphanumeric readout.
 - IP65 Protection standard, operational temperature range of -40° to 85° C.
 - Modbus interface for gauge panel and expansion options.
 - DPF cleaningcycle indication.
 - Log record for inspection
- Automatic safety shutdown system monitors the water temperature, engine oil pressure, low coolant, low DEF, overspeed, and overcrank. Warning lights indicate abnormal conditions.
- Fuel/water separator. Removes condensation from fuel for extended engine life.
- Emergency stop switch — when manually activated, shuts down in any emergency.

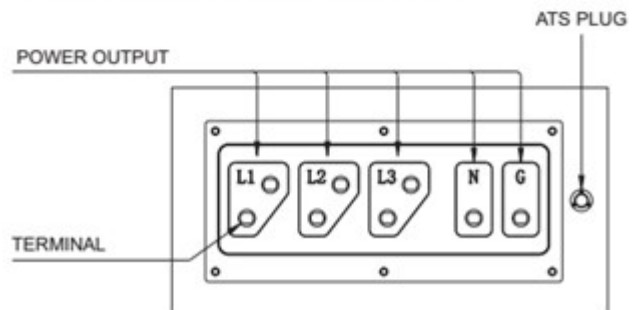
Normal conversation allows substantially lower operating noise levels than competitive designs. UNIVGensets are at home on construction sites, in residential neighborhoods, and at hospitals just about anywhere.

90	Subway / truck traffic
80	Average city traffic
70	Inside car at 60 mph
60	Air conditioner at 6m
50	Normal conversation

Genset at 7m

72.0
DECIBELS

GENERATOR OUTPUT PANEL



SPECIFICATIONS

Generator Specifications	
Model	Revolving field, self-ventilated weatherproof
Armature Connection	Star with Neutral
Phase	3
Standby Output	200 KW (250 KVA)
Prime Output	180 KW (225 KVA)
Power Factor	0.8
Voltage Regulation (No load to full load)	±0.5%
Generator RPM	1800
Frequency	60 Hz
No. of Poles	4
Excitation	Brushless with AVR
Frequency Regulation: No Load to Full Load	Isochronous under varying loads from no load to 100% rated load
Frequency Regulation: Steady State	±0.25% of mean value for constant loads from no load to full load.
Insulation	Class H
Sound Level dB(A) Full load at 7M	72

Amperage	
Rated Voltage	Maximum Amps
3Ø Volt 480/277	270.6 Amps
3Ø Volt 460/266	282.4 Amps
3Ø Volt 400/230	324.7 Amps
3Ø Volt 127/220	590.4 Amps
Main Line Circuit Breaker Rating	630 Amps
Over Current Relay Trip Set Point 220V Mode	700 Amps

Fuel System	
Maximum Fuel Flow (per hour)	184.9 gallons (700 liters)
Fuel Tank Capacity	230 gallons (870 liters)
Fuel Consumption	L / h
At full load	55
At 3/4 load	41
At 1/2 load	29
At 1/4 load	13.8

Control system	
Controller Brand	Deepsea
Model	DSE7320
Module	Manual/Auto start/stop module
Standard function	Engine control
	Generator monitoring
	Generator protection
	Specification
Display	Frequency
	Battery voltage
	Running hour
Warning/shutdown	under/over voltage
	under/over speed
	under/over frequency
	Low oil pressure
	High water temperature
Communication port	USB

Engine Specifications	
Make / Model	Perkins / 1206F-E70TTAG4
Emissions	EPA Tier4F
Starting System	Electric
Design	4-cycle, water cooled, direct injection, natural intake air cooled
Displacement	7.01 liters
No. cylinders	6
Bore x Stroke	105 x 135 mm
Gross Engine Power Output	305 hp (228 kW)
Compression Ratio	16.8 : 1
Engine Speed	1800 rpm
Overspeed Limit	2070 rpm
Oil Capacity	4.35 US gallons (16.5 liters)
Coolant Capacity	6.40 US gallons (24.25 liters)
Battery	12V 100Ah x 1

Alternator	
Alternator Brand	Stamford / Meccalte
Alternator Model	UCI274H/ ECP38 2S4A
Excitation	Brushless, Self-Excited system
Capacity(KVA)	245kva
Power(KW)	196kw
Efficiency(%)	88%
Insulation class	Class H
Protection class	Ip23
Steady state voltage regulation	±1%
Voltage control	AVR

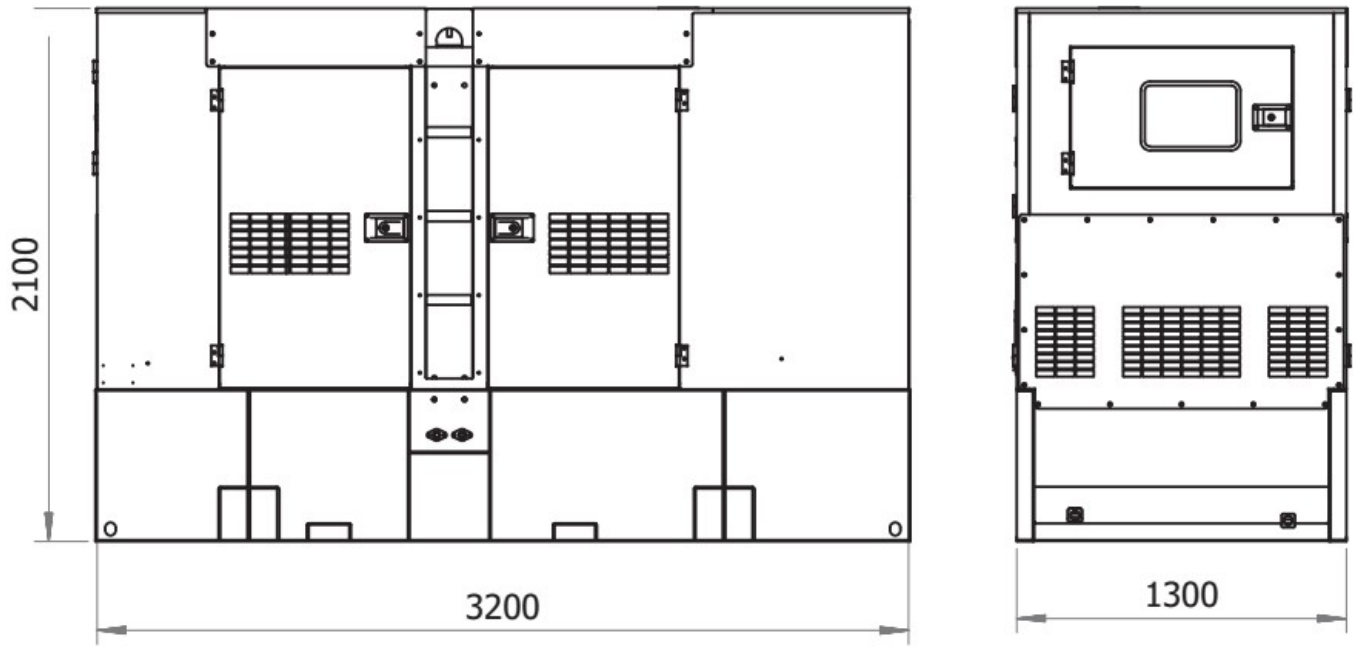
WARRANTY*

Generator

12 months from date of purchase or 1000 hours (whichever occurs first).

NOTICE

Enough Air flow is extremely important to Generator operation. Improper connection can cause electrocution and/or property damage. Do not connect to any electrical system except through an approved device. Specifications are subject to change without notice.



Weight	
Dry Weight	2,700 kg
Wet Weight	3,400 kg
Max. Lifting Point capacity	4,640 kg

