OFFICE OF GROUND WATER AND DRINKING WATER

WASHINGTON, D.C. 20460

SOLICITATION OF PUBLIC COMMENT FOR PROJECT-SPECIFIC BUILD AMERICA, BUY AMERICA NONAVAILABILITY WAIVER PROPOSAL

SUBJECT: **UNDER EVALUATION: Project-Specific Nonavailability Waiver of Build America, Buy America (BABA) Requirements for Thurston County Public Utility District, Washington, for Submersible Well Pumps, Submersible Pump Motors, and Motor Starter Control Boxes for the Lazy Acres 351 PFAS Remediation Project**

Introduction

This solicitation of public comment by the U.S. Environmental Protection Agency (EPA) is to evaluate a BABA waiver request submitted by an assistance recipient based on nonavailability of product(s) for a single project.

This solicitation of public comment does not represent a final agency decision. The purpose of this proposal is to inquire whether potential domestic products may be available that were not identified by the assistance recipient or through the EPA's domestic product research efforts, and whether other factors should be considered in the evaluation of a waiver.

The EPA has completed its market research efforts and was unable to identify BABA compliant products meeting the performance-based specifications, in sufficient and reasonably available quantities and of a satisfactory quality. The EPA makes every effort to locate domestic products through its waiver process, and the public comment period provides a meaningful opportunity to vet the Agency's interim research. In the EPA's experience, a viable domestic product is identified through public comment in many cases. Through this public comment period, commenters may provide information that indicates a waiver may not be needed. For example, if a specified item is found to be domestically available, the EPA would not issue a final waiver.

Public comments are requested for 15 days (specific dates noted on the EPA's website). Please submit comments to BABA-OW@epa.gov. Please include information in the subject of the email identifying it as a public comment on this waiver request, such as "Waiver Comment: Water System Upgrades Project" or similar.

Background

The Buy America Preference set forth in section 70914 of the BABA included in the Infrastructure Investment and Jobs Act (Pub. L. No. 117-58), requires all iron, steel,

manufactured products, and construction materials used for infrastructure projects under Federal financial assistance awards be produced in the U.S.

Under section 70914(b), the EPA may waive the application of the Buy America Preference, in any case in which it finds that: applying the domestic content procurement preference would be inconsistent with the public interest; types of iron, steel, manufactured products, or construction materials are not produced in the U.S. in sufficient and reasonably available quantities or of a satisfactory quality; or the inclusion of iron, steel, manufactured products, or construction materials produced in the U.S. will increase the cost of the overall project by more than 25 percent. All waivers must have a written explanation for the proposed determination; provide a period of not less than fifteen (15) calendar days for public comment on the proposed waiver; and submit the proposed waiver to the Office of Management and Budget's (OMB) Made in America Office for review to determine if the waiver is consistent with policy.

Summary

Proposed Waiver: The Environmental Protection Agency is soliciting comments regarding whether to issue a project waiver of the manufactured products requirements of section 70914 of the BABA included in the Infrastructure Investment and Jobs Act (Pub. L. No. 117-58), for submersible well pumps, submersible pump motors, and motor starter control boxes used in an infrastructure project funded through the Capitalization Grants for Drinking Water State Revolving Funds. The non-availability waiver is proposed for the Lazy Acres 351 Per- and Polyfluoroalkyl Substances (PFAS) Remediation Project.

Waiver Type: Nonavailability of a BABA-compliant product in sufficient and reasonably available quantities or of a satisfactory quality.

Waiver Level and Scope: Project level waiver for multiple products for a single project. No other project will utilize the waiver.

Proposed Waiver Description: Project-specific nonavailability waiver of BABA requirements to the Thurston County Public Utility District for the following products:

1. One (1) 3HP and one (1) 5HP submersible well pumps
2. One (1) 3HP and one (1) 5HP submersible pump motors
3. One (1) 3HP and one (1) 5HP motor starter control boxes

Project Summary: Lazy Acres 351 PFAS Remediation Project includes the construction of the ion-exchange (IX) system, modification and replacement of buildings containing treatment systems and well equipment, and modification and replacement of other associated infrastructure.

Length of the waiver: From the effective date of the final waiver until projection completion, which is estimated to be June 30, 2029.

Summary of Items Covered in the Proposed Waiver (including NAICS):
Submersible well pumps

- NAICS: 333996
- PSC: 4320

Submersible pump motors
- NAICS: 333996
- PSC: 4320

Motor starter control boxes
- NAICS: 333996
- PSC: 4320

No BABA-compliant products were identified by the assistance recipient, or through the EPA's market research completed in October 2025.

Description of Efforts Made to Avoid the Need for a Waiver
Both Thurston County Public Utility District and the EPA made every effort to obtain BABA-compliant submersible well pumps, submersible pump motors, and motor starter control boxes. This is both documented in the waiver request, and in the description of the EPA's extensive research efforts listed below.

Market research concluded on October 23, 2025. The market research process included thorough review of the waiver request submission, examination of domestic manufacturer catalogs and other technical data and marketing materials, personal communication with domestic manufacturers, inquiries of regional project officers, and outreach to contractors and engineers with expertise and familiarity with the project. During market research, the EPA contacted fourteen (14) manufacturers of submersible well pumps, submersible pump motors, and motor starter control boxes. The EPA identified these manufacturers in an attempt to find all potential BABA-compliant manufacturers of the above-mentioned product(s).

When contacted, two (2) manufacturers indicated potential to meet the specifications of the project while being BABA compliant. Through direct communication with the manufacturers, the assistance recipient verified to the EPA that one manufacturer could not provide BABA compliant products that meet the technical specifications for the project, and the other manufacturer informed them that their products could not meet the BABA requirements. Based on the technical evaluation conducted, the claim that BABA-compliant products that meet the project's specification are not available is supported.

Anticipated Impact if No Waiver is Issued
This is a PFAS remediation project. It consists of the construction of water treatment for the removal of PFAS, to comply with upcoming maximum contaminant levels regulation. The project needs submersible well pumps, submersible pump motors, and motor starter control boxes, which are critical to overcome additional headloss through the proposed PFAS treatment system.

Description of Award

Recipient Name and/or Unique Entity Identifier (UEI):
Recipient Name: Thurston County Public Utility District
Recipient Unique Entity Identifier: QYTKXNE588N9
Federal Financial Assistance Identification Number (FAIN): 4E-02J44601
Federal Financial Assistance Listing Name: 66.468 Drinking Water State Revolving Fund
Federal Financial Assistance Listing Number: 66.468
Federal Financial Assistance Funding amount: $515,602.00
Total Cost of Infrastructure Expenditures: $515,602.00

October 3, 2025

United States Environmental Protection Agency
Drinking Water State Revolving Fund
dwsrfwaiver@epa.gov.

RE: Project-Specific Nonavailability Waiver of Build America, Buy America (BABA) Act Requirements to Public Utility District No. 1 of Thurston County, Washington State, for 3 HP and 5 HP rated Submersible Well Pumps, Single Phase Submersible Motors, and Single Phase Motor Starter Control Boxes, for the Lazy Acres 351 PFAS Remediation project, DWL29526-0

In response to the above-referenced Lazy Acres 351 PFAS Remediation project (DWL29526-0), the Customer respectfully requests that this project qualifies for the Environmental Protection Agency's ("EPA") waiver of requirements under Section 70914 of the Build America, Buy America Act ("BABA"), Pub. L. 117-58. Under Section 70914, EPA has the authority to waive application of the Buy America preference if one or more of the following circumstances are met: (1) applying the domestic content procurement preference would be inconsistent with the public interest; (2) types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or (3) the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent.

As explained below in more detail, a waiver is appropriate in this case because the equipment is necessary to the operation of the PFAS remediation project, and no known domestic manufacturers produce alternatives that meet the technical specifications of the project.

Project Summary:

Construction of two new water treatment plants which utilize ion exchange for the removal of Perfluorooctane Sulfonate (PFOS), and Perfluorooctanoic Acid (PFOA) and other per- and polyfluoroalkyl substances (PFAS). Project elements include the construction of the ion-exchange (IX) system, modification and replacement of buildings housing treatment systems and well equipment, and modification and replacement of other associated infrastructure including electrical, controls and instrumentation, and replacement of well pumps and controls to accommodate the increase in head from the water treatment plant, along with other appurtenances.

Waiver Type:

Nonavailability of a domestic product in sufficient and reasonably available quantities or of a satisfactory quality.

Waiver Level and Scope:

Project level waiver for multiple products for a single project. No other project will utilize the waiver.

Waiver Description:

Project-specific nonavailability waiver of BABA requirements to the Public Utility District No. 1 of Thurston County, for 3 HP to 5 HP rated Submersible Well Pumps, Single Phase Submersible Motors, and Single-Phase Motor Starter Control Boxes, for the Lazy Acres 351 PFAS Remediation project, DWL29526-0. Specifically, the Customer is unable to source the following components per the requirements of BABA:

3 HP submersible well pumps: 4-inch diameter, NSF61 approved, 300-series stainless steel housing, design point 45 gpm at 225-ft head, per CSI Division 33 11 36 Submersible Centrifugal Well Pumps.

3 HP Submersible pump motors, 4-inch diameter, NSF61 approved, squirrel cage, induction, stainless steel housing, 230V, single-phase, 60 Hz, NEMA approved, 3-wire, minimum 1.15 service factor. Per CSI Division 33 11 36 Submersible Centrifugal Well Pumps.

3 HP Motor Starter Control Boxes, 230V, single-phase, 60 Hz, NEMA approved, IP42/NEMA 3R enclosure, starter capacitor for 3-wire motor, must be manufactured by the same manufacturer as the 3 HP submersible motor and approved by manufacturer for use with said motor. Per CSI Division 33 11 36 Submersible Centrifugal Well Pumps.

5 HP submersible well pumps: 4-inch diameter, NSF61 approved, 300-series stainless steel housing, design point 65 gpm at 225-ft head, per CSI Division 33 11 36 Submersible Centrifugal Well Pumps.

5 HP Submersible pump motors, 4-inch diameter, NSF61 approved, squirrel cage, induction, stainless steel housing, 230V, single-phase, 60 Hz, NEMA approved, 3-wire, minimum 1.15 service factor. Per CSI Division 33 11 36 Submersible Centrifugal Well Pumps.

5 HP Motor Starter Control Boxes, 230V, single-phase, 60 Hz, NEMA approved, IP42/NEMA 3R enclosure, starter capacitor for 3-wire motor, must be manufactured by the same manufacturer as the 5 HP submersible motor and approved by manufacturer for use with said motor. Per CSI Division 33 11 36 Submersible Centrifugal Well Pumps.

Description of Efforts Made to Avoid the Need for a Waiver

The Customer and Customer's Contractor have made every effort to identify domestically manufactured submersible well pumps, motors, and motor starter control boxes. Outreach was made to the following manufacturers and suppliers: [redacted]. Additional web-based market research failed to identify other potential domestic manufactures.

One source ([redacted]) was found for submersible pumps 1.5 HP and less, however not for the associated 1.5 HP and less submersible motors and starters; further, the domestic manufactured 1.5 HP pumps are significantly undersized for the needs of the project.

Domestic sources were identified for 6 inch and greater diameter submersible pumps, motors, and associated controllers, however the domestic manufactured pumps do not meet project specifications and cannot physically be installed in the Customer's wells.

The Customer's consulting engineer considered substitution of other types of equipment in place of Submersible Centrifugal Well Pumps but found that the above equipment is highly specialized for use in drinking water wells and also caries significant regulatory requirements, particularly the requirement for NSF 61 certification of all components in contact with drinking water. The consulting engineer determined that substitutions of other types of equipment meeting performance and regulatory requirements are not available.

Waiver Request:

Protecting communities across the nation from per- and polyfluoroalkyl substance (PFAS) pollution is a top priority. The EPA has established an MCL for PFAS, with a compliance deadline of 2031. As no domestic sources of said equipment are known and the specified submersible well pumping equipment is necessary to the operation of the PFAS remediation project, the Customer hereby requests Nonavailability Waiver for the above specified submersible well pumping equipment.

Thank you for your consideration.

Sincerely,

Douglas Piehl

Doug Piehl, P.E.
Thurston PUD, District Engineer
1230 Ruddell Rd SE
Lacey, WA 98503
(360) 357-8783
doug.piehl@thurstonpud.org

Exhibit A: Letter from Prime Contractor
Exhibit B: Scope Of Work
Exhibit C: Well Pump Specification

This waiver request was submitted to the EPA by the state of Washington and applies only to the project in the subject line. All supporting correspondence and/or documentation from contractors, suppliers or manufacturers included as a part of this waiver request was done so by the recipient to provide an appropriate level of detail and context for the submission. There may be documents with project diagrams, schedules, and supplier correspondence in formats that do not meet the Federal accessibility requirements for publication on the Agency's website. Hence, these exhibits have been omitted from this waiver publication. They are available upon request by emailing DWSRFWaiver@epa.gov.

Exhibit C

SECTION 33 21 30
SUBMERSIBLE WELL PUMPS

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

A. Work includes installation of well pumps and appurtenances

1. S01, Lazy Street Pumphouse: New 3 HP submersible well pump, Control Box, 2-in drop pipe, 1-in sounding tube, electrical cable, and appurtenances.

   a. Nominal pump set depth 47 feet

   b. Basis of [redacted], rated for nominal 40 gpm at 235 feet TDH

2. S03, Lazy Street Pumphouse: New 3 HP submersible well pump, Control Box, 2-in drop pipe,1-in sounding tube, electrical cable, and appurtenances.

   a. Nominal pump set depth 47 feet

   b. Basis of [redacted], rated for nominal 40 gpm at 235 feet TDH

3. S04, Foster Street Pumphouse: New 5 HP submersible well pump, Control Box, 2-in drop pipe, 1-in sounding tube, electrical cable, and appurtenances.

   a. Nominal pump set depth 55 feet

   b. Basis of [redacted], rated for nominal 54 gpm at 270 feet TDH.

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and Division 01 Specification Sections apply to this Section.

B. The following Sections related to this section:

1. Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL

2. Section 40 70 00 INSTRUMENTATION FOR PROCESS SYSTEMS

1.03 STANDARD SPECIFICATIONS

A. All work shall conform to the specifications listed in WAC 246-290 (Group A Public Water Supplies) and the latest editions of the following references: The Washington State Department of Health Water System Design Manual, Washington State Department of Transportation (WSDOT) standard specifications, APWA standard specifications, AWWA

standards, UPC, and the applicable county rules, regulations, and ordinances. The standards are listed in order of preference in the event that a conflict in standard arises.

B. Execute and inspect all electrical work in accordance with Underwriters Laboratories (UL), and all local and state codes, rules and regulations applicable to the trade affected as a minimum, but if the plans and/or specifications call for requirements that exceed these rules and regulations, the more stringent requirement shall be followed. Follow application sections and requirements and testing procedures of NFPA, IEEE, NEMA, CBM, ANSI, NECA, ICEA, and NETA.

C. Standard Specifications apply only to performance and materials and how they are to be incorporated into the work. Legal/contractual relationship sections and the measurement and payment sections do not apply to this document.

1.04 QUALITY ASSURANCE

A. Contractor is responsible for all effort necessary to complete work in accordance with drawings and standards, until certified by the engineer and state and local agencies for correct installation and satisfactory operation of all equipment and processes as a whole.

B. Any worker on any part of the work shall be competent to perform the task to which they are assigned. Supervision for each crew shall be done by a foreman or superintendent that is capable of directing the work. Conditions which require the constant presence of the Engineer to assure the quality of the work will not be tolerated. Any worker who does not produce quality workmanship through lack of cooperation or incompetence shall be removed from the job.

1.05 SUBMITTALS

A. Product Data: Manufacturer's catalog cuts, specifications, or data sheets shall be clearly marked to delineate the options or styles to be furnished and pumphouse location(s) to be at which to be installed. Submit manufacturer's product data, standard drawings, and catalog cuts for the following:

1. Submersible Well Pumps
2. Submersible Pump Motors
3. Drives and Starters
4. All miscellaneous components and appurtenances

A. Approval by the Engineer under this section is based on a general review only and in no way constitutes final approval of equipment, nor waives any requirement of these specifications, nor relieves the Contractor or Manufacturer of any degree of responsibility for compliance with specific requirements of other portions of these specifications.

1.06 DELIVERY, STORAGE, AND HANDLING

A. All equipment and materials shall be new and shall bear the manufacturers name and trade name. In cases where the standard has been established for the particular material, the material shall be so labeled. The equipment to be furnished shall essentially be the standard product of a manufacturer regularly engaged in the production of the required type of equipment for this type of work and shall be the manufacturers latest approved design. Equipment and material shall be suitably delivered and stored and shall be readily accessible for inspection. All items subject to moisture damage shall be stored in dry spaces. All material and equipment shall be protected against dirt, dust, water and chemical or mechanical injury, vandalism, and theft. Materials shall not be dropped, subjected to heavy impacts, bent, or subjected to abrasion. Any physical damage to the components shall be repaired or replaced by the contractor at the contractor's expense.

B. Contact with ground shall be minimalized for all components to be installed in the well. Under no circumstances shall muddy or dirty components be installed in the well. If a component does become muddy or otherwise soiled, it shall be wiped down with a wet towel and soaked in a 50-ppm bleach solution until all visible contamination is removed.

C. The pumps and drop pipe assembly shall be property supported and protected from falling at all times.

D. Contractor shall be liable for any damage to the well as a result of installation or construction activities.

1.07 WARRANTIES

A. All guarantees implied or stated by the component manufacturer shall be passed in full force to the owner.

1.08 COORDINATION

A. Coordinate schedule and sequence of work with other trades where conflict or interferences occur. Coordinate deliveries of materials and equipment to minimize construction site congestion.

B. Coordinate with PUD to avoid water outages or restrictions; contractor shall develop and provide to the PUD a schedule of activities which may interrupt well production; contractor shall notify PUD a minimum 3 business days prior to any interruption to well production or change in schedule.

1.09 CLEANUP

A. After completion of construction, the Contractor shall remove all surplus material, tools, and temporary structures from the site. All rubbish shall be removed and the construction site left in a clean, satisfactory condition.

PART 2 – PRODUCTS

2.01 GENERAL

A. All system components in substantial contact with water must be NSF 61 approved for drinking water. Chemical additives must be NSF 60 approved. Electrical components must be U.L. listed.

2.02 SUBMERSIBLE WELL PUMP

A. All components and fittings exposed to the well water shall be 300 series stainless steel or composite unless otherwise approved.

B. Submersible well pumps shall be [redacted], or equivalent approved by Engineer. Submersible Pumps shall have the following characteristics and capacities:

1. Submersible centrifugal well pumps not greater than 6 inches in diameter.

2. NSF61 Approved

3. Impellers shall be AISI 304 stainless steel or engineered polymer, accurately machined, statically and dynamically balanced, and keyed to the pump shaft.

4. Shaft shall be designed to carry the maximum torque in both directions, and the starting torque from standstill to continuous operation. Shaft shall be one piece from motor coupling to discharge and shall be sealed by means of a mechanical seal.

5. Bearings shall be bronze or engineered polymer and shall be lubricated by the pumped water.

6. Well pump shall have integral check valve.

C. Submersible motors shall have the following characteristics and capacities:

1. Pump motors shall be [redacted] or an equivalent model as approved by the engineer.

2. Motors shall be NSF 61 Approved

3. Motor shall be squirrel cage, induction type; designed for water filling, water cooling, and water lubrication. Motor shall have ample capacity to permit pump to operate for short periods of time with the discharge valve closed. The motor shall not be overloaded at any point of operation on the pump curve and shall have full thrust capacity regardless of direction of rotation. Service factor shall be 1.15.

a. Stator Windings: Windings shall be directly submersible in water. Insulation shall consist of waterproof, non-aging material of high dielectric strength.

b. Rotor shall be statically and dynamically balanced and fitted with stainless steel sleeves.

c. A minimum of four guide bearings shall support the rotor. Thrust bearings shall be two-piece stainless steel and graphite construction and shall be self-aligning. Motor shall be protected from upthrust. The motor thrust bearing shall be sized to carry the weight of all rotating parts plus the hydraulic thrust of the pump regardless of the direction of rotation. The thrust bearings shall have sufficient capacity to permit the pump to operate momentarily with the discharge valve closed.

d. Shaft seal shall be mechanical type. Original water filling shall be retained by an expansion bellows in the motor base.

e. All fastenings exposed to pumped water shall be series 400 stainless steel.

f. Motor shall be suitable for 230V, 3 phase, 60 Hz.

4. Motor shall confirm to the latest National Electrical Manufacturer's Association (NEMA) Specifications for submersible motors.

5. The motor shall be capable of continuous operation underwater at the conditions specified.

6. Motor shall have built in thermal overload protection

2.03 SUBMERSIBLE CABLE

A. Submersible cable shall be sized to limit the voltage drop to 5% at the motor's terminals from the subpanel breaker. The wire shall be three conductor with ground PVC flat insulated submersible pump cable made from soft-drawn bunch-stranded 100% copper as made [redacted] or equivalent.

B. Each conductor is jacketed with water resistant 600V PVC insulation. which is drawn tightly into the conductor interstices to prevent moisture seepage between the insulation and the conductor. The conductors are then laid parallel and a 600VPVC jacket is pressure extruded to form the flat parallel cable construction

2.04 DROP PIPE

A. Drop pipe shall be threaded and coupled and shall conform to American standard tapered pipe thread specifications. The pipe shall be sized per the specification. Drop pipe shall be Schedule 40 galvanized iron pipe; schedule 120 PVC may be approved on a case by case basis for pumps 2 HP and lower. Pipe shall be in standard 21 foot lengths with adjustment in the final piece. Each section of drop pipe shall be threaded and coupled.

2.05 SOUNDING TUBE

A. Sounding tube for pressure transducer shall be 1" SCH 40 or CL.200 PVC.

B. A level transducer conduit shall extend from just below the point of exiting the well casing to the depth specified.

2.06 CHECK VALVES

A. 175 psi working pressure, with opening pressure of 0.25 – 0.50 psi.

B. Lead free bronze per ASTM B-584 or ductile iron conforming to ASTM A-536,

2.07 VARIABLE FREQUENCY DRIVES

A. Where specified for installation, Variable frequency drive (VFD) to be compatible with specified pumps and shall have the following characteristics and capacities:

1. Integral PID control

2. IP20 enclosure rating

3. VFD shall include pressure transducer and appurtenances.

4. VFD shall have 4-20 mA input to receive water line pressure level.

5. Lag VFD shall be capable of time delay start after lead VFD is called.

6. VFD shall have pump and motor protections (ground fault, motor overload, pump no-flow) built-in.

7. Equipped with a minimum of 2 each analog and 1 each digital inputs and outputs.

B. VFDs shall be the following or Engineer Approved equal:

1. [redacted]

2.08 PUMP STARTERS

A. Where Variable Frequency Drives are not specified for pump operation, single phase submersible pumps shall be equipped with starter boxes approved for use with the specified submersible motor.

PART 3 – EXECUTION

3.01 GENERAL INSTALLATION

A. All applicable safety equipment and practices per state and local requirements shall be followed.

B. All materials and equipment to be installed in a neat, workmanlike manner and shall result in an installation consistent with the best practices of trades.

C. All equipment specified shall be installed in accordance with the manufacturer's recommendations and construction drawings. Conflicts of information shall be called to the attention of the certifying engineer for their clarification.

D. Work is shown only in diagrammatic form and does not necessarily indicate every required fitting, box, conduit, etc. The contractor shall provide and be responsible for fittings, appurtenances, and miscellaneous materials required to complete the job. Omission of fittings, appurtenances, and miscellaneous materials from the specifications shall not constitute a change order or additional charge. Change included in the base bid shall be interpreted as including any change of up to ten feet from the locations indicated on the drawings. Verify all dimensions by field measurements.

E. Contact with the ground shall be minimized for all components to be installed in the well. Under no circumstances shall muddy or dirty components be installed in the well. If a component does become muddy or otherwise soiled, it shall be wiped down with a wet towel soaked in a 50 ppm bleach solution until all visible contamination is removed.

F. The pump and drop pipe assembly shall be properly supported and protected from falling at all times. All applicable safely equipment and practices shall be used.

G. The well shall be disinfected, flushed, and tested and the installation is complete. Disinfection shall be with chlorine tablets such that the concentration of free chlorine is at least 50 ppm for a minimum of one hour. The well shall then be flushed until the chlorine concentration is non-detect. A coliform sample shall be taken a minimum of 24 hours after the chlorine has been completely flushed from the well.

H. Follow manufacturers' directions and recommendations in all cases where the manufacturers of articles used on this Contract furnish directions covering points not shown on the Drawings or covered in these Specifications.

I. All wiring and electrical components shall be installed per applicable codes and standards and shall be properly marked and secured.

3.02 WELL PUMPS AND MOTORS

A. All components and fittings exposed to the well water shall be stainless steel or composite unless otherwise approved.

B. Well pumps shall be installed per Thurston PUD Standard Drawings.

3.03 SUBMERSIBLE CABLE

A. Install per manufacturer's specifications.

B. The wiring is to be fastened to the drop pipe a minimum of every 10 feet such that the wire is held taut and remaining against the drop pipe at all points.

C. The cable shall include a minimum of five feet extra submersible cable, which shall be neatly folded and taped to the drop pipe inside the top of the well casing. All cable fittings

and terminals shall be watertight at the pressure encountered in the applications. No splices between the pump and wellhead shall be allowed unless a longer cable is not commercially available. Splices shall be made with heavy walled adhesive lined flexible cross-linked polyolefin heat shrinkable tubing suitable for applications of up to 600V. The tubing will have a minimum of 3:1 shrink ratio and will shrink unrestricted to 33% of its original diameter.

D. Splices shall be kept to a minimum with no spices between the pump and wellhead, unless a longer cable is not commercially available. Splices shall be made with epoxy filled heat-shrink tubing. All cable fittings and terminals shall be water tight at the pressure encountered in the application.

3.04 DROP PIPE

A. Drop pipe threads shall be treated with joint compound and tightened per AWWA recommendations for the applicable pipe diameter.

B. Torque arrestor shall be provided as recommended by the pump manufacturer or at 100-foot maximum spacing.

3.05 SOUNDING TUBE

A. The sounding tubes are to be fastened to the drop pipe a minimum of every ten feet such that they are held taut and remain against the drop pipe at all points.

3.06 CHECK VALVES

A. Check valves are to be installed “down hole” on the rise pipe as per the specifications. The first check valve shall be located within 25 feet of the pump. Subsequent check valves shall be installed at a minimum of every 100 feet. Valves are to be installed without any chattering.

3.07 PITLESS ADAPTOR

A. Where pumps are set on pitless adaptors, existing pitless adaptors may be reused unless otherwise specified. For all new pitless installations, pitless adaptor shall be at a minimum of 30-inches below grade. A check valve shall be installed immediately outside the casing. The pitless adaptor shall conform to PAS-1 standards and be capable of supporting the full weight of the pumps and drop pipe assembly at full draw-down.

B. Any disturbance of the surface seal shall be backfilled and replaced with bentonite clay.

3.08 STARTERS, DRIVES, AND CONTROLS

A. Install per manufacturer’s specifications with required appurtenances.

B. Equipment shall be securely mounted to the wall in the location shown on drawing with easy access to the user control panel.

C. Drives and controls shall be set/programmed according to opperating parameters defined in drawings and specifications.

3.09 COMMISSIONING

A. Pump shall be verified to produce within 5% of rated nominal flow at specified head.

B. A negative coliform bacteria sample shall be obtained greater than 24 hours but less than 7 days following disinfection of well and pumping until chlorine residual is reduced to 0.00 mg/L.

C. Operation of all well pump controls shall be verified according to controls design.

END OF SECTION