STATE OF WASHINGTON
DEPARTMENT OF HEALTH
NORTHWEST DRINKING WATER REGIONAL OPERATIONS
PO BOX 47800, M/S: K17-12, OLYMPIA WA 98504

August 31, 2023

Scatchet Head Water District
C/O Sandra Bodamer
sandra@kingwater.com

Subject: Scatchet Head Water District, ID #76470
Island County
Arsenic Treatment System and Water System Improvements
Submittal #23-0604

Dear Mrs. Bodamer:

The referenced submittal received in this office on June 20, 2023, along with supplemental information received on August 3, 2023 has been reviewed and, in accordance with the provisions of WAC 246-290, is hereby **APPROVED**. The approval issued herein is only valid as it relates to current standards outlined in WAC 246-290, effective March 9, 2022. Future revisions in the rules may be more stringent and require facility modifications or corrective action.

Design Summary:
The design includes the replacement of the existing well pumps for well #2 and #3 with a 30-hp and 20-hp Grundfos pump, respectively. VFDs and electrical improvements will be installed at the existing pump house building.

The treatment design includes an ATEC oxidation/filtration system to remove iron, manganese, and arsenic from both wells to below the SMCL and MCL, respectively. Raw water data for each source is below.

Analyte	Concentration (mg/L)	
	Well #2 (S02)	Well #3 (S03)
Iron	0.253 ppm	0.774 ppm
Manganese	0.237 ppm	0.691 ppm
Arsenic	6.5 ppb	16.1 ppb

The treatment consists of using potassium permanganate and sodium hypochlorite as an oxidant and ferric chloride as a coagulant. The addition of sodium hypochlorite is also for disinfection purposes and the system intends to maintain a detectable disinfection residual in distribution. Potassium permanganate, sodium hypochlorite, and ferric injection occurs first then water will flow through a 324-gal contact tank allowing for approximately 1.5 min of contact time. Following the contact tank and water will flow through five (5) 42” diameter filters at a loading rate of 4.47 gpm/sf (maximum flow rate of 215 gpm) if both wells operate simultaneously. The normal mode of operation will consist of each well alternating resulting in a loading rate of 2.6 gpm/sf. Each filter contains 38” of Pyrolox Advantage Filter Media. The target ferric, permanganate, and chlorine doses are 1.50 mg/L, 0.10 mg/L, and 5.95 mg/L, respectively. Dosing may be adjusted depending on full scale treatment performance. Each filter will backwash after treating 154,800 gallons, or after 12 hours of run time at a rate of 116 gpm for 5 min, for each filter. The improvements to the treatment process also include backwash pond improvements to regain original infiltration capacity.

Improvements to the distribution system include replacing the existing 2", 4", and 6" AC main with 6" and 8" PVC and HDPE to support fire flows and replacing affected service meters and other appurtenacnes including hydrants and air vacuum/relief valves. The distribution system will be looped at two separate locations. The PRV vault will be replaced to maintain the 285-ft hydraulic grade line of the intermediate pressure zone.

This water system remains approved to serve 597 Equivalent Residential Units.

As required in WAC 246-290-120(5) within sixty days following the completion of and prior to use of the above project or portions thereof, the enclosed construction report must be completed by a professional engineer and returned to this Department.

WAC 246-290-120(8) provides that if construction of the project has not been started within two years of the date of this letter, this approval will become null and void unless you take action at that time to arrange for an extension of the approval in the manner prescribed.

The department's approval of this project does not confer or guarantee any right to a specific quantity of water. The approved number of service connections is based on your representation of available water quantity. If the Washington Department of Ecology, a local planning agency, or other authority responsible for determining water rights and water system adequacy determines that you have use of less water than you represented, the number of approved connections may be reduced commensurate with the actual amount of water and your legal right to use it.

Nothing in this approval shall be construed as satisfying other applicable federal, state, or local statutes, ordinances, and regulations.

Please feel free to contact Alexis Medina or me at alexis.medina@doh.wa.gov or john.ryding@doh.wa.gov if we can help answer any questions.

Sincerely,

John Ryding, P.E.
Assistant Regional Manager
NWRO – Office of Drinking Water
Washington State Department of Health
253-395-6757

Enclosures – Construction Completion Report

ecc: Dave Mullins, Scatchet Head WD Commissioner, @ dave.mullins10@gmail.com
Aneta Hupfauer, ICHD
Alexis Medina, DOH
Curt Schoenfelder, P.E., Wilson Engineering

CONSTRUCTION COMPLETION REPORT FORM

In accordance with WAC 246-290-120 (5), a ***Construction Completion Report*** is required for all approved construction projects. Purveyors **must** submit a Construction Completion Report to the Office of Drinking Water (ODW) within sixty (60) days of completion and before use of any water system facility. This includes any source, water quality treatment, storage tanks, booster pump facilities, and distribution projects.

Please type or print legibly in ink:

Scatchet Head Water District
Name of Water System

DOH System ID No.: **76470**

Sandra Bodamer
Name of Purveyor (Owner or System Contact)

DOH Project No.: **23-0604** (if applicable)

sandra@kingwater.com
Mailing Address

Date Construction Documents Approved by DOH **8/30/2023** (If applicable)

City State Zip

PROJECT NAME AND DESCRIPTIVE TITLE: Arsenic Treatment & Water System Improvements

***CHECK ONE*:** ☐ Entire Project Completed. ☐ Description of Portions Completed.

PROFESSIONAL ENGINEER'S ACKNOWLEDGMENT *(Complete items below–Attach additional sheets as needed)*

The undersigned professional engineer (PE), or their authorized agent, has inspected the above-described project which, as to layout, size and type of pipe, valves and materials, reservoir and other designed physical facilities, has been constructed and is substantially completed in accordance with construction documents reviewed by the purveyor's engineer or approved by the DOH. In the opinion of the undersigned engineer, the installation, physical testing procedures, water quality tests, and disinfection practices were carried out in accordance with state regulations and principles of standard engineering practice.

I have reviewed the disinfection procedures ☐, pressure test results ☐, and results of the bacteriological test(s) ☐ for this project and certify that they comply with the requirements of the construction standards/specifications approved by the DOH. (Check all boxes that apply that are consistent with the nature of the project.)

This project changes the physical capacity of the system to serve consumers. The system is now able to serve _____ equivalent residential units (ERUs.) ☐ Not applicable

P.E.'s Seal

_____
Date Signed

_____
Name of Engineering Firm

_____
Name of PE Acknowledging Construction

_____
Mailing Address

_____
City State Zip

_____
Engineer's Signature

State/Federal Funding Type (if any) _____

Please return completed form to DOH regional office checked below.

☐ **NWRO Drinking Water**
Department of Health
20435 72nd Ave. S, Ste 200
Kent, WA 98032-2358
(253) 395-6750

☐ **SWRO Drinking Water**
Department of Health
PO Box 47823
Olympia, WA 98504-7823
(360) 236-3030

☐ **ERO Drinking Water**
Department of Health
1500 W. Fourth Ave, Suite 305
Spokane, WA 99201
(509) 456-3115

For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TTY 1-800-833-6388).

The purveyor must attach a completed Water Facilities Inventory (WFI) form in accordance with WAC 246-290-120(6), if applicable. Contact the regional office in your area for WFI forms or additional Construction Completion Report forms.