



STATE OF WASHINGTON
FINAL
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

WR Doc ID
6806167

PRIORITY DATE	WATER RIGHT APPLICATION NUMBER
May 29, 2024	G2-30885

NAME AND MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
Ocosta School District No. 172 2580 South Montesano Street Westport, WA 98595	

Total Rate and Quantity Authorized for Withdrawal	
WITHDRAWAL RATE (gpm)	ANNUAL QUANTITY (ac-ft/yr)
600	968

gpm = Gallons per Minute; ac-ft/yr = Acre-feet per Year

Purpose(s)			
PURPOSE	WITHDRAWAL RATE (gpm)	ANNUAL QUANTITY (ac-ft/yr)	PERIOD OF USE
Heat Exchange/Industrial	600	968	01/01–12/31

SPECIAL REMARKS: The appropriation will be for **nonconsumptive use** in an open-loop groundwater source heat pump (GSHP) system.

Source Location			
COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
Grays Harbor	Groundwater	N/A	22 – Lower Chehalis

SOURCE NAME	PARCEL	WELL TAG	TOWNSHIP	RANGE	SECTION	QQ Q	LATITUDE	LONGITUDE
RW-1	161119220080	BPF139	16N	11W	19	NW NW	46.863770	-124.100303
RW-2	161119220080	BQC055	16N	11W	19	NW NW	46.864597	-124.099132
SW-1	161119220080	BQC054	16N	11W	19	NW NW	46.864733	-124.100618

QQ Q = Quarter Quarter

Datum: NAD83/WGS84

Place of Use
PARCEL(S)
161119220080

LEGAL DESCRIPTION OF THE AUTHORIZED PLACE OF USE

Parcel ID 161119220080 of Grays Harbor, Washington, situated within the NW ¼ of Section 19, T. 16 N., R. 11 W.W.M. County legal: A portion of the W ½ of the NW ¼ of Section 19, Township 16 North, Range 11 W.W.M; Including Tax Lot 10A 6, 19 & S 660' of W 900' of Lot 1 & S 660' of NW NE E of RD.

Proposed Works

The system is composed of three wells: one supply well (SW-1: 10 inches by 276 feet deep) and two return wells (RW-1: 8 inches by 215 feet deep and RW-2: 8 inches by 258 feet deep).

Development Schedule

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	PUT WATER TO FULL USE BY THIS DATE
Started	July 1, 2026	July 1, 2030

Attention: These dates represent deadlines that must be met or risk cancellation of this authorization. Submittal of formal documentation for each stage is required. Extensions may be requested.

Measurement of Water Use

HOW OFTEN MUST WATER USE BE MEASURED AND RECORDED?	Weekly
HOW OFTEN MUST WATER USE DATA BE REPORTED TO ECOLOGY?	Upon request by Ecology
WHAT QUANTITY SHOULD BE REPORTED?	Total annual quantity in acre-feet
WHAT RATE SHOULD BE REPORTED?	Annual peak rate of withdrawal in gpm

Provisions**Measurements, Monitoring, Metering, and Reporting**

An approved measuring device must be installed and maintained for each of the sources identified by this water right in accordance with the rule “Requirements for Measuring and Reporting Water Use”, chapter 173-173 WAC, which describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology (Ecology) for modifications to some of the requirements.

Recorded water use data shall be submitted upon request to Ecology.

Proof of Appropriation

Consistent with the development schedule given in this report (unless extended by Ecology), the water right holder must file a Notice of Proof of Appropriation (PA) of Water with Ecology. The PA documents the project is complete and all the water needed has been put to full beneficial use (perfected). In order to verify the extent of water use under this permit, an inspection of water use is typically required, known as a “proof exam.” After filing the PA, the water right holder’s next step is to hire a Certified Water Rights Examiner (CWRE) to conduct this proof exam. A list of CWREs is provided to the water right holder upon filing the PA with Ecology. The final water right document, a water right certificate, then may issue based upon the findings of the CWRE. Statutory county and state filing fees may apply prior to certificate issuance.

Schedule and Inspections

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

Findings of Fact and Order

Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated.

Therefore, I ORDER **APPROVAL** of Application No. G2-30885, subject to existing rights and the provisions specified above.

Your Right To Appeal

You have a right to appeal this decision to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do all of the following within 30 days of the date of receipt of this decision:

- File your notice of appeal and a copy of this decision with the PCHB (see filing information below). "Filing" means actual receipt by the PCHB during regular business hours as defined in WAC 371-08-305 and -335. "Notice of appeal" is defined in WAC 371-08-340.
- Serve a copy of your notice of appeal and this decision on the Department of Ecology by mail, in person, or by email (see addresses below).

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

Filing An Appeal

Filing with the PCHB

For the most current information regarding filing with the PCHB, visit: <https://eluhho.wa.gov/> or call: 360-664-9160.

Service on Ecology

Street Address:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

Mailing Address:

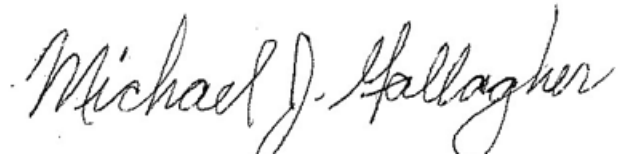
Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

E-mail Address:

ecologyappeals@ecy.wa.gov

Authorizing Signature

Signed at Olympia, Washington, this 21st day of January 2026.

A handwritten signature in black ink that reads "Michael J. Gallagher". The signature is written in a cursive style with a large initial "M".

Mike Gallagher, Section Manager
Water Resources Program/Southwest Regional Office
Department of Ecology

INVESTIGATOR'S REPORT

Water Right Application No.: G2-30885 (Ocosta School District)

Investigator: Jill Van Hulle and Isabellah von Trapp, Aspect Consulting

Reviewed by: Mary Jones

BACKGROUND

This report serves as the written findings of fact concerning Water Right Application Number G2-30885.

On May 29, 2024, Ocosta School District (Ocosta) filed an application for Water Right Permit G2-30885 with the Washington State Department of Ecology (Ecology) requesting an appropriation of public groundwater. The application requested an instantaneous withdrawal (Qi) of 600 gallons per minute (gpm) for heating and cooling purposes. Water will be used for noncontact heating and cooling in an open-loop ground source heat pump (GSHP). The use of water for heat exchange has a high public interest value and is considered an element of the governors' mandate for state facilities to reduce their carbon emissions.

The attributes of the application are summarized below in Table 1.

Table 1. Summary of Requested Water Right

Applicant Name	Ocosta School District
Priority Date	May 29, 2024
County	Grays Harbor
WRIA	22
Water Source	Groundwater
Place of Use	Parcel ID 161119220080 of Grays Harbor, Washington, situated within the NW ¼ of Section 19, T. 16 N., R. 11 W.W.M.

Purpose	Instantaneous Rate (gpm)	Annual Quantity (ac-ft/yr)	Begin Season	End Season
Heat Exchange/Industrial	600	967.8	01/01	12/31

Source Name	Parcel	Well Tag	Township	Range	Section	QQ Q	Latitude	Longitude
RW-1	161119220080	BPF139	16N	11W	19	NW NW	46.863770	-124.100303
RW-2	161119220080	BQC055	16N	11W	19	NW NW	46.864597	-124.099132
SW-1	161119220080	BQC054	16N	11W	19	NW NW	46.864733	-124.100618

WRIA = Water Resource Inventory Area; gpm = Gallons per Minute; ac-ft/yr = Acre-feet per Year; QQ Q = Quarter Quarter Datum: NAD83/WGS84

Cost Reimbursement

This application is being processed under a cost reimbursement agreement between the applicant and Ecology. This report has been prepared by Aspect Consulting (Aspect) and reviewed by Jeff Marti with the Department of Ecology's Water Resources Program.

Priority Processing

This application meets the criteria for priority processing under WAC 173-152-050. Based on the guidance provided in *POL 1021: Priority Processing – Water Budget Neutral Projects*, this project is eligible for priority processing as the proposed use is nonconsumptive and, if approved, would substantially enhance or protect the quality of the natural environment. Nonconsumptive use is considered water use where there is no diminishment of the source.

Ecology’s Policy document *POL-2020: Priority Processing of Heat Pump Applications* provides that using water as a heat source or to dissipate heat is a beneficial use of water. Also, while applications for heat pump water use are assessed in the same manner as other water right requests, Ecology gives priority processing to applications that qualify under WAC 173-152-050(2).

INVESTIGATION

In considering this application, Aspect reviewed available documents pertaining to the application’s site conditions, projected system demand, and the potential effect on existing water right holders, and established minimum instream flows. This review included information submitted with the application, including aquifer characterization reports, well construction and testing reports, and pertinent Ecology records (e.g., well logs and water right records). The review also included reports from multiple investigations characterizing the hydrogeology of the region.

Site Description

The proposed points of withdrawal and place of use are located west of Grays Harbor and east of the Pacific Ocean in the Lower Chehalis watershed Water Resources Inventory Area (WRIA) 22 in Grays Harbor County.

The project site is situated immediately south of West Port on the Point Chehalis Peninsula and consists of a single parcel (Grays Harbor County Parcel ID 161119220080) that encompasses the Ocosta Elementary School and Ocosta Junior/Senior High School campuses. The site spans approximately 36 relatively flat acres that range in elevation from about 10 to 30 feet above sea level, and consists of paved parking lots, school facilities, sport facilities, green space, and undeveloped forestland.

Aspect visited the site on several occasions in 2024. Aspect was present for the site inspections, utility locating, and well drilling and testing oversight.

Feasibility Study

In fall 2023, Aspect conducted a feasibility study for the Ocosta GSHP project. The study documented the initial hydrogeologic feasibility evaluation of a closed- and open-loop wellfield. The analysis found that the hydrogeologic conditions were likely amenable to the construction of either an open- or closed-loop system at the site. Extensive subsurface characterization had been completed at adjacent areas, and the existing testing of the site’s irrigation well indicated that a high-yield aquifer is present at depth within the footprint of the project site. The results of Aspect’s findings were summarized in a memo dated November 16, 2023.

Proposed Use and Basis of Water Demand

Water System Description

The proposed use is for an open-loop GSHP wellfield, in which water is withdrawn from a conventional groundwater well, passed through a closed-pipe heat exchanger/condenser, then returned to the aquifer through two separate return wells. Ground source heat transfer is obtained directly from ambient groundwater temperature, and no evaporation will occur within the system.

Three wells compose the system: one supply well (SW-1: 10 inches by 276 feet deep) and two return wells (RW-1: 8 inches by 215 feet deep and RW-2: 8 inches by 258 feet deep). Each well was modified with a pitless adapter to accommodate subgrade GSHP conveyance piping. Two 1-inch PVC sounding tubes were installed in each well to allow for manual water level measurements and installation of automated pressure transducers and temperature sensors. Each return well is equipped with 20 feet of drop pipe installed below the static water level in the wells so conveyance lines will remain pressurized throughout injection to avoid air entrainment.

SW-1 is equipped with a 4-inch galvanized pump column to an approximate depth of 245 feet below ground surface (bgs) from which the pump and submersible motor (approximately 6.5 feet long) are suspended. RW-1 is equipped with a 40-horsepower (HP) three-phase submersible motor, a 40-HP stainless-steel submersible pump, and a variable frequency drive (VFD).

The construction details of the supply well (SW-1) and the two return wells (RW-1 and RW-2) are summarized in Table 2.

Table 2. Well Construction Details

Well	Tag	Diameter & Depth	Completed Geologic Unit
RW-1	BPF139	8 inches x 215 feet	Satsop formation (Qs)
RW-2	BQC055	8 inches x 258 feet	Satsop formation (Qs)
SW-1	BQC054	10 inches x 276 feet	Satsop formation (Qs)

Water Demand

The proposed water demand is calculated using a flow rate of 600 gpm, the requested Q_i under the subject application, pumped continuously for year-round use (967.8-acre feet, rounded to 968-acre feet). The use is fully nonconsumptive with all water extracted being returned to the same aquifer via return wells that have been located within close proximity to the supply well.

No other uses are being requested, as drinking water is provided by the Westport Water District, and landscape/irrigation water is provided through the school’s existing Water Right Certificate G2-27120C.

Hydrogeologic Evaluation

Hydrogeologic Units

Based on geologic maps (Walsh et al., 1987; Logan, 2003), hydrogeologic reports from the area (Eddy, 1966; Consoer, 1994), and the well log from the existing irrigation well on-site, geologic units across the site are described below in order of youngest (shallowest) to oldest.

- **Alluvium (Qa):** On the eastern side of Point Chehalis, a thin margin of fine-grained alluvial deposits overlies beach sediments. This is a thin deposit of silty sand, deposited by low energy slack water in the South Bay of Grays Harbor. These sediments are mapped at the surface on the eastern portion of the Site, close to the South Bay.
- **Beach deposits (Qb):** These are surface sands deposited by active tidal beach and sand dunes. Around the site, beach deposits include coarser sand and gravel at depth that were deposited by longshore currents. These sediments form a relatively shallow unconfined aquifer tapped by the City of Westport North and South Wellfields, due to its abundant water supply and good water

quality. The existing log for the irrigation well at the site suggests this unit may extend to about 100 feet bgs.

- **Satsop formation (Qs):** Underlying the beach deposits in the project area, the Satsop formation is composed of semiconsolidated clay beds with interbedded sand and gravel sequences. This unit is targeted for water supply where local lenses of sand and gravel are present but may be less desirable for drinking water due to local iron and manganese issues. Ocosta's existing irrigation well taps this unit for production, and existing test data suggest a high-water yield can be obtained from this unit at the site.

The high-yielding sand and gravel of the Satsop formation is targeted for production by the open-loop GSHP system. This unit is a prominent, regional, confined aquifer across the region.

Groundwater Recharge and Flow Direction

The project site is located on a narrow peninsula known as Point Chehalis. Groundwater recharge primarily results from direct infiltration of precipitation, and the site area receives a large amount of annual precipitation (52.8 inches of rain per year; Consoer, 1994). This recharge creates a gradient across the peninsula that causes groundwater to discharge either to the Pacific Ocean or Grays Harbor, depending on location. A conceptual hydrogeologic model used (Consoer, 1994) to assist with development of a numerical model for city water supply planning suggests that groundwater within the beach deposits and Satsop aquifers beneath the site is generally expected to flow east toward Grays Harbor.

Well Drilling, Testing, and Analysis

The first well in this system, Return Well #1 (RW-1) was constructed and tested in July 2024. The well is 8 inches in diameter and completed to a depth of 215 feet bgs, with a 15-foot-length of 8-inch-telescoping (8T) 30-slot stainless steel well screen installed from 197 to 212 feet bgs. After construction, the well was sufficiently developed by surging and bailing techniques to remove fine-grained material from the formation adjacent to the well screen. A short-term step-rate injection test was conducted for 4 hours, during which the flow rate into the well was incrementally increased to evaluate well efficiency (sufficient well development and appropriate screen placement/slot size), a long-term sustainable yield, and the well's ability to function as a return well.

A conservative analysis of the aquifer response at RW-1 suggests an aquifer transmissivity value of approximately 2,400 square feet per day (ft²/day). This corresponds to a transmissivity value approximately 50 percent lower than was assumed during the feasibility assessment (Aspect, 2023) and was carried forward during modeling and design to provide conservatism during wellfield design and capacity planning.

Based on the hydrogeologic parameters estimated from the pumping test, hydraulic¹ and thermal² models were created to assess maximum flow rates, thermal migration, and the long-term effect of thermal conditions to assist with wellfield design. Modeling efforts suggested that flows needed to meet peak heating and cooling demands were achievable and only minor loss of efficiency would occur at the end of a 6-month heating or cooling cycle. It is unlikely that the system would be used to this degree

¹ The hydraulic model is based on conventional analytical methods by Cooper-Jacob (1946) simulating the effects from combined supply and return on the water level.

² A numerical two-dimensional groundwater heat flow model was created in VS2DHI (Version 1.3) to simulate flow and energy transport associated with GSHP wellfield operation.

(pumping/injecting water for 24 hours per day in full heating or full cooling mode for 6 months), so actual losses in efficiency are anticipated to be much smaller.

Two additional wells, Return Well #2 (RW-2) and Supply Well #1 (SW-1) were constructed in August and September 2024. RW-2 and SW-1 were completed to depths of 258 and 276 feet bgs. respectively. RW-2 was screened from 238 to 255 feet bgs with a 30-slot, 8T stainless-steel screen, and SW-1 was screened from 256 to 276 feet bgs with 5 feet of 10T, 30-slot screen from 256 to 261 feet, 10 feet of 10T 40-slot screen from 261 to 271 feet, and an additional 5 feet of 10T 30-slot stainless steel screen from 271 to 276 feet bgs.

RW-2 and SW-1 were developed in September 2024, and step-rate tested up to a rate of 580 gpm in October 2024 to confirm that aquifer parameters aligned with those estimated in 2023/2024. Test water from SW-1 was discharged into RW-2 through a water-tight 4-inch conveyance line to simulate actual operations of the nonconsumptive system. Aquifer parameters were found to be more consistent with those estimated during 2023 modeling efforts (6,000 ft²/day; Aspect, 2023) opposed to what was estimated after RW-1 testing, suggesting that RW-1 may have been completed in a localized lower-permeability zone.

ANALYSIS

Under Washington State law (RCW 90.03.290), each of the following four criteria must be met for an application for a new water right permit to be approved:

- Water must be available for appropriation.
- Water withdrawal and use must not cause impairment of existing water rights.
- The proposed water use must be beneficial.
- Water use must not be detrimental to the public interest (public welfare).

Water Availability

For any new appropriation, water must be both physically and legally available.

Physical Availability

For water to be physically available for appropriation, water must be present in quantities and quality on a sufficiently frequent basis to provide a reasonably reliable source for the requested beneficial use or uses. An analysis of physical availability is required for both surface water and groundwater applications.

Based on the collective information summarized above in the hydrogeologic and well testing sections, we conclude that the quantity of water requested for use in this application is physically available for appropriation. The Satsop sand/gravel aquifer is an expansive regional aquifer, capable of supporting moderate to large groundwater withdrawals. The proposed appropriation is entirely nonconsumptive and is not anticipated to have any long-term impact on groundwater levels.

Legal Availability

To meet the legal availability test, the proposed appropriation may not withdraw and use water that is already “spoken for”, such as water from sources that are protected by administrative rule or court order.

The project site is in Water Resources Inventory Area (WRIA) 23 within the Lower Chehalis drainage basin. The Chehalis River Basin has an instream flow rule (WAC 173-522) adopted to preserve the uses and values of rivers and streams; however, the project site is situated with the Elk-John River subbasin,

which includes a number of smaller creeks that generally discharge directly to Grays Harbor or the Pacific Ocean and are not specifically regulated under the provisions of the rule. There are no perennial fish-bearing water bodies on the peninsula. Further, given the nonconsumptive nature of this project and the approximately 60 feet of aggregated low-permeability sediments vertically separating surface water and the target aquifer, impacts to surface water bodies are not expected.

Based on our review, the proposed water use is physically and legally available and satisfies the water availability portion of the four-part test, as required by RCW 90.03.290.

Impairment

In analyzing impairment, Ecology must make a determination as to whether existing water rights, including adopted instream flows, may be impaired by the withdrawal and proposed use.

The open-loop GSHP is nonconsumptive, groundwater is withdrawn from the supply well and reinjected proximally into the same aquifer; therefore, the proposed project is not expected to have a net hydraulic effect on the aquifer system and is considered water budget neutral. However, some localized impacts can occur within the zone of influence of pumping the supply well and reinjection of groundwater via the return wells.

In order to determine if the proposed project would cause impairment to area water users or regulated surface water, Ecology’s well log and water right databases were queried to identify exempt wells and water rights with points of withdrawal within a 0.5-mile radius of the proposed supply well. Results of the well search are shown in Table 3. The horizontal distance away from the supply well was estimated using information available from the well reports. In addition, two water right claims (G2-132222CL and G2-055885CL) for presumably exempt purposes were identified within the search radius.

Table 3. Summary of Nearby Groundwater Users

Well Report ID/ Well Tag ID	Well Owner	Well Depth (feet)	Estimated Distance from Supply Well (feet)
Multiple (South Wellfield)	City of Westport	64 to 539	1,000
22622	Catholic Church	242	2,640
22978	Cliff Beaty	242	3,600

The closest water user to the project is the City of Westport, which operates its South Wellfield approximately 1,600 feet north of SW-1. The South Wellfield consists of two wells with a combined operational pumping rate of 700 gpm. Potential impairment to the City’s South Wellfield was evaluated using an analytical model that predicts interference drawdown using the Cooper-Jacob Distance Drawdown method:

$$Drawdown = \frac{2.3Q}{4\pi T} \log \frac{2.25Tt}{R^2S}$$

The analysis used estimates of established aquifer parameters and information available from hydraulic testing and water well reports. A continuous pumping rate of 600 gpm was modeled at the supply well which represents the maximum operational flow rate projected for the system. The model predicts

drawdown after 1,000 days of continuous pumping. This time period is beyond the expected operation of the well and was chosen for a conservative (worst-case scenario) representation of interference drawdown. The model parameters also accounted for drawdown induced from pumping at the South Wellfield and for groundwater recharge through the return wells at the Project Site.

The results of the interference analysis predict 1.14 feet of drawdown at the South Wellfield resulting from pumping SW-1 under the modeled conditions. The net change of 1.14 feet is in addition to the 117 feet of drawdown predicted from pumping the South Wellfield under its own operation (700 gpm for 1,000 days). Interference drawdown of only 1.14 feet is minor and does not represent impairment of existing water use. Further, this assumes that the South Wellfield wells are completed in the same production zone as SW-1. Based on the groundwater characterization of the Satsop formation described by Consoer (1994), the formation is thick and contains multiple water-bearing units. The city's South Wellfield wells (BLN498 and BLN499) are approximately 300 feet deeper than Ocosta's wells and are completed in a water-bearing sandstone unit within the Satsop formation, which is hydraulically isolated from shallower sand/gravel production zones within the Satsop (what the Ocosta wells are completed in) by layers of low permeability silt/clay and competent sandstone. Therefore, the predicted 1.14 feet of drawdown in the South Wellfield is likely over predicted and no impairment is anticipated as a result of GSHP operations.

Beneficial Use

The proposed appropriation must be for a beneficial use of water.

Heat exchange is considered a beneficial use of water under RCW 90.54.020(1), and POL-2020 provides that the use of water in a heat pump is "industrial" if associated with an industrial or commercial interest.

Public Interest

The withdrawal and associated use must not be detrimental to the public interest. At a minimum, the following are considered when making this assessment.

Notification to the Washington Department of Fish and Wildlife

Per RCW 90.03.280 and 77.57.020, Ecology must give notice to the Washington Department of Fish and Wildlife (WDFW) of applications to divert, withdraw, use, or store water.

WDFW was provided notice of this water right application on March 13, 2025, but did not provide comments.

Water Quality

The detailed thermal modeling conducted for project design confirms there will be no changes in groundwater temperature outside of the site footprint due to attenuation.

A GSHP relies on the relatively constant temperature of the subsurface to act as either a heat source or sink. The temperature of the subsurface is typically warmer than the ambient outside air in the winter, and cooler than the outside air in the summer. Therefore, the open-loop GSHP transfers heat (via groundwater) to the subsurface during the summer months, and extracts heat from the subsurface during the winter months. Ocosta is anticipating a mixed heating- and cooling-dominated system, depending on the season and individual room demands (e.g., classrooms and office space), which are expected to vary throughout the day.

According to industry documents (EBN, 2000), a change in subsurface temperature of up to 10 degrees is considered acceptable in terms of system efficiency. However, if the seasonal heating and cooling requirements of the GSHP are in balance, such “temperature changes will balance out on an annual basis, and they may even increase system efficiency by using the ground for thermal storage.”

Research on long-term impacts to water quality or ecological effects have largely been inconclusive, but short-term impacts include increased microbial activity with elevated temperatures (EBN, 2000). Increased microbial activity is typically associated with increased fouling or reduced efficiency of the well, resulting in increased well maintenance, but otherwise no other significant consequences. Furthermore, studies indicated that bacteria populations returned to normal levels when groundwater temperatures returned to background levels.

Thermal modeling was conducted to address long-term thermal conditions and potential short-term impacts to groundwater from the thermal attenuation. Based on modeling efforts, no long-term thermal conditioning of the aquifer is anticipated. Modeling also suggests that any short-term thermal attenuation is limited to within the site footprint. Specifically, no impacts to water temperature in surface water in Grays Harbor are predicted.

Given the project’s proximity to the coast, the potential for saltwater intrusion was also evaluated. Water quality testing occurred at the end of the 8-hour step-rate injection test described in the Hydrogeologic Evaluation section. The chloride concentration was 19.2 milligrams per liter, and specific conductivity was 163 microsiemens per centimeter, both of which are well below the secondary maximum contaminant levels outlined in WAC 246-290-310 and indicative of high-quality (nonsaline) groundwater. Furthermore, a common method for mitigation of saltwater intrusion is downgradient injection of freshwater into the same aquifer as the pumping well to create a “freshwater barrier.” In this case, both return wells are downgradient from the supply well, which would further protect the aquifer from any saltwater intrusion issues that may result from long-term operation of the system.

State Environmental Policy Act (SEPA)

Under chapter 197-11 WAC, a water right application is subject to a SEPA threshold determination (an evaluation of whether there will be significant adverse environmental impacts) if any of the following conditions are met:

- It is a surface water right application for more than 1 cubic feet per second (cfs), unless that project is for agricultural irrigation, then threshold is increased to 50 cfs, so long as that irrigation project will not receive public subsidies.
- It is a groundwater right application for more than 2,250 gpm.
- It is an application that, in combination with other water right applications for the same project, collectively exceed the amounts above.
- It is a part of a larger proposal that is subject to SEPA for other reasons (e.g., the need to obtain other permits that are not exempt from SEPA).
- It is part of a series of exempt actions that, together, trigger the need to do a threshold determination, as defined under WAC 197-11-305.

Considering that none of the above conditions are met, the application under review is categorically exempt from a SEPA threshold determination.

Public Notice

RCW 90.03.280 requires that notice of a water right application be published once a week, for two consecutive weeks, in a newspaper of general circulation in the county or counties where the water is to be stored, diverted, and used. Notice of this application was published in the Daily World on March 20 and 27, 2025.

No protests were received as a result of this public notice.

Other Public Interest Concerns

The project site is located within the Chehalis River Watershed (WRIAs 22 and 23). The Chehalis has one of the oldest watershed planning efforts in Washington with a planning group (the Chehalis Basin Partnership) that has been in place since 2004. Streamflow Restoration Plan (Plan) documents represent the most current (2018–2020) planning effort by the Chehalis Basin Partnership. The Plan was developed to ensure that future management of water resources of the Chehalis Basin remains in the hands of its residents to the greatest extent possible. Through this planning process, the local citizenry shared issues and concerns related to water resource management and has worked with utilities and local governmental entities to develop the plan.

Given the nonconsumptive nature of this application, located such as to not have any effect on surface water bodies, and providing cost-effective energy to the school district, there is nothing inconsistent with the issuance of this permit, as recommended.

Conclusions

I find that:

- Water is physically and legally available.
- The appropriation will not impair existing rights.
- The proposed heat exchange is a beneficial use.
- Approval of this application will not be detrimental to the public interest.

RECOMMENDATIONS

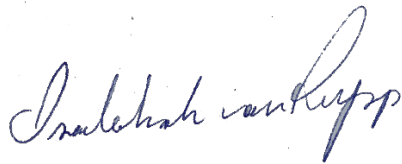
Based on the above investigation and conclusions, I recommend this request for a water right be **APPROVED** in the amounts and within the limitations listed below and subject to the provisions listed above.

Recommended Quantities, Purpose of Use, and Project Location

The rate and quantity of water recommended are maximum limits. The permit holder may only withdraw water at a rate and quantity within the specified limits (Table 3) that are reasonable and beneficial. The final annual quantity of 968-acre feet is rounded up from 967.8-acre feet. The final amount certificated will represent the amount beneficially used during the perfection of the permit.

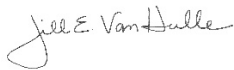
Table 3. Recommended Limits and Location

Maximum Instantaneous Rate (gpm)	600
Maximum Annual Quantity (ac-ft/yr)	968
Purpose(s) of Use	Heat Exchange/Industrial
Point of Withdrawal	NW ¼ NW ¼ of Section 19, T. 16N, R. 11W.W.M
Place of Use	Parcel ID 161119220080 of Grays Harbor, Washington, situated within the NW ¼ of Section 19, T. 16 N., R. 11 W.W.M.



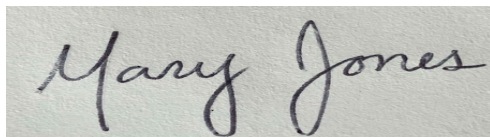
Report Writer

January 21, 2026
Date



Hydrogeologist

January 21, 2026
Date



Ecology Reviewer

January 21, 2026

Date

To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program at 360-407-6872. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

References

Aspect Consulting (Aspect), 2023, Ocosta School District Ground Source Heat Pump Feasibility Evaluation, prepared for McKinstry Co., Technical Memorandum, November 2023.

Consoer, Townsend & Associates Inc., Robinson & Noble, Inc. (Consoer), 1994, City of Westport and South Beach Area Ground water Characterization Study, prepared for City of Westport and Grays Harbor County, February 1994.

Cooper, H.H. and C.E. Jacob (Cooper and Jacob), 1946, A generalized graphical method for evaluating formation constants and summarizing well field history, Am, Geophys. Union Trans., vol. 27, pp. 526-534.

EXHIBIT A

Property Description:

Those portions of Section 19, Township 16 North, Range 11 West of the Willamette Meridian, described as follows:

Parcel 161119220080:

(Tax 10A) Commencing at the intersection of the North line of the South 660.00 feet of the NW quarter of the NW quarter of Section 19, T16N, R11WWM, Grays Harbor County, Washington, with the Easterly line of the Westport County Road (Roberts County Road), said point being the Northwest corner of the Ocosta School District property as per deed recorded in Volume 348 of Deeds, page 279, records of Grays Harbor County, Washington; THENCE N89°34'13"E along the North line of said South 660.0 feet, a distance of 102.1 feet to the True Point of Beginning of this description: THENCE N77°56'58"E at right angles to said Westport County Road a distance of 309.0 feet; THENCE S12°03'02"E parallel to said Westport County Road a distance of 63.54 feet to the North line of said South 660.0 feet; THENCE S89°34'13"W along said North line a distance of 315.47 feet to the True Point of Beginning;



Comments: Places of use and points of diversion are defined on the cover sheets under the heading "LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED."

LEGEND:

- Return Wells
- Supply Well
- Site Location
- Grays Harbor Tax Parcel
- Section



Site Map
McKinstry Ocoosta School District
Westport, Washington

	MAR-2025	BY: MPB / HMD	FIGURE NO.
	PROJECT NO. 230343A	REVISED BY: KMJ	1

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