DEPARTMENT OF ECOLOGY
State of Washington

STATE OF WASHINGTON
DRAFT
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

WR Doc ID 6798943

PRIORITY DATE	WATER RIGHT APPLICATION NUMBER
November 23, 2015	G2-30675

NAME AND MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
Raintree Nursery 408 Butts Rd Morton WA 98356	

Total Rate and Quantity Authorized for Withdrawal

WITHDRAWAL RATE (gpm)	ANNUAL QUANTITY (ac-ft/yr)
40	14.25

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
Irrigation/Commercial	40	14.25	01/01-12/31

IRRIGATED ACRES
10

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
Lewis	Groundwater		26

SOURCE NAME	PARCEL	WELL TAG	TOWNSHIP	RANGE	SECTION	QQ Q	LATITUDE	LONGITUDE
Well No. 1 (Existing)	033779002000	BIQ690	13 N	3 E	27	NW NE	46.587230	-122.413369
Well No. 2 (Proposed)	033779002000	TBD	13 N	3 E	27	NW NE	46.587164	-122.415018

QQ Q = Quarter Quarter

Datum: NAD83/WGS84

Place of Use

PARCEL(S)
033779002000
LEGAL DESCRIPTION OF THE AUTHORIZED PLACE OF USE
Section 27 Township 13N Range 03E NW4 NE4 LY SWLY BUTTS RD EX PT NWLY BED CANYON (or Parcel No. 033779002000)

Proposed Works
Well 1 is a 6-inch diameter well completed to a depth of 82 feet and cased to a depth of 80 feet. Proposed Well 2 will be similar in construction.

Development Schedule		
BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	PUT WATER TO FULL USE BY THIS DATE
Started	12/31/2023	12/1/2028

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?	Monthly
HOW OFTEN MUST WATER USE DATA BE REPORTED TO ECOLOGY?	Annually by January 31
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 electronically by January 31 each year. To set up an Internet reporting account, contact the Regional Office. If you do not have Internet access, you can still submit hard copies by contacting the Regional Office for forms to submit your water use data.

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. **G2-30675**, subject to existing rights and the provisions specified above.

Your Right To Appeal

You have a right to appeal this Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this Order. 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 the following within 30 days of the date of receipt of the Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order to Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

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

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW, Ste 301 Tumwater, WA 98501	**Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

For additional information, visit the Environmental Hearings Office Website: http://www.eho.wa.gov. To find laws and agency rules, visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser.

Authorizing Signature

Signed at Olympia, Washington, this _____ day of _____, 2022.

_____

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

INVESTIGATOR'S REPORT

Water Right Application No.: G2-30675
Investigator: Jill Van Hulle, Aspect Consulting
Reviewed by: Tammy Hall

BACKGROUND

This report serves as the written findings of fact concerning Water Right Application Number G2-30675.

Raintree Nursery is requesting a water right permit to irrigate 10 acres of land (consisting of approximately 2 acres of green house and 8 acres of field plantings). The water would be withdrawn from two wells - one completed well (Well ID: BIQ-690) and one proposed well. Both points of withdrawals (POWs) will be completed in the unconsolidated glacial-alluvial aquifer on the north bank of the Tilton River.

Table 1. Summary of Requested Water Right

Applicant Name	Raintree Nursery
Priority Date	November 23, 2015
County	Lewis
WRIA	26
Water Source	Two wells
Place of Use	Parcel No. 033779002000

Purpose	Instantaneous Rate (gpm)	Annual Quantity (ac-ft/yr)	Begin Season	End Season
Irrigation	40	14.25	January 1	December 31

Source Name	Parcel	Well Tag	Township	Range	Section	QQ Q	Latitude	Longitude
Well No. 1 (Existing)	033779002000	BIQ690	13 N	3 E	27	NW NE	46.587230	-122.413369
Well No. 2 (Proposed)	033779002000	TBD	13 N	3 E	27	NW NE	46.587164	-122.415018

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 the Department of Ecology. This report has been prepared by Aspect Consulting, LLC and reviewed by Tammy Hall with the Department of Ecology's Water Resources Program.

INVESTIGATION

In consideration of this application, Aspect reviewed available documents pertaining to the proposed use of water, site conditions, and potential effect on existing water rights and surface water bodies. This included information submitted by the applicant, well drilling reports, relevant watershed plans, and pertinent Ecology records including water rights records and water resource policy and guidance documents.

Project Background

Raintree Nursery is requesting a water right permit to irrigate 10 acres of land at its commercial nursery in Lewis County. The project is situated in the Tilton River watershed, approximately 7 miles west of Morton, WA. The Tilton River is a major tributary of the Cowlitz River, entering the Cowlitz drainage (Water Resource Inventory Area/WRIA 26) at Mayfield Lake, a Tacoma Public Utility reservoir.

Site Description

The project site is located on Parcel No. 033779002000 within the NW quarter of the NE quarter of Section 27, Township 13 North, Range 13 E.W.M., Lewis County, Washington.

The site is located within the Tilton River Valley approximately 2,000 feet north of the Tilton River. More specifically the property is situated on a relatively flat glacial terrace that stands approximately 280 feet above the main stem of the Tilton River. Directly south of the property is the edge of the glacial terrace, which is denoted by a 180-foot drop-off located directly northeast of Highway 508.

Based on the location of the project site relative to the Tilton River it is assumed that groundwater withdrawals associated with this application will ultimately reduce groundwater recharge to the Tilton River. As detailed in this Report of Examination, water is legally available within this sub-basin.

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 September 22, 2021, and responded on October 21, 2021. Steve Boessow, Water Right Biologist, indicated that based on impacts to fish and/or wildlife and the habitat they rely on, and pursuant to 77.57.020 RCW, that the WDFW does not oppose the issuance of this application. This application is consistent with the revised WRIA 26 Watershed Plan.

State Environmental Policy Act (SEPA)

Under chapter 197-11 WAC, a water right application is subject to a SEPA threshold determination (i.e., 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 cfs, unless that project is for agricultural irrigation, in which case the 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 Chronicle on October 2 and 7, 2021 No protests were received in response to the public notice.

Water System Description

Raintree's irrigation needs are currently met by a single production well. Well 1 is a 6-inch diameter well cased to a depth of 80 feet (Well ID: BIQ690) with a reported completion depth of 82 feet. The well is currently equipped to produce about 14 gallons per minute. Raintree plans to drill it's second well within the next two years, or by the end of 2023. The second well will target the same aquifer system but additional care will be taken with its screen design to maximize its production potential. It is hoped that combined the two wells will be capable of producing about 40 gpm, however this permit may be reduced to reflect the production of the second well.

Water will be conveyed from the wells to the greenhouses and fields via a (4-inch diameter) irrigation mainline. Water use will be measured using an approved measuring device in accordance with Chapter 173-173 WAC.

Raintree Nursery currently uses a zone system to manage water distribution, in both the greenhouses and the fields. In the fields each zone is manually turned on or off. In the greenhouses each zone is controlled with a battery-operated timer. The nursery is divided into 4 main irrigation zones, and each zone is divided into sub-zones.

Raintree's water delivery system varies by location. The fields are irrigated with 1 gallon per hour (GPH) emitters, and a flow rate that is regulated by setting the pressure at 20 PSI. Most of the greenhouses use overhead irrigation, with low flow (low GPH) emitters, one greenhouse uses drip irrigation. In addition, hand watering via hose with a breaker is used as needed.

Raintree's water use is highly efficient, for example they add rice hulls to the top of containers for weed management, which has also increased water conservation in the containers by reducing evaporation.

Proposed Use

Raintree proposes to use the water to irrigate 10-acres of nursery plants. Over 50 varieties are cultivated, including but are not limited to apples, cherries, apricots, figs, nectarines, olives, peaches, pears, plums, pomegranates, blackberries, blueberries, almonds, chestnuts, hazelnuts, bamboo, ginger, and lemon grass.

Total Irrigation Requirement

Raintree Nursery estimates a demand of 4.6 million gallons per year for the irrigation operations. This is based on their current water use patterns and includes the current use plus additional water to support future greenhouses and outdoor growing space within the 10-acre place of use. The annual water demand of 14.25 acre-feet per year projection is based on discussions with the operators of Raintree's irrigation system.

Hydrogeologic Setting

The proposed place of use is located within the Tilton River Valley (Valley) approximately 0.5 miles north of the main stem of the Tilton River. The Valley floor is composed of recent alluvial and glacial unconsolidated deposits. The Valley is confined to the north and south by andesitic and basaltic mountain ridges which stand between 1,000 feet and 2,000 feet above the main stem of the Tilton River.

Information from local well logs and regional geologic maps were used to determine the source aquifer for the proposed wells, the extent and hydrogeologic characteristics of the aquifer, including whether the wells are in continuity with the Tilton River; and the potential for impairment to senior surface water and groundwater (including permit-exempt) rights.

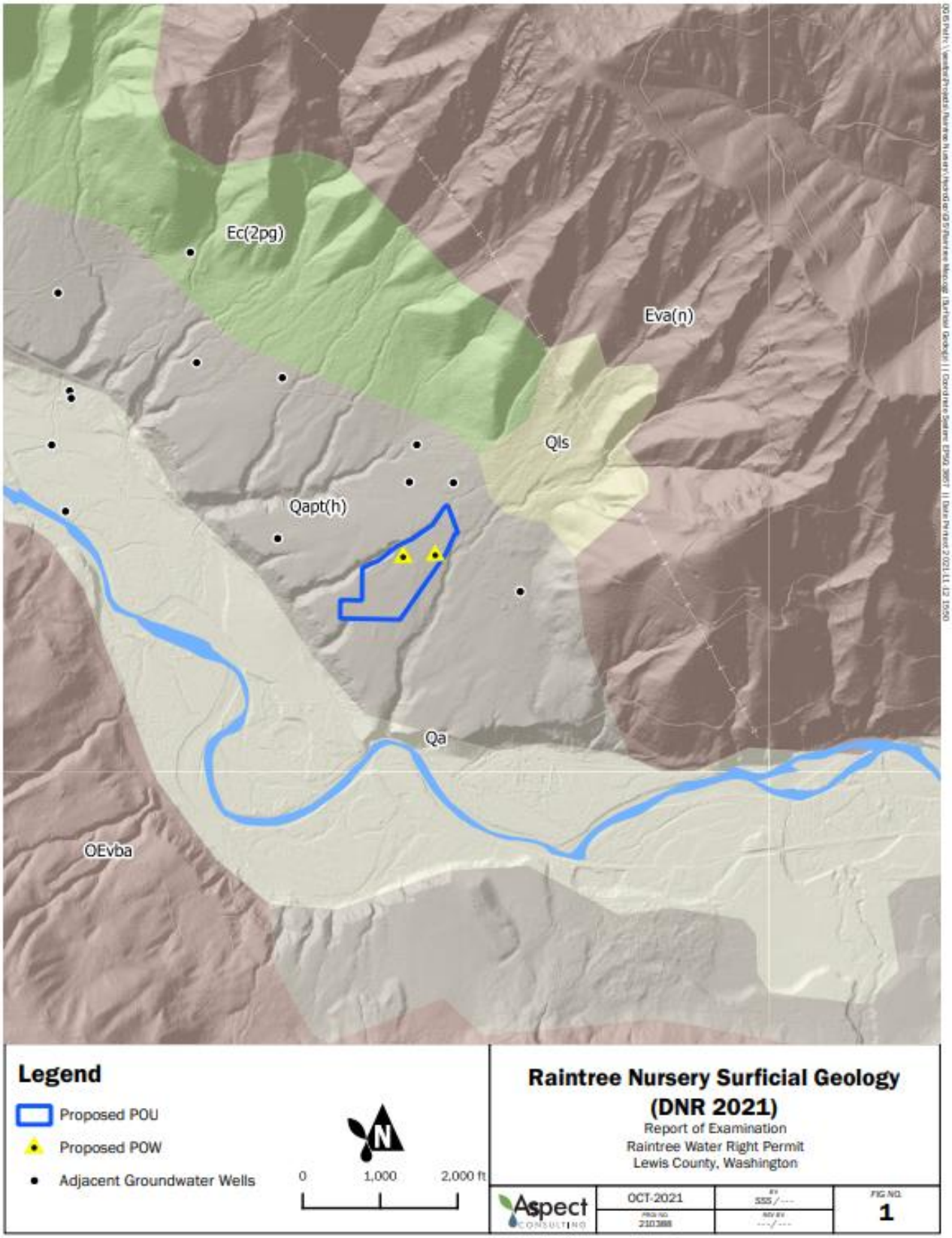
The Raintree wells will be completed within the Hayden Creek Drift, locally mapped as glacial till overlain by a thin silt layer. The unit is generally mapped as undifferentiated, and may exhibit discontinuous outwash deposits with depth.

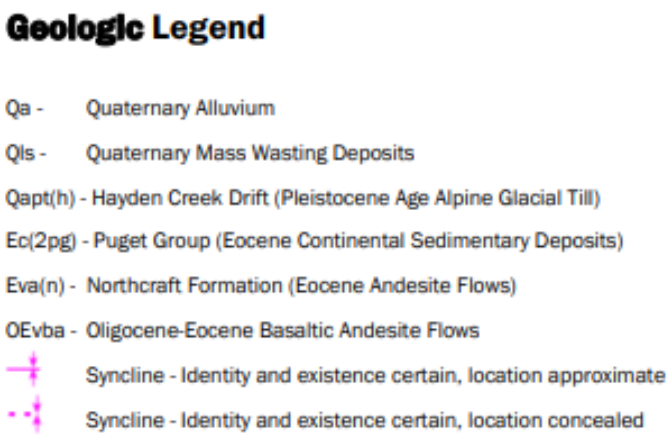
The Hayden Creek Drift in the Tilton River valley is deeply incised and is truncated along the northern valley terrace. The land surface elevation ranges from roughly 1080 ft ngvd (National Geodetic Vertical Datum) at Butts Road on the north side of the nursery, to 900 ft ngvd at the lowest southwesterly side of the site. Approximately 1,000 feet south of the site, and above State Route 508, elevation of valley terrace drops steeply into the floodplain with elevations below 700 ft ngvd.

Based on the discontinuous nature of outwash deposits within the Hayden Creek Drift and limited water level data available from well construction logs, we assume that groundwater flow within the Hayden Creek Drift deposits is topographically driven, controlled by the elevation of underlying bedrock and extent of the glacial sediments as truncated by the incised floodplain within the project area.

Groundwater flow is generally from higher elevations in the north and northeast toward the southwest likely discharging at depth into the narrow and somewhat bedrock-confined Tilton River Valley or as springs or seeps along the steep slope above Route 508.

Recharge to the source aquifer is from precipitation, losing stream reaches, and to a lesser extent irrigation return flows and septic return flows. Discharge from the aquifer is to springs, wells, and into the alluvial system within Tilton River floodplain deposits. The lateral exchange of groundwater between the Hayden Creek Drift and the upper fracture zones of the underlying bedrock is unknown, but assumed to be controlled by local water level relationships between the two units and the surrounding steep sub-alpine to alpine topography.


Ec(2pg)
Eva(n)
Qls
Qapt(h)
Qa
OEvba
Legend
Proposed POU
Proposed POW
Adjacent Groundwater Wells
N
0
1,000
2,000 ft
Raintree Nursery Surficial Geology
(DNR 2021)
Report of Examination
Raintree Water Right Permit
Lewis County, Washington
Aspect
CONSULTING
OCT-2021
210388
FIG NO.
1



Hydrogeologic Evaluation

The proposed place of use is located on a terrace of glacial deposits mapped as the Hayden Creek Drift, that stands approximately 280 feet in elevation above the Tilton River. The property's existing well is completed at a depth of 82 feet below ground surface (bgs) within the glacial deposits. Post well completion, the static water level was reported as approximately 70 feet bgs which is approximately 200 feet higher than the water level in the adjacent reach of the Tilton River.

Based on the conceptual hydrogeologic model of the area, pumping the proposed POWs completed in the glacial drift will likely intercept groundwater that would otherwise recharge underlying and adjacent aquifers presumed to be in hydraulic communication with the Tilton River alluvial system.

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).

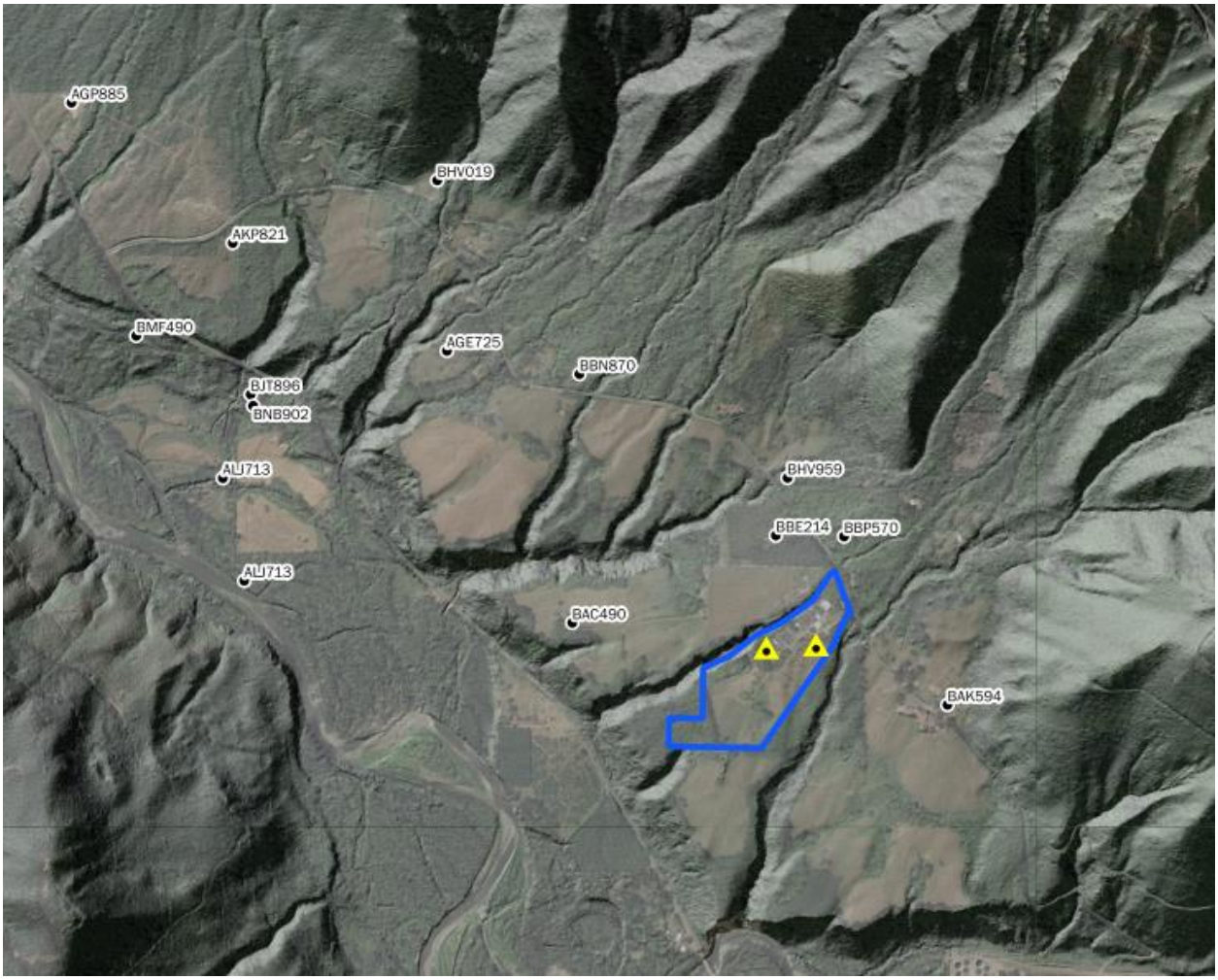
Water Availability

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 and 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.

Water is considered physically available at the site based on the presence of local wells within the Hayden Creek Drift deposits and testing data recorded in drillers reports from surrounding wells completed within the same source aquifer.



Well construction and testing data obtained from the drillers logs of existing production well and neighboring wells are summarized in Table 2.

Table 2. Documented Well Yields

Well ID	Well Depth (feet)	Well Yield (gpm)	Water Level (Feet)	Stem Depth (Feet)
BIQ690 (POW)	82	14	71	77
BAK594	62	30	26	57
BBP570	62	15	23	57
BBE214	113	9	75	106
BHV959	81	16	33	78

Raintree's existing well can produce approximately 14 gpm but was originally intended as a domestic supply well, equipped with a small submersible pump, and was never fully developed. Based on the

aquifer thickness and estimated specific capacity at the site, a properly constructed second well should easily be able to provide an additional 25 gpm, and provide Raintree with the requested Qi of 40 gpm.

Legal Availability

The regulatory structure of WRIA 26 is different than many other watersheds within the State. The basin is not subject to a formal rule, however WRIA 26 has undergone a watershed planning process that in turn shapes water right permitting decisions. In May 2010, the Department of Ecology held public hearings in Longview and Morton on proposed water management rules for WRIA 26 (Cowlitz). The draft rules that were proposed by Ecology were based on recommendations that had been developed during earlier planning efforts, specifically in the 2006 WRIA 25/26 Watershed Management Plan (Plan). At these hearings, widespread concern was voiced over the adequacy of proposed water reservations to meet the future needs of the people, cities and towns, communities, and businesses of Cowlitz River Basin. In response to these concerns, the WRIA 25/26 Planning Unit requested, and Ecology agreed to discontinue the rule process until the Planning Unit could review the water supply and stream flow provisions of the Plan and, if warranted, recommend changes to those provisions.

Additional evaluation was conducted by the planning group, primarily by the Fish and Flow Work Group which developed initial water management reports for each of the seven subbasins in the Cowlitz watershed. The reports summarized projected future water needs, water availability, fish resources and stream flows and made recommendations regarding whether a subbasin or sub-watershed should be closed to further water appropriations, whether water should be reserved for future development and land uses, and whether instream flows should be established to help protect fish resources.

It is this resulting plan that serves as the regulatory map for future water right permitting decision in the watershed. The plan establishes a system of reservations for many of the sub-basin. In the Tilton River Sub-basin the plan amendment considered both water for domestic supply and agriculture, and included an estimate for future demand within the sub-basin ranging from 0.33 to 0.78 cfs. Based on WDFW and Ecology guidelines , the water availability estimate for the mainstem Tilton River reach is 0.62 cfs.

The Tilton subbasin supports populations of winter steelhead, fall Chinook, spring Chinook, and Coho. All are listed as Threatened under the Federal Endangered Species Act (ESA). Based on review by WDFW biologists the Fish and Flow Workgroup felt most streams in this subbasin were of low concern of streamflow impacts from development, and categorized them as Category A – of low concern. This is relevant to the Raintree site which is situated within this zone that has been identified as having low concerns for instream impacts resulting from groundwater development. Higher in the Tilton drainage several areas have an existing Surface Water Source Limitation (SWSL) designation, and the Fish and Flow subgroup recommended retaining the low flow recommendation from those SWSLs; thus, they categorized those streams as Category E – active protective measure in place. These streams and/or reaches include Minnie Creek, Tilton-5, and Tilton-6.

Per the watershed plan, the lower stretch of the Tilton River is not subject to closures. The Tilton River terminates in Lake Mayfield which is a reservoir that is operated by Tacoma Public Utilities (TPU) to produce hydro-electric power. TPU is required to operate it's Cowlitz River project in a manner consistent with its FERC licensing, which includes provisions for maintaining instream flows and providing fish passage.

<u>Reservation Considerations</u>

The basin plan served to identify both a potential water demand, and an allowable level of stream flow depletion. The plan converts annual demands to continuous instantaneous figures, and in the Tilton

subbasin of the 0.62 cfs that has been deemed to be potentially available, approximately half (0.23 cfs) has been identified as needed for domestic supply[1].

Since the adoption of the 2014 plan amendment, Ecology has not processed any pending water right application within the Tilton drainage subject to the set-aside, which would indicate that there should still be a portion of the intended reserve available pending a tally of exempt wells that may have been constructed. Accordingly, the presumed remaining balance of 0.39 cfs is available to meet non-domestic needs such as irrigation. Since Raintree's annual demands of 14.25 acre-feet per year equate to a continuous instantaneous rate of 0.02 cfs, it appears that there is water available for Raintree's request.

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.

To determine groundwater pumping impacts for the proposed use, Aspect identified nearby wells completed in the same hydrogeologic unit to determine aquifer characteristics such as specific yield , transmissivity, saturated thickness, and lateral extent. Air lift test data were used to derive an estimate of aquifer transmissivity (T) using Driscoll's empirical equation (Driscoll, 1986) for a confined aquifer (see Equation 1 below).

Equation 1: $$T = \frac{2000 * Q}{s}$$

Where:

Q = Discharge (gallons per minute)

s = Drawdown (feet)

T = Transmissivity (gpd/ft)

The specific capacity (SC) based on air test data performed on the proposed POW and adjacent wells (Well IDs: BAK594, BBP570, BAC490, and BBE214) is approximately 0.8 gallons per minute per foot of drawdown (gpm/ft). Based on this specific capacity, transmissivity of the unconsolidated material in the vicinity of the proposed POWs is estimated to be approximately 1,200 gallons per day per foot (or 160 feet^2/day). Assuming a storativity value of 10^{-3} (which is typical for confined glacially derived aquifers), Equation 2 (Theis 1935) was used to assess potential interference drawdown of adjacent water users.

Equation 2: $$s = \frac{Q}{4\pi T} W(u)$$

Where:

u = $\frac{r^2 S}{4Tt}$

S = Storativity (unitless)

[1] [1] Plan methodology assumption provide that using 1% of the 90% exceedance flow can be used as a measure of acceptable habitat loss and water availability. This streamflow availability (0.62 cfs) equates to a total water availability of 449 ac-ft/yr (Consumptive Use)

t = Time (min)

r = Radial distance from pumping well (ft)

the proposed annual quantity (14.25 ac-ft/yr) over the year results in an average flow rate of 9 gpm. The closest well to the proposed POWs is approximately 1,000 feet away (BBP570) and has a total available drawdown of 40 feet. Using the hydrogeologic parameters discussed above, the calculated well interference at the closest adjacent well is less than 2 feet, and likely significantly less given the conservative nature of the Theis equation. Since this level of potential drawdown is not enough to impact the operation of neighboring wells, we find that other groundwater users will not be impaired by this request.

Formal instream flows have not been established for the surface water bodies that are believed to be hydraulically connected to target aquifer. However, as stated in the most recent watershed plan it has been recommended that if instream flows were to be established that this area of the Tilton River Watershed remain open to appropriation, subject to a potential reservation.

Beneficial Use

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

Agriculture including the irrigation demands of Raintree's commercial nursery is considered a beneficial use of water under RCW 90.54.020(1).

Public Interest

The withdrawal and associated use must not be detrimental to the public interest.

Our evaluation of this project has not identified any conflicts with the public interest, water is available to appropriate and the project is consistent with the watershed plan.

Conclusions

I find that:

- Water is physically and legally available.
- The appropriation will not impair existing rights.
- The proposed use for irrigated agriculture 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.

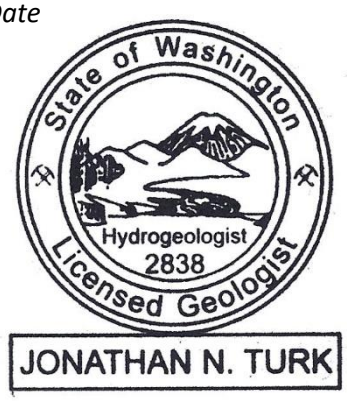
Recommended Quantities, Purpose of Use, and Project Location

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 that are reasonable and beneficial:

Table 3. Recommended Limits and Location

Maximum Instantaneous Rate (gpm)	40
Maximum Annual Quantity (ac-ft/yr)	14.25
Purpose(s) of Use	Irrigation of 10 acres
Point of Diversion	NW¼, NE¼, Section 27, Township 13 North, Range 3 E.W.M.
Place of Use	Parcel No. 033779002000 (Figure 1)

Jill Van Hulle, Aspect Consulting *Date*



Jonathan Turk, LG *Date*

Tammy Hall *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

Driscoll, F. G., 1986, Groundwater and Wells (2nd Edition), Johnson Screens, St. Paul, MN.

Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground-water storage, Transactions, American Geophysical Union 16: 519–524.

Washington State Department of Ecology (Ecology), 2016, Washington State Well Log Viewer, https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/default.aspx.

Washington State Department of Natural Resources (DNR), Geologic Map of the Centralia Quadrangle, Washington, Washington Division of Geology and Earth Resources Open File Report 87-11. Compiled by Henry W. Schasse

Washington State Department of Natural Resources (DNR), 2021, Geologic Information Portal, Washington Interactive Geologic Map, http://www.dnr.wa.gov/programs-andservices/geology/publications-and-data/geologic-information-portal.

Comments:
All sections are within Township 13 North, Range 3 E.W.M.
Parcels obtained from Lewis County Assessors Office.

LEGEND:

- Proposed Place of Use
- Proposed Point of Withdrawal
- Sections
- Lewis County Parcels
- City Locations

0 0.25 0.5 mi

Raintree Nursery Project

Vicinity Map

Report of Examination
Raintree Water Right Permit
Lewis County, Washington

Aspect Consulting	OCT-2021	BY: SSS / ---	FIG NO. 1
	PROJ NO. 210388	REV BY: --- / ---	