DEPARTMENT OF
ECOLOGY
State of Washington

State of Washington
Report of Examination for Water Right

PRIORITY DATE	WATER RIGHT NUMBER
January 20, 2011	G2-30565

MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
City of Washougal **1701 C Street** **Washougal, WA 98671**	

Total Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE	UNITS	ANNUAL QUANTITY (AF/YR)
4,675	GPM	3,786

Purpose

	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		
PURPOSE	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	PERIOD OF USE (mm/dd)
Municipal Supply		4,675	GPM		3,786	01/01-12/31

REMARKS

IRRIGATED ACRES		PUBLIC WATER SYSTEM INFORMATION	
ADDITIVE	NON-ADDITIVE	WATER SYSTEM ID	CONNECTIONS
		93400	

SOURCE FACILITY/DEVICE	PARCEL	WELL TAG	TWN	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
Well No. 5	89935000		1N	3E	12	NE SE, NW SE	45°34'N	122°22'W
Well No.6	89935000		1N	3E	12	NE SE, NW SE	45°34'N	122°22'W
Well No.7	89935000		1N	3E	12	NE SE, NW SE	45°34'N	122°22'W
Well No.11	89935000		1N	3E	12	NE SE, NW SE	45°34'N	122°22'W
Well No.12	89935000	APN125	1N	3E	12	NE SE, NW SE	45°34'N	122°22'W

Datum: NAD83/WGS84

Place of Use (See Attached Map)

PARCELS (NOT LISTED FOR SERVICE AREAS)
NA

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE
Area served by the City of Washougal as described in the mostly recent Water System Plan approved by the Department of Health

Proposed Works

Lower Wellfield, consisting of existing Well Nos. 5, 6, 7, 11, and 12 with casings up to 16" in diameter and ranging in depth from 75 to 150 feet deep. All five wells are currently available for use

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	Completed	December 31, 2030

Measurement of Water Use

How often must water use be measured?	Weekly
How often must water use data be reported to Ecology?	Annually
What volume should be reported?	Total Annual Volume
What rate should be reported?	Annual Peak Rate of Withdrawal (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", WAC 173-173.

Department of Ecology personnel, upon presentation of proper credentials, must have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

WAC 173-173 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 for modifications to some of the requirements.

Proof of Appropriation

The water right holder must file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate will reflect the extent of the project perfected within the limitations of the superseding permit. Elements of a proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

Findings of Facts

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

Therefore, I ORDER the requested approval of Application No. G2-30565 subject to existing rights and the provisions specified above.

Signed at Olympia, Washington, this 8th day of May 2012.

Michael J. Gallagher

Michael J. Gallagher, Section Manager

Your Right To Appeal

You have a right to appeal this Order to the Pollution Control Hearing 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 on 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.

INVESTIGATOR'S REPORT
Application for Water Right -- Washougal City
Water Right Control Number G2-30565
Phil Crane, Department of Ecology Contact

BACKGROUND

Cost Reimbursement

This application is being processed under a cost reimbursement agreement between the applicant, City of Washougal (City) and the Department of Ecology (Ecology). This report has been prepared by HDR Engineering, Inc. under a contract and Work Assignment with Ecology.

The City submitted an application to appropriate public ground water to Ecology on January 20, 2011. The application is for 4,675 gallons per minute (gpm) for municipal supply. The application was accepted by the Ecology Southwest Regional Office and was assigned as Ground Water Application G2-30565. A second application, G2-30564, was filed by the City at the same time for 1,325 gpm, also for municipal supply. Application G2-30565 is for the City's Lower Wellfield and Application G2-30564 is for the City's Upper Wellfield.

The intent of these two applications is to secure water rights which are non-additive that authorize the current rate of withdrawal at each of the existing Upper and Lower Wellfields. The City's water rights are currently "capped" at an authorized total withdrawal of 3,786 acre-feet per year (af/yr).

Pacific Groundwater Group (PGG) completed a Phase I review for both applications which is documented in their letter report dated March 15, 2011. The City requested that Ecology complete the Phase II review and processing of the water right under the cost reimbursement program using an independent consultant on contract to Ecology. HDR Engineering was selected by the City to perform the Phase II services.

Description and Purpose of Proposed Application

Table 1 Application Summary

Attributes	Summary
Name	City of Washougal
Priority Date	1/20/2011
Instantaneous Quantity	4675 gpm (non-additive)
Annual Quantity	3786 af/yr (non-additive)
Purpose of Use	Municipal Supply
Period of Use	Year Round
Place of Use	Area served by the City of Washougal as described in a Department of Health approved Water System Plan

Table 2 Proposed Sources of Withdrawal or Diversion

Source Name	Parcel	WellTag	Twp	Rng	Sec	QQ Q	Latitude	Longitude
Well 5	89935000		01N	03E	12	NE SE, NW SE	45°34'N	122°N 22'W
Well 6	89935000		01N	03E	12	NE SE NW SE	45°34'N	122°N 22'W
Well 7	89935000		01N	03E	12	NE SE NW SE	45°34'N	122°N 22'W
Well 11	89935000		01N	03E	12	NE SE NW SE	45°34'N	122°N 22'W
Well 12	89935000	APN125	01N	03E	12	NE SE NW SE	45°34'N	122°N 22'W

Legal Requirements for Approval of Appropriation of Water

Chapters 90.03 and 90.44 RCW authorize the appropriation of public water for beneficial use and describes the process for obtaining water rights. Laws governing the water right permitting process are contained in RCW 90.03.250 through 90.03.340 and RCW 90.44.050. In accordance with RCW 90.03.290, determinations must be made on the following four criteria in order for an application for water rights to be approved:

- Water must be available
- There must be no impairment of existing rights
- The water use must be beneficial
- The water use must not be detrimental to the public interest

This report serves as the written findings of fact concerning the investigation regarding Water Right Application Number G2-30565.

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 area where the water is to be stored, diverted and used.

Notice of this application was published in the Columbian newspaper on February 10, 2001, and February 16, 2011. No protests were filed to this application. A copy of the Affidavit of Publication is included as Attachment A.

Consultation with the Department of Fish and Wildlife

The Department must give notice to the Department of Fish and Wildlife (WDFW) of applications to divert, withdraw or store water (RCW 77.57.020). The Department notified WDFW of this application by email and no response was received from WDFW.

State Environmental Policy Act (SEPA)

The combination of this application and the associated application, G2-30564, is greater than 2,250 gpm, so a SEPA threshold determination is needed for this application.

The City, acting as Lead Agency, issued a Determination of Nonsignificance (DNS) on August 26, 2011, according to the SEPA Rules, Chapter 197-11 WAC, as a non-project proposal relating to Application Nos. G2-30564 and G2-30565. This DNS was issued as a follow-up to the Environmental Checklist submitted on May 26, 2011. The DNS was distributed to numerous Federal, State, Regional, and Local agencies, as well as newspapers in the vicinity and local interest groups, with written comments accepted by the City until September 9, 2011. The City received just one written comment within this time frame, but it wasn't related to this non-project action, since the comment related to construction activity.

INVESTIGATION

Site Visit and Existing Reports

A site visit was conducted by Jerry Louthain of HDR on September 27, 2011 with City Engineer, Rob Charles. Mr. Charles pointed out the location of the Upper and Lower Wellfields and the specific locations for each of the wells in the two wellfields. For the Lower Wellfield, all five wells, Well Nos. 5, 6, 7, 11, and 12 are currently in use as production wells. This Lower Wellfield is located just north of the railroad track and west of Whitney Street. The wells are located along an east-west line, with the wells approximately 100 feet apart. The most westerly well is Well No. 6, and then Well No. 7, Well No. 5, Well No. 11, and Well No. 12 being the most easterly well within the wellfield. The entire wellfield is within approximately a 50 foot by 500 foot fenced area.

The following reports were reviewed as part of this investigation:

- *Phase 1 Assessment for City of Washougal Cost Recovery Agreement Water Right Applications G2-30564 and G2-30565*, March 15, 2011, Pacific Groundwater Group.
- *City of Camas Water Supply Alternatives Investigation,* including *Appendix A, Lower Washougal River Groundwater Flow Model,* October 22, 2004, Pacific Groundwater Group.
- *Technical Memorandum, Assessment of Changes in Washougal River Baseflow Associated with Potential Water Right Transfer*, December 16, 2011, Pacific Groundwater Group.

The following is a brief summary of the content of these reports:

Summary of *Phase 1 Report, PGG, March 2011*

This report described the purpose and intent of the two applications filed by the City and the production capacities for each of the wells in the Upper and Lower Wellfields. The report also discussed the hydrological setting for the wellfield areas, with a description of the geology and the two principal aquifers in the vicinity, the Pleistocene Alluvial Aquifer (PAA), and the Sand and Gravel Aquifer (SGA).

The Lower Washougal River Groundwater Flow Model that was developed by PGG was described and how PGG used this model to analyze the effects to other water users in the vicinity. Through the use of this model and the analysis by PGG it was determined that the shift in production of moving more ground water production from the Upper Wellfield to the Lower Wellfield would not be anticipated to impair any other water users, including the City of Camas Well 14.

In addition, this report clarified that since these two applications are non-additive, they are neutral to other water users and can be processed prior to any other pending water right applications within this same source.

Summary of *City of Camas Study and Lower Washougal River Groundwater Flow Model Report, PGG, Oct. 2004*

This study and groundwater flow model report was developed to plan for a future additional source of water supply for the City of Camas from the PAA. The model was used to develop an assessment of regional drawdown from ground water pumping and to plan out and design expansion of the Camas wellfield and to provide information needed for the City of Camas water right applications.

Summary of *Technical Memorandum, Assessment of Changes in Washougal River Baseflow Associated with Potential Water Right Transfer, PGG, December 2011*

In this technical memorandum, PGG described how the Camas/Washougal ground water flow model (described above) was used to assess the impacts of the proposed water rights applications by City of Washougal.

PGG ran the model to assess the effects of these two water right applications. PGG ran two scenarios to accomplish this evaluation. The first scenario evaluated pumping under the current water rights authorizations with 2,800 gpm pumping in the Upper Wellfield. The second scenario moved 1,525 gpm of pumping from the Upper Wellfield to the Lower Wellfield. PGG then determined the quantity of water exchanged between the aquifer and the Washougal River for each scenario and calculated the difference to determine the effects of the proposed exchange on river flow.

PGG determined that moving 1,525 gpm of pumping from the Upper Wellfield to the Lower Wellfield causes about 0.5 cfs *less* streamflow depletion in the lower Washougal River between the Upper Wellfield and the Lower Wellfield. This is because the aquifer at the Upper Wellfield is directly in hydraulic connection with the Washougal River whereas a portion of the aquifer in the Lower Wellfield area is disconnected from the river because of a bedrock high that is exposed near the river.

Proposed Use and Basis of Water Demand

The City filed this application for the wells in the Lower Wellfield, along with Application No. G2-30564 for the wells in the Upper Wellfield to request approval of the amount of water for each their wellfields to conform to the pumping capacity of each of the wellfields. This application is for 4,675 gpm and Application No. G2-3056 is for 1,325 gpm, for municipal supply, for a total of 6,000 gpm for the two wellfields. The applications do not increase the quantity or rate of water use. The City has filed these two applications to supplement their existing rights, with the requested total instantaneous pumping rate from each of these applications to match the total production capability from each of the two wellfields.

The City is currently updating their Water System Plan, with the 20-year planning period shown to be through the year 2030. The current draft of the Water System Plan also shows that the year 2009 is the highest water production year in recent years as 611.79 million gallons (mg), which is equivalent to 1,878 afy. Projections to the year 2030 show the water demand to be 985 mg, which is equivalent to 3,024 afy.

Comparing this projected demand to the City's existing water rights of 3,786 afy shows that the City already has sufficient existing water rights to meet and exceed their 20-year projected demand.

Other Rights Appurtenant to the Place of Use

Table 3 below shows the City's existing water rights which consist of five water right claims and two certificates, with each document for a specific well or wells. The individual Qi and Qa is shown for each of these documents with the total Qi for these shown as 6,350 gpm. The individual values for Qa exceed the total "capped" amount of water rights of 3,786 afy, however the notation for Certificate No. G2-25796 states that this water right limits the total system Qa to 3,786 afy.

Water Availability

For water to be available for appropriation, it must be both physically and legally available.

Physical and Legal Availability

In the case of this application, the water availability requirement has essentially already been satisfied in that the City already has in total, the existing water rights for the amount of water shown in the application and that no additional water is proposed to be appropriated under this application. This application is merely to obtain a water right for the Lower Wellfield that matches the City's existing pumping amounts from the wells in the Lower Wellfield. This application is supplemental on both a Qi and a Qa basis, to the City's existing water rights.

Table 3. City of Washougal Water Rights

Water Right	*WR Qi (gpm)*	*WR Qa (ac-ft/yr)*
Claim 000733	1,100	1,777.75
Claim 000774	850	1,371
Claim 000755	850	1,371
Claim 000776	850	1,371
Claim 000777	1,200	1936
G2-25796	1,100	1,419.5
G2-24581	400	322.6*
Total	6,350	3,786**

*non-additive
**G2-25796 limits total water system to 3,786 ac-ft/yr

Impairment Considerations

Impairment is an adverse impact on the physical availability of water for a beneficial use that is entitled to protection. A water right application may not be approved if it would:

- Interrupt or interfere with the availability of water to an adequately constructed groundwater withdrawal facility of an existing right. An adequately constructed groundwater withdrawal facility is one that (a) is constructed in compliance with well construction requirements and (b) fully penetrates the saturated zone of an aquifer or withdraws water from a reasonable and feasible pumping lift.

- Interrupt or interfere with the availability of water at the authorized point of diversion of a surface water right. A surface water right conditioned with instream flows may be impaired if a proposed use or change would cause the flow of the stream to fall to or below the instream flow more frequently or for a longer duration than was previously the case.

- Interrupt or interfere with the flow of water allocated by rule, water rights, or court decree to instream flows. Degrade the water quality of the source to the point that the water is unsuitable for beneficial use by existing users (e.g., via sea water intrusion).

Impairment, Qualifying Ground Water Withdrawal Facilities, and Well Interference

Qualifying ground water withdrawal facilities are defined as those wells which in the opinion of the Department are adequately constructed. An adequately constructed well is one that (a) is constructed in compliance with well construction requirements; (b) fully penetrates the saturated thickness of an aquifer or withdraws water from a reasonable and feasible pumping lift (WAC 173-150); (c) the withdrawal facilities must be able to accommodate a reasonable variation in seasonal pumping water levels; and (d) the withdrawal facilities including pumping facilities must be properly sized to the ability of the aquifer to produce water.

From the review of the information provided in the documentation by PGG (the March, 2011 Phase 1 Report, and the 2004 Groundwater Flow Model Report and the December 2011 Technical Memorandum), it does not appear that there would be any impairment of existing water rights in the vicinity from the transfer of 1,525 gpm of pumping from the Upper Wellfield to the Lower Wellfield. The

reason is that there is adequate transmissivity in the aquifer to support the ground water pumping that is already occurring. The existing wells are operating properly without excessive drawdown or well interference.

Impairment: Surface Water and Instream Flows

The PAA is in hydraulic connection with the Washougal River and, in places, the Columbia River. Ground water pumping under the current conditions reduces the amount of flow in the Washougal River by inducing water to flow from the river into the aquifer or capturing the discharge of ground water flowing into the river from the aquifer.

PGG used the Camas/Washougal ground water flow model to determine the effects of ground water pumping on Washougal River flow for the water rights authorizations for the current water rights and the proposed new water right. PGG determined that moving 1,525 gpm of pumping from the Upper Wellfield to the Lower Wellfield causes about 0.5 cfs *less* streamflow depletion. This is because the aquifer at the Upper Wellfield is directly in hydraulic connection with the Washougal River whereas a portion of the aquifer in the Lower Wellfield area is disconnected from the river because of a bedrock high that is exposed near the river. The 0.5 cfs change in river flow capture from the new water rights authorizations will likely be captured from the Columbia River. However, the Columbia River is not flow limited in this area.

Beneficial Use

The use of water for municipal supply purposes is defined in statute as a beneficial use (RCW 90.54.020(1)). Water has been used from this source for municipal supply purposes for many years under the authority of the City's existing water rights.

Public Interest Considerations

Approval of this water right for municipal supply purposes is in the public interest. No protests or objections have been filed to the approval of this application. In addition, Ecology notified the Washington Department of Fish and Wildlife about this application to see if WDFW had any comments or specific concerns about this application and no response was received from WDFW.

Conclusions

In conclusion, approval of this application for the recommended quantities meets the following four criteria that must be met for a water right to be approved:

- Water must be available
- There must be no impairment of existing rights
- The water use must be beneficial
- The water use must not be detrimental to the public interest

RECOMMENDATIONS

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

Purpose of Use and Authorized Quantities

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial:

4,675 gpm (Non-additive)
3,786 acre-feet per year (Non-additive)

Municipal Supply

Point of Withdrawal

NE¼SE¼ and NW ¼SE ¼, Section12, Township 1 North, Range 3 E.W.M.

Place of Use

Area served by the City of Washougal as described in a Department of Health approved Water System Plan.

Report Writer *Date*

Phil Crane 5/8/2012

Reviewed by Phil Crane *Date*

LIST OF ATTACHMENTS

Attachment A- Affidavit of Publication

If you need this publication in an alternate format, please call Water Resources Program at (360) 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Selected References

Phase 1 Assessment for City of Washougal Cost Recovery Agreement Water Right Applications G2-30564 and G2-30565. Pacific Groundwater Group, March 15, 2011

City of Camas Water Supply Alternatives Investigation, Pacific Groundwater Group, October 22, 2004

Lower Washougal River Groundwater Flow Model, (Appendix A of PGG, October 22, 2004 report)