File No. G2-30616
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DEPARTMENT OF
ECOLOGY
State of Washington

# State of Washington
# REPORT OF EXAMINATION
# FOR WATER RIGHT APPLICATION

**PRIORITY DATE**
April 26, 2013

**APPLICATION NUMBER**
G2-30616

**MAILING ADDRESS**
City of Cosmopolis
PO Box 2007
Cosmopolis, WA 98537

**SITE ADDRESS (IF DIFFERENT)**

## Quantity Authorized for Withdrawal

| DIVERSION RATE | UNITS | ANNUAL QUANTITY (AF/YR) |
|---|---|---|
| 60 | GPM | 54 |

## Purpose

| PURPOSE | WITHDRAWAL OR DIVERSION RATE | | | ANNUAL QUANTITY (AF/YR) | | PERIOD OF USE (MM/DD) |
|---|---|---|---|---|---|---|
| | ADDITIVE | NON-ADDITIVE | UNITS | ADDITIVE | NON-ADDITIVE | |
| Municipal Supply | 60 | 0 | GPM | 54 | 0 | 10/1 - 6/30 |

## Source Location

| WATERBODY | TRIBUTARY TO | COUNTY | WATER RESOURCE INVENTORY AREA |
|---|---|---|---|
| N/A | N/A | Grays Harbor | 22 |

| SOURCE FACILITY/DEVICE | WELL ID | PARCEL | TWN | RNG | SEC | QQ Q | LATITUDE | LONGITUDE |
|---|---|---|---|---|---|---|---|---|
| Well 1 | BHH 186 | 417092212000 | 17 | 9W | 22 | NWNE | 46.94977 | -123.78637 |
| 3 Wells TBD | TBD | 417092212000 | 17 | 9W | 22 | NWNE | TBD | TBD |

Datum: WGS84

## Place of Use (See Map, Attachment 1)

**LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE**

Area served by the City of Cosmopolis as described in a Department of Health approved Water System Plan. See also RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

## Proposed Works

1 existing well (8-inch casing to 320-feet), Three proposed wells to be constructed to approximate depths of 350 feet

## Development Schedule

| BEGIN PROJECT | COMPLETE PROJECT | PUT WATER TO FULL USE |
|---|---|---|
| Started | September 1, 2020 | September 1, 2030 |

## Measurement of Water Use

| | |
|---|---|
| • How often must water use be measured? | Monthly |
| • How often must water use data be reported to Ecology? | Annually (Jan 31) |
| • What volume should be reported? | Total Annual Volume |
| • What rate should be reported? | Annual Peak Rate of Withdrawal (gpm) |

## Provisions

**Progress Reports**

The City of Cosmopolis is required to provide Ecology progress reports every five (5) years beginning September 1, 2025. Progress reports will consist of describing efforts made on project in the previous five (5) year period and if the project is progressing on schedule. Any changes in point of contact must also be updated.

**Wells, Well Logs and Well Construction Standards**

All wells constructed in the state must meet the construction requirements of WAC 173-160 titled "Minimum Standards for the Construction and Maintenance of Wells" and RCW 18.104 titled "Water Well Construction". Any well which is unusable, abandoned, or whose use has been permanently discontinued, or which is in such disrepair that its continued use is impractical or is an environmental, safety or public health hazard must be decommissioned.

All wells must be tagged with a Department of Ecology unique well identification number. If you have an existing well and it does not have a tag, please contact the well-drilling coordinator at the regional Department of Ecology office issuing this decision. This tag must remain attached to the well. If you are required to submit water measuring reports, reference this tag number.

Installation and maintenance of an access port as described in WAC 173-160- 291(3) is required.

**Measurements, Monitoring, Metering and Reporting**

An approved measuring device shall 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, 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 for modifications to some of the requirements.

Recorded water use data shall be submitted via the Internet. To set up an Internet reporting account, contact the Southwest Regional Office. If you do not have Internet access, you can still submit hard copies by contacting the Southwest Regional Office for forms to submit your water use data.

**Water Use Efficiency**

Use of water under this authorization shall be contingent upon the water right holder's maintenance of efficient water delivery systems and use of up-to-date water conservation practices consistent with established regulation requirements and facility capabilities.

**Proof of Appropriation**

The water right holder shall 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 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.

**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 Facts

Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I concur with the investigator that water is available from the source in question; that there will be no impairment of existing rights; that the purpose(s) of use are beneficial; and that there will be no detriment to the public interest.

Therefore, I ORDER approval of Application No. G2-30616, 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 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**<br>Attn: Appeals Processing Desk<br>300 Desmond Drive SE<br>Lacey, WA 98503<br><br>**Pollution Control Hearings Board**<br>111 Israel RD SW STE 301<br>Tumwater, WA 98501 | **Department of Ecology**<br>Attn: Appeals Processing Desk<br>PO Box 47608<br>Olympia, WA 98504-7608<br><br>**Pollution Control Hearings Board**<br>PO Box 40903<br>Olympia, WA 98504-0903 |

Signed at Olympia, Washington, this 9th day of August 2016.

Michael J. Gallagher

Michael J. Gallagher, Section Manager
Water Resources Program/SWRO
Department of Ecology

## BACKGROUND

On April 26, 2013, the **City of Cosmopolis** (City) filed an *Application for Water Right Permit* with the State Department of Ecology (Ecology). The City requested an instantaneous withdrawal rate (Qi) of 200 gallons per minute (gpm) and an annual quantity (Qa) of 300 acre-feet per year (af/yr).

**Table 1. Summary of Application No. G2-30616**

| Attributes | Proposed |
|---|---|
| Applicant | **City of Cosmopolis** |
| Application Received | April 26, 2013 |
| Instantaneous Quantity | 200 gpm |
| Source | 4 Wells |
| Purpose of Use | Municipal supply |
| Period of Use | Year-round as needed |
| Place of Use | Area served by City of Cosmopolis as described in a Department of Health approved Water System Plan. RCW 90.03.386 may have the effect of revising the place of use of this water right |

This application has been processed under Ecology's Cost Reimbursement Program. Pacific Groundwater Group (PGG) prepared this report of examination under contract to Ecology. PGG attended a site visit and reviewed available documents pertaining to this and other related *Applications for Water Right*, including hydrogeologic and well construction reports, historical water use, stream flow conditions, and standing of existing rights.

Under the provisions of RCW 90.03.290 and 90.44, a water right may be issued upon findings that water is available for appropriation for a beneficial use, and that the appropriation will not impair existing rights or be detrimental to the public welfare. In accordance with these provisions, I recommend issuance of Permit G2-30616.

## LEGAL REQUIREMENTS FOR APPLICATION PROCESSING

The following requirements must be met prior to processing a water-right application.

### Public Notice

A public notice of the proposed appropriation was published in the Vidette on June 2nd and 9th, 2016. No protests were received as a result of this notice.

### Consultation with the Department of Fish and Wildlife

The Department must give notice to the Department of Fish and Wildlife (DOFW) of applications to divert, withdraw, or store water. This application and supporting information were provided to the Department of Fish and Wildlife on April 7, 2016.

Water Right Biologist Steve Boessow express concerns regarding the potential to reduce flows in the Alder Creek drainage which would impact the fishery operations at the Grays Harbor Community College. The DOFW has indicated that they do not object to the issuance of this permit provided it can be determined that it won't result in impairment to downstream water users. As a result of PGG's review of these concerns, we have recommended that that this permit be issued for seasonal use only so as not to conflict with other users with senior water rights.

### State Environmental Policy Act (SEPA)

A groundwater right application is subject to a SEPA threshold determination (i.e., an evaluation of whether there are likely to be significant adverse environmental impacts) if one of the following conditions is met.

- It is an application for more than 2,250 gpm
- It is an application that, in combination with other water right applications for the same project, collectively exceeds the amount 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 make a threshold determination, as defined under WAC 197-11-305

None of these situations apply to this application. Accordingly, the subject application is categorically exempt under SEPA (WAC 197-11-305 and WAC 197-11-800(4)).

### Water Resources Statutes and Case Law

Under the provisions of RCW 90.03.290 and 90.44.050, a water right shall be issued upon findings that water is available for appropriation for a beneficial use and that the appropriation, as proposed in the application, will not impair existing rights or be detrimental to the public welfare.

This application has been processed under Ecology's Cost Reimbursement Program. Based on the provisions of RCW 43.21A.690 and RCW 90.03.265, PGG prepared this report under contract to Ecology.

## INVESTIGATION

Evaluation of this application included, but was not limited to, research and/or review of the following:

- Gibbs & Olsen, Inc., City of Cosmopolis Production Well No. 1 (PW-1) Evaluation, Draft May 1, 2015.
- Gibbs & Olsen, Inc., Pumping test data for Cosmopolis Production Well PW-1 provide by Mike Olden to PGG in an e-mail dated 8/12/15.
- Eddy, P.A, 1968. Preliminary Investigation of the Geology and Ground-Water Resources of the Lower Chehalis River Valley and Adjacent Areas, Water Supply Bulletin No. 30.

- Logan, R.L., 1987. Geologic Map of the Chehalis River and Westport Quadrangles, Washington, Washington Division of Geology and Earth Resources Open File Report 87-8.
- Pacific Groundwater Group, 2016. Hydrogeologic Evaluation and Impairment Considerations – Technical Memorandum in Support of City of Cosmopolis Water Right Application G2-30616, May 5, 2016.
- Robinson & Noble, 2013. City of Elma, Application for New Water Right G2-29303, Phase 1 Water Right Assessment, September 2013.
- Slaughter, S.L., et al, 2013. Earthquake-Induced Landslide and Liquefaction Susceptibility and Initiation Potential Maps for Tsunami Inundation Zones in Aberdeen, Hoquiam, and Cosmopolis, Grays Harbor County, Washington for a M9+ Cascadia Subduction Zone Event, Washington Division of Geology and Earth Resources, Report of Investigations 36, February 2013
- Western Regional Climate Center, Climate Summaries for Aberdeen Washington (450008), http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?waaber
- Williams, J.R. and Pearson, H.E., 1984. Streamflow Statistics and Drainage-Basin Characteristics for the Southwestern and Eastern Regions, Washington, Volume I. Southwestern Washington. USGS Open-File Report 84-145-A.
- Washington State Conservation Commission, 2001. Salmon and Steelhead Habitat Limiting Factors, Chehalis Basin and nearby Drainages, Water Resource Inventory Areas 22 and 23. May 2001.
- Washington State Department of Ecology records of surface and groundwater rights and claims in the vicinity of the subject production wells. https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx
- Washington State Department of Ecology water well logs in the vicinity of the subject production well. https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/default.aspx


A field visit was conducted by Jill Van Hulle of Pacific Groundwater Group on May 18, 2016. Ms. Van Hulle visited the site of the City's proposed well field, and the surrounding area including the Alder Creek\Swano Lake drainage.

**Project Description**

The proposed supply source under the new permit would be groundwater wells located at Makarenko Park, a 40-acre city park situated in the NW1/4 of the NE1/4 of Section 22, Township 17 North, Range 9 West, W.M. The intent of this application is to secure a new water right for the City from 4 wells, one of which was constructed in 2013.

To date the City has developed and tested a single 6-inch diameter supply well (PW-1) at the site. The well was drilled to a depth of 320 feet and completed in a marine sandstone aquifer at depths of between 140 and 320 feet.

**Site Description**

The City of Cosmopolis is located on the south side of the Chehalis River in Grays Harbor County just east and upstream of the City of Aberdeen.

The City is situated on terrace and floodplain deposits within the lower Chehalis River valley (WRIA 22). The valley is bordered by bedrock uplands to the north and south, which have much higher elevations.

Near the valley floor, the City's elevation ranges from approximately 15 to 20 feet above sea level with higher terraces extending to about 140 feet above mean sea level (msl). The City's proposed wellfield lies in an upper terrace at an elevation of about 120 feet above msl.

There are two small streams in vicinity of the proposed wellfield. Alder Creek which drains the upland area above the proposed wellfield and Mill Creek that drains areas further to the east. Alder Creek flows to the northwest and discharges into Grays Harbor. Mill Creek flows mostly north where it discharges into the Chehalis River

The City's water service area is within Sections 13, 14, 15, 22, and 23, Township 17 North, Range 9 West. Land development within the City's service area is dominantly moderate density single family residential with some industrial lands along the river.

The City currently serves about 1,640 full time residents and gets water from City of Aberdeen which is diverted from the Wishkah River approximately 14 miles up the Wishkah Valley on Squirrel Rd. Water is treated with a membrane filtration system prior to being delivered to the City of Cosmopolis.

**Cosmopolis's Public Works Department is responsible for all maintenance, construction, inspections, and water quality of the water distribution system in Cosmopolis. The applicant has determined that it would be more cost effective for them to have the capacity to produce at least some of their own supply.**

**Aquifer Characterization and Site Hydrogeological Conditions**

The geology of the lower Chehalis River valley can be described as a large, partially-sediment filled channel cut into the Tertiary sedimentary rocks that consist of marine shale, sandstone, and conglomerate (Eddy, 1968; Robinson & Noble, 2013). The Quaternary age deposits that occur within the valley and surrounding terraces are a complex mixture of fluvial sediments, deposited in both high- and low-energy regimes associated with historic periods of glacial and interglacial times.

The local geology is divided into (1) bedrock found in the uplands, and (2) unconsolidated sediments found in lowlands and floodplains.

Unconsolidated sediments in the lowlands and floodplains include fluvial terraces from the modern Chehalis River and other streams, as well as older Pleistocene (2.6 million years to 11,000 year old) alluvium and a scattering of outwash from alpine glaciations in the Olympic Mountains (Logan, 1987).

During the last glacial maximum, when glacial ice occupied the Puget Lowland as far south as Tenino, drainage from the ice sheet as well as portions of the Cascade Range was routed down the Chehalis River through Grays Harbor. Sea level was several hundred feet lower, and the river downcut deeply before depositing sediment in its channel in response to sea level rise.

The floodplain of the Chehalis River, where the cities of Aberdeen, Cosmopolis, and Hoquiam now exist, is composed of thick sandy silt to silty clay, as evidenced by more than 300 geotechnical boreholes. The fine-grained sediments exceed 200 ft in thickness near the Chehalis River and progressively thin toward the uplands. Boreholes show that the fine-grained sediments are underlain by sand, gravel, and bedrock).

**Local Hydrogeology**

PW-1 was constructed under the authority of an Ecology issued Preliminary Permit to drill and test. Cosmopolis's well PW-1 was installed by Arcadia Drilling in 2013. The well was drilled to a depth of 320 feet and completed with a 6-inch liner casing from 2 feet above ground surface to a depth of 320 feet.

The stratigraphy at the site consists of about 44 feet of unconsolidated Quaternary alluvial (Qa) deposits that overlie the deeper Tertiary marine (Tm) bedrock deposits. Well PW-1 taps the deeper marine bedrock deposits (PGG 2016).

The static water level at the time of drilling (5/26/13) was 19 feet below the top of the well or about 17 feet below ground surface. Based on a site elevation of 124 feet, the static water level would be 107 feet above msl. This static water level is about 9 feet higher than the elevation of Alder Creek which lies approximately 300 feet south of the site.

At the time of drilling, PW-1 was tested with both bailer and air lift tests, and in August 2013, the City completed a series of more controlled tests with a test pump, flow meter, and pressure transducer (Gibbs & Olsen, 2015). The testing included a 3-hour step rate test and both a 12-hour and a 24-hour constant-rate test.

During the step-rate tests, PW-1 was incrementally pumped at rates of between 15 gpm and 30 gpm with drawdown monitored in the pumping well and a monitoring well (OW-1) located about 1,900 feet to the east of PW-1. The observation well is completed at approximately the same elevation as PW-1. There was no measurable drawdown in the observation well during the test. Total drawdown in PW-1 at the end of the 24-hour test was 89.1 feet for a one-day specific capacity of 0.26 gpm/ft.

A curve matching program (Aqtesolv) was used to assess aquifer properties and boundary influences using drawdown and recovery data from both the 12-hour and 24-hour tests. The Aqtesolv analysis indicated a very low aquifer transmissivity of 39 ft2/day and a semi-confined storage coefficient of 0.016 (PGG, 2016). The analysis suggests that leakage has a fairly strong influence on drawdown which largely stabilizes after one day of pumping. The source of leakage to the Tm supply aquifer would likely be water derived from the overlying Qa aquifer. The Aqtesolv analysis suggests that vertical hydraulic conductivity could be actually higher that the horizontal hydraulic conductivity possibly due to flow through fractures within the lithified sandstone sediments (PGG, 2015).

**Water Availability**

The testing of PW-1 indicates that the Tm aquifer has a relatively low transmissivity which limits production from individual supply wells. As designed, PW-1 has about 123 feet of available drawdown (difference between top of perforations and static water level. Professional practice calls for limiting total drawdown to about two thirds of the available drawdown so as to provide sufficient safety margin for seasonal variability, interference impacts, changes in well efficiencies, and long-term water level decline. Using this criterion, total drawdown should be limited to about 80 feet. Based on the specific capacity of 0.26 gpm/ft observed at the end of the 24-hour test, the recommended well yield for PW-1 would be about 21 gpm (Gibbs & Olsen, 2015).

Higher yields could be achieved by developing several lower capacity wells and integrating them into a wellfield supply. Based on the Aqtesolv analysis noted above, we assess a wellfield configuration of four supply wells spaced 100 feet apart with individual well yields of 15 gpm and a total wellfield yield of 60 gpm. This configuration resulted in 75 feet of predicted drawdown in individual wells after water levels

stabilized due to leakage. Water level stabilization was predicted to occur after about one week of pumping. The Aqtesolv analysis suggests that most of the drawdown would be concentrated within 100 to 200 feet of the wellfield due to leakage (i.e. less than 0.5 feet of drawdown beyond 200 feet). In affect this suggests that water will be largely sourced from vertical flow from the overlying Qa aquifer which has continuity with nearby streams such as Alder Creek and Mill Creek. We assume that the highest rates of wellfield capture would be focused on Alder Creek given its closer proximity to the wellfield site (i.e. 300 feet for Alder Creek versus 1700 feet for Mill Creek).

We would recommend that the total wellfield withdrawal rate be limited to 60 gpm given the low transmissivity of the aquifer which limits production from the system and the potential for capture from nearby streams.

**Potential Effects on Other Groundwater Users**

Due to the significant leakage noted during the constant-rate pumping test, water levels in the aquifer will likely stabilize after about a week of pumping. The leakage will also act to minimize interference drawdown away from the wellfield – with most all of the drawdown occurring within 200 feet of the wellfield area (i.e. less than 0.5 feet for Q=23 gpm, t=7 days). This is due to the high vertical permeability predicted by the Aqtesolv analysis.

Testing completed by the City at a nearby well for a mobile home park seems to confirm that interference drawdown within the supply aquifer will be quite limited in areal extent. The mobile home park well is located 850 feet from PW-1 and is completed at the same elevation as PW-1. This well was pumped at about 40 gpm for a 30-minute period with no measurable effect on the water level in PW-1 (Gibbs and Olsen, 2015). Although the testing period was quite short, the absence of any observable drawdown at PW-1 is consistent with the Aqtesolv analysis noted above that suggest very limited drawdown away from pumping centers.

**Potential Impairment to Instream Flows and Existing Surface Water Users**

The Chehalis River basin includes parts of Lewis, Thurston, Cowlitz, Pacific, Grays Harbor, and Mason Counties and falls within Water Resource Inventory Areas (WRIA) 22 and 23. The total drainage area of the basin is 2,680 square miles of which approximately 84 percent is forest lands. Approximately 187 square miles (120,000 acres) are in agriculture.

Under the provisions of WAC 173-522/23, an Instream Resource Protection Plan has been adopted for the Chehalis River and its tributaries. The rule established instream flows for the Chehalis River and closed certain tributaries to any additional consumptive withdrawals. Under the rule, Ecology's decisions on future permitting actions related to groundwater withdrawals must consider the natural inter-relationship of surface and groundwater, thus these restrictions apply to both groundwater and surface water withdrawals.

Based on our evaluation of the information submitted with this application, we have determined that this proposal will not result in direct impacts to the main stem of the Chehalis River itself. Tributary creeks within the vicinity of the proposed wellfield include Mill Creek which is located about 1,700 feet to the east and Alder Creek which is situated about 300 feet to the south. The City's wells are targeting groundwater that is either discharging directly to marine waters, or to a more limited extent discharging as surface water into the tributary drainages, likely into Alder Creek.

Mill Creek and Alder Creek are not regulated by instream flows or closures, and the Department of Fish and Wildlife does not have concerns regarding fish utilization of these waterbodies. However, there are downstream water rights on Alder and Mill Creek that could be affected by a change in surface water discharge. A review of Ecology's WRATS database indicates that there are three surface water right on Alder Creek and five short form claims on Mill Creek. The Alder Creek rights include:

- SWC 8976 - This right has a 1950 priority date and allows for the irrigation of 10 acres, in the amounts of 20 acre-feet and 0.1 cfs. A water right application was originally filed by Swano Katalinich for gravel washing and irrigation, but only issued for irrigation. Under the recommendations of the Department of Fish and Wildlife diversions were limited to when the flow of Alder Creek was greater than 0.5 cfs. This right was later conveyed to the Aberdeen School District[1].

- S2-00189 - This right has a 1971 priority date and was issued to the WA Department of Natural Resources for the irrigation of 12 acres of athletic fields, in the amounts of 36 acre-feet and 0.2 cfs. The period of use is May 1 through September 30. The ROE mentions specifically that these 12 acres are in addition to those previously authorized under SWC 8976. The water source is referenced as an unnamed drainage ditch, but appears to correspond with Alder Creek below Swano Lake.

- S2-25740 – This right has a 1980 priority date and was issued to Grays Harbor College for fish propagation, in the amount of 1 cfs. The right is non-consumptive with a short bypass reach below the aquatic center. Water is collected immediately above the barrier dam that impounds Swano Lake.

Total rights on Alder Creek amount to 1.3 cfs during the irrigation season and 1.0 cfs at other times.

Since streamflow data are not available for Alder Creek, we reviewed streamflow statistics from Clearwater Creek which is nearby drainage basin that has similar characteristics as Alder Creek (Williams et.al., 1984). Based on the relative drainage areas of the two creeks, we generated estimates of average monthly flow in Alder Creek. Estimated average monthly flows range from a low of 0.8 cfs in August to a high of 8.7 cfs in January.

In Mill Creek only a single surface water claim in the amount of 0.5 cfs cfs[2] has been filed. This claim was filed by the City of Cosmopolis for a non-specified purpose of use, and we note that the City does not currently operate a diversion from Mill Creek, and that the drainage of Mill Creek is significantly larger than Alder Creek so even if they were using water there would be adequate flow.

Since flows in Alder Creek do have the potential to become quite low in summer and early fall, and senior rights have previously been issued by Ecology has may exceed natural flows we recommend that no additional water rights be issued during the low flow period. Based on our evaluation of projected discharges it appears that stream flow is generally high enough to accommodate minor effects from October 1st through June 30th.

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[1] PGG has not confirmed current status of senior water rights.

[2] Since this filing was a short-form claim, no date of first use was specified. We also not that that a purpose of use was not indicated.

We find that while the City's proposed withdrawal does have the potential to have some level of effect on Alder Creek that it is unlikely to impair other water users because pumping from the proposed wellfield by the City will only take place during the time of year when flows are at their highest. The City's withdrawals should not cause negative environmental impacts or impact senior users.

**Quantities for Permit**

The City of Cosmopolis is a small community with correspondingly low overall water demand. Average daily demand in Cosmopolis is 265 gallons per day per connection. The City currently has about 725 service connections, and uses approximately 208 acre-feet per year. Distribution system leakage, as reported to the Dept. of Health is about 6.6% which meets the State's target for Water Use Efficiency. The City's goal is to reduce distribution loss to below 5% in the next 6 years.

A review of the City's population data from 1968 to 2013 shows that the average annual growth rate over the last 45 years has been about 0.5%. There has been no net growth within the City over the most recent five year period.

There are currently no economic initiatives or significant projects in the area that would suggest that growth will not follow historical trends. The City projects a future demand of 235 acre-feet by 2054.

While the seasonal nature of this water right preclude its use to meet all demand, the City should be able to produce about 54 acre-feet during the 9 month period of time that the wells may be utilized[3].

**Priority Processing**

RCW 90.03.265(2) provides that, in pursuing a cost-reimbursement project, the Department must determine the source of water from which the water is proposed to be diverted or withdrawn, including the boundaries of the area that delimit the source. The Department must determine if any other water-right applications are pending from the same source. A water source may include surface water only, groundwater only, or surface and groundwater together, if the Department finds they are hydraulically connected. The Department shall consider technical information submitted by the applicant in making its determinations under this subsection.

RCW 90.03.265(1)(b) provides that the requirement for an applicant to pay for the processing of senior applications does not apply in situations where the water allocated to one party will not diminish the water available to a senior applicant from the same source.

The only pending application that predates the City's is G2-29769 which was filed in 1998 by the Weyerhaeuser Company (Weyco) for the pulp mill that is now owned by Cosmo Specialty Fibers. The pulp mill currently obtains water from the City of Cosmopolis for domestic use.

The proposed use of the water under the Weyco application is for industrial cooling. Cosmo Specialty Fibers operates a well that is situated in the low lying areas near the Chehalis River upstream of PW-1. The well has an approximate capacity of 1,000 gpm, and the intent of the application is to increase the facilities water right authorizations from 500 gpm to 1,000 gpm to reflect the installed capacity. Based on the significant difference between the proposed hydrogeologic units for Cosmo Specialty Fibers and City's applications, there is no potential for measurable interference from operation of the City's proposed wells. Water appears to be available for the Cosmo Specialty Fibers application,

[3] Assumes operation for 9 months, for an average of 18 hours per day

regardless if a permit is issued to the City. Accordingly, since there are no other pending groundwater applicants that will be directly affected by the requested allocation, this application can be processed prior to other pending applications.

**Four Statutory Tests**

This Report of Examination (ROE) evaluates the application based on the information presented above. To approve the application, Ecology must issue written findings of fact and determine that each of the following four requirements of RCW 90.03.290 has been satisfied:

1. Water is available. *Water appears to be physically available, however it is not anticipated that the wells will be capable of producing water in excess of 15 gpm each or a total capacity of 60 gpm from four wells given the low transmissivity of the water bearing formation.*
2. No impairment to other right holders or instream flows will occur. *Existing water rights including surface waters subject to instream flow rules (WAC 173-522 and WAC 173-523) are not anticipated to be impaired by the proposed withdrawals is operated during the 9 month period of use authorized by this recommendation.*
3. Beneficial use. *Use of the water by the City of Cosmopolis for municipal purposes is considered a beneficial use, (RCW 90.14.031).*
4. Water Resources Act of 1971. *The issuance of this permit is consistent with RCW 90.54 (Water Resources Act of 1971), which requires allocation of water in a manner that preserves instream resources, protects the quality of water, and provides adequate and safe supplies of the state and its citizens. The use of the water by the water by the City of Cosmopolis is not detrimental to the public welfare and will enable the City to meet the water supply needs of its service area consistent with its approved water system plan.*

**CONCLUSIONS**

The conclusions based on the above investigation are as follow:

1. The proposed appropriation for municipal supply is a beneficial use of water,
2. The recommended quantity of 60 gpm and 54 af/yr is available for appropriation,
3. The appropriation will not impair senior water rights, and
4. The appropriation will not be detrimental to the public interest.

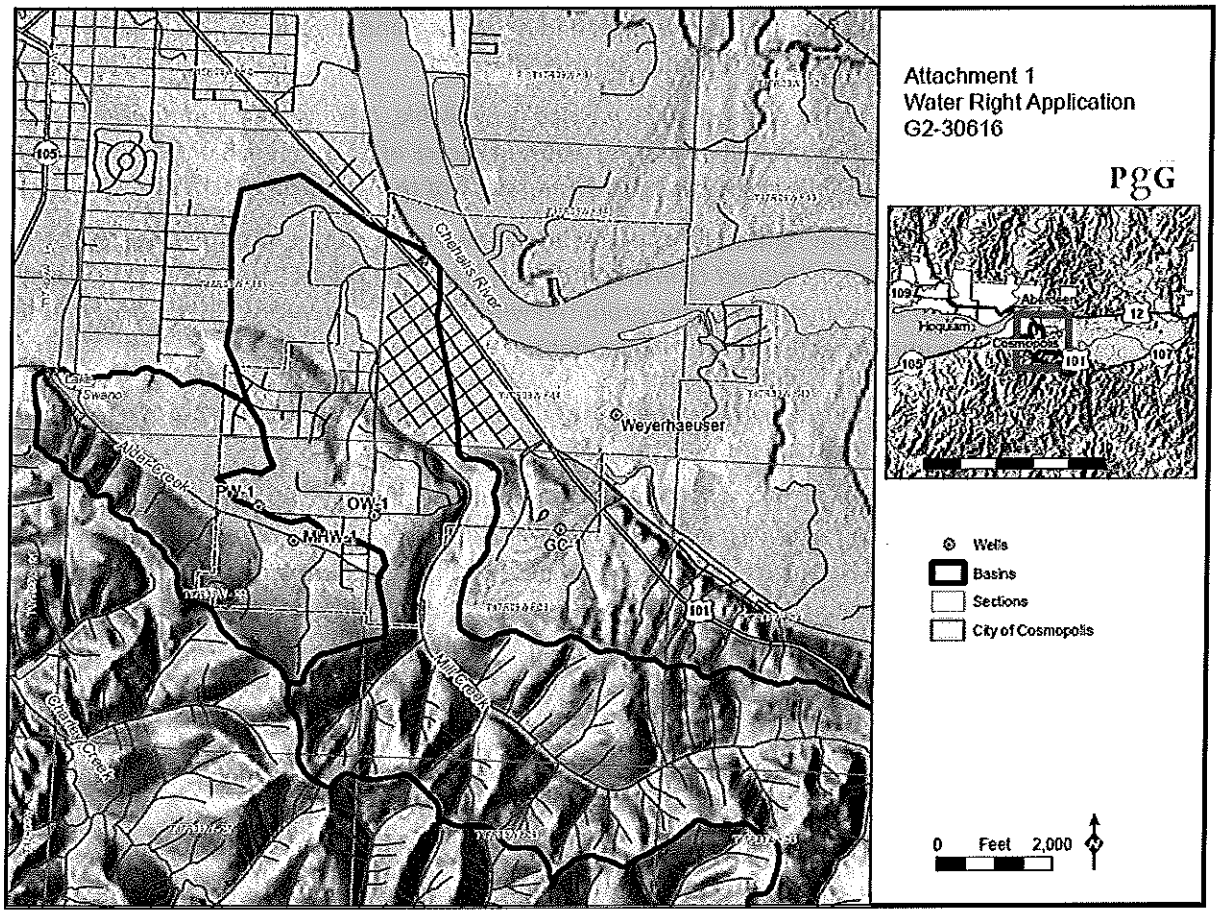
**RECOMMENDATION**

Based on the information presented above, the author recommends the allocation of 60 af/yr and 54 gallons per minute, as described, limited, and provisioned on page 1 through 3 of this report.

Report by: Jill E Van Hulle 8/9/2016

Jill Van Hulle, Pacific Groundwater Group — Date

Reviewed by: Tammy Hall, Water Resources Program — Date: 8/9/2016

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