WASHINGTON STATE DEPARTMENT OF ECOLOGY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
REPORT OF EXAMINATION
To Appropriate Public Waters

PRIORITY DATE	APPLICATION NO.		
March 11, 2008	G2-30461		

NAME
Dexter Development Company, Inc.

ADDRESS/STREET	CITY/STATE	ZIP CODE
P.O. Box 487	Tokeland, WA	98590

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
A Well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND (cfs)	MAXIMUM GALLONS PER MINUTE (gpm)	MAXIMUM ACRE FEET PER YEAR (ac-ft/yr)
	180*	15**

TYPE OF USE & PERIOD OF USE
Domestic supply – as needed

SPECIAL REMARKS

*The instantaneous quantity is additive to Groundwater Certificate 4472-A. The total instantaneous withdrawal under this right and Certificate 4472-A shall not exceed 192 gallons per minute.

**The annual quantity is additive to Groundwater Certificate 4472-A. The total annual withdrawal under this right and Certificate 4472-A shall not exceed 34.2 acre-feet per year.

LOCATION OF DIVERSION/WITHDRAWAL

SOURCE	PARCEL	LATITUDE	LONGITUDE	QTR/QTR	SECTION	TOWNSHIP	RANGE
Well	78008004015			NW1/4 NW1/4	11	T14N	R11W

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

The place of use of this water right is the NW ¼ of the NW ¼ of Section 11, Township 14N, Range 11W within what is known as the Dexter by the Sea subdivision. The subdivision is located in Tokeland, WA. Attachment 1 shows the location of the place of use (Dexter By the Sea Subdivision) and point of withdrawal (well location).

DESCRIPTION OF PROPOSED WORKS

The Dexter Development Company, Inc., project consists of the use of a groundwater well located on the Dexter by the Sea subdivision for domestic water supply to the subdivision. The well was constructed in 2008 to a depth of 199 feet below ground surface (feet bgs) within what is known as the Artesian Aquifer. The well is 6 inches in diameter. The Washington Department of Ecology Well Tag ID No. is A.5988. A projected 100 residential connections will be served. A storage tank with a capacity of up to 10 acre-feet may be installed for standby storage, storage equalization, and fire suppression storage.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	WATER PUT TO FULL USE BY THIS DATE
Already begun	December 31, 2016	December 31, 2029

PROVISIONS

1. Meter Installation
An approved measuring device shall be installed and maintained on the source authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use," WAC 173-173. See http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html.

2. Metering Rule Description And Petition Info
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 (Ecology) for modifications to some of the requirements. Installation, operation, and maintenance requirements are enclosed as a document titled "Water Measurement Device Installation and Operation Requirements." See http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html.

3. Record Water Use, Report Annually
Water use data shall be recorded biweekly. The maximum monthly rate of withdrawal and the monthly total volume shall be submitted to the Department of Ecology by January 31st of each calendar year. Water use data may be submitted via the Internet. To set up an Internet reporting account, access https://fortress.wa.gov/ecy/wrx/wrx/Meteringx/.

4. Authority To Access Project
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 the records of water use, the point of withdrawal, the measuring device, and the associated distribution system for compliance with water law.

5. Seawater Intrusion
Due to the proximity of the well to seawater, biannual chloride monitoring and reporting during the first two years of operation will be required. Chloride and conductivity measurements shall be made in April and August. The chemical analysis shall be performed by a state-accredited laboratory. A copy of the laboratory results for all sampling events shall be submitted by January 31st of each year to the Department of Ecology, Southwest Regional Office, Olympia, Washington. For record keeping, please include the water right number on all copies.

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. Furthermore, I concur with the investigator that water is available from the source in question, the purpose of use is beneficial, there will be no impairment of existing rights, and there will be no detriment to the public interest.

Therefore, I order APPROVAL of Application No. G2-30461, subject to existing rights and the provisions listed above.

You have a right to appeal this ORDER. To appeal this you must:

- File your appeal with the Pollution Control Hearings Board within 30 days of the "date of receipt" of this document. Filing means actual receipt by the Board during regular office hours.
- Serve your appeal on the Department of Ecology within 30 days of the "date of receipt" of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). "Date of receipt" is defined at RCW 43.21B.001(2).

Be sure to do the following:

- Include a copy of this document that you are appealing with your Notice of Appeal.
- Serve and file your appeal in paper form; electronic copies are not accepted.

1. To file your appeal with the Pollution Control Hearings Board

Mail appeal to:

The Pollution Control Hearings Board
P.O. Box 40903
Olympia, WA 98504-0903

OR

Deliver your appeal in person to:

The Pollution Control Hearings Board
4224 – 6th Ave SE Rowe Six, Building 2
Lacey, WA 98503

2. To serve your appeal on the Department of Ecology

Mail appeal to:

The Department of Ecology
Appeals Coordinator
P.O. Box 47608
Olympia, WA 98504-7608

OR

Deliver your appeal in person to:

The Department of Ecology
Appeals Coordinator
300 Desmond Drive SE
Lacey, WA 98503

3. And send a copy of your appeal to:

Thomas Loranger
Department of Ecology
P.O. Box 47775
Olympia, WA 98504-7775

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.

Signed at Olympia, Washington, this 24th day of August, 2010.

Thomas Loranger

Thomas Loranger, Section Manager
Water Resources Program
Southwest Regional Office

INVESTIGATOR'S REPORT

Legal Requirements

Public Notice (RCW 90.03.280)

Public notice of application G2-30461 was published during the weeks of March 11 and March 18, 2009. There were no protests to this application.

State Environmental Policy Act (SEPA)

The subject water right application is categorically exempt under SEPA [WAC 197-11-305 and WAC 197-11-800(4)] because the instantaneous quantity is less than the threshold of 2,250 gallons per minute (gpm).

Determinations

Chapters 90.03 and 90.44 RCW authorize the appropriation of public water for beneficial use and describe 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; and
- The water use must not be detrimental to the public interest.

Background

Project Description

The Applicant filed water right application G2-30461 with Ecology to use groundwater as a water supply for an existing housing development, Dexter by the Sea. The requested water right is for an additional instantaneous quantity (Qi) of 180 gallons per minute (gpm) and an additional annual quantity (Qa) of 15 acre-feet per year (ac-ft/yr). Under the Applicant's proposed project, groundwater would be withdrawn from a well installed in 2008 on the Dexter by the Sea Subdivision, located in Township 14 North, Range 11 West, Section 11 (Attachment 1).

The Applicant currently holds Groundwater certificate 4472-A for a Qa of 19.2 ac-ft/yr and a Qi of 12 gpm for community domestic supply. This existing water right associated with the Applicant's water system was originally approved in the early 1960s. The Applicant has requested that this pre-existing water right be transferred to the well installed in 2008 along with the proposed additional water right. This transfer does not require a change of the existing right, as the new well has been installed within the same township, range, and section as the existing right. The cumulative annual water right for the recently installed well, including both the existing water right and requested additional right, would result in Qi of 192 gpm and Qa of 34.2 ac-ft/yr.

Details regarding the requested right and the pre-existing right to be transferred to the new well are summarized in the table below.

Application or Certificate	Priority Date	Source	Depth (ft)	Township	Range	Section	Qi (gpm)	Qa (ac-ft/yr)
G2-30461	3/11/2008	Groundwater	199	14N	11W	11	180	15
4472-A	7/2/1961	Groundwater	199	14N	11W	11	12	19.2
Total	--	--	--	--	--	--	**192**	**34.2**

A map showing the location of the well and the proposed place of use is provided as an attachment (Attachment 1).

Priority Processing/Cost Reimbursement

This application is being processed by AMEC Geomatrix, Inc. (AMEC), pursuant to a cost-reimbursement agreement with the Department of Ecology. No other applications are being processed within the scope of the agreement.

Investigation

Proposed Use

The Applicant filed water right application G2-30461 requesting an additional groundwater right to withdraw a cumulative Qi of 192 gpm to meet peak hourly water demand for the Dexter by the Sea Subdivision. As described in the application, the Applicant calculated a water demand based upon the determination that an equivalent residential unit (ERU) in Tokeland, Washington, uses approximately 309.1 gallons of water per day. The Applicant then applied the ERU consumption rate to the 100-lot Dexter by the Sea Subdivision to calculate Qa of 34.2 ac-ft/yr.

Under the Applicant's proposed project, groundwater would be withdrawn from an existing well located in Township 14 North, Range 11 West, Section 11. The well is located within the Dexter by the Sea Subdivision east of the Shoalwater Bay Indian Reservation and at the north end of the Tokeland Peninsula (Attachment 1).

Other Rights Appurtenant to the Place of Use

The Applicant currently holds water right certificate 4472-A for a Qa of 19.2 ac-ft/yr and a Qi of 12 gpm for community domestic supply. The Applicant has requested that this existing water right be transferred to the well installed in 2008 along with the proposed additional water right, resulting in a cumulative requested annual water right of Qi of 192 gpm and Qa of 34.2 ac-ft/yr. No other senior water rights were identified within the same place of use as the Applicant's well.

Relationship of New and Existing Rights

The right addressed in this Report of Examination will represent an additive water right and will be used as needed to meet demand for the Dexter by the Sea Subdivision. The Applicant calculated a total Qa based upon the determination that an equivalent residential unit (ERU) in Tokeland, Washington, uses approximately 309.1 gallons of water per day. The Applicant then applied the ERU consumption rate to the 100-lot Dexter by the Sea Subdivision to calculate Qa of 34.2 ac-ft/yr.

All senior rights and/or applications for water rights potentially drawing from the same source water as the Applicant's application were identified. In conducting the determination, the source of water that the Applicant proposes using for domestic water supply and the universe of senior rights are normally defined based on the following considerations:

- Sharing a common recharge (catchment) area;
- Sharing a common flow regime;
- Hydraulic continuity between points of withdrawal; and
- Hydraulic continuity between the groundwater aquifer and surface water bodies.

Applying the criteria outlined above, rights deemed to draw from the same source as the Applicant's well include those that would involve either extracting directly from or in hydraulic connection with the Artesian Aquifer. It is expected that new withdrawals by the Applicant would likely affect only other wells screened within the Artesian Aquifer.

Ecology's Water Right Tracking System (WRTS) database lists all water rights and/or water right applications in Pacific County with priority dates senior to the Applicant's application. A conservative distance of approximately one mile from the Applicant's well was used to identify senior water rights potentially drawing from the same source of water within the potential area of influence as the Applicant's well. Within this search distance, all senior rights located in the same Township/Range/Section as the Applicant's well (Township 14 North, Range 11 West, Section 11) and in the adjacent Sections 1, 2, and 12, were identified. In addition, rights located in Section 18, which is located downgradient of the Applicant's well, were identified. Groundwater resources within downgradient regions of the Artesian Aquifer could be affected by upgradient withdrawals.

A total of seven senior certificates, consisting of the senior Dexter certificate (4472-A) and six certificates belonging to other parties, were identified within the search area. Attachment 2 provides a map of well locations associated with these senior certificates. The senior certificates and associated information are also tabulated in Attachment 3. All except the Dunsmoor certificate were confirmed to be screened within the Artesian Aquifer. The depth of the Dunsmoor well is unknown.

In addition, a total of 46 water right claims were identified within the search area. These claims are tabulated in Attachment 4. Of the 34 valid claims, 8 are associated with wells confirmed to be screened within the Artesian Aquifer. The remaining claims do not specify an aquifer and could be associated with wells screened within the Artesian Aquifer.

No water right applications senior to the Applicant's application were identified within the search area.

Site Visit

A site visit has not been conducted at the present time. However, the location of the Applicant's well was confirmed in discussions with the Applicant, and the location of the nearest senior water right holder (Benson) was confirmed in discussions with representatives of Tradewinds subdivision, the current right owner.

Hydrologic/Hydrogeologic Evaluation

The project site is located in northern Pacific County, Washington, immediately east of the Shoalwater Bay Indian Reservation at the north end of the Tokeland Peninsula (Attachment 1). The well location lies within a coastal lowland environment, approximately 60 to 80 feet north of tidelands associated with the Willapa Bay (Hansen, 2009). The coastal lowlands are relatively flat, with ground surface elevation ranging from sea level to 40 feet above sea level. North of the project site, ground elevation increases to approximately 300 feet above sea level as the coastal lowlands transition into forested uplands (Lane and Ebbert, 2002).

According to the Western Regional Climate Center (http://www.wrcc.dri.edu), average annual precipitation, including both snowfall and rainfall, as measured 7 miles north-northwest of the project site at Grayland, Washington, is 73.9 inches. The highest average monthly precipitation of 11.2 inches occurs in December, with the lowest monthly average of 1.37 inches occurring in July.

Regional Hydrogeology

The geology of Pacific County, Washington, generally consists of bedrock composed of weathered and eroded basalt and other volcanic rocks, overlain by sedimentary deposits (Lum, 1984). According to Lane and Ebbert (2002), the basalt formation may contain groundwater, but production and water quality have not been investigated. Lum (1984) reported that an oil exploration well advanced northwest of the Shoalwater Indian Reservation encountered basalt over 1,000 feet below sea level. Basalt outcrops are also present east of the reservation near the mouth of the North River at elevations from 200 to 600 feet above sea level (Lum, 1984).

The overlying sedimentary deposits include consolidated and unconsolidated terrace deposits, beach sands, and alluvium (Lum, 1984). Lane and Ebbert (2002) suggest that the sedimentary deposit is at least 350 feet thick, while Lum (1984) concluded that the thickness is greater than 400 feet. Terrace deposits are composed of unconsolidated and partially compacted layers with varying amounts of clay, silt, sand, and gravel (Lane and Ebbert, 2002). Groundwater within the terrace deposits is present in both confined and unconfined conditions.

Water-bearing hydrostratigraphic units may also include reworked alluvium deposits and beach sands; however, Lane and Ebbert (2002) did not investigate this potential groundwater resource as part of their Artesian Aquifer study.

Local Hydrogeology

Lane and Ebbert (2002) described three major hydrostratigraphic units present within the sedimentary deposits found in the vicinity of the Dexter by the Sea Subdivision. These units, from the ground surface downward, include a sandy water table aquifer, semiconfining lower permeability clay and silt unit, and the sand and gravel Artesian Aquifer. The water table aquifer is present only within coastal lowland regions, while the Artesian Aquifer extends northward beneath the coastal lowlands and uplands.

Groundwater flow directions within the Artesian Aquifer are generally from north to south, indicating that recharge to the Artesian Aquifer occurs to the north and at a higher elevation than the Dexter by the Sea Subdivision. An upward hydraulic gradient is present from the Artesian Aquifer across the overlying semi-confining unit and into the watertable aquifer.

The Applicant's well is located immediately north of Willapa Bay and east of the Pacific Ocean. Larger tributaries to Willapa Bay in the vicinity of the project site include the Cedar River and Freshwater Creek. Other minor tributaries include Pacific County Drainage Ditch Number 1, Cannery Slough, Kindred Slough, Teal Slough, and Norris Slough. Because of the thick, low-permeability unit present above the Artesian Aquifer in this area, groundwater extraction from the Artesian Aquifer is not anticipated to adversely influence groundwater contributions to surface water bodies within the project area.

The Applicant's well is constructed at a depth of 201 feet below ground surface (bgs) and is screened from 189 to 199 feet bgs. The well screen is located within a sand and gravel unit that is formally referred to as the Artesian Aquifer (Lane and Ebbert, 2002). The Applicant, however, has indicated that the sand and gravel aquifer's potentiometric surface is located above the ground surface only during the winter months. During the late summer and early fall, the well does not exhibit flowing artesian conditions. The Artesian Aquifer is overlain by a low-permeability clay and silt semiconfining unit. The Applicant's water well report indicates that the semiconfining unit is approximately 60 feet thick in the vicinity of the well. Above the semiconfining unit and extending to the ground surface is a sand-dominated water table aquifer.

Impairment Considerations

It is expected that withdrawals by the applicant related to this application would be dominantly from the sand and gravel aquifer referred to as the Artesian Aquifer. Available data for the Artesian Aquifer, including results of aquifer pump tests, available hydrogeologic studies, and groundwater chemical data analyses, were reviewed to quantify hydrogeologic properties that can be used to address possible impacts on water resources or impairment of other rights. Reviewed reports and information included the following:

- Lane, R.C. and L.C. Ebbert, 2002, Hydrogeologic and Water-Quality Reconnaissance of the Artesian Aquifer Under the Shoalwater Bay Indian Reservation and Tokeland Peninsula, Pacific County, Washington, 1988-1999: United States Geological Survey Water-Resources Investigations Report 01-4023;

- Lum, W.E. II, 1984, A Reconnaissance of the Water Resources of the Shoalwater Bay Indian Reservation and Adjacent Areas, Pacific County, Washington, 1978-1979: United States Geological Survey Water Resources Investigation Report 83-4165;

- Moerke and Sons Pump and Drilling, Inc., 2008, Dexter by The Sea Well Capacity Report;

- Wegner, Duane E., 1956, Preliminary investigation of ground water in the Grayland Watershed, Grays Harbor and Pacific Counties, Washington: U.S. Geological Survey Open-File Report; and

- Available materials in Ecology files for water right certificates and claims within the conservative potential area of influence (adjoining Township/Range/Sections, and Sections downgradient of the applicant's well on the Tokeland peninsula), including information available in prior ROEs and associated protest letters.

Potential for Impairment

The potential for the proposed right to impair senior rights associated with nearby qualifying withdrawal facilities is evaluated in this section. "Qualifying withdrawal facilities" means those withdrawal facilities which in the opinion of Ecology constitute a reasonable development of the aquifer. A reasonable development must satisfy the following requirements (WAC 173-150):

- The withdrawal facilities must be constructed in accordance with chapter 18.104 RCW (Water Well Construction Act), chapter 173–160 WAC (Minimum standards for construction and maintenance of water wells), and the water right permit provisions, if any, or the applicable state laws and the regulations of the department which were in effect at the time of construction of the facilities.
- The withdrawal facilities must have a depth of aquifer penetration which will allow the withdrawal of water from a reasonable or feasible pumping lift.
- The withdrawal facilities must be able to accommodate a reasonable variation in seasonal pumping water levels.
- The withdrawal facilities, including the pumping facilities, must be properly sized to the ability of the aquifer to produce water.

A qualifying withdrawal facility is deemed to be impaired if there is an interruption or interference of water to said facility or a contamination of such water due to withdrawals associated with the junior right, or if significant modifications must be made to said facilities in order for the senior right to be exercised.

The Dexter well log indicates that sand is present from about 90-200 feet bgs, below a 60-foot-thick clay layer. The well was screened to a depth of 199 feet bgs. During and immediately following well installation, the water level rose to +3 feet above ground surface, indicating at least 202 feet of available water.

Quantitative data sets suitable for determining aquifer properties, such as transmissivity, storativity, and the well's potential radius of influence, were not available for evaluation. No 24-hour or 48-hour pump tests have been completed at any known wells in the area. According to a protest filed by former USGS geologist Duane Wegner for the Nelson Stock Ranch application in the same area and aquifer (application G2-29043), the size of the aquifer, its recharge source, and pump test data had not been determined for the Artesian Aquifer as of 1995 (Wegner, 1995).

During development of the Applicant's well, however, groundwater was extracted at a rate of approximately 191 gpm for over 5 hours, resulting in drawdown of 81 feet (Moerke & Sons, 2008). According to information provided by the Applicant, the pump is currently located at 100 feet bgs, indicating that 19 feet of water remained above the pump at the completion of well development (Moerke & Sons, 2008). Presumably, the pump could be lowered deeper into the well if it is anticipated that drawdown would exceed 100 feet over longer periods of time.

Following well development, groundwater levels recovered to 11 feet bgs within 1 minute following completion of pumping. After 15 minutes of recovery, groundwater levels rose to 3.2 feet bgs (Moerke & Sons, 2008). Recovery data indicate that the Artesian Aquifer may be a highly transmissive system. Groundwater measurements were not collected at observation wells during well development.

Due to the short span of the well development process and the lack of data from observation wells, no quantitative conclusions can currently be drawn regarding quantitative aquifer characteristics, including transmissivity and coefficient of storage. These quantitative characteristics are required to estimate the radius of influence or potential for impairment of other water rights. A large drawdown was experienced during the test, indicating that a sizeable cone of depression could extend laterally through the aquifer during prolonged pumping from the Applicant's well. The well associated with a senior certificate located closest to the Applicant's well is the Benson well, belonging to the Tradewinds subdivision (depicted on Attachment 2). This well is located approximately 1,200 feet away. While it is unlikely that pumping of the well at the proposed rate would impair a qualifying withdrawal facility associated with a senior right at this distance or further, it is suggested that the Applicant perform a 24-hour pump test, with simultaneous monitoring of water levels in an observation well during the test. Data collected from the pump test will help the Applicant with long-term management of the well and future operational and/or regulatory and legal issues that could develop.

Surface Water Influence

The Artesian Aquifer is overlain by a low-permeability, clay and silt semiconfining unit. In the vicinity of the Applicant's well, the Artesian Aquifer is isolated from the overlaying water table aquifer by a thick unit of low-permeability silt and clays. The Applicant's water well report indicates that the semiconfining unit is approximately 60 feet thick in the vicinity of the well. As a result, groundwater extraction from the Artesian Aquifer is not anticipated to detrimentally affect surface water bodies. Due to the thickness of the semiconfining unit in this area, the anticipated areal extent, and the low permeability, no impacts to the water table aquifer or surface water bodies are expected due to groundwater withdrawals from this well.

Potential for Sea Water Intrusion

Because the well associated with this application is located adjacent to a seawater body, a potential for seawater intrusion is present.

Lane and Ebbert (2002) characterized water quality in the Artesian Aquifer. Chloride concentrations varied from 8.8 to 20 milligrams per liter (mg/L) and were not interpreted as characteristic of seawater intrusion.

Wegner (1956) indicated that some pockets of high chloride content are present in groundwater in wells located in the Township/Range/Section where the Applicant's well is located. However, chloride was present prior to the beginning of pumping, and chloride concentrations did not increase due to pumping. Wegner therefore concluded that these areas result from dilute connate water rather than seawater intrusion.

Due to the proximity of the well to seawater and uncertainty regarding the radius of influence of pumping from the well, biannual chloride monitoring and reporting during the first two years of operation will be required. If pumping from the well authorized by this water right causes chloride concentrations to show an increasing trend, action may be required to prevent chloride concentrations from increasing. These actions may include, but are not limited to, reducing the instantaneous withdrawal rate (gpm) of the well, lowering the annual quantity removed from the well, altering the pumping cycle, or drilling additional wells.

Water Availability

In assessing water availability for appropriation, this report distinguishes between physical and legal water availability.

Physical availability

Available drawdown at the Applicant's well has been identified to be at least 202 feet, based on a water level of +3 feet above ground surface following well installation and a total well depth of 199 feet. Total available drawdown may fluctuate seasonally. Drawdown from the water level of +3 feet above ground surface during a

5-hour pump test conducted immediately after well installation was 81 feet, with rapid recovery following the cessation of pumping. Water is considered likely to be physically available for appropriation at this location.

Legal availability

Water to be captured by the Applicant's well would naturally discharge to the salt water of Drayton Harbor. No legal constraints to use of this water were identified, and the water is therefore considered available for appropriation.

Public Interest Considerations

RCW 90.03.290 requires that a proposed appropriation not be detrimental to the public interest.

The following considerations were examined during this investigation:

- Chloride concentrations in the Artesian Aquifer have not been interpreted as characteristic of seawater intrusion. In addition, withdrawals from the Artesian Aquifer have historically not led to problems with seawater intrusion. Seawater intrusion is not expected due to operation of this well. However, due to the proximity of the well to seawater and uncertainty regarding the radius of influence of pumping from the well, biannual chloride monitoring and reporting during the first two years of operation will be required. No impacts to water quality parameters, including temperature, are anticipated in hydraulically connected surface water. The Artesian Aquifer is separated from overlying aquifers and surface flow by a thick confining layer expected to be continuous in the area. No impacts to perennial base flows, aquatic habitat, recreation, or navigation uses are anticipated.
- The use is considered consistent with water resource fundamental principles of Chapter 90.54 RCW.

Conclusions

In accordance with RCW 90.03.290, determinations have been made and are summarized below on the four criteria for a water right application to be approved.

Water must be available

Based on a 5-hour drawdown test during well development, sufficient pressure head appears to be present in the Artesian Aquifer in which the well associated with this right is screened in order to supply the requested withdrawal quantity. In order to better plan and manage water use, it is recommended that the applicant conduct a 24-hour or longer pump test to determine aquifer capacity.

There must be no impairment of existing rights

Based on existing data, no impairment of existing water rights is anticipated.

The water use must be beneficial

Community domestic water supply is considered a beneficial use in accordance with RCW 90.54.020.

The water use must not be detrimental to the public interest

No detriment to the public interest was found.

Recommendations

Based on the above investigation and conclusions, I recommend application G2-30461 be approved in the amounts and within the limitations listed below and subject to the provisions noted on page 2.

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:

- 180 gpm
- 15 acre-feet per year
- Continuous Community Domestic supply

Point of Withdrawal

NW¼ NW¼, Section 11, Township 14 N, Range 11 E, W.M.

Place of Use

The place of use of this water right is the NW ¼ of the NW ¼ of Section 11, Township 14N, Range 11W within what is known as the Dexter by the Sea subdivision.

Reviewed by: Phil Crane

Phil Crane
Department of Ecology
Water Resources Program

8/23/2010
Date

If you need this publication in an alternate format, please call the Water Resources Program at 425- 649-7000. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

References

Hansen, Keith, 2009, Dexter Development Co., Inc., personal communication.

Lane, R.C. and L.C. Ebbert, 2002, Hydrogeologic and Water-Quality Reconnaissance of the Artesian Aquifer Under the Shoalwater Bay Indian Reservation and Tokeland Peninsula, Pacific County, Washington, 1988-1999: United States Geological Survey Water-Resources Investigations Report 01-4023, 52 pp.

Lum, W.E. II, 1984, A Reconnaissance of the Water Resources of the Shoalwater Bay Indian Reservation and Adjacent Areas, Pacific County, Washington, 1978-1979: United States Geological Survey Water Resources Investigation Report 83-4165, 34 p.

Moerke & Sons (Moerke and Sons Pump and Drilling, Inc.), 2008, Dexter by the Sea Well Capacity Report.

Rizzardi, John, 2009, Cairncross and Hempelmann, P.S., personal communication.

Wegner, Duane E., 1956, Preliminary investigation of ground water in the Grayland Watershed, Grays Harbor and Pacific Counties, Washington: U.S. Geological Survey Open-File Report, 32 p., 1 plate.

Wegner, Duane E., 1995, letter to Department of Ecology Re: Application G2-29083 (Nelson Stock Ranch), May 22.