File NR CG2-CV1-2P53
WR Doc ID 6411831

State of Washington

DRAFT

REPORT OF EXAMINATION FOR WATER RIGHT CHANGE

Changed Point of Withdrawal

PRIORITY DATE	WATER RIGHT NUMBER
June 27, 1946	CG2-CV1-2P53

MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
DUNGENESS MEADOWS HOMEOWNERS ASSOC 251 DUNGENESS MEADOWS SEQUIM WA 98382	461 DUNGENESS MEADOWS SEQUIM WA 98382

Total Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE	UNITS	ANNUAL QUANTITY (AF/YR)
30	GPM	33

Purpose

PURPOSE	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		PERIOD OF USE (mm/dd)
	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	
Municipal Supply	30		GPM	33		01/01 - 12/31

REMARKS

Combined annual withdrawals under this water right and Certificate G2-00175C are limited to 80 acre-feet per year.

IRRIGATED ACRES		PUBLIC WATER SYSTEM INFORMATION	
ADDITIVE	NON-ADDITIVE	WATER SYSTEM ID	CONNECTIONS
0	**0**	204456	

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
CLALLAM	GROUNDWATER		18-ELWHA-DUNGENESS

SOURCE FACILITY/DEVICE	PARCEL	WELL TAG	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
WELL 1	043026530120	AGP288	30N	04W	26	NESE	48.0642	-123.1461
							Datum: NAD83/WGS84	

Place of Use (See Attached Map)

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE
The place of use (POU) of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health, so long as the water system is and remains in compliance with the criteria in 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

An 8-inch well drilled to a depth of 230 feet and distribution system for municipal supply purposes.

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	November 1, 2018	November 1, 2020

Measurement of Water Use

How often must water use be measured?	Weekly
How often must water use data be reported to Ecology?	Annually (by January 31)
What volume should be reported?	Total Annual Volume
What rate should be reported?	Annual Peak Rate of Withdrawal (gpm)

Provisions

Combined withdrawals under this water right and Certificate G2-00175 are limited to a maximum of 210 gallons per minute and 80 acre-feet per year.

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 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, 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.

Department of Health Requirements
Prior to any new construction or alterations of a public water supply system, the State Board of Health rules require public water supply owners to obtain written approval from the Office of Drinking Water of the Washington State Department of Health. Please contact the Office of Drinking Water at Southwest Drinking Water Operations, 243 Israel Road S.E., PO Box 47823, Tumwater, WA 98504-7823, (360) 236-3030.

Water Use Efficiency
The water right holder is required to maintain efficient water delivery systems and use of up-to-date water conservation practices consistent with RCW 90.03.005.

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 water right. 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, will 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.

Real Estate Excise Tax
This decision may indicate a Real Estate Excise Tax liability for the seller of water rights. The Department of Revenue has requested notification of potentially taxable water right related actions, and therefore will be given notice of this decision, including document copies. Please contact the state Department of Revenue to obtain specific requirements for your project. Phone: (360) 570-3265. The mailing address is: Department of Revenue, Real Estate Excise Tax, PO Box 47477, Olympia WA 98504-7477 Internet: http://dor.wa.gov/. E-mail: REETSP@DOR.WA.GOV.

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 of use is beneficial; and that there will be no detriment to the public interest.

Therefore, I ORDER approval of Application for Change of Water Right No. CG2-CV1-2P53, subject to existing rights and the provisions specified above.

Your Right To Appeal

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

To appeal you must do the following within 30 days of the date of receipt of the Order.

File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this Order 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 **Pollution Control Hearings Board** 1111 Israel RD SW Ste 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

Signed at Olympia, Washington, this _____ day of _____ 2016.

_____

Michael J. Gallagher, Section Manager

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
Marie Peter, Department of Ecology
Water Right Control Number CG2-CV1-2P53
Dungeness Meadows Homeowners Association

BACKGROUND

This report serves as the written findings of fact concerning Application for Change of Water Right Number CG2-CV1-2P53.

On December 19, 2014, Sally Thomas, Chairperson of the Board of Trustees of Dungeness Meadows Homeowners Association, filed an *Application for Change of Water Right* to move the point of withdrawal under Certificate of Change No. CG2-CV1-2P53 issued on Water Right Certificate No. 76-A. This right authorizes groundwater withdrawals for multiple domestic supply from Dungeness Meadows Water System Well #2 in Clallam County. The Dungeness Meadows community is located approximately ½ mile west of the City of Sequim in the Greater Dungeness River Basin of Water Resource Inventory Area 18 (WRIA 18).

EXISTING Water Right Attributes

Water Right Owner:	**Dungeness Meadows Homeowners Association**
Priority Date:	6/27/1946
Place of Use	Plats of Dungeness Meadows I, II and III and Plats of Dungeness Meadows Mobile Home Village Divisions I and II, within Sections 26 and 35, T30N, R4WWM

County	Waterbody	Tributary To	WRIA
Clallam	Groundwater		18-Elwha-Dungeness

Purpose	Rate	Unit	Ac-ft/yr	Begin Season	End Season
Domestic multiple (Municipal supply)	30	GPM	33	01/01	12/31

Source Name	Parcel	Twp	Rng	Sec	QQ Q	Latitude	Longitude
Well 2 (untagged)	043026440000	30N	04W	26	SE SE	48.0607	-123.1472

GPM = Gallons per Minute; Ac-ft/yr = Acre-feet per year; Sec. = Section; QQ Q = Quarter-quarter of a section; WRIA = Water Resource Inventory Area; W.W.M. = West of the Willamette Meridian; Datum in NAD83/WGS84.

This application requests a change of the existing point of withdrawal to another existing well, Dungeness Meadows Well 1 (AGP88), located approximately ¼ mile northeast of Well 2. Withdrawals from Well 1 are covered under Water Right Certificate No. G2-00175.

REQUESTED Water Right Attributes

Applicant Name:	Dungeness Meadows Homeowners Association
Date of Application:	12/19/2014
Place of Use	Dungeness Meadows Water System service area as described in the most recent Water System Plan update approved by the Department of Health

County	Waterbody	Tributary To	WRIA
Clallam	Groundwater		18-Elwha-Dungeness

Purpose	Rate	Unit	Acre-feet/yr	Begin Season	End Season
*Municipal Supply	30	GPM	33	01/01	12/31

Source Name	Parcel	Well Tag	Twp	Rng	Sec	QQ Q	Latitude	Longitude
Well 1 (AGP288)	043026530120	AGP288	30N	04W	26	NE SE	48.0642	-123.1461

GPM = Gallons per Minute; Ac-ft/yr = Acre-feet per year; Sec. = Section; QQ Q = Quarter-quarter of a section; WRIA = Water Resource Inventory Area; W.W.M. = West of the Willamette Meridian; Datum in NAD83/WGS84.

*This water right is being conformed to show that it meets the definition of a water right for *municipal supply purposes* under RCW 90.03.015.

Legal Requirements for Requested Change

The following is a list of requirements that must be met prior to authorizing the proposed change in point of withdrawal:

Public Notice

RCW 90.03.280 requires that notice of a water right application be published once a week, for two consecutive weeks, in a newspaper of general circulation in the county or counties where the water is to be stored, diverted and used. Notice of this change application was published in the *Peninsula Daily News* of Clallam County on February 25, 2015 and March 4, 2015. No protests or letters of concern were received as a result of this notice.

Consultation with the Department of Fish and Wildlife

The Department must give notice to the Washington Department of Fish and Wildlife (WDFW) of applications to divert, withdraw or store water. However, WDFW was not specifically notified of this application because 1) it is a request for a change of point of withdrawal on an existing water right that will be fully mitigated so it will not adversely affect surface water flows; and 2) this application is being evaluated and appropriately mitigated in accordance with the provisions of Chapter 173-518 Washington Administrative Code, *Water Resources Management Program for the Dungeness Portion of the Elwha-Dungeness Water Resource Inventory Area (WRIA) 18* which became effective on January 2, 2013.

State Environmental Policy Act (SEPA)

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

(a) It is a surface water right application for more than 1 cubic foot per second, unless that project is for agricultural irrigation, in which case the threshold is increased to 50 cubic feet per second, so long as that irrigation project will not receive public subsidies;
(b) It is a groundwater right application for more than 2,250 gallons per minute;
(c) It is an application that, in combination with other water right applications for the same project, collectively exceed the amounts above;
(d) 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);
(e) It is part of a series of exempt actions that, together, trigger the need to do a threshold determination, as defined under WAC 197-11-305.

Because this application does not meet any of these conditions, it is categorically exempt from SEPA and a threshold determination is not required.

Water Resources Statutes and Case Law

RCW 90.03.380(1) states that a water right that has been put to beneficial use may be changed. The point of diversion may be changed if it would not result in harm or injury to other water rights.

The Washington Supreme Court has held that Ecology, when processing an application for change to a water right, is required to make a tentative determination of extent and validity of the claim or right. This is necessary to establish whether the claim or right is eligible for change. *R.D. Merrill v. PCHB* and *Okanogan Wilderness League v. Town of Twisp.*

RCW 90.03.386(3) requires a municipal water supplier to apply cost-effective water conservation measures as part of its water system planning. The water supplier must also evaluate the effects of delaying the use of inchoate water rights before it may increase use of those inchoate rights. RCW 90.03.320 requires Ecology to consider the public water supplier's use of conserved water when establishing a surface or ground water right construction schedule.

RCW 90.44.100 allows Ecology to amend a ground water permit to (1) allow the user to construct a replacement or additional well at a new location outside of the location of the original well, or to (2) change the manner or place of use of the water, if:
The additional or replacement well taps the *same body of public ground water* as the original well.
(a) Where a replacement well is approved, the user must discontinue use of the original well and properly decommission the original well. RCW 90.44.100(2)(b),
(b) Where an additional well is constructed, the user may continue to use the original well, but the combined total withdrawal from all wells shall not enlarge the right conveyed by the original permit or certificate. RCW 90.44.100(2)(c),
(c) Other existing rights must not be impaired. RCW 90.44.100(2)(d).

Indicators that wells tap the *same body of public groundwater* include:
(a) Hydraulic connectivity.
(b) Common recharge (catchment) area.
(c) Common flow regime.
(d) Geologic materials that allow for storage and flow, with recognizable boundaries or effective barriers to flow.

INVESTIGATIONS

My evaluation of this application included review of the following:

- Information submitted by Dungeness Meadows Homeowners water system manager, John Holmes, in support of this application.
- Telephone communications with John Holmes.
- Electronic mail communications with Nick Dostie of Zenovics & Associates, Inc.
- Department of Ecology's Well Log database and Water Rights Tracking System (WRTS) database.
- Chapter 173-518 Washington Administrative Code (WAC) - *Water Resources Management Program for the Dungeness Portion of the Elwha-Dungeness WRIA (East WRIA 18 Rule)*
- Water consumption and demand forecast planning data provided by Zenovic and Associates, Inc., dated December 9, 2014.
- Memorandum by Ecology staff hydrogeologist, Matt Rakow, dated October 7, 2015.

Well and Water System Information

The Dungeness Meadows Water System service area is situated east of the Dungeness River, above the active 100-year floodplain, approximately six miles south of the Strait of Juan de Fuca *(See Attachment 1: Vicinity Map).* The community consists of 218 residential lots, several larger community parcels, and an 11-hole golf course. The southern portion of the development extends to the east bank of the Dungeness River. A forested riparian zone separates the northern portion from the river. The area immediately surrounding the Dungeness Meadows subdivision is rural and characterized by less intensive residential development, farms and forested areas.

Irrigation water for the Dungeness Meadows golf course is provided by Clallam Irrigation Company. Clallam Irrigation Company's ditch/pipe system enters the south end of the development and runs through the south half of the golf course. It also extends along the east side of the development, through the Well 2 parcel. A tributary fed by irrigation tail waters exits the north end of the service area, eventually discharging to the Dungeness River.

The community's original older well, Well 2, is completed at a depth of 57 feet. It is currently maintained only for emergency/back-up supply purposes. Well 2 is located near the Dungeness Meadows community office in the south half of the development. The Dungeness River flows in a northwesterly direction, approximately ¼ mile west of the well site.

The primary source of supply for Dungeness Meadows Water System is Well 1 (AGP288), completed at a depth of 230 feet in a deeper zone of the shallow aquifer than Well 2. Well 1 is located at the northeast corner of the development, ¼ mile NNE of Well 2 and approximately 1/3 mile east of the Dungeness River.

History of Water Use

Certificate of Water Right No. 76-A was issued to Chester S. King on October 27, 1947. It authorized withdrawal of 30 gpm and 33 acre-feet per year from Well #2 for irrigation of 11 acres and domestic supply. On November 29, 1974, under Certificate of Change CG2-CV1-2P53, the purpose of use of the irrigation portion of the right was changed to domestic supply and the place of use boundaries were modified to reflect the current service area.

Dungeness Meadows Water System's average annual use has been steadily declining over the past decade as a result of increased water use efficiency. The highest annual use during the last five years of record was 60 acre-feet per year, in 2010. Approximately 46 acre-feet was used in 2014.

Other Rights Appurtenant to the Place of Use

Certificate G2-00175 with a priority date of July 9, 1969 is also appurtenant to the Dungeness Meadows Water System service area. It authorizes withdrawal of 180 gpm and 80 acre-feet per year from Well 1 (AGP288). Approval of this change application will allow withdrawal of an additional 30 gpm from Well 1, for a combined instantaneous rate of 210 gpm.

Tentative Determination of Extent and Validity of Water Right

Dungeness Meadows Water System currently has Department of Health approval to serve 218 services and is approximately 90% built out. The system's water rights are for *municipal supply purposes* as defined under RCW 90.03.015. The primary quantities of 30 gpm and 33 acre-feet per year, issued under Certificate of Change No. G2- CV1-2P53, have been fully perfected for municipal supply purposes and are currently being withdrawn from primary Well 1. These quantities are valid, in good standing, and eligible for change as requested. Additional unused annual and instantaneous quantities remain in good standing and are available for continued growth of the Dungeness Meadows community under Certificate G2-00175.

Proposed Use

Dungeness Meadows Well 1 is currently equipped with a dual pumping system. The main pump is capable of pumping 168 gpm. A second 30 gpm back-up pump is held in reserve for alternate use. Well 2 has been physically disconnected from the system and is currently inactive. Approval of this change request will allow Dungeness Meadows Homeowners Association (DMHA) to operate both pumps in Well 1 simultaneously. At the current level of build-out, this higher rate of withdrawal is only necessary to meet peak demand during extremely hot weather when storage may otherwise become depleted.

Upon transfer of this water right to Well 1, DMHA plans to decommission Well 2 and continue pumping Well 1 at its current capacity, up to 198 gpm, until the main pump needs repair or replacement. At that time, the pump will be upgraded to produce 210 gpm.

DMHA also plans to construct an additional new well in the future, capable of producing 210 gpm. Well 1 will then be delegated to emergency back-up or standby/reserve status. When the new well is drilled, it will be added to both of DMHA's water rights through submittal of a *Showing of Compliance* affidavit and supporting documentation.

Hydrologic/Hydrogeologic Evaluation

Surficial Geology

Quaternary alluvial sediments deposited by the Dungeness River underlie the entire project site. This geologic unit is described as generally well-stratified and well-sorted deposits of rounded cobble and pebble gravel, sandy gravel, gravelly sand, silt, clay, and peat; brown to gray, depending on composition and weathering; deposited in and along present streams. The thickness of this unit varies locally, but a maximum thickness of 40 feet has been estimated from analyzing water well driller logs (Washington Division of Geology and Earth Resources, 2014).

Hydrogeologic Units

Seven hydrogeologic units have been identified in the 1999 USGS Sequim-Dungeness area hydrogeologic assessment. Descriptions of each hydrogeologic unit can be found in Appendix A. The names and order of the hydrogeologic units are:

1. Shallow Aquifer
2. Upper Confining Unit
3. Middle Aquifer
4. Lower Confining Unit
5. Lower Aquifer
6. Undifferentiated Unconsolidated Sediments
7. Bedrock

Shallow Aquifer Properties

- The Shallow Aquifer is described as consisting alluvium, older alluvium, Everson sand, Everson glaciomarine drift, Vashon recessional ice-contact and outwash deposits, Vashon till, Vashon reworked till, and Vashon advance outwash.
- Typical thickness of the Shallow Aquifer ranges from 10 to 300 feet. The Shallow Aquifer at the project location is on the thicker end of the spectrum.
- Groundwater in the Shallow Aquifer in the project area is projected to have northward flow direction and a downward gradient into the upper confining layer. Depth to groundwater averages from 20 feet above ground to 200 feet below ground.
- Horizontal conductivity for the Shallow Aquifer is estimated to be approximately 210 feet per day (Thomas, Goodman, and Olsen, 1999).

Source Wells

Table 1: Comparison of Well #1 and #2 Attributes

	Well #2 (no well tag) (Original point of withdrawal)	***Well #1 (AGP288)*** *(New point of withdrawal)*
Date completed	04-13-1946	03-06-1969
Approximate wellhead elevation	340 feet above mean sea level	350 feet above mean sea level
Completion depth	57 feet	230 feet
Approximate Completion elevation	283 feet msl	120 feet msl
Well casing diameter	6-inch	8-inch
Screen/perforation depth	Perforated 51-57 feet	Perforated 122-146 feet Screened 212-230 feet
Static water level (btoc); date	12 feet (04-13-1946)	63 feet (03-05-1969)

Well 2

The original well, Well 2 (not tagged), is completed at a depth of 57 feet in the top ¼ portion of the Shallow Aquifer (Table 2). It is most likely tapping into a perched lens of water-bearing sand and gravel. Well 2 is currently disconnected from the water system but produced 30 gpm when it was in use.

Table 2: Driller's Well Log for Well 2

From (ft)	To (ft)	Material
0	6	Clay loam
6	10	Gravel (some water)
10	32	Hard pan (cemented gravel)
32	33	Gravel
33	51	Hard pan (cemented gravel)
51	57	Gravel and water

Well 1

Well 1 (AGP288) is completed at a depth of 230 feet, also in the Shallow Aquifer. This determination is supported by the well's location and completed depth matching up to the extent and thickness of the Shallow Aquifer as detailed in the USGS report. The static water level measured at the time Well 1 was drilled also corresponds with the modeled Shallow Aquifer potentiometric surface map found in the report. According to the driller's log, this well does not fully penetrate the aquifer because materials consistent with the Upper Confining Layer were not encountered at the appropriate depths (Thomas, Goodman, and Olsen, 1999).

Table 3: Driller's Well Log for Well 1

From (ft)	To (ft)	Material
0	65	Boulders & Gravel
65	75	Brown cemented gravel (water bearing)
75	98	Brown fine gravel
98	115	Brown cemented gravel (water bearing)
115	133	Brown water bearing gravel
133	150	Brown water bearing sand & gravel
150	156	Gravel & layers of brown clay
156	170	Brown muddy sand & gravel water bearing
170	185	Clean brown sand & gravel water bearing
185	216	Brown sand & gravel water bearing
216	230	Brown sand & gravel water bearing

Well 1 is screened between 212-230 feet below ground surface and the casing is perforated from 122 to 146 feet below ground surface. A static water level collected after construction was measured at 63 feet below ground surface. The driller performed a pump test on Well 1 that yielded 322 gpm for 4 hours with 10'10" of drawdown and then 405 gpm for 5 hours with 14' 10" of drawdown. These limited pump test results suggest that this well has a specific capacity of around 28 gpm per foot of drawdown. Additional hydrogeologic investigations have not been conducted for this water system.

The applicant submitted recent static and dynamic water level data. Static water levels in Well 1 measured between October 16 and 17, 2015, were at 93.5 feet below measuring point. Dynamic pumping water levels were approximately 4 feet lower at 97.5 feet below measuring point after a 45-minute pumping duration at a pumping rate of 180 gpm. This information correlates with the initial pumping test conducted with the driller.

One important thing to note is that there was an apparent water level decline of 30 feet over the life of Well 1. This gives DMHA approximately 25 feet between the current pumping water level and the top of the perforated section of casing. If the pumping level exceeds the 25-foot mark in the future, the well would encounter cascading water conditions and potential problems associated with it.

This decline in water levels is mirrored in the City of Sequim's Silberhorn wells. The Silberhorn wells are located approximately one-half mile to the northeast of Well 1. They are also considered to be completed in the Shallow Aquifer and appears to be the only wells recorded within a half-mile radius of the Dungeness Meadows Well 1 to fully penetrate the Shallow Aquifer. Water levels measured from 1993 to 2014 show a decline of between 25 to 30 feet. The water level decline has leveled off over the last five years.

Vicinity Well Logs

There are 245 to 255 records of water wells located within one-half mile the Dungeness Meadows source wells (Washington State Department of Ecology, 2015b). Dungeness Meadows Well 1 has the deepest construction depth of all of these wells. Only the City of Sequim's Silberhorn Well #1 was drilled deeper than Dungeness Meadows Well 1. The Silberhorn well was drilled to final depth of 265 feet below ground surface and has a completed construction depth of 220 feet below ground surface. The last 43 feet of drilled material consisted of clay and "muddy" sand.

Water Availability

Physical Availability

For water to be physically available for appropriation there must be groundwater present in quantities and quality and on a sufficiently frequent basis to provide a reasonably reliable source for the requested beneficial use.

Water levels in the Shallow Aquifer show a marked decline from the mid-1990's to around 2008. A number of factors have contributed to the decline in water levels in the Shallow Aquifer. The three most probable factors causing the decline in water levels are irrigation ditch piping/lining, decreased irrigation ditch diversion rate, and increased residential development.

Leakage from irrigation ditches was a significant source of recharge to the Shallow Aquifer system up until the 1990's. It is estimated that roughly 430 ac-ft per year of recharge from leaky irrigation ditches has been lost due to ditch lining and piping locally around the Silberhorn well. Two irrigation ditches that run near Dungeness Meadows were piped sometime after 2001 (Pacific Groundwater Group, 2009).

Irrigation diversion between the 1970's and the late 1990's was cut in half to a rate of 50 to 65 cfs. Continuing conservation efforts include plans to reduce the average diversion rate by an additional 17.5 cfs. The decline in diversion rates is a result of more efficient irrigation techniques, crop management, and an agreement between irrigators and Ecology limit diversion to no more than 50% of the flow of the Dungeness (Pacific Groundwater Group, 2009).

Consumptive use for domestic water systems only has a small correlative effect on water levels in the Shallow Aquifer when compared to irrigation diversions and recharge. However, domestic water use needs to be accounted for given the population growth that this area has seen in the last 40 years. It is estimated that consumptive water use between 1980 and 2007 rose by 60% in the Sequim-Dungeness

area. About 61% of the current residential groundwater withdrawals are sourced from the Shallow Aquifer (Pacific Groundwater Group, 2009). Based on this estimate, consumptive water use for domestic purposes totals 2,330 ac-ft per year.

For over three decades, high quality drinking water has continuously been available from Well 1 at the currently authorized rate of withdrawal (180 gpm). Long-term monitoring data is not available for the DMHA wells but water-level data from the City of Sequim's Silberhorn wells are reflective of conditions in the Shallow Aquifer. Over the last five to six years, water levels in the Silberhorn well have stabilized at a level of approximately 25 to 30 feet lower than levels recorded in the 1990's (Washington State Department of Ecology, 2015). The stabilization is most likely due to a reduction in withdrawals from the Silberhorn well since 2006. Water levels observed in the Shallow Aquifer at the time Well 1 and the Silberhorn well were drilled were most likely artificially high due to leakage from irrigation ditches and irrigation return flows. It is probable that the reduction in the amount of surface water diverted from the Dungeness River, ditch lining and piping, and more efficient agricultural practices have restored groundwater levels closer to what they had been historically, before the area was settled by farmers.

Given the relatively small amount of drawdown at the current DMHA pumping rate, it is estimated that an additional 30 gpm of instantaneous withdrawal could incur less an additional one to two feet of drawdown in Well 1. Furthermore, the well's cycle times should theoretically be shorter due to the increased withdrawal rate. Under this scenario, water is likely available at the rate and quantity requested.

Legal Availability

To determine if water is legally available for appropriation, the following factors are considered:

- Regional water management plans which may specifically close certain water bodies to further appropriation.
- Existing rights which may already appropriate physically available water.
- Fisheries and other in-stream uses (e.g., recreation and navigation). In-stream needs, including in-stream and base flows set by regulation. Water is not available for out of stream uses where further reducing the flow level of surface water would be detrimental to existing fishery resources.
- The Department may deny an application for a new appropriation in a drainage where adjudicated rights exceed the average low flow supply, even if the prior rights are not presently being exercised. Water would not become available for appropriation until existing rights are relinquished for non-use by state proceedings.

The Dungeness Meadows water system is located in the eastern or Dungeness portion of the Elwha-Dungeness Water Resource Inventory Area (WRIA 18). Chapter 173-518 Washington Administrative Code (WAC), the *East WRIA 18 Rule*, became effective on January 2, 2013. The rule sets recommended in-stream flows for the Dungeness River, including its tributaries, and other independent streams in the Greater Dungeness watershed. It regulates the appropriation of surface water and groundwater in hydraulic continuity with surface water bodies. Although the rule does not affect the underlying senior water rights for Dungeness Meadows Water System, changes to those rights are subject to rule requirements and new impacts to in-stream flows resulting from the change must be fully mitigated.

Instream Flow Considerations

The term "instream flow" is used to identify a specific stream flow at a specific location for a defined time period, and typically following seasonal variations. In-stream flows are usually defined as the stream flows needed to protect and preserve in-stream resources and values, such as fish, wildlife and recreation. In-stream flows are most often described and established in a formal legal document, typically an adopted state rule. Once established, a minimum flow constitutes an appropriation with a priority date as of the effective date of the rule establishing the minimum flow (RCW 90.03.345). Thus, a minimum flow set by rule is an existing right which may not be impaired (RCW 90.03.345; RCW 90.44.030).

Under WAC 173-518-050, the main-stem Dungeness River, from mouth to headwaters, including all tributaries, is closed to consumptive appropriations from July 15 through November 15. The rule allows new appropriations or changes if impacts are fully mitigated for as long as the water use continues.

The Dungeness Water Exchange (DWE) was established to provide effective mitigation of the collective impacts of multiple projects in the Greater Dungeness basin at reasonable cost to applicants. DWE mitigation projects are designed to direct recharge to specific streams to ensure that sufficient base flows are maintained in all East WRIA 18 streams covered by the rule, thereby allowing new uses of water.

The "Dungeness Mitigation Calculator" was developed using a flow model based on Pacific Groundwater Group's report, *2008 Dungeness Groundwater Flow Model Design, Construction, Calibration and Results.* The mitigation calculator allows a simplified process for quantifying the likely impacts of proposed withdrawals from the Greater Dungeness aquifer system to determine mitigation requirements for maintaining rule-recommended minimum flows in the Dungeness River and each of eight other area streams discharging to the Strait of Juan de Fuca. The calculator takes into account the geographic location of a source, well depth, source aquifer and local hydrologic conditions.

WAC 173-518-070(3)(i) identifies this groundwater flow model and calculator as the best available method at the time of rule adoption for estimating mitigation requirements for new groundwater withdrawals. Use of this calculator is required under the rule until the Department of Ecology determines a better estimation method in the future. Once mitigation requirements are identified, the DWE will design its projects to collectively mitigate the sum of calculated impacts. Accordingly, DMHA's change proposal was evaluated for impacts to surface water flows using the Dungeness Mitigation Calculator.

The estimated impacts of pumping 33 acre-feet per year at the original Well 2 location (Clallam County Parcel No. 043026440000), from the Shallow Aquifer, were compared with the predicted effect of pumping the same quantity from the Middle Aquifer at the Well 1 site (Parcel No. 043026530120). Because the DMHA service area is served by septic systems, consumptive use for mitigation purposes is estimated to be approximately 10% of this total annual quantity consumed, or a total of 2,946 gallons per day. The remaining 90% is considered return flow which will eventually recharge the aquifer and surface water system.

The mitigation calculator results show that the net impact to surface water flows, for all East WRIA 18 streams combined, will be reduced by 133 gallons per day through approval of this change (see *Table 4*).

Table 4: Comparison of Calculated Impacts of Withdrawal of 33 Acre-feet per year from Wells #1 and #2 on Area Streams

Stream	Original Impact (Well #2) in gallons per day	Impact of Proposed Withdrawal (Well #1) in gallons per day
Dungeness River	2479	2346
Bagley Creek	0	0
Bell Creek	28	39
Cassalery Creek	152	181
Gierin Creek	195	253
Matriotti Creek	8	9
McDonald Creek	1	1
Meadowbrook Creek	1	2
Siebert Creek	0	0
Total	**2864.58**	**2650.57**

The overall reduction in impacts to surface water resulting from the proposed transfer of withdrawals is almost entirely due to the greater distance from the nearest stream, the Dungeness River, thereby lowering the degree of hydraulic connection. However, impacts to other smaller area streams, with the exception of McDonald, Siebert and Bagley Creeks, are expected to be greater as a result of this change.

Because the proposed change is expected to result in a new set of impacts, as shown in the table above, the Department of Ecology will track the calculated difference in impacts to each of the affected streams and notify the Dungeness Water Exchange of amounts that will need to be mitigated. The DWE has agreed to fine-tune its mitigation projects to deliver water back to the impacted streams, in the amounts specified, to maintain water-budget neutrality. Thus, the requested change of DMHA's point of withdrawal may be approved with the proposed DWE mitigation.

Impairment Considerations

There are three concepts that are important when considering whether a withdrawal of water from a well would impair another existing water right. The concepts are defined as follows: Impairment is an adverse impact on the physical availability of water for a beneficial use that is entitled to protection i.e. water rights that are both senior and junior in priority to the right the applicant seeks to change.

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 that allows the withdrawal of 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.

Potential Impacts to Existing Water Rights

The Department of Ecology's Water Rights Tracking System indicates the following ground water rights and claims for sources within a one-half-mile radius of the Dungeness Meadows Well 1:

- The City of Sequim's Certificate No. G2-23856 authorizes withdrawal of 700 gpm and 690 acre-feet per year from the Silberhorn Well Field, located approximately 2,600 feet NE of Well 1.

- Certificate No. G2-24817 issued to James and Janet Vincent for a well located approximately 2000 feet north of Well 1, authorizing withdrawal of 10 gpm and 3 acre-feet per year from an 89-foot deep well.
- Ground Water Right Claim No. 150261 was filed by Norma Rossi in 1974, claiming a right to withdraw 450 gpm for domestic supply for a single home on the parcel immediately north of the Well 1 parcel.
- Ground Water Right Claim No. G2-095716 filed by Harry H Fritz for domestic supply from a well approximately 140 feet north of Well 1.
- Numerous groundwater right claims are recorded within a half-mile radius, mainly for domestic use and stock watering.

The City of Sequim's Silberhorn wells are the only wells recorded within ½ mile of Dungeness Meadows Well 1 that fully penetrate the Shallow Aquifer. Pumping an additional 30 gpm from the Well 1 location will not increase the risk of impairment given the distance between the wells and the available drawdown in the City's wells.

The Vincent well is not considered a qualifying withdrawal facility because it does not fully penetrate the saturated thickness of the Shallow Aquifer. This well is most likely completed in a perched water-bearing lens of sand and/or gravel. Ecology's Well Log database indicates that there are also a number of permit-exempt wells in this area, some of which are also represented by water right claims. The nearest wells are located on two parcels immediately north of the DMHA Well 1 parcel and along Timberside Lane to the east. Like the Vincent well, these wells also do not fully penetrate the aquifer. Approval of an additional 30 gpm from Well 1 will not result in impairment of neighboring wells.

Although there are several surface water right diversion points recorded within a ½-mile radius of Well 1, the risk of impairment to these rights is actually lessened by moving the point of withdrawal to Well 1 because it is drawing water from a much deeper zone of the Shallow Aquifer than Well 2.

Beneficial Use

The proposed use of water for municipal supply purposes is a beneficial use in accordance with RCW 90.54.020(1).

Public Interest Considerations

Dungeness Meadows Water System is a municipal water system serving an existing growing community. Approval of this water right change allows this system to continue serving the Dungeness Meadows community with a more reliable supply. It also discourages the proliferation of private wells, consistent with the provisions of RCW 90.54.020(8) and WRIA 18 watershed planning recommendations.

The proposed appropriation from Well 1 will, overall, result in fewer impacts to surface water sources in the Greater Dungeness River Basin than the original appropriation from Well 2. Water-for-water mitigation will be provided through the Dungeness Water Exchange to retain base flows necessary in each of the area streams to preserve fish, wildlife, scenic, aesthetic and other environmental values.

Approval of this application is consistent with other local and regional water planning goals. The change will not degrade water quality, reduce recreational opportunities, or otherwise result in detriment to the public interest.

Consideration of Protests and Comments
No protests were filed against this application.

CONCLUSIONS

In accordance with RCW 90.03 and 90.44, I find that:

- Water is available for withdrawal from the requested new point of withdrawal.
- Municipal supply is a beneficial use of water.
- Approval of the requested change will not impair existing rights, including in-stream flows adopted under Chapter 173-518 WAC.
- The proposed change will not be detrimental to the public interest.
- Well 1 withdraws water from the same body of public groundwater tapped by Well 2.
- Approval of the requested change will not enable enlargement of the original water right.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend approval of the requested change on Certificate of Change of Water Right No. G2-CV1-2P53 in the amounts and 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:

- 30 gpm
- 33 acre-feet per year
- Municipal supply
- Point of Withdrawal: NE¼ SE¼, Section 26, T. 30 N., Range 4 W.W.M.
- Place of Use: As described on Page 1 of this Report of Examination.

I recommend that a *Superseding Certificate of Water Right* be issued under Water Right Change Authorization No. CG2-CV1-2P53 upon filing of a *Proof of Appropriation* form showing that both pumps installed in Well 1 are operating simultaneously and the additional 30 gpm available under this filing has been applied to beneficial use for municipal supply of the Dungeness Meadows community.

If, in the future, DMHA replaces Well 1 or drills additional wells within the same quarter quarter-section, a *Showing of Compliance* affidavit must be filed on both Water Rights G2-00175 and G2-CV1-2P53 to allow withdrawals from the new well under those rights.

Report Writer *Date*

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Attachment 1: Vicinity Map