File NR CS1-22989C
WR Doc ID 6167626

DEPARTMENT OF ECOLOGY
State of Washington

State of Washington
REPORT OF EXAMINATION FOR WATER RIGHT CHANGE

Changed Place of Use
Added or Changed Point of Withdrawal/Diversion

PRIORITY DATE	WATER RIGHT NUMBER
September 29, 1977	CS1-22989C

MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
MUCKLESHOOT INDIAN TRIBE 39015 172ND AVE SE AUBURN 98092	MUCKLESHOOT INDIAN TRIBE 34900 212TH AVE SE AUBURN WA 98092

Total Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE	UNITS	ANNUAL QUANTITY (AF/YR)
0.01	CFS	1
0.68	CFS	Non-Consumptive (NC)

Purpose

	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		
PURPOSE	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	PERIOD OF USE (mm/dd)
Domestic Single	0.01		CFS	1		01/01 - 12/31
Fish Propagation	0.68		CFS	NC		01/01 - 12/31

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
KING	UNNAMED SPRINGS (aka KETA SPRINGS)	CRISP CREEK	9-DUWAMISH-GREEN

SOURCE FACILITY/DEVICE	PARCEL	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
MAIN KETA SPRING	2021069014	21N	06E	20	NESE	47.2931°	-122.0604°
KETA SPRING 2						47.2928°	-122.0612°
KETA SPRING 3						47.2932°	-122.0621°
KETA SPRING DOMESTIC						47.2933°	-122.0606°
NEW KETA SPRING						47.2923°	-122.0619°

Datum: NAD83/WGS84

Place of Use (See Attached Map)

PARCELS (NOT LISTED FOR SERVICE AREAS)

PARCELS 2021069014, 2021069017, 2021069097, 2121069026, AND 2121069039

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

SE¼ of Section 20, and SW¼ of Section 21, Township 21 North, Range 6 East, W.M.
Attachment 1 shows the location of the authorized place of use and points of diversion
Attachment 2 provides the legal description of the property on which water is to be used

Proposed Works

Keta/Crisp Fish Hatchery Complex

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
July 15, 2015	December 31, 2020	December 31, 2024

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?	Domestic Annual Quantity
What rate should be reported?	Annual Peak Rate of Withdrawal (cfs)

Provisions

Measurements, Monitoring, Metering and Reporting

An approved measuring device must be installed and maintained for the domestic source 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 Northwest Regional Office. If you do not have Internet access, you can still submit hard copies by contacting the Northwest Regional Office for forms to submit your water use data.

Department of Fish and Wildlife Requirement(s)

The intake(s) must be screened in accordance with Department of Fish and Wildlife screening criteria (pursuant to RCW 77.57.010, RCW 77.57.070, and RCW 77.57.040). Contact the Department of Fish and Wildlife, 600 Capitol Way N, Olympia, WA 98501-1091. Attention: Habitat Program, Phone: (360) 902-2534 if you have questions about screening criteria. http://wdfw.wa.gov/about/contact/

A permit from the Department of Fish and Wildlife may be needed to raise fish in any state waters. http://wdfw.wa.gov/about/contact/

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 superseding 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.

Findings of Facts

I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I conclude that water right S1-22989C is valid and is eligible for change, water will be diverted from the same source as the original appropriation, the change will not result in any additional water being diverted, and there will be no impairment of existing rights.

Therefore, I ORDER approval of Application No. CS1-22989C, 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 Bellevue, Washington, this 4th day of May, 2015.

Tom Buroker, 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
Jerry Liszak, Department of Ecology
Water Right Control Number CS1-22989C
Muckleshoot Indian Tribe

BACKGROUND

This report serves as the written findings of fact concerning Water Right Application Number CS1-22989C.

EXISTING Water Right Attributes

Water Right Owner:	**Muckleshoot Indian Tribe**
Priority Date:	9/29/1977
Place of Use	NE¼ of the SE¼ of Section 20, Township 21North, Range 6 East, W.M. Parcel 2021069014

County	Waterbody	Tributary To	WRIA
King	Unnamed Spring (aka Keta Spring)	Crisp Creek	9-Duwamish-Green

Purpose	Rate	Unit	Ac-ft/yr	Begin Season	End Season
Domestic single	0.01	CFS	1	Continuously	Continuously
Fish propagation	1.99	CFS	Non-consumptive	Continuously	Continuously

Source Name	Parcel	Twp	Rng	Sec	QQ Q	Latitude	Longitude
Unnamed Spring (aka Keta Spring)	2021069014	21N	06E	20	NE SE	47.2931°	-122.0604°

CFS = Cubic Feet per Second; Ac-ft/yr = Acre-feet per year; Sec. = Section; QQ Q = Quarter-quarter of a section; WRIA = Water Resource Inventory Area; E.W.M. = East of the Willamette Meridian; Datum in NAD83/WGS84.

REQUESTED Water Right Attributes

Applicant Name:	**Muckleshoot Indian Tribe**
Date of Application:	4/7/2014
Place of Use	SE¼ of Section 20, and SW¼ of Section 21, Township 21 North, Range 6 East, W.M. **Parcels** 2021069014, 2021069017, 2021069097, 2121069026, and 2121069039

County	Waterbody	Tributary To	WRIA
King	Keta Springs	Crisp Creek	9-Duwamish-Green

Purpose	Rate	Unit	Acre-feet/yr	Begin Season	End Season
Domestic single	0.01	CFS	1	Continuously	Continuously
Fish propagation	0.68	CFS	Non-consumptive	Continuously	Continuously

Source Name	Parcel	Twp	Rng	Sec	QQ Q	Latitude	Longitude
Main Keta Spring	2021069014	21N	06E	20	NE SE	47.2931°	-122.0604°
Keta Spring 2						47.2928°	-122.0612°
Keta Spring 3						47.2932°	-122.0621°
Keta Spring Domestic						47.2933°	-122.0606°
New Keta Spring						47.2923°	-122.0619°

CFS = Cubic Feet per Second; Ac-ft/yr = Acre-feet per year; Sec. = Section; QQ Q = Quarter-quarter of a section; WRIA = Water Resource Inventory Area; E.W.M. = East of the Willamette Meridian; Datum in NAD83/WGS84.

Legal Requirements for Requested Change

The following is a list of requirements that must be met prior to authorizing the proposed changes

Public Notice

RCW 90.03.280 requires that notice of a water right application be published once a week, for two consecutive weeks, in a newspaper of general circulation in the county or counties where the water is to be stored, diverted and used. Notice of this application was published in the Auburn Reporter on May 16, 2014 and May 23, 2014. No protests were received.

State Environmental Policy Act (SEPA)

A SEPA review is required for water right applications requesting 1.0 cfs or greater (50 cfs or greater for agricultural irrigation). This request was one of four applications for change, totaling 10.55 cfs. Therefore, a SEPA review was required for this request. Ecology was the lead agency for review and decision-making. On February 5, 2014, Jacqueline Klug, Northwest Regional Office Water Resources Section Manager, issued the following Determination of Non-Significance (DNS).

Description of Proposal:

The Keta\Crisp Modernization Project involves improvements to two existing and adjacent fish hatchery facilities. The Keta and Crisp facilities are owned and operated by the Muckleshoot Indian Tribe (Tribe) to provide fish for treaty and non- treaty harvest in Elliott Bay and the Green River. The Keta and Crisp facilities are in need of modernization and upgrades due to their age, condition and other factors. These facilities are in the Green River Watershed, and are located adjacent to both Crisp and Keta creeks. Keta Creek is a small springfed tributary to Crisp Creek. Crisp Creek enters the Green River at river mile 40, and the hatchery facilities are one mile upstream from this confluence. The Keta and Crisp facilities were historically operated as two independent operations.

The Crisp facility will receive a complete overhaul. The key elements will be two new concrete rearing ponds, parking areas, crew and feed storage building, residence, surface water intakes, water treatment facilities, and circular rearing tanks. The Keta facility will also receive a complete overhaul. The key elements will be new concrete adult holding ponds, larger gravel parking areas, a hatchery and operations building, residence, spring water intakes, and water treatment and reuse facilities.

The modernization project will completely update the water withdrawal and delivery system. A 6 cubic-feet-per-second (cfs) capacity screened gravity intake structure will provide water to new concrete rearing ponds and circular tanks with the capacity to meet salmon production goals. This new intake structure will replace an existing in-stream diversion structure that is in disrepair. A new 6 cfs capacity intake to be located downstream of the gravity intake will pump Crisp Creek water into the new ponds and tanks.

Three water right change applications are pending with Department of Ecology to add additional points of diversion and change the place of use for water withdrawn from Crisp Creek. The change applications were submitted in order to increase operational flexibility and expand the area where water can be used. With the changes, the existing water allocations would not increase over the total non-consumptive appropriation of 10.55 cfs.

Location of Proposal:
East of Auburn and north of southeast Green Valley Road in south King County. The project site is in the SE SE of Section 20, T 21N, R 6E and the SW SW of Section 21, T 21N, R 6E.
The current address of the Keta Creek Hatchery is 34900 - 212 Ave SE, Auburn, WA.

Lead Agency: State of Washington Department of Ecology

Public Comment Period: February 10 to February 25, 2014. Comments will be accepted by email, US Mail, or fax.

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030 (2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal until after 14 days from the date below.
Comments must be submitted by February 25, 2014 to the contact person listed below. Email comments are acceptable.

Comments were received on the SEPA Determination of Non-Significance from three neighbors of the project property. I shared the comments with the Tribe, and they submitted responses to the comments in writing. I forwarded the Tribes responses to the commenter's. Below, I have summarized the comments and the Tribal responses:

Commenter 1: Concerned about impacts to our views from our home, tree and vegetation removal, installation of in-water structures in Crisp Creek and safety hazard to our children, and impacts to wildlife in the area.

Response 1: Vegetation along the creek will be protected and/or replanted. The primary buffer of trees along the northeast corner of the property will remain as well. The locations of the water intakes will not change and security fencing will be as needed for protection. The large fir tree will be spared as well as two perching trees for wildlife.

Commenter 2: Since I was denied a permit to construct a shop on my property, I am appalled at the amount of work allowed in the creek, change of water flow, demolition of buildings and new construction, and diminishment of property values and way of life.

Response 2: The property is held in trust for the Tribe by the United States and is not subject to local land use rules. The improvements are necessary for viability of the hatchery. The pond/wetland restoration and vegetation plantings will enhance the natural landscape and provide screening of the project.

Commenter 3: Concerned about the effects to Critical Area Designation, effect to creeks and ponds, waste disposal odor control, water supply demand studies and assurances, compensation to property owners.

Response 3: There will be no effects to Critical Areas or land use of property off site, or to creeks, and the south pond will be converted and enhanced as a wetland. Water supply demands will remain the same. The upgrades will include a pollution abatement settling pond, or clarifier, to remove solids and control odor.

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, place of use, and purpose of use 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.*

Consultation with the Department of Fish and Wildlife

The Department must give notice to the Department of Fish and Wildlife of applications to divert, withdraw or store water. Steve Boessow, WDFW, received copies of the applications for change to the Muckleshoot Indian Tribes Keta and Crisp Creek Hatcheries, including this application. In a letter from Steve dated June 24, 2014, he commented as follows: "Based on impacts to fish and/or wildlife and the habitat they rely on, and pursuant to Chapter 77.57.020 RCW, WDFW does not oppose the issuance of

these applications. No additional water will be used, and changes to diversion points will benefit fisheries."

INVESTIGATION

The investigation included, but was not limited to, review of:

- Affidavit of Dennis Moore in Support of Keta Creek Hatchery Water Right Change Applications, Nov. 26, 2008.
- Affidavit of Dennis Moore in Support of Keta Creek Hatchery Water Right Change Application #S1-22989C, Mar. 4, 2014.
- Associated Earth Sciences, Inc., 2008, Environmental Impact Statement Technical Report on Geology, Soils, and Ground Water THE VILLAGES Black Diamond, Washington. Prepared for BD Villages Partners, LP
- Associated Earth Sciences, Inc., 2009, Ground Water Controls on Surface Water in Horseshoe Lake, King County, Washington. Abstract and Graphics Poster presentation at the 7th Washington Hydrogeology Symposium
- Carlson, C., 2013, Flow Duration Analysis for Crisp Creek, Muckleshoot Indian Tribe Fisheries Department.
- Carlson, C. MIT in progress, Updated Crisp Cr Watershed Assessment
- Carlson, C.V., 1994. Crisp Creek and Keta Creek Hatchery Water Rights/Supply Analysis. Muckleshoot Indian Tribe Fisheries Department.
- Culhane, T. and Liszak, J., 1995. Final Amended: Initial Watershed Assessment Water Resources Inventory Area 9 Green-Duwamish Watershed. Washington Department of Ecology
- HDR Engineering, Inc., 2009. Keta-Crisp Fish Production Master Plan
- Muckleshoot Indian Tribe, WAC 197-11-960 Environmental Checklist, Jan. 18, 2014

History of Water Use

The Muckleshoot Indian Tribe (Tribe) constructed the Keta Creek Hatchery in 1978, and has owned and operated it since then. The Crisp Creek Rearing Ponds facility or Hatchery, comprised of two connected in-channel rearing ponds, has been owned and operated by the Washington State Department of Fish and Wildlife since 1975. The Tribe took over operation of the ponds in 1997 and then acquired the Crisp Creek Hatchery and property from the State in 2004. The Keta Creek Hatchery is located on the west side of 212th Ave SE and Crisp Creek Hatchery is just across the street to the east, just off of Green Valley Road, about 2 miles northwest of Flaming Geyser State Park. The two facilities are being combined into one and will be modernized to meet the Washington State Department of Fisheries (WDFW) 2013 Future Brood Document production goals.

Crisp Creek provides spawning and rearing habitat for coho, chinook, chum and winter steelhead and also serves as the water supply for both the Keta and Crisp Hatcheries. The entire flow of Crisp Creek is impounded by the Crisp Hatchery salmon rearing ponds, which were constructed in the 1930s by previous landowners. Pond inflow is roughly equal to outflow so continuous flow and flushing rates are maintained to help ensure habitat and biological health for rearing fish. The mean annual flow in Crisp

Creek at the inflow to the Crisp Hatchery rearing ponds averages 5 or 6 cfs. Due to limited discharge data for Crisp Creek at the hatchery rearing ponds, measured flows were compared to gaged flows at a County gaging station downstream on Crisp Creek, to develop a corresponding flow relationship. The resulting equation was then applied to the time series record for the County gage to estimate flows for Crisp Creek at the rearing ponds for 1995 through 2013 (Carlson, 2013). Flow exceedance plots were then developed at the rearing ponds indicating a median flow of 5.3 cfs, a 10% chance of occurrence for a low flow of 3.5 cfs, and a 6% chance of occurrence of a high flow of 10.5 cfs.

The Crisp Hatchery water right (S1-22503C) is for 8 cfs. The Keta Hatchery diverts water from Crisp Creek downstream of the Crisp Hatchery rearing ponds with water rights (S1-23839C and S1-24508C) totaling 2.55 cfs. In addition to water diverted from Crisp Creek, the Tribe has two water rights (S1-22989C and S1-23733C) from Keta Springs for 1.99 cfs for use at the Keta Hatchery for fish propagation and 0.02 cfs and 2 ac-ft/yr for domestic use. Crisp Creek and all tributaries to the Green River are closed to further surface water appropriations (Chapter 173-509 WAC).

The Keta and Crisp Hatchery facilities are old and run down from age. The water delivery system is unreliable having pipes and valves wearing thin from corrosion that are now leaking. Fish rearing containers are breaking down and drain systems are undersized and partially clogged. The average volume of water available for hatchery activities is typically between 3 and 5 cfs throughout the year and water is treated and reused. In February, during the height of available water and fish needs, the existing supply is insufficient with the present site configuration. Upgrades are needed to maximize available limited supplies, mainly with water quality treatment improvements. Future growth allowed by current zoning in the area may decrease available water by 0.8 cfs. This would further impede the rearing capacity of the facility.

Both facilities will receive a complete overhaul. Three water right change applications, S1-22503C, S1-22989C, and S1-24508C, are being processed concurrently to add additional points of diversion and change the place of use for water withdrawn from Crisp Creek. The applications were submitted in order to increase operational flexibility and expand the area so water can be used to cover both facilities. With the changes, the existing water allocations will not increase over the existing total non-consumptive appropriation of 10.55 cfs. In addition a fourth change application was submitted to accommodate the expanded place of use and additional point of diversion from Keta Springs for fish propagation and domestic use.

Proposed Use and Points of Diversion

On May 21, 2014, Kellie Arthur, Ecology GIS Specialist, and I met with Carla Carlson, Water Resources Analyst\Hydrologist for the Muckleshoot Indian Tribe, and Hugo Hernandez, Keta\Crisp Hatchery Manager. They gave us a tour of the hatchery facilities and all points of diversion from Crisp Creek and Keta Springs.

Under the proposed change the two adjacent fish hatchery facilities, Keta and Crisp, will be upgraded and the place of use will be expanded to combine both facilities into one complex. Additionally, the points of diversion will be used interchangeably throughout the complex to allow greater flexibility.

Key elements of the Keta\Crisp Fish Hatchery Modernization Project will be new concrete rearing and holding ponds, larger gravel parking areas, crew and feed storage building, residence, a hatchery and operations building, surface and spring water intakes, and water treatment and reuse facilities. The current level of production has reached its maximum capacity and the Keta and Crisp facilities are in need of substantial repair and replacement to attain WDFW 2013 Future Brood Document production goals (1 million coho and 5 million chum by 2013-2014).

Crisp Site

Currently, Crisp Creek flows into the two in-channel earthen ponds and discharges into a culvert under 212th Ave. SE to form the mainstem. Flow is continuous through the ponds with flow always leaving the ponds, so Crisp Creek never goes dry. The modernization project will route flow mainly to the south pond and place the hatchery off-channel.

The Crisp facility will have an updated water withdrawal and delivery system. A 6 cfs capacity screened gravity intake structure will provide water to the concrete rearing ponds and circular tanks. The new structure will replace an existing in-stream diversion structure that is in disrepair. An additional new 6 cfs capacity intake downstream of the gravity intake will pump Crisp Creek water into the new off-channel concrete ponds and tanks. This dual system will provide flexibility to hatchery operations. A water treatment system to remove sediment and disinfect the water will provide high quality, disease free water to the ponds and tanks. The discharge of facility water will occur at the same location as it is currently. The new configuration will allow the creek to by-pass the new ponds and ensure no greater than 10.55 cfs is withdrawn from the creek at this location. The water rights for the Crisp and Keta facilities from Crisp Creek are a combined 10.55 cfs and part of all of the flow will be able to be withdrawn from any of the established points of diversion.

The new off-channel rearing ponds will each hold about 100,000 cubic feet of water. Construction of the new ponds will fill a small portion of the northern earthen pond for the new rearing ponds, and a new earthen embankment will be placed into the northern pond to maintain a settling basin for sediment and rocks that are washed down Crisp Creek during high flows. This basin will be drained and cleaned during regular maintenance activities, similar to today's operations. Crisp Creek will then flow over a weir or through a culvert prior to discharging into the southern pond. The central earthen berm between the rearing ponds will be retained. Existing unneeded culverts and water management structures, including the current gravity intake and the outlet structures for the north and south ponds, in Crisp Creek will be removed. The existing south pond will be restored to riverine wetlands on either side of a new Crisp Creek channel.

Keta Hatchery Site

The current Keta facility contains three concrete raceway structures used to rear chum and three dirt ponds used to raise catchable size trout as part of the Tribe's fishing derby program. The site also contains an operations building for the overall site, a hatchery building, two residences, numerous support and storage buildings, and gravel parking areas. Water treatment facilities for the raceways, springs, and domestic water supply system are spread across the site. A settling lagoon provides treatment for waste generated when the raceways are cleaned. Current water supply facilities include a concrete flume for a pumped intake on Crisp Creek, and spring collectors on the Keta Springs upslope from the facility.

The Keta facility will also receive a complete overhaul. The key elements will be new concrete adult holding ponds, larger gravel parking areas, a hatchery and operations building, residence, spring water intakes, and water treatment and reuse facilities.

The water supply system will be extensively renovated. Water for the adult holding ponds will be piped from the new concrete rearing ponds after reuse and treatment. The spring collection system for domestic water and incubation water will be improved to more efficiently handle debris and sand, and a new intake structure will be constructed for the Keta Springs water supply. A new water treatment system to remove colloidal size particles from the spring water will be constructed.

The adult holding ponds will have the capacity to hold up to 6,400 adult chum and coho prior to spawning. The existing in-creek adult holding area will be renovated to provide additional space for holding adults during the peak of the fish return period in October and November. A new indoor spawning facility will be constructed adjacent to the holding ponds to replace the existing creek-side spawning shelter. Capacity to incubate up to 5.5 million chum eggs and 1.3 million coho eggs will be provided in the new hatchery and operations building. Water supply for incubation will be provided by the new Keta spring water treatment facility and from the facilities on the Crisp Creek portion.

A new pollution abatement settling pond, or clarifier, will be constructed to remove solids from cleaning waste water from the rearing ponds, circular tanks and water treatment facilities. The pollution abatement facilities and hatchery water discharges will be operated in accordance with the existing NPDES permit (NPDES General Permit No. WAG-130000) issued by EPA. The existing raceways and water treatment system will be removed and the area surfaced with gravel to provide additional parking during fishing derby events. An existing area for treating parking area runoff will be retained. The existing operations building will be partially demolished as will some of the residences and out buildings on the site.

All Water Rights Appurtenant to the Proposed Place of Use

Muckleshoot Indian Tribe Water Rights Associated with the Keta/Crisp Hatchery Complex

Water Right #	Priority Date	Source	Qi (cfs)	Qa (af/yr)	Purpose of Use
S1-22989C	9/29/1977	Keta Springs	0.01	1.0	Domestic
S1-22989C	9/29/1977	Keta Springs	1.99	Non-consumptive	Fish propagation
S1-23733C	12/5/1980	Keta Springs	0.01	1.0	Domestic
S1-22503C	5/29/1975	Crisp Creek	8.0	Non-consumptive	Fish propagation
S1-23839C	3/30/1981	Crisp Creek	2.0	Non-consumptive	Fish propagation
S1-24508C	7/27/1984	Crisp Creek	0.55	Non-consumptive	Fish propagation

Additionally, the Muckleshoot Tribe may hold federally reserved water rights, which as yet are unquantified, to maintain instream flows in Crisp Creek for fish since time immemorial.

Tentative Determination of the Extent and Validity

To change a water right, Ecology must make a tentative determination as to the extent and validity of the right. Under RCW 90.14.160, any portion of a water right not exercised for a period of five successive years, without sufficient cause, shall be relinquished and revert to the state.

To assess the extent and validity of Certificate S1-23989C, I evaluated the affidavit of Dennis Moore, which documented past hatchery practices and water use. The flow data he collected at Keta Springs for fish propagation show the peak flows have only totaled 0.68 cfs, therefore the water right has not been fully perfected at the certificated 1.99 cfs rate. Therefore the fish propagation portion of this water right will be reduced accordingly.

Hydrogeologic Evaluation

The Keta/Crisp Hatchery site is located in South King County between the cities of Black Diamond and Auburn within the Green River Watershed (see site map, Attachment 1). Keta Springs and Crisp Creek are located near the southwestern end of a drift plain known as the Covington Upland. The drift plain lies above the Green River Valley and has a surface elevation generally about 400 to 600 feet above mean sea level. The drift plain is bounded by the Cedar River on the north, the Green River on the south, the Black Diamond area on the east, and the Green/Duwamish River Valley on the west. The Cedar and Green Rivers and the Green River Valley serve as natural discharge boundaries. Bedrock deposits that occur east of the Black Diamond area provide a natural barrier to the east. Soos, Jenkins, and Covington Creeks are the principal internal drainage features within the drift plain which drain to the Green River.

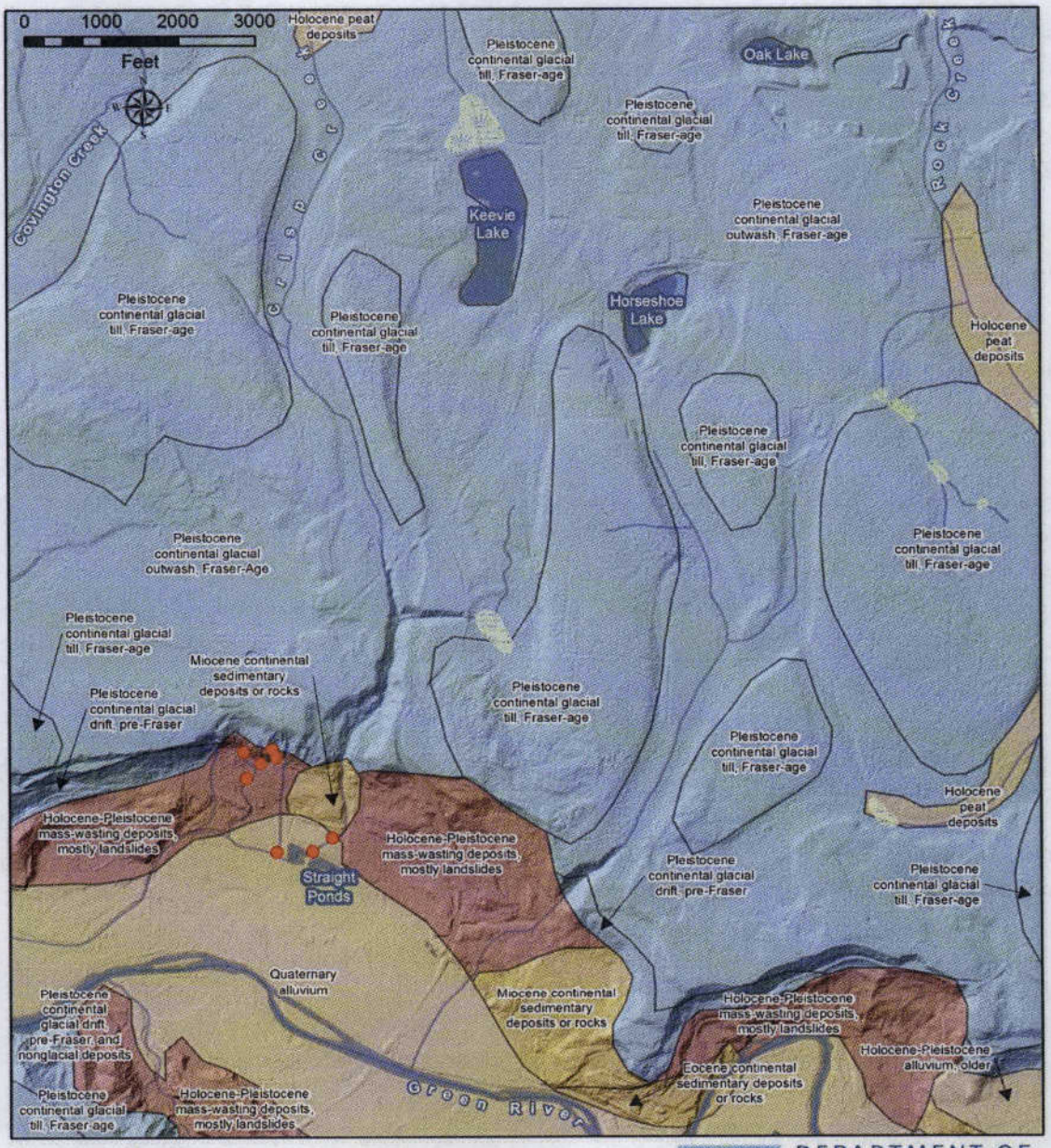
The drift plain is mantled by till and outwash deposits from the Vashon stage of the Frasier glaciation which formed northerly trending hills and depressions. The Vashon till and outwash deposits are underlain by older pre-Olympian glacial and interglacial deposits which are in turn underlain by Tertiary bedrock consisting of sandstone, shale and coal of the Puget Group. The Vashon recessional outwash (Qvr) was deposited by glacial melt water during the latest retreat of the Frasier ice sheet. The outwash deposits principally consist of stratified sand and gravel, and they are usually very permeable. The Qvr aquifer is underlain in most areas by low permeability Vashon till that impedes downward vertical flow. The underlying pre-Olympian aquifer is comprised of both coarse grained glacial (Qpog) and non-glacial (Qpon) sediments.

The Crisp Creek subbasin represents the southern terminus of the drift plain. The Ovr deposits surround outcrops of till and cover most of the rolling terrain upland area (Figure 1).The subbasin encompasses an area roughly 3,200 acres which includes Keevie and Horseshoe Lakes and most of Black Diamond Lake. In places where there is missing till, a feature known as a "window", groundwater within the Qvr aquifer becomes directly hydraulically connected to the underlying pre-Olympian aquifer. Horseshoe Lake represents such a window through the Vashon lodgement till. There is a slight vertically downward gradient from the Qvr aquifer into the pre-Olympian aquifer. Wells installed within the pre-Olympia aquifer in the subbasin indicate a general horizontal flow direction to the southwest toward Crisp Creek and the Green River Valley.

Crisp Creek is an undercut stream flowing through a relatively wide swale formed in an abandoned, low-gradient meltwater channel. The groundwater flow in the Crisp Creek subbasin can be subdivided into shallow Vashon Recessional outwash (Qvr) aquifer components in the headwater area and deeper pre-Olympian aquifer flow components in the steep reaches of Crisp Creek where it cuts through the glacial deposits to form a deep canyon in the valley wall on the north side of the Green River. The headwater wetlands and upper reaches of Keta Springs and Crisp Creek are likely recharged by groundwater within the Qvr deposits and adjacent to the creek within the swale. Depending on the thickness of the Qvr deposits and the shape of the underlying till surface, portions of the upper Crisp Creek channel probably vary between losing reaches to gaining reaches. The younger portion of the pre-Olympian aquifer is very productive and discharges as springs to Crisp Creek and along the northern Green River Valley slope.

Crisp Creek runs for a total of 3 miles from the plateau and then runs parallel to the Green River before entering it at mile 40.1. Landslide deposits and colluvium mantle the steep valley wall on the north side of the Green River Valley. The creek provides the majority of the water for hatchery production. In addition, three main springs, collectively known as Keta Springs, supply the domestic and egg incubation water supply for the hatchery. Several springs discharge along the steep Green River Valley walls and serve single-family homes and the Diamond Springs Water Association. About 40 homes are currently served by the Diamond Springs water system, with a total of 50 connections approved by WDOH.

Figure 1


0 1000 2000 3000
Feet
Holocene peat deposits
Pleistocene continental glacial till, Fraser-age
Oak Lake
Pleistocene continental glacial till, Fraser-age
Rock Creek
Covington Creek
Keevie Lake
Pleistocene continental glacial outwash, Fraser-age
Pleistocene continental glacial till, Fraser-age
Horseshoe Lake
Pleistocene continental glacial till, Fraser-age
Holocene peat deposits
Pleistocene continental glacial till, Fraser-age
Pleistocene continental glacial outwash, Fraser-Age
Pleistocene continental glacial till, Fraser-age
Pleistocene continental glacial till, Fraser-age
Miocene continental sedimentary deposits or rocks
Pleistocene continental glacial drift, pre-Fraser
Pleistocene continental glacial till, Fraser-age
Pleistocene continental glacial till, Fraser-age
Holocene peat deposits
Holocene-Pleistocene mass-wasting deposits, mostly landslides
Holocene-Pleistocene mass-wasting deposits, mostly landslides
Straight Ponds
Pleistocene continental glacial drift, pre-Fraser
Pleistocene continental glacial till, Fraser-age
Quaternary alluvium
Pleistocene continental glacial drift, pre-Fraser and nonglacial deposits
Miocene continental sedimentary deposits or rocks
Holocene-Pleistocene mass-wasting deposits, mostly landslides
Holocene-Pleistocene alluvium, older
Eocene continental sedimentary deposits or rocks
Pleistocene continental glacial till, Fraser-age
Holocene-Pleistocene mass-wasting deposits, mostly landslides
Green River
Muckleshoot Diversion Locations
Water Body
Wetland
Stream or Ditch
Geologic Unit Age and Type
Sedimentary
Alluvium
Mass-Wasting
Glacial Deposits
DEPARTMENT OF ECOLOGY
State of Washington
Geology in the Vicinity of
The Muckleshoot Fish Hatchery
King County LiDAR, 2003
WRIA 9, King County

Impairment Considerations

The original point of diversion (POD) will remain and four additional POD's will be added to allow flexibility of the system. All of the POD's are located within the same quarter/quarter Section. The five points of diversion pertinent to the subject change application are shown on Attachment 1. The points of diversion for all of the Tribes water rights pertinent to the Keta/Crisp Hatchery Complex are depicted on Figure 1.

The non-consumptive and consumptive quantities taken from Keta Springs will remain the same as historically used, therefore there will be no impairment to existing water rights.

It is determined that approval of the proposed changes in points of diversion and place of use will not impair existing water rights, or regulated instream flows in the Green River.

Consideration of Protests and Comments

There were no protests or comments filed in response to the public notice for this application. Comments were filed in response to the SEPA DNS. The comments and response to the DNS are discussed above in the SEPA section.

Conclusions

In accordance with Chapter 90.03 RCW, the author makes a tentative determination that water right S1-22989C with a priority date of September 29, 1977, represents a valid water right that authorizes the diversion of up to 0.68 cfs for non-consumptive fish propagation, and of 0.01 cfs consumptive use for single domestic with 1 acre-feet/year continuously.

Approval of this application to change POD and place of use will divert water from the same source, in the same quantities, and will not cause impairment of existing rights.

As a result of my investigation and determinations, I conclude the following:

- Water Right S1-22989C is valid and is eligible for change.
- Water will be diverted from the same source as the original appropriation.
- The change will not result in any additional water being diverted.
- There will be no impairment of existing rights.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that Change Application No. CS1-22989C be approved in the amounts and within the limitations listed below and subject to the provisions listed above.

Purpose of Use and Authorized Quantities

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

0.01 cfs and 1 acre-feet/year consumptive use single domestic
0.68 cfs Non-consumptive use for fish propagation

Points of Diversion

NE¼ SE¼, Section 20, Township 21 North, Range 6 E.W.M.

Place of Use

That portion of the SE¼ of Section 20 and the SW¼ of Section 21, Township 21 North, Range 06 East, W.M., including King County, Parcels Nos. 2021069014, 2021069017, 2021069097, 2121069026, and 2121069039

As described on Page 2 of this Report of Examination.

JERRY LEE LISZAK

Jerry L. Liszak, LG, LHG *Date* 5/4/2015

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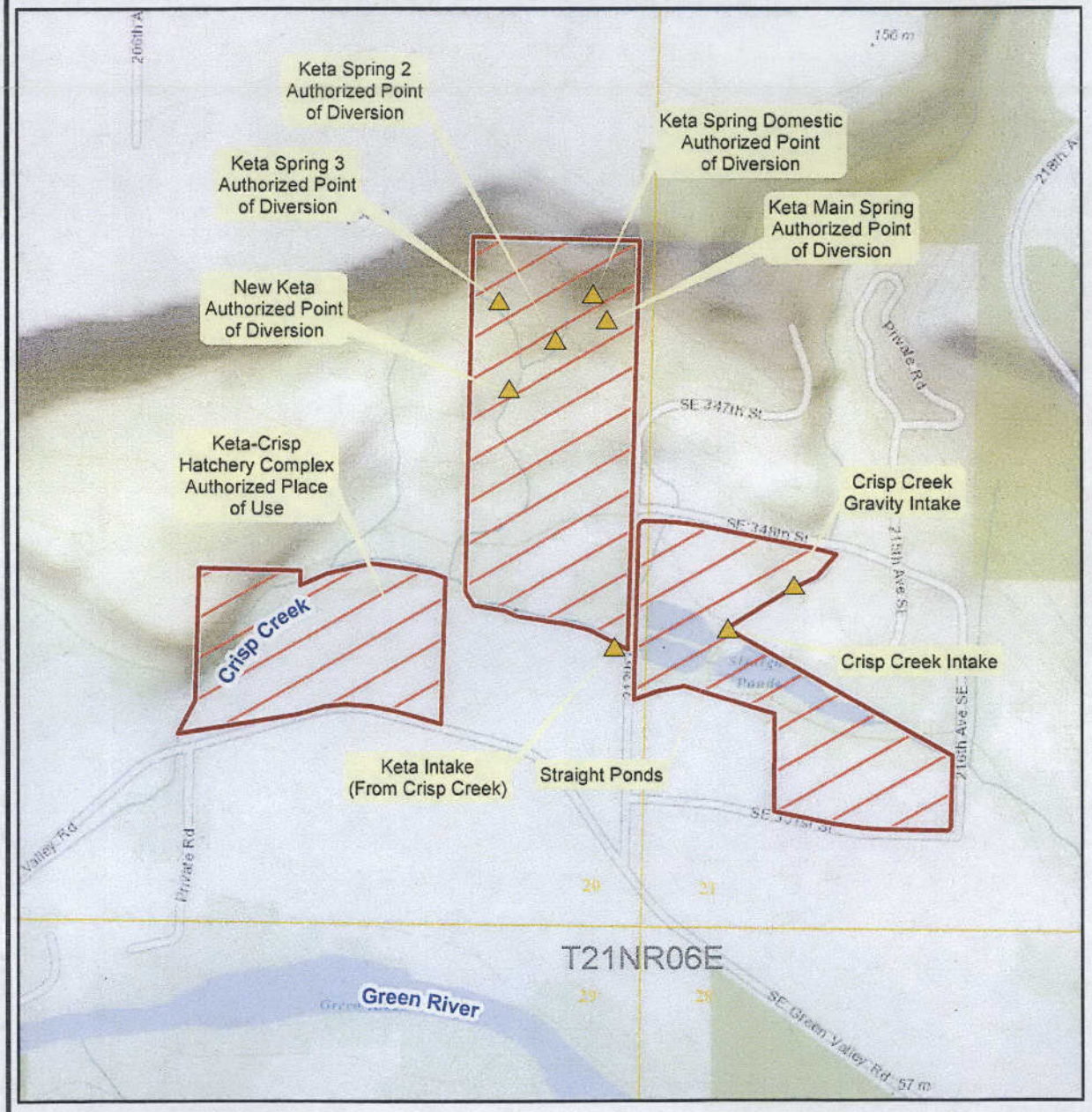
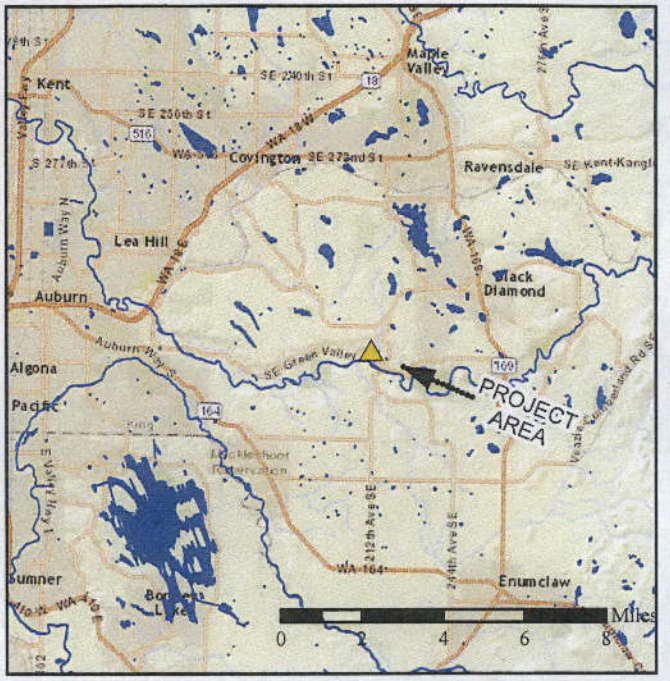
Muckleshoot Indian Tribe
Water Right CS1-22989C
Section 20, T 26N R 06E W.M.
WRIA 9 King County





Legend

- Authorized Place of Use
- Point of Diversion
- Water Body
- Townships
- Sections

0 500 1000 1500 2000 Feet

DEPARTMENT OF ECOLOGY
State of Washington

Map Date: 3/11/2015

Place of use and point(s) of diversion are as defined on the cover sheet under the headings, 'LOCATION OF DIVERSION' and 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'

ATTACHMENT 1

Attachment 2

Those portions of Section 20, Township 21 North, Range 6 East, W.M., described as follows:

Parcel 2021069097
That portion of the Southwest quarter of the Southeast quarter of said Section 20 described as follows: Beginning at the Northeast corner of said subdivision; thence S88°54'16"W along north line thereof 394.36 ft; thence S1°09'45"E parallel with the East line of said subdivision 540 ft, more or less, to the centerline of Crisp Creek; thence Southwesterly along said centerline to a point on Northerly margin of County Road known as Green Valley Road; thence Easterly along said Northerly margin to the East line of said Southwest quarter of Southeast quarter; thence N1°09'45"W along the East line thereof 567 ft, more or less, to the point of beginning.

TOGETHER WITH that portion of the East half of the Southeast quarter of said Section 20 described as follows: Beginning at the East quarter-corner of said section; thence S89°02'13"W along North line of said subdivision 1322.65 feet, to the Northwest corner of said subdivision; thence S1°09'45"E along West line thereof 1399.91 ft, to a point on a line parallel with and 15 ft Southerly of the centerline of Crisp Creek and the TRUE POINT OF BEGINNING; thence along said parallel line N64°47'01"E 116.94 ft; thence continuing on said parallel line N74°43'05"E 176.83 ft ; thence continuing on said parallel line S84°28'56" E 153.24 ft; thence continuing on said parallel line S82°03'03"E 83.91 ft; thence continuing on said parallel line S72°09'01"E 54.92 ft; thence S1°09'45"E parallel with the West line of said East half of Southeast quarter 580.27 ft to a point on the Northerly margin of county road known as Green Valley Road; thence along said Northerly margin N77°21'21"W 182.47 ft; thence continuing along said Northerly margin N80°10'44"W 100.21 ft; thence continuing along said Northerly margin N87°24'18"W 103.29 ft; thence continuing along said Northerly margin S81°43'46"W 87.27 ft; thence continuing along said Northerly margin S72°08'15"W 104.41 ft to a point on the West line of said East half of Southeast quarter; thence N1°09'45"W along said West line 509.86 ft to the TRUE POINT OF BEGINNING.

ALSO known as a portion of Lot B per King County LLA Number 185028, subject to deed of and agreement relating to development rights, King County Recorder's Number 8403200703.

Parcel 2021069014
The Northeast quarter of the Northeast quarter of the Southeast quarter of said Section 20.

TOGETHER WITH the West half of the Southeast quarter of the Northeast quarter of the Southeast quarter of said Section 20.

Parcel 2021069017
The East half of the Southeast quarter of the Northeast quarter of the Southeast quarter of said Section 20;

TOGETHER WITH that portion of the North ½ of the Northeast quarter of the Southeast quarter of the Southeast quarter of said Section 20 lying Northerly of the centerline of Crisp Creek.

TOGETHER WITH the North 15 feet of that portion of the East half of the East half of the Southeast quarter of said Section 20 lying Southerly of the centerline of Crisp Creek.

AND those portions of Section 21, Township 21 North, Range 6 East, W.M., described as follows:

Parcel 2121069026

Beginning at the Northwest corner of said Section 21; thence S1°46'3"W along West section line 1340.10862 ft; thence N87°5'41"E 28.84801 ft to the TRUE POINT OF BEGINNING; thence N1°44'13"E 206.59091 ft to a tangent curve to the right, having a radius of 25.077105 ft and a

chord length of 25.09821 ft, thence continuing along said curve 38.90661 ft; thence leaving said curve S89°5'6"E 35.4408 ft; thence S87°13'50"E 82.94744 ft; thence S81°56'36"E 108.53793 ft; thence s78°27'40"E 429.22551ft; thence S75°51'25"E 55.56707 ft; thence S73°39'24"E 45.57042 ft; thence S40°34'44"W 118.92976 ft; thence 63°30'53"W 124.29209 ft; thence S57°25'51"W 281.67652 ft; thence N52°0'40"W 128.5847 ft; thence N64°23'1"W 278.47767 ft to the TRUE POINT OF BEGINNING.

Also known as Lot 1 of King County Short Plat Number 283060, recorded under Recording Number 8312200734, instrument Number 198312200734, in King County, Washington.

Parcel 2121069039
That portion of the Southwest quarter of the Southwest quarter of said Section 21, described as follows: beginning at the Southwest corner of said subdivision, thence Northerly along West line thereof 454.88ft; thence Easterly 30ft to East margin of 212th Avenue Southeast; thence Northerly along said East margin 370.23ft to the TRUE POINT OF BEGINNING; thence continuing Northerly along said East margin 483.72ft; thence S65°42'34"E 279.42ft; thence S53°52'25"E 131.35ft; thence S62°04'35"E 1006.48ft to West margin of 216th Avenue Southeast ; thence Southerly along said West margin 281.43; thence along a curve to the right with a radius of 20 feet, an arc length of 31.34 feet to the North margin of Southeast 351st Street; thence Westerly along said North margin 686.02 feet; thence N00°00'10"E 368.53ft; thence N73°09'19"W 370.06 ft; thence S78°50'08"W 104.51ft; thence S70°33'28"W 100.48ft to the TRUE POINT OF BEGINNING, EXCEPT any portion lying within county road right of ways.