STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
D R A F T

REPORT OF EXAMINATION
Changes to place of use, purpose of use, and addition of points of withdrawal
WRTS File # CS2-SWC8483

PRIORITY DATE	CLAIM NO.	PERMIT NO.	CERTIFICATE NO.
February 25, 1960		R-240	*8483A, *8483B

NAME
Hampton Lumber Mills – Washington, Inc., Randle Division

ADDRESS/STREET	CITY/STATE	ZIP CODE
P.O. Box 189, 10166 US Hwy 12	Randle, WA	98377

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
2 wells

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND (cfs)	MAXIMUM GALLONS PER MINUTE (gpm)	MAXIMUM ACRE FEET PER YEAR (ac-ft/yr)
	350	12

QUANTITY, TYPE OF USE, PERIOD OF USE

350 gpm, community domestic and commercial/industrial, continuous

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL

Well #1: 800 feet south and 2,630 feet east from the northwest corner of Section 15 in T12N, R07E.W.M.
Well #2: 720 feet south and 1,480 feet west from the northeast corner of Section 15 in T12N, R07E.W.M.

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED
[Figures 1 and 2 show location of the authorized place of use and point(s) of diversion or withdrawal]

The place of use of this water right is the Lewis County Water District #1 service area described in the 2006 Water System Plan Amendment approved by the Washington State Department of Health. The service area is located within the SE ¼ SW ¼, SW ¼ SE ¼, and SE ¼ SE ¼ of Section 8; SE ¼ SE ¼, SW ¼ SE ¼, SE ¼ SW ¼, SW ¼ SW ¼, NE ¼ SW ¼, and NW ¼ SE ¼ of Section 9; SW ¼ SW ¼, and SE ¼ SW ¼ of Section 10; NW ¼ NW ¼, NE ¼ NW ¼, SE ¼ NW ¼, NW ¼ NE ¼, SW ¼ NE ¼, and NW ¼ SE ¼ of Section 15; NE ¼ NW ¼, NW ¼ NE ¼, NE ¼ NE ¼, and SW ¼ SW ¼ of Section 16; NE ¼, SE ¼, NW ¼ SW ¼, NE ¼ SW ¼, SE ¼ SW ¼, NE ¼ NW ¼, SW ¼ NW ¼, and SE ¼ NW ¼ of Section 17; NE ¼ NE ¼, and NW ¼ NE ¼ of Section 20; all in T12N, R07E.W.M.

DESCRIPTION OF PROPOSED WORKS

Well #1: Existing 8 inch diameter well approximately 100' deep (Hampton Well) (Well Tag #922)
Well #2: Existing 8 inch diameter well 102' deep (Well Tag # AGA118)

DEVELOPMENT SCHEDULE		
BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	WATER PUT TO FULL USE BY THIS DATE
Dec 1, 2011	December 1, 2029	December 1, 2029

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PROVISIONS

The water right will be subject to the following provisions:

1. The maximum cumulative withdrawal rate under water rights *8483 and G2-27504 will not exceed 350 gpm and 54 acre-feet per year.

2. Lewis County Water District #1 (LCWD #1) will be responsible for operation and maintenance of the water system consisting of Wells #1 and #2 storage tanks, and associated transmission and distribution pipelines, and will monitor and report water use.

A. WELLS, WELL LOGS AND WELL CONSTRUCTION STANDARDS

A1. **Well Head Protection**
In accordance with WAC 173-160, wells shall not be located within certain minimum distances of potential sources of contamination. These minimum distances shall comply with local health regulations, as appropriate. In general, wells shall be located at least 100 feet from sources of contamination. Wells shall not be located within 1,000 feet of the boundary of a solid waste landfill.

A2. **Well Construction Standard**
All wells constructed in the state shall 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 shall be decommissioned.

A3. **Well Tag**
All wells shall 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 shall remain attached to the well. If you are required to submit water measuring reports, reference this tag number.

A4. **Access Port**
Required installation and maintenance of an access port as described in WAC 173-160- 291(3).

B. MEASUREMENTS, MONITORING, METERING AND REPORTING

B1. **Meter Installation**
An approved measuring device shall be installed and maintained for each of the sources authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173. http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html

B2. **Record, Report Upon Request by Ecology**
Water use data shall be recorded annually and maintained by Lewis County Water District #1 for a minimum of five years, and shall be promptly submitted to the Department of Ecology upon request.

B3. **Record Weekly, Report Annual Totals**
Water use data shall be recorded monthly and maintained by Lewis County Water District #1 for a minimum of five years. The maximum rate of diversion/withdrawal and the annual total volume

shall be submitted to the Department of Ecology by January 31st of each calendar year.

B4. **Electronic Reporting**
Recorded water use data shall be submitted via the Internet. To set up an Internet reporting account, contact the Southwest Regional Office. If you do not have Internet access, you can still submit hard copies by contacting the Southwest Regional Office for forms to submit your water use data.

B5. **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 for modifications to some of the requirements.

C. MUNICIPAL SUPPLY AND PUBLIC WATER SYSTEMS

C1. **Health Approval Required**
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, prior to beginning (or modifying) your project.

D. SCHEDULE AND INSPECTIONS

D1. **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, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

D2. **Proof of Appropriation**
The water right holder shall file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate will reflect the extent of the project perfected within the limitations of the 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.

E. GENERAL CONDITIONS:

E1. **CONSERVATION**
Use of water under this authorization shall be contingent upon the water right holder's maintenance of efficient water delivery systems and use of up-to-date water conservation practices consistent with established regulation requirements and facility capabilities.

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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 find the change of water right as recommended will not be detrimental to existing rights or the public welfare.

Therefore, I ORDER approval of the recommended change to the purpose of use, place of use, and addition of points of withdrawal under Change Application No. *8483, 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
PO Box 40903
Olympia, WA 98504-0903

OR

Deliver your appeal in person to:

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

2. To serve your appeal on the Department of Ecology

Mail appeal to:

The Department of Ecology
Appeals and Application for Relief Coordinator
PO Box 47608
Olympia, WA 98504-7608

OR

Deliver your appeal in person to:

The Department of Ecology
Appeals and Application for Relief Coordinator
300 Desmond Dr SE
Lacey, WA 98503

3. And send a copy of your appeal to:

Thomas Loranger
Department of Ecology
Southwest Regional Office
PO 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 .

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Signed at , Washington, this day of 200 .

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Thomas Loranger
Section Manager
Water Resources Program

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BACKGROUND

Description and Purpose of Proposed Change

On March 5, 2009, Hampton Lumber Mills-Washington, Inc., of Randle, Washington, filed a change application for water right *8483 with the Washington State Department of Ecology (Ecology) requesting to add points of withdrawal, and change the place and purpose of use as follows:

- Add two points of withdrawal in Township 12N, R07E W.M. (Figure 1)
  - An existing well in the NW ¼ of the NE ¼ of Section 15 (Well #2);
  - A well to be located in T12N, R07E, based on a well siting study, in the SW ¼ of the SW ¼ of Section 10 (Well #3);
  - Place of use to the existing service area of the Lewis County Water District #1 (Figure 2);
  - Purpose of use for community domestic and commercial/industrial water supply.

The proposed points of withdrawal and place of use are near the confluence of Silver Creek and the Cowlitz River, in the Upper Cowlitz River Subbasin, within the Cowlitz River Water Resource Inventory Area (WRIA) 26, in Lewis County.

Current Sources

Hampton operates under two water rights: G2-27504 (350 gpm and 42 afy, both additive), and *8483 (350 gpm non-additive and 12 afy additive). Both water rights are currently exercised at the same well. The total additive water rights held by Hampton are for 350 gpm and 54 afy (Table 1).

Table 1
Summary of Hampton Water Rights

Cert #	Name	Priority Date	Source	T/R/S	Purpose	Add. Qi	Non-Add. Qi	Add. Qa
8483	Cowlitz Stud Company	2/25/60	Well	12N 7E 15	Commercial/ Industrial		350	12
G2-27504	Cowlitz Stud Company	2/27/89	Well	12N 7E 15	Industrial/Fire	350		42
Total						**350**		**54**

Note: Add. = additive. Non-Add. = non-additive.

Community Context

LCWD #1 is located in the unincorporated community of Randle in Lewis County, an economically distressed county. LCWD #1 has operated the public water system since 1957. In 1974 the White Pass School District No. 303 and the USFS wells were connected to the water system under long term agreements with LCWD #1.

In 2001 the LCWD #1 Water System Plan identified insufficient fire flow and storage as a critical issue that must be resolved in order to assure public health and safety in the community. The 2006 Water System Plan Amendment reiterated the need to resolve this issue.

The 2001 Water System Plan also identified source susceptibility issues at the existing School well and the USFS well; Washington DOH has determined that these wells are threats to public health.

Water right changes and new appropriations are needed to resolve these issues and maintain a safe and reliable water system in Randle.

Hampton Lumber Mills-Washington, Inc., in Randle holds 2 groundwater rights exercised at the Facility well; this well has no source susceptibility issues. The Hampton water system includes a pump station and 345,643 gallon storage tank.

To resolve the community water supply issues identified in the 2001 and 2006 water system plans, LCWD #1 and Hampton agreed to enter into a long-term agreement for water supply from the Hampton well to serve the Water District. The agreement includes provisions for a long-term lease of Hampton's water rights, well, pump station, storage tank and associated infrastructure to LCWD #1. This lease agreement provides for sufficient fire flow storage and improves water quality. Additionally, Hampton and LCWD #1 have cooperated in the design and construction of a new transmission main to connect the Hampton well and storage tank with the LCWD#1 distribution system. This cooperative effort was accomplished with funding from Hampton for a portion of the costs as well as a Community Development Block Grant from the State.

The LCWD #1 water system upgrade will be completed through additional agreements between the Water District, Hampton, and the School District. Hampton is gifting a parcel of land to the School District for a new well that has no source susceptibility issues and will provide pumping capacity for fire protection. Design and construction of this well, pump station and associated infrastructure, and connection to the LCWD #1 distribution system, is a cooperative effort between the School District, Hampton and the Water District. LCWD #1 and the School District have agreed to enter into an amended long-term lease of this new School well as a source of supply.

This appropriation is evaluated in conjunction with applications for change of the Hampton and School District water rights, and new appropriations to LCWD #1. Upon approval of the water rights, the system will be connected to the new transmission line, Hampton well and storage tank, and new School well. The existing School well will be used for non-potable irrigation of the School grounds and athletic fields. The USFS well will not be used as a source of water supply by LCWD #1. LCWD #1, under long-term agreements with Hampton and the School District, will be responsible for the operation of the system and reporting water use at all wells.

Summary

Hampton operates one well (Well #1) under two combined water rights (G2-27504 and *8483). Well #2 will be operated by LCWD #1 in conjunction with Well #1 and a future well (Well #3).

This change application will enable LCWD #1 to: 1) secure a reliable public water supply for the community of Randle; 2) establish and use sources that are not susceptible to contamination and thereby maintain public health and safety; and 3) provide sufficient fire flow for public health and safety as required by the Washington State Department of Health.

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Attributes of the Certificate and Proposed Change

Table 2
Summary of Proposed Changes to Water Right No. *8483

Attributes	*Existing*	*Proposed*
Name	Hampton (Cowlitz Stud Company)	Hampton (Cowlitz Stud Company)
Priority Date | Date of Application for Change	February 25, 1960	March 5, 2009
Instantaneous Quantity	350 (non-additive)	350 (non-additive)
Annual Quantity	12	12
Source	Groundwater	Groundwater
Point of Diversion/Withdrawal	Well #1	Wells #1, #2 and #3
Purpose of Use	Industrial and fire	Community domestic and commercial/industrial
Period of Use	year round	Continuous
Place of Use	Parcel # 03175200600 (NE¼NW¼ of Section 15, Township 12N, Range 7E; Figure 2)	Lewis County Water District #1 Service Area (Figure 2)

Legal Requirements for Proposed Change

The following is a list of requirements that must be met prior to authorizing the proposed change in *8483:

- **Public Notice**
  Notice of the proposed change application was published in The East County Journal of Morton, Washington, on April 29 and May 6, 2009. No protests were received by Ecology.

- **State Environmental Policy Act (SEPA)**
  This application is categorically exempt from SEPA according to WAC 197-11-800(4).

- **Water Resources Statutes and Case Law**
  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:

  (a) The additional or replacement well taps the same body of public ground water as the original well. RCW 90.44.100(2)(a),

  (b) 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),

(c) 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),

(d) Other existing rights shall not be impaired. RCW 90.44.100(2)(d).

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.

Long Term Leases and Agreements

White Pass School District holds two groundwater rights, 1011-A and 5393-A. On November 11, 1974, White Pass School District leased to LCWD #1 the right to withdraw water from the School well for a period of 50 years, with an optional renewal term of 25 years. White Pass School District and the LCWD #1 are amending this lease agreement and extending the term of the lease for 50 years to 2059. The amended lease will allow LCWD #1 to withdraw water at the new Well #2, thereby removing the threat of contamination of the community water supply. On April 17, 2009, the School District filed applications to change the purpose of use and place of use and add points of withdrawal of its water rights.

The Hampton well (Well #1) has no record of contamination. In 2006 LCWD#1 amended its Water System Plan to integrate the Hampton Lumber Mill into the water supply system. Hampton and the LCWD #1 have agreed to lease Hampton's water rights, well, pump station, storage tank and associated infrastructure, and a wellhead protection easement to LCWD #1 for a term of 50 years to 2059.

Hampton is gifting a parcel of Mill property to the School District for Well #2 as an additional point of withdrawal under the School water rights. The existing School well will be disconnected from the LCWD #1 potable water supply system. The School District will use the existing School well for non-potable irrigation of school grounds and athletic fields under a portion of its water rights.

INVESTIGATION

In consideration of this application, available documents pertaining to the application's site conditions, projected water demand, agreements among the parties, and the potential effect on existing water right holders and proposed minimum instream flows were reviewed. This included the information submitted by the applicant and pertinent Ecology records including well logs, water rights records, and well construction and design reports.

Deb Hunemuller and Tom Culhane of Ecology visited the site on February 20, 2007, and met with Bill McMahan (chairman of the LCWD #1) David Like (environmental manager of the Hampton Lumber Mill) and Chris Pitre (Golder). During the site visit they inspected the current point of withdrawal, proposed points of withdrawal for Wells 1 and 2, and the proposed place of use, and interviewed the applicant.

History of Water Use

Hampton Lumber Mills operates Well #1 under water right certificates *8483 and G2-27504. Certificate 8483 was issued to Cowlitz Stud Company 1962; Certificate G2-27504 was issued to Cowlitz Stud in 1991. Ecology issued a modified Record of Decision for change of Certificate *8483 in 2006 upon investigation of the tentative extent and validity of the water right.

Meter records are not available prior to 1991. Water use at the Hampton Mill from 1991 to 2008 is summarized in the following table.

Table 3
Historic Water Use at the Hampton Mill, 1991 to 2008

Year	**Annual Production** (AF/yr)	**Comments**
1991	35	Minimum usage 6/8-12/31. Meter broken 8/27-10/7.
1992	110	
1993	110	
1994	108	
1995	118	
1996	150	
1997	149	
1998	9	Pump run 1/1-1/27.
1999	60	Pump run 8/2-12/31.
2000	158	Broken line in log yard 7/5.
2001	64	
2002	74	
2003	84	On 7/1/03, water usage noted as abnormally high since 5/6/03. New 25 hp pump installed 7/22/03.
2004	63	
2005	63	
2006	incomplete data	
2007	65	
2008	82	

* Water use represents water used under water rights G2-27504 and *8483. Total for 2007 includes estimated data for January and November and the total for 2008 includes estimated data for February and December.

Points of Withdrawal

Figure 1 shows the current and proposed additional points of withdrawal.

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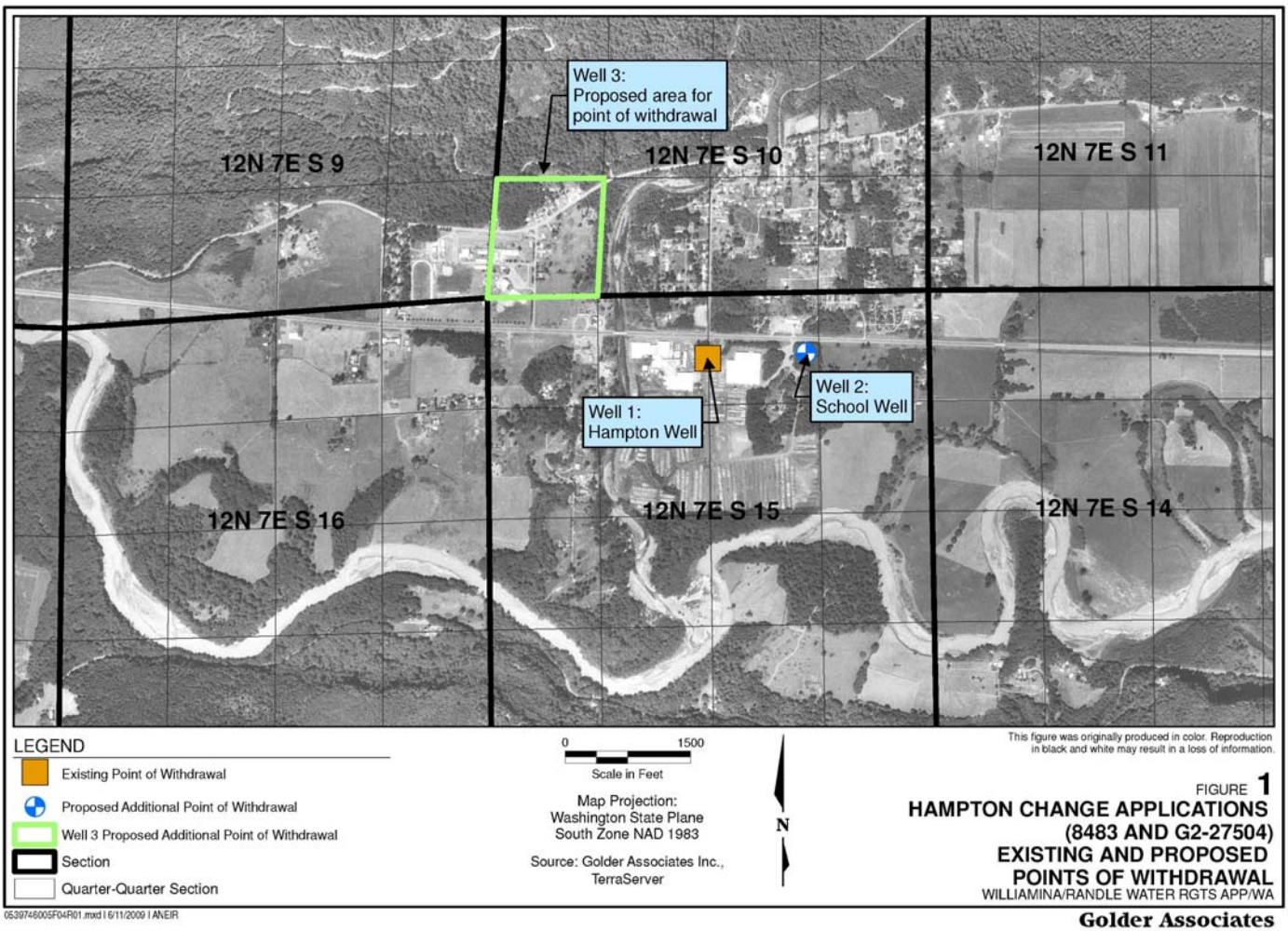

Well #1: The first point of withdrawal is the existing well owned by Hampton Lumber, located on the east side of the NE ¼ of the NW ¼, Section 15, Township 12 North, Range 7 East (Parcel #031752006000). This well (Well #1) is an eight-inch diameter well approximately 100 feet deep (no well log exists for this well). Groundwater is withdrawn from this well by Hampton Lumber under Groundwater Certificate Number G2-27504C with an annual quantity of 42 afy and an instantaneous rate of 350 gpm, and Surface Water Certificate Number 8483A (changed to allow withdrawal from groundwater) with an annual quantity of 12 afy.

Well #2: The second point of withdrawal is a new well (well tag #AGA 118) installed on the east side of the NW ¼ of the NE ¼, Section 15, Township 12 North, Range 7 East (Parcel #031749007000). The well, located approximately 2,100 feet east of Silver Creek is an 8-inch diameter well 102 feet deep. The well log is on file at Ecology under well tag #AGA 118. Drilling, installation, development and testing of the well occurred between July 14 and September 3, 2008. The results of the aquifer testing indicate that the aquifer in the vicinity of the new well is very permeable (180,000 ft^2/d). With a design pumping rate of 350 gpm, the long-term drawdown is expected to be in the range of 3 to 4 feet (Golder, 2008).

Well #3: The third point of withdrawal is a well that is requested is within the SW ¼ of the SW ¼ of Section 10, Township 12 North, Range 7 East. Beyond that general description, an exact point of withdrarwal has not been identified, nor has a well siting study been conducted.

Proposed Use

Wells #1 and #2 will pump water into the main east-west transmission main along US Route 12 to the LCWD #1 service area, the proposed place of use (Figure 2; Table 4). Well #3, if installed, would provide system redundancy and reliability in the event of a disruption of supply from Well #1 or #2.

Figure 2
Place of Use: Lewis County Water District #1

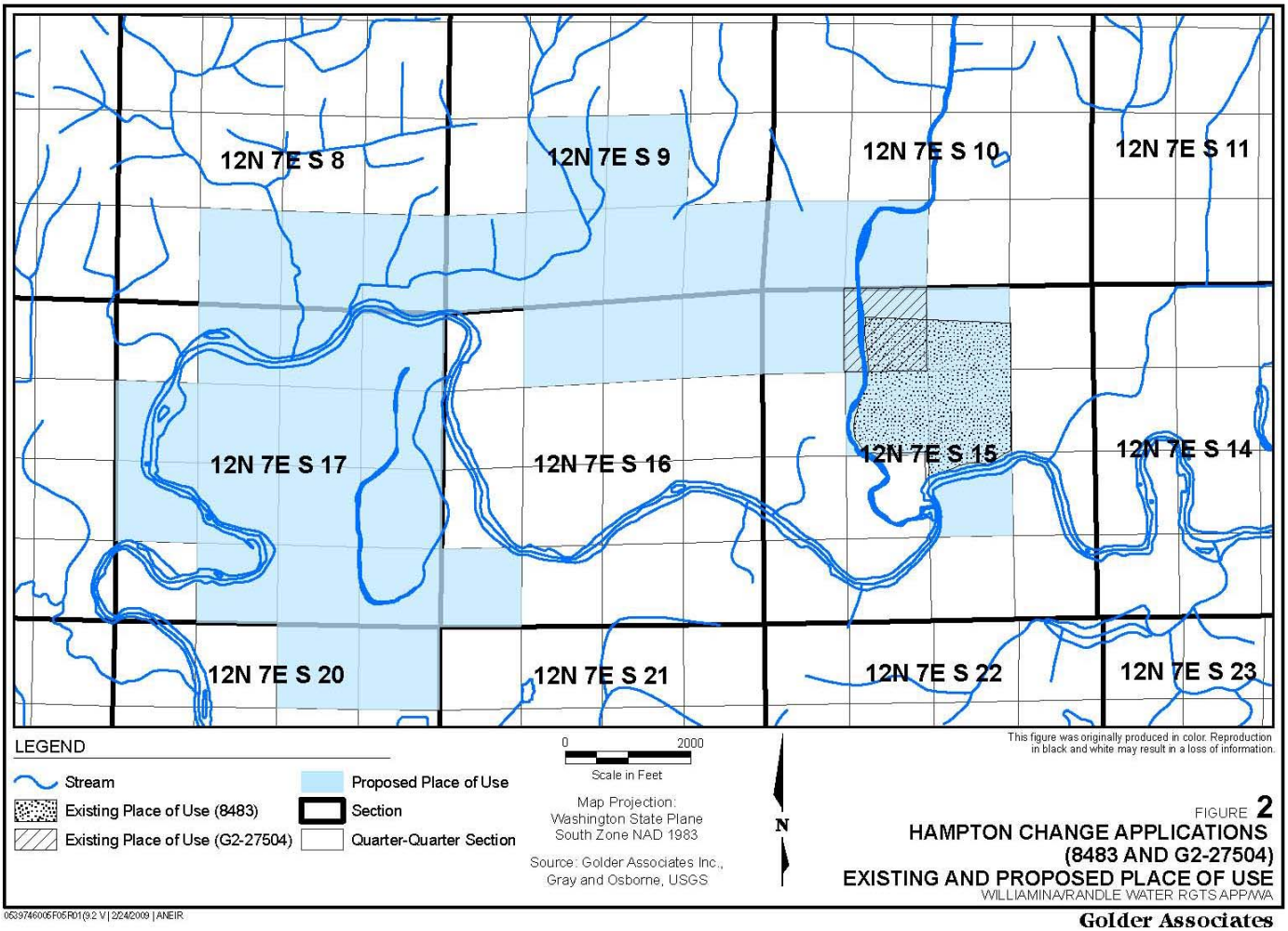

Table 4
Place of Use: Lewis County Water District #1
(T12N, R07E)

¼	¼	Section
SE	SW	8
SW	SE	
SE	SE	

¼	¼	Section
NE	NW	16
NW	NE	
NE	NE	

SE	SE	9
SW	SE	
SE	SW	
SW	SW	
NE	SW	
NW	SE	
SW	SW	10
SE	SW	
NW	NW	15
NE	NW	
SE	NW	
NW	NE	
SW	NE	
NW	SE	

SW	SW	
All	NE	17
All	SE	
NW	SW	
NE	SW	
SE	SW	
NE	NW	
SW	NW	
SE	NW	
NE	NE	20
NW	NE	

Water Rights Appurtenant to the Place of Use

Application to change Certificate *8483 is evaluated in conjunction with the following water rights as sources of supply for LCWD #1.

A portion of water rights 1011-A and 5393-A may be exercised at the existing School well (Well #4) which will be disconnected from the drinking water system and used for irrigation purposes only. LCWD #1 will be responsible for reporting water use at all wells in comprehensive water system planning documents provided to the Washington Departments of Health and Ecology.

Projected Water Demand

The Water District's 2006 Water System Plan Amendment calculated future water needs for a planning horizon to 2020. Using an updated 20-year planning horizon to 2029 and an annual population growth rate of 1.33% (based on the Lewis County Growth Management Plan), and projected demand for the Mill based on predicted maximum lumber production, the twenty-year projection for total water demand for the integrated system is 230 afy and 792 gpm.

Hydrologic/Hydrogeologic Evaluation

Chris Pitre, a licensed hydrogeologist in the State of Washington, provided findings dated January 31, 2007, supplemented with information from pumping tests conducted during the installation of Well #2. Some of that information, including a hydrogeologic interpretation, is included here. Additionally, Tom Culhane, a licensed hydrogeologist in the State of Washington, performed his own investigation and that analysis, incorporated in a memo dated March 7, 2007, is also included below.

Ecology well logs from Sections 10, 11, 14 and 15, T12N, R7E were used to provide a local characterization of the hydrogeological stratigraphy and groundwater resource.

Table 6
Well Logs from Ecology's On-Line Well Log Database Used in the Hydrogeologic Assessment

Section (T 12N, R 7 E)	Number of Wells Completed in Quaternary Sediments	
	Well Logs	**With Usable Pumping Test Data**
10	36	24
11	5	3
14	0	0
15	14	8
Total	**54**	**34**

The hydrogeology of the Upper Cowlitz Subbasin is characterized by shallow Quaternary alluvial sediments filling the bottom of valleys set in Tertiary Volcanic bedrock. The greatest documented thickness of Quaternary sediments is 118 feet, and forms the principal aquifer in the area. The uppermost 50 feet of sediments are generally lower permeability silty and clayey sediments typical of overbank fluvial deposits. Most wells are completed in sand and gravel at depths greater than 50 feet below ground surface. The depth to water in wells completed in the Quaternary sediments is generally 36 feet to 40 feet below ground surface (average and median, respectively).

The median specific capacity of wells completed in the Quaternary sediments is 11 gpm/ft. However, there is a marked gradation of increasing specific capacity from the edge of the alluvial valley to the center. Wells within approximately 1,500 feet of the volcanic bedrock outcrop have a median specific capacity of 9 gpm/ft. Those further away from the bedrock outcrop and closer to the middle of the valley (*e.g.*, in Section 15), and within the alluvial deltaic deposits of Silver Creek within which the proposed points of withdrawal are located, have a median specific capacity greater than 50 gpm/ft (in some cases greater than 100 gpm/ft; pumping rate ranging from 25 gpm to >400 gpm, and associated drawdown ranging from not measurable to three feet). A specific capacity of 50 gpm/ft equates to an approximate aquifer transmissivity of 100,000 gallons per day per foot (gpd/ft; Driscoll, 1986). The proposed points of withdrawal are within the alluvial deltaic deposits of Silver Creek; therefore, an aquifer transmissivity in excess of 100,000 gpd/ft is considered representative in the vicinity of the proposed points of withdrawal.

The only quantitative pumping test in the area to evaluate aquifer properties was conducted during installation of Well #2 (Golder, 2008). A pumping test was conducted on Well #2 at a rate of 406 gpm for 24.22 hours. Drawdown of water levels in the well stabilized at approximately 3.1 feet after approximately 10 hours of pumping. Well efficiency was estimated to be 43% efficient using the Hantush-Biershenck method (Kruseman and deRidder, 1992). Therefore, drawdown immediately outside of the well (*e.g.*, at a radius of one foot) is estimated to be approximately 1.2 feet when adjusted for a pumping rate of 350 gpm, as is requested in this change application. Drawdown at the nearest well will be less.

The distribution of well yield is consistent with the presence of a highly permeable deltaic formation along the length of Silver Creek from the point that it discharges from bedrock outcrop to its confluence with the Cowlitz River. The typical hydrology of a stream discharging from a bedrock watershed to an alluvial valley setting is a perched losing stream. This is corroborated by a static water level in Well #2 of approximately 26 feet below

ground surface, which is lower than the elevation of Silver Creek reaches and approximately equivalent to the elevation of the Cowlitz River (USGS, 1989).

Groundwater Quality

Water quality in Wells #1 and #2 is excellent.

Organic materials (*e.g.*, peat and wood) are reported in well logs in the vicinity, which may cause slightly elevated concentrations of iron or manganese. This is generally associated with lower permeability materials outside of the Silver Creek alluvial delta.

Underground petroleum storage tanks are located within 20 feet of Well #4; petroleum product contaminants have been detected at this well. Continued use of this well will be for irrigation only.

Impairment Considerations

Assessment of Proposed Well #2 Point of Withdrawal: The Hampton well (Well #1) is located approximately 1,000 feet away from Silver Creek. The new Well #2 point of withdrawal is located more than twice as far from Silver Creek. Therefore, any potential impacts of withdrawal at Well #2 point of withdrawal on Silver Creek will be less than current impacts. Impacts on the Cowlitz River from the existing Hampton Well and new Well #2 points of withdrawal are expected to be similar.

Based on a pumping test conducted on Well #2, drawdown immediately outside of the well (*e.g.*, at a radius of one foot) is estimated to be approximately 1.2 feet when the well is pumped at a rate of 350 gpm. Drawdown at the nearest well will be less. Therefore, no impairment on other groundwater users is predicted.

Assessment of Proposed Well #3 Point of Withdrawal: The purpose of requesting a new point of withdrawal in this area is to provide a point of withdrawal on the west side of Silver Creek in order to maintain potable water supply to the community should flooding of Silver Creek disrupt normal supply from Wells #1 and #2 on the east side of Silver Creek.
The proposed Well #3 is located within the same ¼ ¼ as the existing point of withdrawal (Well #4). Well #4 has been pumped at rates of approximately 300 gpm since approximately the 1950s. The USFS well has been pumped at rates of between 50-80 gpm, for a combined pumping rate of the School and USFS wells by LCWD #1 of between 350-380 gpm. No reports of impairment are known to exist.

Impairment of Other Rights

Drawdown interference is estimated to be approximately 1.2 feet at a distance of one foot from the wells; drawdown interference at greater distances from the pumped well is estimated to be less than 1.2 feet. Evaluation of potential impairment is conducted within the following areas (Table 7).

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Table 7
Areas of Potential Impairment of Groundwater Users

Well	Area Considered (all within T12N, R7E)
Well #2	North half of the NE ¼, Section 15
Well #3	East half of the SE ¼, Section 9 SW ¼, Section 10 North half of the NW ¼, Section 15 North half of the NE ¼, Section 16

These areas are selected because:

- Well #2 is located in the middle of the ¼-¼ section in the north-south aspect. No impairment is predicted in areas south or north of the ¼-¼ section. The well is located on the eastern boundary of the ¼-¼ section. Therefore, potential impairment is evaluated on groundwater users in the same ¼-¼ section, and the ¼-¼ section immediately to the east.
- Potential impairment is evaluated on groundwater users in all adjacent ¼-¼ sections.

Potential impairment near Well #1 is not considered because no increase in the instantaneous withdrawal rates is proposed.

Identification of other groundwater users relies primarily on data contained in Ecology's Water Rights Application Tracking System (WRATS) database of 2009. The assessment assumed the location of potentially affected wells within the described area to be at the closest point to the proposed point of withdrawal. This assessment predicted maximum potential impairment. Actual impairment as a function of the location is expected to be less than predicted because the wells are more likely to be located further from the proposed point of withdrawal.

Evaluation of Potential for Impairment of Existing Groundwater Right Certificates & Permits
There are no existing groundwater right certificates & permits in the area considered around Well #2. The WRATS database lists one active groundwater certificate that may be within the area considered for Well #3:

Table 8
Groundwater Certificates and Permits Within a ¼-¼ of the Proposed Well #3 Proposed Point of Withdrawal
(Ecology WRATS database, 2009)

Name	Water Right	TRS	Quad	Priority Date	Qi (gpm)	Qa (afy)
Larson, Edward E	G2-26914C	T12N/R07E-15	SW/NW	May 22, 1986	15	2.0

The Larson water right is registered in the SW ¼ of the NW ¼ of Section 15. However, the well is registered in the SW ¼ of the SW ¼. For the purposes of assessment, the location closer to the proposed point of withdrawal was assumed (i.e., the SW ¼ of the NW ¼). The pumping test conducted on the Larson well when installed indicated an excess available drawdown of 41 feet when pumped at the full instantaneous rate allowed by the associated water right. The maximum interference drawdown from the proposed point of withdrawal on the

Larson well is less than 1.2 feet (assuming a minimum distance from the pumped well of 1 foot). Therefore, no impairment of the Larson water right is predicted to occur as a result of exercising the new point of withdrawal.

Evaluation of Potential for Impairment of Existing Groundwater Right Claims and Wells

Claims in the WRATS database are only located to the resolution of a section (*i.e.*, ¼-¼ information is not provided. Therefore, all claims in sections 9, 10, 15 and 16 of T12N, R7E are considered. There are 97 claims within these sections (61 long form claims, and 36 short form claims), most of which may be outside of the area of consideration.

A review of Ecology's on-line well log database identified 46 wells in Sections 9, 10, 15 and 16 that may be located within the area considered for potential impairment. Some of these may be associated with water right certificates, permits or claims, or private exempt wells. There may be additional wells installed beginning in 1974. Therefore there may be additional wells not registered in Ecology's well log database that were installed before 1974.

WAC 173-150-060 requires that the impairment test be applied to "qualifying withdrawal facilities". Qualifying groundwater withdrawal facilities are defined as those wells that are adequately constructed. An adequately constructed well is one that fully penetrates the saturated thickness of an aquifer and can accommodate reasonable variation in seasonal pumping water levels (WAC 173-150). As such, legal impairment of neighboring wells would not occur unless those wells were drilled deep enough to fully penetrate the aquifer.

Based on the collective information, no impairment of existing water rights is predicted from the full use of the requested quantity at the proposed points of withdrawal.

Public Interest Considerations

The approved 2006 Water System Plan Amendment for the LCWD #1 describes a change in the service area of the community of Randle including the Hampton Mill. Management of the Hampton well, and associated water right and storage tank, will be transferred to LCWD #1 to provide potable water to the community.

This change application will enable LCWD #1 to: 1) establish and use sources that are not susceptible to contamination and thereby maintain public health and safety; 2) provide sufficient fire flow for public health and safety, as required by the Washington State Department of Health; and, 3) secure a reliable public water supply for the community of Randle.

Consequently, issuance of this water right change will not be detrimental to the public welfare and will protect and enhance public health and safety.

Consideration of Protests and Comments

Notice of the proposed change application was published in The East County Journal of Morton, Washington, on April 29 and May 6, 2009. No protests were received by Ecology.

Potential for Enlargement / Curtailment

<u>Quantities to be Associated with the Water Right</u>

The quantities associated with the existing water right and water right changes are 350 gpm (non-additive to water right G2-27504) and 12 afy (additive). The existing right has been put to full beneficial use for the available period of record. The validity of the water right was recently confirmed by Ecology through an approved water right change. Approval of the requested change will not result in an enlargement of the right.

The total allowable withdrawal from the Hampton well for commercial and industrial purposes is 350 gpm up to a maximum of 54 afy. On March 2, 2006, Ecology determined that the Hampton Mill was out of compliance with its rights and included a provision in the Modified Record of Decision that Hampton voluntarily comply with the terms and conditions of its water rights by developing a compliance plan. Hampton will cooperate with LCWD #1 to develop a compliance plan that must be incorporated into the District's Water System Plan that is currently being updated. Ecology will review, change or approve the compliance plan during its consultation with the Department of Health review of the Water System Plan.

Water Availability

Source of Water Proposed for Appropriation

The applicant seeks to add two new points of withdrawal of groundwater (both in Township 12 North, Range 7 East): one well (Well #2) located in the NW ¼ of the NE ¼, Section 15; and one well (Well #3) to be located in SW ¼ of the SW ¼ of Section 10 based upon a well siting study. All of these wells are expected to be completed within the same highly transmissive Silver Creek delta, which is considered the same body of groundwater.

The Hampton well (Well #1) has produced water at a permitted rate of 350 gpm for many years. Well #2 has been tested at a rate of 406 gpm. Measured aquifer transmissivity is in excess of 100,000 gpd/ft. Wells in the area requested for Well #3 have similar well yields and aquifer transmissivity. Well #4 (the existing point of withdrawal under groundwater rights 1011-A and 5393-A) has withdrawn 300 gpm and the USFS well has withdrawn between 50-80 gpm, for a total of 350-380 gpm. Therefore water is physically available for appropriation at the new well sites.

Beneficial Use

This appropriation will serve as the primary source of water for the Water District. In accordance with RCW 90.54.020(3), this appropriation for community domestic and commercial/industrial is a beneficial use of water.

CONCLUSIONS

In accordance with chapters 90.03 and 90.44 RCW, I conclude that Certificate *8483 is a valid right and eligible for change. I have determined that the requested changes will not enlarge the right and the water use will be beneficial. Approval of this change request will not impair existing rights or be detrimental to the public interest.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that the request for change to Certificate *8483 be approved in the amounts and within the limitations listed below, as well as subject to the provisions beginning on Page 2, *et seq.*

The amount of water granted is a maximum limit that shall not be exceeded and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required.

Purpose of Use and Authorized Quantities

The amount of water recommended under this change approval is a maximum limit and the applicant may only use an amount of water within the specified limit that is reasonable and beneficial. LCWD #1 shall be responsible for metering, monitoring and reporting water use at each well.

- The maximum instantaneous withdrawal rate (Qi) for Well #1 is not to exceed 350 gpm; Qi for Well #2 is not to exceed 250 gpm.
- The combined maximum instantaneous withdrawal rate (Qi) from all wells is not to exceed the additive quantities of the water rights listed in Table 5.
- Total annual withdrawal (Qa) under Certificate *8483 is not to exceed 12 acre-feet per year.
- The combined maximum annual withdrawal from all wells is not to exceed the additive quantities of the water rights listed in Table 5.
- Period of use is year round, as needed.

Points of Withdrawal

- Well #1: Existing Hampton Well in NE ¼, NW ¼ Section 15, Township 12 North, Range 7 E.W.M.
- Well #2: School Well in NW ¼, NE ¼ Section 15, Township 12 North, Range 7 E.W.M.

The Proposed Well No. 3 is not authorized at this time because it is speculative and no firm plans exist. A well sitting study has not been conducted. At such time as the District has firm plans to drill a Well #3, it may file a Showing of Compliance pursuant to RCW 90.44.100(3) or, if necessary, file an application for change of water right to add an additional point of withdrawal.

Place of Use

- Service Area of Lewis County Water District #1 (Figure 2 of this Report of Examination).

ADDITIONAL RECOMMENDATIONS

Measuring and Reporting Water Use

RCW 90.03.360 requires the owner of any water diversion to maintain substantial controlling works and a measuring device. It must be constructed and maintained for accurate measurement and practical regulation of the flow of water diverted. Technical requirements for measuring and reporting water use are described in WAC 173-173. This decision contains provisions addressing the measuring and reporting of the quantities of water withdrawn.

Water Use Agreements

The applicant, in conjunction with Lewis County Water District #1, will submit copies of current water use agreements to the Department of Ecology.

CITATIONS

The State Water Code

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Freeze, R.A., and J.A. Cherry, 1979. Groundwater. Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632, Golder Associates Inc. (Golder), 2008. Technical Memorandum RE: Lewis County Water District 1 - Randle Production Well Installation and Testing. October 17, 2008.

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HDR and Economic and Engineering Service, Inc., 2006. Grays-Elochoman and Cowlitz Watershed Management Plan. Prepared for the Lower Columbia Fish Recovery Board. July 21, 2006.

Kruseman, G.P. and N.A. deRidder, 1992. Analysis and Evaluation of Pumping test data. International Institute of Land Reclamation and Improvement Publication 47, Wageningen, The Netherlands.

Theis, C.V., 1935. The relation between the lowering of piezometric surface and the rate and duration of discharge of a well using groundwater storage. Trans. Amer. Geophys. Union, 2, pp. 519-524.

United States Geological Survey, 1989. 7.5 minute quadrangle topographic map of Randle, Washington. Reference: 46121-E8-TF-024.

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