



**CUMULATIVE IMPACT ANALYSIS  
OF OUTDOOR WATER USE BY PERMIT-EXEMPT WELLS  
IN THE CHUMSTICK CREEK  
AND MISSION CREEK SUBWATERSHEDS**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

*Submitted to:*

**Chelan County Natural Resource Department,  
Wenatchee, WA**

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## TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY .....	ES-1
1.0 INTRODUCTION .....	1
1.1 PHYSICAL SETTING .....	1
1.1.1 Chumstick Creek Subwatershed .....	1
1.1.2 Mission Creek Subwatershed.....	2
1.2 ISSUES OF CONCERN .....	2
1.2.1 Chumstick Creek Subwatershed .....	2
1.2.2 Mission Creek Subwatershed.....	3
1.3 REGULATORY SETTING .....	3
2.0 CUMULATIVE IMPACT ASSESSMENT APPROACH .....	5
2.1 IDENTIFICATION OF LAND PARCELS WITH PERMIT-EXEMPT DOMESTIC WELLS .....	5
2.1.1 Well Logs.....	5
2.1.2 Building Permits .....	6
2.1.3 Combining Well Log and Building Permit Information .....	6
2.1.4 Eliminating Parcels with Active Certified Water Rights .....	6
2.2 ESTIMATING OUTDOOR WATER USE FOR PERMIT-EXEMPT WELL LAND PARCELS ...	7
3.0 RESULTS .....	9
3.1 LAND USE.....	9
3.2 AVERAGE AET IN PARCELS WITH PERMIT-EXEMPT WELLS .....	9
4.0 CUMULATIVE IMPACT ANALYSIS.....	10
4.1 CHUMSTICK CREEK SUBWATERSHED.....	10
4.2 MISSION CREEK SUBWATERSHED.....	10
5.0 SOURCES OF UNCERTAINTY.....	11
5.1 IDENTIFICATION OF LAND PARCELS WITH PERMIT-EXEMPT WELLS .....	11
5.2 USE OF AET TO ESTIMATE OUTDOOR WATER USE .....	12
6.0 REFERENCES .....	13

## TABLES

Table 1	Permit-Exempt Domestic Wells Installed in the Chumstick Creek Subwatershed after June 3, 1983
Table 2	Permit-Exempt Domestic Wells Installed in the Mission Creek Subwatershed after June 3, 1983
Table 3	Precipitation Prior to Image Selected to Estimate Actual Evapotranspiration
Table 4	Land Use Types within Chumstick Creek Subwatershed for Land Parcels Identified as Having Permit-Exempt Wells Installed after June 3, 1983
Table 5	Land Use Types within Mission Creek Subwatershed for Land Parcels Identified as Having Permit-Exempt Wells Installed after June 3, 1983
Table 6	Average Actual Evapotranspiration for Chumstick Creek Subwatershed Land Parcels Identified as Having Permit-Exempt Wells Installed after June 3, 1983

## TABLE OF CONTENTS (Continued)

Table 7	Average Actual Evapotranspiration for Mission Creek Subwatershed Land Parcels Identified as Having Permit-Exempt Wells Installed after June 3, 1983
Table 8	Comparison of the Cumulative Outdoor Water Use from Permit-Exempt Wells in the Chumstick Creek Subwatershed with Mean Creek Flow in Chumstick Creek and Minimum Instream Flows in the Wenatchee River at Peshastin
Table 9	Comparison of the Cumulative Outdoor Water Use from Permit-Exempt Wells in the Mission Creek Subwatershed with Mean Flow in Mission Creek and Minimum Instream Flows
Table 10	Evaluation of the Uncertainty of Actual Evapotranspiration Estimates in Chumstick Creek Subwatershed Assuming an Accuracy of +/- 15 Percent
Table 11	Evaluation of the Uncertainty of Actual Evapotranspiration Estimates in Mission Creek Subwatershed Assuming an Accuracy of +/- 15 Percent

## FIGURES

Figure 1	Chumstick Creek Subwatershed Land Parcels with Permit-Exempt Wells
Figure 2	Mission Creek Subwatershed Land Parcels with Permit-Exempt Wells
Figure 3	Water Cycle of the Earth's Surface

# **CUMULATIVE IMPACT ANALYSIS OF OUTDOOR WATER USE BY PERMIT-EXEMPT WELLS IN THE CHUMSTICK CREEK AND MISSION CREEK SUBWATERSHEDS**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

## **EXECUTIVE SUMMARY**

The Wenatchee Watershed (Water Resource Inventory Area [WRIA] 45) has been identified by the Washington State Department of Ecology (Ecology) as one of 16 watersheds in the state where water is over appropriated (i.e., more water has been allocated to out-of-stream uses than is naturally available in some years), and the watershed provides inadequate streamflows for fish, particularly during periods of late summer and early fall. A final Wenatchee Watershed Management Plan (WWMP) was completed in April 2006. This document identified a number of key water-related issues and potential management strategies and actions for WRIA 45, including specific recommendations for each of the subwatersheds within WRIA 45. Recommendations for the Chumstick Creek subwatershed and Mission Creek subwatershed included the completion of a cumulative impact assessment of outdoor water use associated with permit exempt wells installed after the June 3, 1983, Wenatchee instream flow rule on instream flows in Chumstick and Mission creeks.

Land parcels within the subwatersheds that have permit-exempt wells installed after the 1983 instream flow rule were identified by reviewing information in Ecology's well log database and building permits issued by Chelan County. A total of 321 land parcels in the Chumstick Creek subwatershed, with a combined area of 669 acres, were identified as having installed permit-exempt wells after the 1983 instream flow rule. A total of 87 land parcels in the Mission Creek subwatershed, with a combined area of 558 acres, were identified as having installed permit-exempt wells after the 1983 instream flow rule.

No direct measurements of outdoor water use are available in the Chumstick Creek and Mission Creek subwatersheds; therefore estimates of actual evapotranspiration (AET) obtained from the analysis of satellite images was used to estimate outdoor water use. Evapotranspiration is the sum of outdoor water loss due to evaporation and plant transpiration. Provided that AET is measured during periods of no precipitation, it can provide a direct measure of human consumptive outdoor water use. The average AET within each land parcel identified as having a permit-exempt well installed after the instream flow rule was calculated from one satellite image selected within each month from April through October. The

cumulative outdoor water use was estimated by summing the average AET for the permit-exempt land parcels identified within each watershed.

The cumulative impact of the estimated outdoor water use (cubic feet per second [cfs]) in the Chumstick Creek subwatershed was assessed by comparing the water use to mean monthly flows measured at Gage 45C060 near the mouth of Chumstick Creek and to 1983 minimum instream flows for the nearest downstream control point in the Wenatchee River at Peshastin, Washington. The estimated outdoor water use exceeded 100 percent of mean monthly Chumstick Creek flows during May through October. Minimum instream flows have not yet been established for Chumstick Creek. Comparison of outdoor water use estimates to minimum instream flows for the Wenatchee River at Peshastin shows that outdoor water use estimates represent from 0.6 to 1.7 percent of the minimum instream flows.

The cumulative impact of the estimated outdoor water use (cfs) in the Mission Creek subwatershed was assessed by comparing the water use to mean monthly flows measured at Gage 45E070 near the mouth of Mission Creek and to minimum instream flows developed for Mission Creek in 1983. The estimated outdoor water use exceeds 100 percent of the mean monthly creek flow during July – September. Mean flows at Gage 45E070 are below the minimum instream flows for this location during May through October. Adding the estimates of outdoor water use to the mean gage flows would substantially increase creek flows during July through October; however, creek flows would still remain below the minimum instream flows.

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Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

## **1.0 INTRODUCTION**

The Wenatchee Watershed (Water Resource Inventory Area [WRIA] 45) has been identified by the Washington State Department of Ecology (Ecology) as one of 16 watersheds in the state where water is over-appropriated (i.e., more water has been allocated to out-of-stream uses than is naturally available in some years), and the watershed provides inadequate streamflows for fish, particularly during periods of late summer and early fall (Wenatchee Watershed Planning Unit [WWPU], 2006). This report evaluates outdoor water use in two subwatersheds (Chumstick Creek and Mission Creek) within the Wenatchee watershed.

### **1.1 PHYSICAL SETTING**

This section provides brief descriptions of the Chumstick Creek and Mission Creek subwatersheds.

#### **1.1.1 Chumstick Creek Subwatershed**

The Chumstick Creek subwatershed is located in the central portion of the Wenatchee River watershed, joining the Wenatchee River at river mile (RM) 23.5. The subwatershed covers an area of approximately 77.4 square miles (49,520 acres). The main tributary to the Wenatchee River in this subwatershed, Chumstick Creek, discharges to the Wenatchee River at River Mile (RM) 23.5 and contributes less than 3 percent of the Wenatchee River's annual flow (WWPU, 2006). Significant tributaries to Chumstick Creek include Eagle Creek, Little Chumstick Creek, and Spromberg Canyon. The upper reaches of Chumstick Creek reach elevations greater than 5,000 feet above mean sea level (msl) near Chumstick Mountain and Sugarloaf Peak. Elevations are approximately 1,100 feet above msl at the confluence with the Wenatchee River.

A narrow, alluvial valley forms the floodplain of Chumstick Creek, and trends roughly north-south. Eagle Creek is a major tributary that joins Chumstick Creek low in the watershed (RM 1.9), at about 1,225 feet above msl. Although Tumwater Mountain forms a prominent drainage divide (topographic relief of 3,600 feet) in the south of the watershed, there is a relatively low divide (topographic relief of only 400 feet) between the Wenatchee River and Chumstick Creek on the north side of the watershed.

Agricultural and residential development is limited mainly to the valley bottoms of Chumstick Creek and Eagle Creek. Most of the land within the two creek valleys is privately owned. Most of the upland areas are either privately held timberlands or land owned by federal or state government, primarily the U.S. Forest Service and Washington Department of Natural Resources.

### **1.1.2 Mission Creek Subwatershed**

The Mission Creek subwatershed drains the northeast side of the Wenatchee Mountains, joining the Wenatchee River at RM 10.4. Excluding the Brender Creek drainage, the subwatershed covers an area of approximately 82 square miles (52,734 acres). The main tributary to the Wenatchee River in this subwatershed, Mission Creek, discharges to the Wenatchee River at RM 10.4 and contributes approximately 2 percent of the Wenatchee River's annual flow (WWPU, 2006). Significant tributaries to Mission Creek include Sand Creek, Tripp Creek, Yaksum Creek, and Brender Creek. The upper reaches of Mission Creek reach elevations greater than 5,000 feet above msl near Mission Peak and Tronsen Ridge. Elevations are approximately 790 feet msl at the confluence with the Wenatchee River.

The Mission Creek valley above Sand Creek is bounded by steep slopes, with a relatively narrow valley bottom. Below Sand Creek, a broader alluvial valley bottom is present, although the valley is still bounded by steep slopes. Near the City of Cashmere the valley opens onto an alluvial plain adjacent to the Wenatchee River.

Agricultural and residential development is limited mainly to the valley bottoms of Mission Creek and its tributaries below the confluence with Sand Creek. With the exception of a few inholdings and private timberland, most of the land above the confluence with Sand Creek is forested land owned by the federal or state government, primarily the U.S. Forest Service and Washington Department of Natural Resources.

## **1.2 ISSUES OF CONCERN**

A final Wenatchee Watershed Management Plan (WWMP) was completed in April 2006 (WWPU, 2006). This document identified a number of key water-related issues and potential management strategies and actions for WRIA 45, including specific recommendations for each of the subwatersheds within WRIA 45. Issues of concern identified for Chumstick Creek and Mission Creek subwatersheds are listed below.

### **1.2.1 Chumstick Creek Subwatershed**

The WWMP identified three primary issues of concern within the Chumstick Creek subwatershed: (1) inadequate water quantity for instream flows, (2) diminished water quality,

and (3) lack of geologic and hydrologic data on which to evaluate water availability and management strategies.

### **1.2.2 Mission Creek Subwatershed**

The WWMP identified three primary issues of concern within the Mission Creek subwatershed: (1) limited water quantity, (2) insufficient streamflow, and (3) diminished water quality.

### **1.3 REGULATORY SETTING**

Water resources in the Wenatchee Watershed are currently managed according to the rule established under the amended Washington Administrative Code (WAC) Chapter 173-545, Instream Resources Protection Program (IRPP) for the Wenatchee River basin, which became effective on January 12, 2008. This instream flow rule includes (1) minimum instream flows at specified control points; (2) reservation of water for certain future uses; and (3) maximum allowed allocations above the instream flows for the Wenatchee River and its tributaries.

The instream control point in the Chumstick Creek subwatershed is Gage 45C060, located along North Road approximately 1,500 feet upstream from the confluence with the Wenatchee River. However, minimum instream flows have not yet been established for Chumstick Creek. The minimum instream flows for the nearest downstream control point in Wenatchee River at Peshastin, Washington, will be used to assess Chumstick Creek instream flows until minimum instream flow targets are developed for the creek. The amended IRPP establishes an interim water reservation of up to 0.043 cubic feet per second (cfs) for Chumstick Creek to meet projected growth for the 3-year period between January 12, 2008, and January 12, 2011 [WAC 173-545-090(1)(d)(vi)]. Allocation of the full 0.13 cfs water reservation for Chumstick Creek will be considered by Ecology only after completion of an instream flow assessment and a cumulative impacts assessment (CIA). The CIA will be used by Ecology to determine if outdoor water use associated with permit-exempt groundwater uses initiated after June 3, 1983, interferes with the instream flows specified in WAC 173-545-050 [WAC 173-545-090(10)].

The instream control point in the Mission Creek subwatershed for minimum instream flows recommended by the WWPU is Gage 45E070, located at RM 0.2 near the City of Cashmere. The amended IRPP establishes an interim water reservation of up to 0.03 cfs for Mission Creek to meet projected growth for the 2-year period between January 12, 2008, and January 12, 2010 [WAC 173-545-090(1)(d)(vii)]. A CIA will be used by Ecology to determine if outdoor water use associated with permit-exempt groundwater uses initiated after June 3, 1983, interferes with the instream flows specified in WAC 173-545-050 [WAC 173-545-090(11)].



The Revised Code of Washington (RCW) 90.44.050 mandates that no withdrawal of public groundwater of the state shall occur unless the user files an application and receives a permit from Ecology. However, certain types of use are exempted from this requirement. Uses exempted from the requirement are:

- Stock watering;
- Watering of a lawn or a noncommercial garden not exceeding one-half acre in area;
- Domestic uses (single or group domestic) in an amount not exceeding 5,000 gallons per day;
- Industrial uses in an amount not exceeding 5,000 gallons per day.

Wells installed under this provision of the RCW are referred to as “permit-exempt wells,” because they are exempt from the requirement to obtain a permit.

## **2.0 CUMULATIVE IMPACT ASSESSMENT APPROACH**

A formal methodology for completing a CIA for the use of groundwater from permit-exempt wells for outdoor watering has not been established by Ecology. The approach described in this section was developed by staff from AMEC, the Chelan County Natural Resource Department, and Ecology.

The approach to completing the CIA for each subwatershed included three main steps.

1. Identifying land parcels with permit-exempt wells installed after the June 3, 1983, adoption of the Wenatchee instream flow rule.
2. Estimate outdoor water use for these parcels by measuring actual evapotranspiration (AET).
3. Sum the outdoor water use for all parcels to estimate cumulative water use, and compare the cumulative water use to mean creek discharge and minimum instream flows.

### **2.1 IDENTIFICATION OF LAND PARCELS WITH PERMIT-EXEMPT DOMESTIC WELLS**

Three sources of information were evaluated to identify permit-exempt wells within the Chumstick Creek and Mission Creek subwatersheds. These sources included domestic well log listings in Ecology's well-log database; building permits filed with Chelan County; and parcels with active water right certifications in Ecology's water rights database.

#### **2.1.1 Well Logs**

When a well is installed, Ecology requires submittal of a well log. Ecology retains this information in a database accessible at <http://apps.ecy.wa.gov/wellog/>. This database includes general information on the location, construction, and proposed use of drilled wells. Despite the Ecology requirement, well logs are not always submitted.

Well log records were reviewed to identify the proposed purpose (e.g., domestic or irrigation) and type of work conducted (e.g., new well construction, well deepening, or well abandonment). The well log database was then filtered to select only logs documenting new construction of domestic wells after the June 3, 1983, adoption of the Wenatchee instream flow rule. A total of 377 and 108 new permit-exempt wells were identified within the Chumstick Creek and Mission Creek subwatersheds, respectively.

To the extent possible, logs representing permit-exempt domestic wells were assigned County parcel numbers using the Chelan County parcel GIS database. Wells were matched to parcels based on matches between the two databases of the following information, as available:

- parcel number listed on the well log and County parcel database parcel number;
- well owner name and public land survey section number and parcel owner name located in the same section; and
- well location address and parcel address.

An additional attempt was made to match well logs to parcels based on well owner names from the well log database and permit applicant name and parcel number from the review of building permits discussed below.

### **2.1.2 Building Permits**

Building permits available from Chelan County were also examined to identify parcels associated with installation of permit-exempt domestic wells after June 3, 1983. These permits are a good indicator of the presence of domestic wells, based on the assumption that when a permit for new construction is submitted and the parcel is not on municipal water supply, a well must have been installed. Only building permits with an application date after June 3, 1983, were included. Prior to 1994, all permit application records were available only as hard copies. After 1994, building permit data were entered into an electronic database. The hard copies of the permit applications and the database were used to identify parcels likely to have domestic wells. Building permits that were unrelated to domestic water use or otherwise were redundant were screened out. For example, all permits that included “fire re-build” in the intended-use column were excluded. Also, those permits that indicated a community well as a source of water were eliminated.

### **2.1.3 Combining Well Log and Building Permit Information**

The well log entries and building permit information that could be linked to a land parcel in each of the two subwatersheds were combined, and duplicate entries were eliminated. In the Chumstick Creek subwatershed a total of 361 parcels were identified as having permit-exempt domestic wells installed after June 3, 1983. In the Mission Creek subwatershed a total of 127 parcels were identified as having permit-exempt domestic wells installed after June 3, 1983.

### **2.1.4 Eliminating Parcels with Active Certified Water Rights**

A review of information contained in Ecology’s water rights database shows that 40 of the 361 parcels in the Chumstick Creek subwatershed that were identified as having permit-exempt wells installed after June 3, 1983, have active water rights. These parcels were removed from the list of parcels to be evaluated for the cumulative impact analysis because there is no way to discern whether outdoor water use is associated with a permit-exempt well

or a water right. The 321 parcels included in the analysis are listed in Table 1, and their locations are shown on Figure 1.

In the Mission Creek subwatershed, 40 parcels identified as having active water rights or active water claims were removed from the list of parcels to be evaluated for the cumulative impact analysis. The 87 parcels included in the analysis are listed in Table 2, and their locations are shown on Figure 2.

## **2.2 ESTIMATING OUTDOOR WATER USE FOR PERMIT-EXEMPT WELL LAND PARCELS**

No direct measurements of outdoor water use are available within the Chumstick Creek and Mission Creek subwatersheds; therefore, outdoor water use must be estimated using other techniques. In 2003, outdoor water use in Wenatchee River basin subwatersheds was estimated by characterizing the different land-use types within each subwatershed and assuming that these land-use types are irrigated at rates recommended by the U.S. Department of Agriculture (USDA) for land use types in Chelan County (Montgomery Water Group, 2003). This approach estimated an annual consumptive outdoor water use of 597,394 in the Chumstick Creek subwatershed, and an annual consumptive outdoor water use of 954,745 gallons per acre per year in the Mission Creek subwatershed. This approach, while comprehensive, has the disadvantage of having to assume that individuals will use water at the optimal application rates recommended by USDA (1997).

In 2007, Geomatrix Consultants, Inc. (Geomatrix) recommended an alternative approach, which measures AET as a measure of outdoor water use (Geomatrix, 2007a; 2007b). Evapotranspiration is the sum of outdoor water loss due to evaporation and plant transpiration (Figure 3). Provided that AET is measured during periods of no precipitation, it can provide a direct measure of human consumptive outdoor water use. Other outdoor water loss terms in the water budget (infiltration and surface runoff) are not considered consumptive use as the water returns to the groundwater aquifer or surface streams (Figure 3).

AET within the Chumstick Creek and Mission Creek subwatersheds was measured using a technique known as the Surface Energy Balance Algorithm for Land (SEBAL). SEBAL was developed by Dr. Wim Bastiaanssen of The Netherlands (Bastiaanssen et al., 1998a, 1998b, 2005). SEBAL uses spectral radiances recorded by satellite-based sensors, plus meteorological data, to solve the energy balance at the Earth's surface. SEBAL computes AET for each pixel in a multispectral satellite image by applying radiative, aerodynamic, and energy balance physics in 25 computational steps incorporated into 19 models. SEBAL has been shown to have a 96 percent accuracy at the watershed level (Bastiaanssen et al., 2005). A detailed description of the application of SEBAL in the Chumstick Creek and Mission Creek subwatersheds was provided by Geomatrix (2008).

Evapotranspiration was estimated for a period of seven months (April – October), which is considered to represent the season of outdoor consumptive water use. Outdoor consumptive water use in other months is generally negligible. One Landsat 5 Thematic Mapper scene was selected to be representative of each month. Ideally, all images should come from the same year; however, due to the extensive cloud cover during the months of April and May in 2006, images for these months were selected from 2007. Table 3 shows the image dates selected, the number of prior days without precipitation, and the amount and date of the most recent precipitation event.

SEBAL was used to calculate daily AET (millimeters [mm] water/day) values for each satellite image pixel. Each pixel represents a 30-square-meter area; point estimates of AET were generated for a grid overlying the two watersheds with a spacing of 30 meters (m) between grid points. These estimates were calculated for each of the seven satellite images listed in Table 3. The average daily AET within each parcel identified as having a permit-exempt well installed after June 3, 1983 (Tables 1 and 2), was calculated for each of the seven satellite image dates. The average daily AET values for each parcel were converted to units of cubic feet per second to correspond to the typical units of measuring streamflow. The AET values are assumed to be an estimate of outdoor water use.

AET values could not be calculated for some small land parcels where none of the grid points used to calculate estimated AET occurred within the land parcel. AET also was not calculated for all seven images for all parcels. AET could not be calculated for parcels that were obscured by cloud cover, which occurred more often for the Mission Creek subwatershed land parcels, primarily for the September and October satellite images.

### **3.0 RESULTS**

This section characterizes recent land use within parcels identified as having permit-exempt wells installed after June 3, 1983, and the average AET values calculated for these parcels.

#### **3.1 LAND USE**

Land use for year 2006 (USDA, 2007) within parcels identified as having permit-exempt wells installed after June 3, 1983, is characterized for the Chumstick Creek (Table 4) and Mission Creek (Table 5) subwatersheds. In the Chumstick Creek subwatershed, 2006 land use in the parcels with permit-exempt wells is primarily woodland (48.2%) and pasture/grassland/nonagricultural (31.1%). In the Mission Creek subwatershed, 2006 land use in parcels with permit-exempt wells is primarily shrubland (41.1%), woodland (25.0%), and pasture/grassland/nonagricultural (17.8%).

#### **3.2 AVERAGE AET IN PARCELS WITH PERMIT-EXEMPT WELLS**

Average AET values for parcels with permit-exempt wells installed after June 3, 1983, in the Chumstick Creek and Mission Creek subwatersheds are listed in Tables 6 and 7, respectively. The average AET values in Chumstick Creek parcels ranged from 0.01 to 8.26 mm water/day, while the average AET values in Mission Creek parcels ranged from 0.01 to 7.62 mm water/day. The AET values for parcels with permit-exempt wells in the Chumstick Creek subwatershed were generally higher than AET values for parcels in the Mission Creek subwatershed. Presumably this occurs because the proportion of land-use categories that may require outdoor water is higher in the Chumstick Creek subwatershed (Table 4) than in the Mission Creek subwatershed (Table 5).

## **4.0 CUMULATIVE IMPACT ANALYSIS**

This section discusses the outdoor water use estimate for all parcels identified as having permit-exempt wells installed after the June 3, 1983, instream flow rule.

### **4.1 CHUMSTICK CREEK SUBWATERSHED**

A total of 321 land parcels in the Chumstick Creek subwatershed, with a combined area of 669 acres, were identified as having installed permit-exempt wells after the 1983 instream flow rule. The cumulative consumptive outdoor water use within these parcels was estimated by summing the AET values for each of the seven satellite images analyzed (Table 8). Each of the images is assumed to be representative of AET during the month the image was taken.

The cumulative AET estimates of outdoor water use range from 5.5 cfs in October to 22.6 cfs in July. The estimates of outdoor water use exceed 100 percent of mean monthly creek flow during May through October. Outdoor water use estimates for July and August exceed monthly Chumstick Creek flows by a factor of more than 5. Minimum instream flows have not yet been established for Chumstick Creek. Comparison of outdoor water use estimates to 1983 minimum instream flows for the nearest downstream control point in the Wenatchee River at Peshastin, Washington, shows that outdoor water use estimates represent from 0.6 to 1.7 percent of the minimum instream flows (Table 8).

### **4.2 MISSION CREEK SUBWATERSHED**

A total of 87 land parcels in the Mission Creek subwatershed, with a combined area of 558 acres, were identified as having installed permit-exempt wells after the 1983 instream flow rule. The cumulative consumptive outdoor water use within these parcels was estimated by summing the average AET values within each land parcel for each of the seven satellite images analyzed (Table 9). Each of the images is assumed to be representative of AET during the month the image was taken.

The cumulative AET estimates of outdoor water use range from 1.1 cfs in October to 3.9 cfs in July. Table 9 compares the estimated outdoor water use from permit exempt wells to the mean 3-year flow record at Gage 45E070 located at RM 0.2 in Mission Creek. The estimated outdoor water use exceeds 100 percent of the mean monthly creek flow during the period July – September. Mean flows at Gage 45E070 are below the 1983 instream flows for this location during May through October. Adding the estimates of outdoor consumptive water use to the mean gage flows would substantially increase creek flows during July through October; however, creek flows would still remain below the instream flows.

## 5.0 SOURCES OF UNCERTAINTY

The cumulative impact analysis includes several sources of uncertainty that are discussed in this section.

### 5.1 IDENTIFICATION OF LAND PARCELS WITH PERMIT-EXEMPT WELLS

Land parcels with permit-exempt wells installed after the June 3, 1983, instream flow rule for the Wenatchee Watershed were identified by reviewing Chelan County building permits and information in Ecology's well log database. While well log entries provide a clear indication of when a well was installed, the date associated with building permits is not tied to the installation of a well. Land parcels were included in the cumulative impact analysis based on building permit dates on or after June 3, 1983. It is possible that some permits issued prior to this date actually installed wells after June 3, 1983.

An additional source of uncertainty associated with the use of building permits is that unless there is also an entry for the land parcel in Ecology's well log database, there is no way to confirm that a well was actually installed on the property. In the Chumstick Creek subwatershed, 119 parcels included in the cumulative impact analysis (37 percent of the total number of parcels) were identified only on the basis of building permits. In the Mission Creek subwatershed, 37 parcels included in the cumulative impact analysis (43 percent of the total number of parcels) were identified only on the basis of building permits.

The cumulative impact analysis only included land parcels that could be linked to information in Ecology's well log database and/or Chelan County building permits. In the Chumstick Creek subwatershed, 54 well log entries for installation of wells after June 3, 1983, could not be linked to land parcels and were excluded from the cumulative impact analysis. If the average AET value for all parcels included in the analysis is used along with an assumed parcel area of one-half acre for all 54 missing entries, the outdoor estimates of water use in the Chumstick Creek subwatershed would increase by 0.2 cfs for the months of April, May, June, and August; 0.3 cfs in July; and 0.1 cfs in September and October.

In the Mission Creek subwatershed, only four well log entries for installation of wells after June 3, 1983, were excluded from the cumulative impact analysis because they could not be linked to land parcels. If the average AET value for all parcels included in the analysis is used along with an assumed parcel area of one-half acre for all four missing entries, the estimate of outdoor water use would increase by approximately 0.01 cfs during April – October.



## 5.2 USE OF AET TO ESTIMATE OUTDOOR WATER USE

AET was estimated using the SEBAL model. One satellite image from each of seven months (April – October) was analyzed using this model to obtain average AET values for each of the land parcels included in the cumulative impact analysis. There are two main sources of uncertainty.

1. How variable are AET estimates for the April – October period included in the impact analysis?
2. How accurately does SEBAL predict AET?

To assess the variability of AET within the Chumstick and Mission Creek subwatersheds during critical low-flow periods it would be necessary to analyze multiple satellite images within a given month. Due to funding limitations this was not possible. However, future analysis of additional satellite images could provide an estimate of the daily variability of AET.

SEBAL has been applied in more than 30 countries worldwide for both research (26 studies) and applications (17 studies) to measure AET (Bastiaanssen et al., 2005). The accuracy of the model varies with the scale and time frame over which it is applied. The overall accuracy of AET estimates calculated using SEBAL for single-day events and for scales on the order of 100 hectares is +/- 15 percent; integration over larger areas and time improves the accuracy of the model (Bastiaanssen et al., 2005). This assumed +/- 15 percent accuracy was used to assess how uncertainty in model estimates may affect overall conclusions of this analysis. A range of estimated AET values was created by adding and subtracting 15 percent from the estimates of AET presented in Tables 8 and 9. Tables 10 and 11 provide a comparison of this range of AET estimates with mean monthly gage flows and minimum instream flows for the Wenatchee River at Peshastin and Mission Creek, respectively. The lower estimates of AET still represent a substantial fraction of creek flow in both Chumstick and Mission creeks.

## 6.0 REFERENCES

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**TABLES**

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**TABLE 1**

**PERMIT-EXEMPT DOMESTIC WELLS  
INSTALLED IN THE CHUMSTICK CREEK SUBWATERSHED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance

Chelan County, Washington

Parcel No.	Address	City	Property Use	Basis for Determination
241701220059	745 BEAR RIDGE DR NW	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701220060	816 NW 107TH ST	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701220120	1025 BLUFF AVE	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701550010	PO BOX 962	LEAVENWORTH	AGRICULTURE-NOT IN OPEN SPACE	Well Log
241701550027	PO BOX 696	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550028	2149 W CASCADE AVE	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701550029	PO BOX 962	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701550036	10688 TITUS RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
241701550039	10627 TITUS RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701550041	10735 TITUS RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550044	10737 TITUS RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550046	23907 SE 253RD PL	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550047	10741 TITUS ROAD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550053	3940 91ST AVE SE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550070	PO BOX 72379	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
241701550075	10565 TITUS ROAD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701550113	14518 MORNING SUN DR	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701550121	12198 DETILLION RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550126	12270 EMIG DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550127	12240 EMIG DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550128	12211 DETILLION RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550130	12190 EMIG DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550132	12160 EMIG DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550134	12140 EMIG DRIVE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550145	10402 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701550160	12195 EMIG DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550161	129 101ST AVE NE	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
241701550162	12145 ENIG DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550166	12245 EMIG DRIVE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550167	12190 EMIG DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701550183	10392 TITUS RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701550196	PO BOX 819	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701830001	12120 TITUS RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701835030	PO BOX 361	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701870030	12266 SKI VIEW LANE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701871020	7711 DEAN ST WEST	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701872010	6000 WARNER CANYON RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701872030	414 ASH ST	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701872040	PO BOX 2204	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701872050	PO BOX 2017	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701872060	PO BOX 2017	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701873030	4610 NE 18TH ST	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701873040	12160 TITUS PLACE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701873050	138 W WHITMAN ST APT 6	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241701874020	6000 WARNER CANYON RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241701874040	9301 NE SOUTH BEACH DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241806210100	10650 FOX ROAD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241806220110	10550 FOX RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241806220120	PO BOX 962	LEAVENWORTH	AGRICULTURE-NOT IN OPEN SPACE	Well Log

**TABLE 1**

**PERMIT-EXEMPT DOMESTIC WELLS  
INSTALLED IN THE CHUMSTICK CREEK SUBWATERSHED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance

Chelan County, Washington

Parcel No.	Address	City	Property Use	Basis for Determination
241806220125	PO BOX 962	LEAVENWORTH	AGRICULTURE-NOT IN OPEN SPACE	Well Log
241806220200	PO BOX 962	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
241806230100	10330 MOTTELER RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
241806570035	PO BOX 962	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251724410040	PO BOX 295	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251724410050	2760 68TH AVE SE	LEAVENWORTH	VACATION AND CABIN	Well Log
251724410075	12032 SPROMBERG CYN	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251724440050	356 NW 200TH ST	LEAVENWORTH	VACATION AND CABIN	Well Log
251724440150	12085 SPROMBERG CANYON	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251806000100	16209 CRESCENT DR SW	LEAVENWORTH	DESIG FOREST LAND RCW 84.33	Well Log
251806400050	14940 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251806410040	14978 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251806430100	12002 BURNETT ROAD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251806440050	PO BOX 193	LEAVENWORTH	OTHER RESOURCE PRODUCTION	Well Log
251806440100	14850 HWY 209	LEAVENWORTH	OPEN SPACE RCW 84.34	Well Log
251806605020	15395 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251806605030	PO BOX 2085	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251806605050	15233 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251806605080	15131 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251806605090	15121 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251806605120	14865 CHUMSTICK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251806605130	PO BOX 69	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251806605170	PO BOX 1002	PLAIN	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251806605190	15220 MARTIN CHRISTENSEN	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251806605210	15290 CHRISTENSEN DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251806605240	15190 CHRISTENSEN DRIVE	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251806605270	657 S LEWIS LANE	PLAIN	NONCOMMERCIAL FOREST	Well Log
251806830010	15191 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251806830020	9945 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251807120050	2623 LEMONS BEACH RD W	LEAVENWORTH	UNDEVELOPED LAND	Well Log & Bldg Permit
251807120200	14599 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251807120300	10311 - 184TH AVENUE NE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251807130100	HWY #209 14395	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251807130150	PO BOX 895	LEAVENWORTH	VACATION AND CABIN	Building Permit
251807130163	PO BOX 895	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251807130164	PO BOX 895	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251807130220	21840 PINTO LANE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251807130230	22492 CHIWAWA LOOP ROAD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251807130240	1112 DYER RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251807140155	6111 TIGNER RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251807420160	14287 HIGHWAY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251807420180	16063 ROAD 1 NW	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251807420192	14287 HIGHWAY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251807420220	30305 S E 273RD PL	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251807430040	15118 SUNITCH CYN RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251807440050	15641 129TH COURT SE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251807440075	9925 MERRY CYN RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251818120050	13855 CHUMSTICK HWY	LEAVENWORTH	UNDEVELOPED LAND	Well Log
251818130200	13559 HIWAY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit

**TABLE 1**

**PERMIT-EXEMPT DOMESTIC WELLS  
INSTALLED IN THE CHUMSTICK CREEK SUBWATERSHED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance

Chelan County, Washington

Parcel No.	Address	City	Property Use	Basis for Determination
251818130350	PO BOX 1078	LEAVENWORTH	DESIG FOREST LAND RCW 84.33	Well Log
251818240400	227 161ST PL SE	LEAVENWORTH	VACATION AND CABIN	Well Log
251818410100	PO BOX 403	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251818420050	PO BOX 174	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251818420100	13455 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Building Permit
251818420150	PO BOX 742	LEAVENWORTH	VACATION AND CABIN	Building Permit
251818440100	PO BOX 733	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251818440150	PO BOX 835	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251818440175	13391 CHUMSTICK RD	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251819100050	1233 UTAH ST	LEAVENWORTH	NONCOMMERCIAL FOREST	Well Log
251819110050	13065 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819120020	PO BOX 923	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819120100	1305 HOLT DR	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251819210060	PO BOX 162	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819210250	13064 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251819210350	PO BOX 2195	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819210450	12919 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819240200	12875 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251819240250	12823 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819240450	12721 HIGHWAY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251819310100	12585 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819310150	PO BOX 957	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819310170	12515 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819310200	12687 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251819310300	12670 HWY 209	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251819310320	2263 PINE TREE RD	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251819310330	12603 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251819330200	11875 SPROMBERG CANYON	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251819340020	13345 CHUMSTICK RD	LEAVENWORTH	PERSONAL SERVICES	Well Log & Bldg Permit
251819340070	12500 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819340100	12455 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251819340140	18022 SMOKEY POINT BLVD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251819340150	12475 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251819340200	PO BOX 251	LEAVENWORTH	VACATION AND CABIN	Building Permit
251821000000	PO BOX 944	LEAVENWORTH	TIMBERLAND IN OPEN SP RCW 84.34	Well Log & Bldg Permit
251821310000	PO BOX 445	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251821340000	PO BOX 927	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251821340100	321 9TH ST #202	LEAVENWORTH	TIMBERLAND IN OPEN SP RCW 84.34	Well Log & Bldg Permit
251822140000	2455 E LAKE WA BLVD	LEAVENWORTH	DESIG FOREST LAND RCW 84.33	Well Log
251822410200	9001 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Well Log
251822410210	PO BOX 147	LEAVENWORTH	VACATION AND CABIN	Building Permit
251822410260	9001 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Well Log
251822420050	1635 PEACH COURT EAST	LEAVENWORTH	NONCOMMERCIAL FOREST	Well Log & Bldg Permit
251822430075	PO BOX 674	LEAVENWORTH	NONCOMMERCIAL FOREST	Well Log & Bldg Permit
251823220075	10153 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251823230050	2455 E LAKE WA BLVD	LEAVENWORTH	DESIG FOREST LAND RCW 84.33	Well Log
251827545050	9585 EAGLE CREEK	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251827545100	9475 EAGLE CREEK ROAD	LEAVENWORTH	VACATION AND CABIN	Well Log
251827545125	6126 145TH PL SE	LEAVENWORTH	VACATION AND CABIN	Well Log

**TABLE 1**

**PERMIT-EXEMPT DOMESTIC WELLS  
INSTALLED IN THE CHUMSTICK CREEK SUBWATERSHED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance

Chelan County, Washington

Parcel No.	Address	City	Property Use	Basis for Determination
251828200040	5490 132ND AVE NE	LEAVENWORTH	DESIG FOREST LAND RCW 84.33	Building Permit
251828200100	10261 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251828200140	10404 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Building Permit
251828230020	PO BOX 1783	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251828230075	21921 MONTBURY DR	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251828230090	17242 130TH AVE SE	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251828240130	10042 EAGLE CR RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251828545010	7605 201 ST SW	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251828545011	11201 NE 112TH ST	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251828545012	9791 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251828545017	9660 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251828545026	PO BOX 730	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251828545038	PO BOX 848	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251828545046	9705 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251828545070	QUINN FAMILY TRUST	LEAVENWORTH	VACATION AND CABIN	Building Permit
251828545075	9670 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Well Log
251828545085	9880 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Building Permit
251828545090	5215 38TH AVE NE	LEAVENWORTH	VACATION AND CABIN	Building Permit
251828545100	3955 O'BRIEN RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251828545200	9855 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251829100000	10750 EAGLE CREEK RD	LEAVENWORTH	NONCOMMERCIAL FOREST	Well Log & Bldg Permit
251829130050	10750 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251829140050	10750 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251829230000	11088 EAGLE CREEK RD	LEAVENWORTH	DESIG FOREST LAND RCW 84.33	Well Log & Bldg Permit
251829230100	PO BOX 2014	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251829230150	7701 3RD AVE NW	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251829240175	10904 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251829240300	PO BOX 481	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251829300023	11025 EAGLE CRK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251829300050	FAMILY PARTNERSHIP	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251829300150	11150 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251829300151	11146 EAGLE CREEK	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251829300153	24410 SE 156TH ST	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251829330050	3211 CALLOW RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251829330060	PO BOX 273	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251830100050	327-33136 GEORGE FERGUSON	LEAVENWORTH	DESIG FOREST LAND RCW 84.33	Well Log & Bldg Permit
251830130100	13502 36TH AVE NE	LEAVENWORTH	NONCOMMERCIAL FOREST	Well Log & Bldg Permit
251830210130	12160 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251830230000	11780 FRUEND CANYON	LEAVENWORTH	DESIG FOREST LAND RCW 84.33	Well Log & Bldg Permit
251830240150	12079 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Building Permit
251830240220	12115 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Building Permit
251830310220	PO BOX 132	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251830310230	PO BOX 132	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251830310250	2263 PINE TREE RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251830340050	11645 HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251830340100	11555 STATE HWY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251830340110	11595 HIGHWAY 209	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251830340150	11550 FREUND CANYON RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251830340250	11500 FREUND CANYON	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit

**TABLE 1**

**PERMIT-EXEMPT DOMESTIC WELLS  
INSTALLED IN THE CHUMSTICK CREEK SUBWATERSHED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance

Chelan County, Washington

Parcel No.	Address	City	Property Use	Basis for Determination
251830440100	11225 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251831000050	23503 NE 61ST ST	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251831000055	LLC OF WASHINGTON	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251831000075	3700 PACIFIC HWY E #410	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251831000080	LLC OF WASHINGTON	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251831000090	LLC OF WASHINGTON	LEAVENWORTH	NONCOMMERCIAL FOREST	Well Log
251831000095	4312 CRYSTAL LANE LOOP	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251831000100	%ROBERT&HELEN LIVREVTRT	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251831110060	11350 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251831110130	8310 BRENDER CANYON RD	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251831110150	PO BOX 1089	LEAVENWORTH	VACATION AND CABIN	Building Permit
251831110200	11255 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251831110300	11373 EAGLE CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251831120090	10107 33RD AVE SE #A	LEAVENWORTH	VACATION AND CABIN	Well Log
251831120100	PO BOX 2065	LEAVENWORTH	VACATION AND CABIN	Building Permit
251831120120	11525 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Building Permit
251831120130	4104 S DEARBORN CT	LEAVENWORTH	VACATION AND CABIN	Building Permit
251831120160	11450 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251831120170	11401 RIVER BEND DR	LEAVENWORTH	VACATION AND CABIN	Well Log
251831120175	11550 EAGLE CREEK RD	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251831120185	3114 E SPRUCE ST	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251831120250	PO BOX 624	LEAVENWORTH	VACATION AND CABIN	Building Permit
251831120260	1409 N 12TH ST	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251831140050	LLC OF WASHINGTON	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251831210100	PO BOX 306	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
251831210105	PO BOX 306	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251831240050	PO BOX 142	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
251831310050	LLC OF WASHINGTON	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
251831320300	10795 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Building Permit
251831330075	41 S EDGEWATER DR	LEAVENWORTH	VACATION AND CABIN	Well Log
251831330500	10747 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
251831562020	868 172ND AVE NE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
261817210000	18126 SE 42ND PL	LEAVENWORTH	VACATION AND CABIN	Building Permit
261817230050	18400 LITTLE CHUMSTICK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261818300060	621 HWY 9 PMB 22	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261818400100	18121 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Building Permit
261818410200	23326 WOODS CREEK RD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
261818420070	31709 134TH ST SE	LEAVENWORTH	VACATION AND CABIN	Building Permit
261818420080	18088 HWY 209	LEAVENWORTH	VACATION AND CABIN	Well Log
261818420090	18095 HWY 209	LEAVENWORTH	VACATION AND CABIN	Well Log
261819000050	PO BOX 424	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
261819120090	17774 CHUMSTICK HIGHWAY	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
261819140055	PO BOX 1006	LEAVENWORTH	NONCOMMERCIAL FOREST	Well Log
261819210020	PO BOX 634	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261819210030	17750 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
261819210070	PO BOX 817	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
261819230050	9735 SW FREWING ST	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261819410050	17401 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261819420050	PO BOX 977	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit



**TABLE 1**

**PERMIT-EXEMPT DOMESTIC WELLS  
INSTALLED IN THE CHUMSTICK CREEK SUBWATERSHED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance

Chelan County, Washington

Parcel No.	Address	City	Property Use	Basis for Determination
261819420060	PO BOX 461	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
261819420100	PO BOX 977	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
261819420150	16635 - 76TH NE	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261819430090	1904 LAKE PLACE	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261819440050	424 39TH PL NW	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261828200300	PO BOX 399	LEAVENWORTH	VACATION AND CABIN	Well Log
261828200375	16735 2ND CREEK RD	LEAVENWORTH	VACATION AND CABIN	Building Permit
261828200500	23708 19TH DR SE	LEAVENWORTH	VACATION AND CABIN	Well Log
261829310050	3056 GARLOUGH AVE SW	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261829310100	23212 BARKER RD SW	LEAVENWORTH	VACATION AND CABIN	Well Log
261829340170	5603 DORBRANDT ST	LEAVENWORTH	VACATION AND CABIN	Well Log
261829400050	10570 MERRY CYN RD	LEAVENWORTH	VACATION AND CABIN	Well Log
261829697060	141 MAPLE AVE	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261830100055	16930 HWY 209	LEAVENWORTH	VACATION AND CABIN	Building Permit
261830100150	16882 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Well Log
261830120050	16970 HWY 209	LEAVENWORTH	VACATION AND CABIN	Building Permit
261830120055	PO BOX 553	LEAVENWORTH	VACATION AND CABIN	Well Log
261830140010	16797 CHUMSTICK HWY	LEAVENWORTH	UNDEVELOPED LAND	Well Log & Bldg Permit
261830200050	4885 SPURGIN RD	PLAIN	DESIG FOREST LAND RCW 84.33	Well Log & Bldg Permit
261830400100	1700 NE 124TH	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261830400150	PO BOX 399	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261830410150	20902 4TH AVE W	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261830420300	PO BOX 176	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261830440050	3741 PARK AVE N	LEAVENWORTH	VACATION AND CABIN	Well Log
261831100050	15950 CHUMSTICK HWY	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
261831120150	4653 WELCH LN	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
261831130050	PO BOX 353	LEAVENWORTH	VACATION AND CABIN	Building Permit
261831130076	15966 CHUMSTICK HWY	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261831430100	PO BOX 242	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
261832110040	5603 DORBRANDT ST	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261833100100	3722 E HIGH LANE	LEAVENWORTH	SINGLE FAMILY UNITS	Building Permit
261833130050	17424 REDHAWK DR	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log
261833240150	9660 MERRY CANYON RD	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261833410100	9650 CHUMSTICK CREEK RD	LEAVENWORTH	VACATION AND CABIN	Building Permit
261833420150	4505 91ST AVE SE	LEAVENWORTH	TIMBERLAND IN OPEN SP RCW 84.34	Well Log & Bldg Permit
261833420250	4710 VIEW DR	LEAVENWORTH	VACATION AND CABIN	Well Log
261833420350	2542 QUEEN ANNE AVE N	LEAVENWORTH	VACATION AND CABIN	Building Permit
261833440050	PO BOX 335	LEAVENWORTH	VACATION AND CABIN	Well Log & Bldg Permit
261834120100	%ROBERT/LADOREEN LIVTRT	LEAVENWORTH	VACATION AND CABIN	Well Log
261834220050	9149 MERRY CANYON ROAD	LEAVENWORTH	SINGLE FAMILY UNITS	Well Log & Bldg Permit
261834220100	9650 CHUMSTICK CREEK RD	LEAVENWORTH	VACATION AND CABIN	Building Permit
261834300050	9482 MERRY CANYON RD	LEAVENWORTH	OTHER RESOURCE PRODUCTION	Building Permit

Abbreviation(s)

RCW = Revised Code of Washington

**TABLE 2**

**PERMIT-EXEMPT DOMESTIC WELLS  
INSTALLED IN THE MISSION CREEK SUBWATERSHED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance

Chelan County, Washington

Parcel No.	Address	City	Property Use	Basis for Determination
221926210000	1426 SE GIDEON	WENATCHEE	TIMBERLAND IN OPEN SP RCW 84.34	Building Permit
231904330300	PO BOX 4211	CASHMERE	SINGLE FAMILY UNITS	Well Log
231904330625	3505 HIGHWAY 25 E	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231904330635	PO BOX 284	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231904331150	5088 MISSION CREEK ROAD	CASHMERE	SINGLE FAMILY UNITS	Well Log
231904340435	5189 MISSION CR RD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231905490076	DAIVD DEAN INGRAHAM TRT	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231905490077	5188 REGAN RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231905520200	PO BOX 582	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231907320000	4639 SYN MEADOWS RD	CASHMERE	DESIG FOREST LAND RCW 84.33	Well Log & Bldg Permit
231908110330	PO BOX 36	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231908110650	PO BOX 255	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231908111200	4625 BUTLER RD	CASHMERE	SINGLE FAMILY UNITS	Well Log
231908140300	4772 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Well Log
231908140325	4706 MISSION CREED RD	CASHMERE	SINGLE FAMILY UNITS	Well Log
231908140550	PO BOX 631	CASHMERE	PUBLIC ASSEMBLY	Well Log
231908440155	4340 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231908440160	503 RINGOLD STREET	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231908440165	4324 MISSION CRK RD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231909110000	4625 BUTLER RD	CASHMERE	AGRICULTURE-NOT IN OPEN SPACE	Building Permit
231909110050	4650 BUTLER RD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231909220050	5161 BINDER ROAD	CASHMERE	SINGLE FAMILY UNITS	Well Log
231909220100	3264 MISSION CREEK RD	CASHMERE	BUSINESS SERVICES	Well Log
231909220600	4920 YAXON CANYON	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231909220850	1132 CHERRY CIRCLE	CASHMERE	SINGLE FAMILY UNITS	Well Log
231909220900	4902 YAKSUM CANYON RD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231909230150	4867 MISSION CRK ROAD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231909320100	1008 BRYAN TERRACE	CASHMERE	AGRIC IN OPEN SPACE RCW 84.34	Well Log
231909703020	4355 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231909703030	5285 PATRICK LANE	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231909818005	5025 HARNDEN RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231909818006	5015 HARNDEN RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231909818015	215 PATON ST	CASHMERE	SINGLE FAMILY UNITS	Well Log
231909818050	21717 SE 33RD PLACE	CASHMERE	AGRICULTURE-NOT IN OPEN SPACE	Building Permit
231909818073	4625 BUTLER RD	CASHMERE	SINGLE FAMILY UNITS	Well Log
231909818075	BOX 812	CASHMERE	SINGLE FAMILY UNITS	Well Log
231909818080	4960 HARNDEN RD	CASHMERE	AGRIC IN OPEN SPACE RCW 84.34	Building Permit
231909818095	4889 YAKSUM CANYON ROAD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231916210100	4175 YAKSUM CANYON RD	CASHMERE	AGRICULTURE-NOT IN OPEN SPACE	Building Permit
231916210150	4296 YAXON CANYON	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231916230050	4040 YAKSUM CANYON RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231916340050	3625 YAKSUM CYN RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231916340070	3555 YAKSUM CYN RD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231916340080	3579 YAYSUM CYN	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231916340125	3655 YAKSUM CANYON RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231916340175	3725 YAKSUM CYN ROAD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231917110050	4285 MISSION CREEK ROAD	CASHMERE	OTHER RESOURCE PRODUCTION	Building Permit
231917110070	4280 MISSION CREEK ROAD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231917110080	4284 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit

**TABLE 2**

**PERMIT-EXEMPT DOMESTIC WELLS  
INSTALLED IN THE MISSION CREEK SUBWATERSHED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel No.	Address	City	Property Use	Basis for Determination
231917110085	4296 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231917110260	4195 MISSION CREEK ROAD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231917110270	5820 FLEMING CT	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231917110350	4282 MISSION CREEK ROAD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231917130075	4060 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231917210050	4050 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231917230100	3922 MISSION CREEK ROAD	CASHMERE	AGRICULTURE-NOT IN OPEN SPACE	Building Permit
231917340100	PO BOX 1006	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231918400100	3501 HANSEL LANE	CASHMERE	DESIG FOREST LAND RCW 84.33	Building Permit
231920320050	3088 MISSION CREEK	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231920320150	2984 MISSION CREEK RD	CASHMERE	AGRICULTURE-NOT IN OPEN SPACE	Well Log & Bldg Permit
231929330025	2015 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231929330100	1984 MISSION CREEK ROAD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231929330255	1875 MISSION CREEK ROAD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231930440050	HOPEWELL CANYON FARM	CASHMERE	AGRIC IN OPEN SPACE RCW 84.34	Well Log
231931410030	PO BOX 602	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231931410040	PO BOX 823	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231931410110	1390 MISSION CREEK RD	CASHMERE	SINGLE FAMILY UNITS	Well Log & Bldg Permit
231932000050	1425 MISSION CR RD	CASHMERE	UNDEVELOPED LAND	Well Log
231932220055	1875 MISSION CREEK ROAD	CASHMERE	SINGLE FAMILY UNITS	Building Permit
231932220060	1875 MISSION CREEK RD	CASHMERE	AGRICULTURE-NOT IN OPEN SPACE	Well Log

Abbreviation(s)

RCW = Revised Code of Washington

**TABLE 3**  
**PRECIPITATION PRIOR TO IMAGE SELECTED**  
**TO ESTIMATE ACTUAL EVAPOTRANSPIRATION**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

<b>Image Date<sup>1</sup></b>	<b>Number of Days Without Precipitation Prior to Image Date<sup>2</sup></b>	<b>Last Precipitation Event Prior to Image Date<sup>2</sup></b>	<b>Precipitation Amount (inches)<sup>2</sup></b>
June 23, 2006	8	June 14, 2006	0.06
July 25, 2006	39	June 14, 2006	0.06
August 26, 2006	71	June 14, 2006	0.06
September 27, 2006	7	September 19, 2006	0.01
October 13, 2006	3	October 9, 2006	0.04
April 23, 2007	13	April 9, 2007	0.02
May 9, 2007	5	May 3, 2007	0.01

Note(s)

1. Landsat 5 Thematic Mapper Image.
2. Source: NOAA National Environmental Satellite, Data, and Information Service, Wenatchee, Washington Station.

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							Total
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	
241701220059	206,931	111,302	25,295	53,820	0	29,870	0	0	0	108,985
241701220060	75,800	75,800	807	55,165	0	20,721	0	0	0	76,693
241701220120	39,203	6,601	6,727	0	0	1,345	0	0	0	8,073
241701550010	857,366	857,370	675,705	121,363	0	59,202	0	0	0	856,269
241701550027	58,568	58,568	56,780	0	0	1,884	0	0	0	58,663
241701550028	88,602	88,602	88,802	0	0	0	0	0	0	88,802
241701550029	302,048	302,049	156,884	66,736	0	79,115	0	0	1,345	304,081
241701550029a	896	896	0	0	0	269	0	0	0	269
241701550036	56,459	56,459	0	18,030	7,535	0	0	0	31,484	57,049
241701550039	128,320	128,320	11,840	40,365	63,507	12,648	0	0	0	128,360
241701550041	49,239	49,239	0	27,986	0	20,182	0	0	0	48,169
241701550044	49,928	49,928	0	2,960	18,030	28,524	0	0	0	49,514
241701550046	44,226	44,226	0	19,375	24,219	0	0	0	0	43,594
241701550047	50,079	50,079	0	20,990	24,219	5,920	0	0	0	51,129
241701550053	49,366	49,366	0	24,757	0	25,833	0	0	0	50,590
241701550070	57,787	57,787	41,441	7,535	9,418	0	0	0	0	58,394
241701550075	197,493	197,493	53,281	55,703	12,378	76,155	0	0	0	197,518
241701550113	118,184	118,185	0	83,420	0	36,328	0	0	0	119,749
241701550121	82,351	82,351	0	82,344	0	0	0	0	0	82,344
241701550126	44,289	14,427	0	7,804	0	5,382	0	0	0	13,186
241701550127	43,811	42,996	0	9,957	0	29,332	0	4,306	0	43,594
241701550128	42,812	42,812	0	34,714	0	0	0	5,920	0	40,634
241701550130	43,331	43,331	0	37,405	0	0	0	6,458	0	43,863
241701550132	43,934	43,934	0	21,797	0	18,837	0	3,229	0	43,863
241701550134	43,943	43,942	0	14,531	0	28,524	0	0	0	43,056
241701550145	216,736	216,736	65,122	33,637	97,683	19,375	0	0	0	215,816

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING  
PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	Total
241701550145a	101,499	101,500	0	51,129	14,531	36,597	0	0	0	102,257
241701550160	43,895	43,895	0	23,950	0	0	0	20,182	0	44,132
241701550161	43,803	43,803	0	26,641	0	0	0	19,106	0	45,747
241701550162	43,805	43,805	0	22,873	0	0	0	19,913	0	42,787
241701550166	44,274	19,844	0	0	0	0	0	21,259	0	21,259
241701550167	43,711	43,711	0	3,229	0	0	0	40,365	0	43,594
241701550183	46,766	46,765	0	45,478	0	0	0	0	0	45,478
241701550196	32,911	32,910	0	10,764	20,182	0	0	0	0	30,946
241701550196a	44,609	16,211	0	12,109	4,575	0	0	0	0	16,684
241701550196b		3,278	0	1,884	807	0	0	0	0	2,691
241701830001	44,555	44,555	0	26,910	0	19,106	0	0	0	46,016
241701835030	42,341	42,341	0	41,441	0	538	0	0	0	41,979
241701870030	46,497	46,497	0	17,491	0	15,877	0	0	13,455	46,823
241701871020	43,962	43,962	0	30,677	0	13,455	0	0	0	44,132
241701872010	43,540	43,540	8,342	36,059	0	0	0	0	0	44,401
241701872030	37,026	37,026	0	38,481	0	0	0	0	0	38,481
241701872040	37,162	37,162	0	37,943	0	0	0	0	0	37,943
241701872050	45,158	45,158	0	11,840	0	33,368	0	0	0	45,208
241701872060	40,272	40,272	0	20,451	0	20,721	0	0	0	41,172
241701873030	42,931	42,931	0	13,186	0	29,870	0	0	0	43,056
241701873040	37,451	37,451	0	4,575	0	32,023	0	0	0	36,597
241701873050	41,210	41,210	0	6,189	0	34,445	0	0	0	40,634
241701874020	45,853	45,853	1,345	44,132	0	0	0	0	0	45,478
241701874040	45,781	45,781	0	33,099	0	12,917	0	0	0	46,016
241806210100	176,827	22,565	0	23,142	0	0	0	0	0	23,142
241806220110		185	0	269	0	0	0	0	0	269

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							Total
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	
241806220110a	403,263	129,113	0	85,573	5,113	0	0	0	37,405	128,091
241806220120	662,848	351,134	272,865	44,670	2,691	29,870	0	0	0	350,096
241806220125	406,590	406,595	166,033	148,004	64,583	0	0	0	28,255	406,876
241806220200	90,398	90,398	0	85,573	0	4,036	0	0	0	89,610
241806230100	129,295	129,296	0	80,729	0	46,554	0	0	2,422	129,705
241806570035	78,908	39,703	33,368	0	0	7,266	0	0	0	40,634
251724410040	102,188	102,189	0	64,045	0	0	0	0	38,481	102,526
251724410050	325,720	325,724	0	32,561	41,710	0	0	0	251,337	325,608
251724410075	170,056	170,058	0	47,361	9,957	0	0	0	113,828	171,146
251724440050	495,000	495,005	0	36,866	40,365	67,544	0	0	351,173	495,947
251724440150	649,456	649,463	0	78,307	27,179	10,764	0	0	536,043	652,293
251806000100	895,740	895,762	0	284,705	178,143	11,840	0	0	422,484	897,172
251806400050	846,037	846,065	0	176,797	137,240	0	0	0	531,468	845,505
251806410040	1,033,620	1,033,652	0	203,707	244,341	0	0	0	586,364	1,034,412
251806430100	133,234	133,239	0	126,207	0	6,727	0	0	0	132,934
251806440050	916,316	916,345	0	311,077	111,676	157,422	0	0	338,256	918,431
251806440100	849,604	849,632	0	106,832	238,690	0	0	0	505,635	851,156
251806605020	108,763	108,767	0	100,912	6,458	1,615	0	0	0	108,985
251806605030	91,269	91,272	0	23,681	46,823	20,721	0	0	0	91,224
251806605050	147,400	147,405	0	117,865	16,684	0	0	0	11,571	146,120
251806605080	165,297	165,303	0	155,000	269	9,957	0	0	0	165,226
251806605090	122,372	122,376	0	76,962	45,208	1,345	0	0	0	123,516
251806605120	96,222	96,225	0	43,056	42,248	8,880	0	0	0	94,184
251806605130	405,803	405,816	0	325,877	40,096	41,441	0	0	0	407,414
251806605170	131,779	131,783	0	1,615	63,776	34,714	0	0	31,215	131,320
251806605170a	6,015	6,015	0	807	4,306	1,076	0	0	0	6,189

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING  
PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	Total
251806605190	147,563	147,567	0	538	125,400	18,837	0	0	3,229	148,004
251806605190a		6,417	0	0	0	6,189	0	0	0	6,189
251806605210	326,523	326,534	0	26,641	118,672	0	0	0	179,488	324,801
251806605210a	16,362	16,362	0	5,920	10,495	269	0	0	0	16,684
251806605240	253,233	253,241	0	77,500	85,304	0	0	0	91,762	254,567
251806605270	896,105	896,133	0	234,922	276,363	0	0	0	384,810	896,096
251806830010	45,865	45,866	0	48,169	0	0	0	0	0	48,169
251806830020	98,846	98,849	0	97,144	807	0	0	0	0	97,952
251807120050	235,479	235,487	0	160,382	0	74,002	0	0	0	234,384
251807120200	243,945	243,953	0	68,889	77,231	17,222	0	0	81,268	244,610
251807120300	145,266	145,271	0	45,478	12,648	269	0	0	87,457	145,851
251807130100	46,676	46,677	0	34,983	0	269	0	0	12,109	47,361
251807130150	226,329	226,336	0	89,879	7,804	39,826	0	0	86,380	223,889
251807130163	90,153	90,156	0	34,445	13,724	1,345	0	0	40,903	90,417
251807130164	104,274	104,277	0	41,441	0	3,229	0	0	60,816	105,486
251807130220	65,102	65,104	0	19,913	1,345	8,880	0	0	32,830	62,969
251807130230	69,720	69,722	0	0	0	24,219	0	0	44,401	68,620
251807130240	112,820	112,824	0	0	39,288	0	0	0	73,464	112,752
251807140155	193,067	193,073	0	185,677	3,767	0	0	0	4,306	193,750
251807420160	155,728	155,733	0	156,077	0	2,691	0	0	0	158,768
251807420180	44,190	44,191	0	17,222	0	0	0	0	26,102	43,325
251807420192	102,551	102,555	0	54,089	0	0	0	0	48,438	102,526
251807420220	42,364	42,365	0	3,767	0	4,844	0	0	32,830	41,441
251807430040	136,229	136,233	0	85,304	41,172	0	10,495	0	0	136,971
251807440050	922,531	922,560	0	155,269	0	39,019	0	0	730,062	924,351
251807440075	1,003,090	1,003,126	0	162,535	12,109	10,226	0	0	817,519	1,002,389



**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING  
PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	Total
251818120050	594,435	594,453	0	96,606	3,767	55,165	0	0	440,782	596,321
251818130200	44,097	44,098	0	0	0	0	0	0	44,132	44,132
251818130350	1,201,650	1,201,682	0	146,389	134,818	0	0	0	920,314	1,201,522
251818240400	283,184	283,190	0	188,907	79,922	0	0	0	14,800	283,629
251818240400a	97,616	1,182,917	0	0	96,606	0	0	0	0	96,606
251818410100	240,544	240,550	0	127,821	0	0	0	0	110,061	237,882
251818420050	113,261	113,264	0	0	0	0	0	0	112,483	112,483
251818420100	48,830	48,831	0	0	0	0	0	0	47,361	47,361
251818420150	52,557	52,558	0	1,345	0	0	0	0	49,245	50,590
251818440100	871,641	871,664	0	325,877	66,467	0	0	0	485,452	877,797
251818440150	858,204	858,226	0	342,023	38,481	0	0	0	475,496	856,000
251818440175	887,985	888,008	0	359,784	0	0	0	0	529,315	889,099
251819100050	864,829	864,851	0	28,524	0	0	0	0	836,087	864,611
251819110050	881,653	881,675	0	230,886	0	0	0	0	651,486	882,372
251819120020	87,309	87,311	0	0	37,405	0	0	0	51,667	89,071
251819120100	293,242	293,249	0	290,626	0	0	0	0	1,615	292,240
251819210060	24,268	24,269	0	807	20,721	0	0	0	2,153	23,681
251819210250	241,900	241,904	0	40,365	94,184	0	0	0	106,563	241,112
251819210350	17,717	17,717	0	15,069	0	2,153	0	0	0	17,222
251819210450	44,350	44,351	0	10,764	0	31,754	0	0	807	43,325
251819240200	33,045	33,045	0	9,149	0	6,458	0	0	15,339	30,946
251819240250	103,734	103,737	0	4,306	5,920	269	0	0	89,879	100,373
251819240450	228,368	228,373	0	77,500	31,484	18,299	0	0	98,490	225,773
251819310100	125,321	125,323	0	70,504	20,990	34,445	0	0	0	125,938
251819310150	170,407	170,410	0	31,215	77,231	0	0	0	59,740	168,186
251819310170	147,542	147,545	0	40,365	30,677	0	0	0	78,307	149,349

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							Total
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	
251819310200	322,268	322,274	0	56,511	90,955	9,688	0	0	167,379	324,532
251819310300	81,547	81,549	0	64,314	0	17,760	0	0	0	82,075
251819310320	50,583	50,584	0	34,175	6,727	10,764	0	0	0	51,667
251819310330	50,297	50,298	0	41,441	6,189	1,884	0	0	0	49,514
251819330200	566,626	566,633	0	0	0	75,347	158,768	0	332,336	566,451
251819340020		20,582	0	4,036	0	16,415	0	0	0	20,451
251819340020a			0	4,306	0	0	0	0	0	4,306
251819340070	88,647	88,649	0	68,620	9,688	9,957	0	0	0	88,264
251819340100	131,819	131,822	0	37,943	0	0	0	0	93,377	131,320
251819340140	131,937	131,939	0	36,328	0	0	0	0	94,722	131,051
251819340150	131,362	131,365	0	44,939	23,681	7,266	0	0	54,896	130,782
251819340200	261,224	261,229	0	72,656	8,342	807	0	0	179,488	261,294
251821000000	865,576	865,618	0	357,362	249,185	15,608	0	0	245,148	867,302
251821310000	864,135	864,175	0	294,124	117,865	57,856	0	0	392,614	862,458
251821340000	960,240	960,284	0	135,087	136,433	47,899	26,641	0	610,852	956,912
251821340100	867,887	867,928	0	183,256	88,533	110,868	75,078	0	410,105	867,840
251822140000	979,184	979,248	0	615,158	152,309	21,528	0	0	190,252	979,247
251822410200	264,503	264,521	0	3,229	0	0	0	0	260,487	263,716
251822410210	246,655	246,671	0	42,248	0	31,754	0	0	175,990	249,992
251822410260	92,074	92,080	0	71,311	0	1,615	0	0	18,568	91,493
251822420050	748,900	748,948	0	575,331	18,030	0	0	0	158,499	751,859
251822430075	834,695	834,747	0	181,910	3,767	81,806	0	0	569,411	836,894
251823220075	1,073,230	1,073,310	0	144,236	210,434	6,997	35,252	0	675,166	1,072,086
251823230050	978,899	978,965	0	403,647	9,957	39,826	0	0	526,086	979,516
251827545050	501,738	501,760	0	111,406	155,000	0	0	0	236,806	503,213
251827545100	880,107	880,154	0	276,633	101,450	11,302	0	0	489,758	879,143

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							Total
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	
251827545125	240,832	240,845	0	224,428	10,226	6,189	0	0	0	240,843
251828200040	866,039	866,073	0	273,942	209,089	9,149	0	0	374,046	866,226
251828200040a	790,362	790,399	0	0	145,851	111,137	0	0	536,043	793,031
251828200100	694,601	694,628	0	434,862	50,590	134,549	0	0	73,464	693,465
251828200140	74,866	74,868	0	51,936	0	22,066	1,345	0	0	75,347
251828200140a	14,155	14,156	0	8,342	0	0	5,113	0	0	13,455
251828230020	88,733	88,736	0	0	2,691	538	0	0	83,689	86,919
251828230075	223,483	223,491	0	186,754	0	0	0	0	36,328	223,082
251828230090	97,332	97,336	0	26,910	12,917	0	0	0	57,587	97,413
251828240130	112,162	112,167	0	85,035	28,255	0	0	0	0	113,290
251828545010	97,024	97,029	0	32,023	16,684	48,976	0	0	0	97,683
251828545011	98,673	98,677	0	93,646	0	0	0	0	5,113	98,759
251828545012	117,077	117,082	0	107,370	0	10,226	0	0	0	117,596
251828545017	120,983	120,989	0	121,094	0	538	0	0	0	121,632
251828545026	105,286	105,291	0	105,486	0	0	0	0	0	105,486
251828545038	91,563	91,567	0	91,493	0	0	0	0	0	91,493
251828545046	93,846	93,851	0	71,311	22,335	0	0	0	0	93,646
251828545070	376,043	376,062	0	373,508	0	0	0	0	0	373,508
251828545075	457,846	457,869	0	461,234	0	269	0	0	0	461,503
251828545085	476,712	476,735	0	265,330	48,976	23,681	0	0	139,124	477,110
251828545090	669,609	669,642	0	507,788	0	27,986	0	0	133,203	668,977
251828545100	191,053	191,061	0	177,605	6,727	6,189	0	0	0	190,521
251828545200	144,744	144,750	0	110,868	6,458	0	0	0	28,524	145,851
251829100000	1,764,400	1,764,453	0	1,147,702	106,832	231,155	104,948	0	173,299	1,763,936
251829130050	372,551	372,564	0	317,805	21,797	0	0	0	33,906	373,508
251829140050	233,165	233,174	0	139,393	54,358	0	0	0	38,750	232,500

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	Total
251829230000	1,570,110	1,570,144	0	358,976	372,431	0	0	0	839,854	1,571,262
251829230100	54,980	54,982	0	23,681	0	0	0	0	31,484	55,165
251829230150	86,502	86,504	0	85,035	0	0	0	0	538	85,573
251829240175	366,679	366,686	0	184,601	10,226	0	0	0	172,223	367,049
251829240300	166,632	166,637	0	153,117	0	13,724	0	0	0	166,841
251829300023	102,192	102,194	0	47,361	24,488	30,139	0	0	0	101,988
251829300050	1,157,350	1,157,383	0	267,752	176,797	79,653	0	0	632,111	1,156,313
251829300150	148,399	148,402	0	93,108	0	39,557	0	0	15,877	148,542
251829300151	239,682	239,687	0	114,905	23,681	0	0	0	101,719	240,304
251829300153	203,967	203,971	0	85,573	82,075	12,109	0	0	23,681	203,438
251829330050	220,467	220,472	0	149,618	70,504	0	0	0	0	220,122
251829330060	14,784	14,784	0	9,957	269	3,767	0	0	0	13,993
251830100050	1,789,190	1,789,233	0	312,423	259,410	0	0	0	1,217,668	1,789,500
251830130100	853,796	853,810	0	47,899	135,087	0	0	0	671,399	854,386
251830210130	63,014	63,014	0	35,790	0	26,372	807	0	0	62,969
251830230000	1,798,640	1,798,657	0	409,836	305,157	52,205	0	0	1,030,106	1,797,304
251830240150	24,854	24,854	0	0	0	24,488	0	0	0	24,488
251830240220	120,349	120,352	0	0	0	23,950	0	0	95,799	119,749
251830310220	162,839	162,842	0	8,342	57,587	0	0	0	96,875	162,804
251830310230	44,727	44,728	0	1,345	0	6,727	0	0	35,521	43,594
251830310250	72,967	72,967	0	6,727	0	66,198	0	0	0	72,926
251830340050	602,034	602,042	0	184,063	117,596	106,025	0	0	194,289	601,972
251830340050a	103,523	103,524	0	12,378	0	67,544	0	0	24,757	104,679
251830340100	315,547	315,552	0	0	36,597	22,335	0	0	255,643	314,575
251830340100a	107,396	107,397	0	0	0	93,646	0	0	13,993	107,639
251830340110	68,276	68,277	0	0	3,767	64,314	0	0	0	68,082

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	Total
251830340150	63,743	63,744	0	0	3,229	58,125	0	0	2,422	63,776
251830340250	60,614	60,614	0	0	0	45,747	0	0	15,877	61,623
251830440100	61,694	61,695	0	38,750	0	22,604	0	0	0	61,354
251831000050	1,925,310	1,925,320	0	345,791	36,328	3,767	0	0	1,541,123	1,927,009
251831000050a	877,439	877,454	0	0	0	0	0	0	878,066	878,066
251831000055	873,643	855,759	0	78,577	97,144	0	0	0	679,472	855,193
251831000075	862,201	738,358	0	2,153	74,002	0	0	0	654,177	730,331
251831000075a	867,265	841,565	0	497,562	173,030	807	0	0	169,801	841,200
251831000080	840,760	807,433	0	177,335	90,417	0	0	0	539,003	806,755
251831000090	861,450	861,461	0	409,567	96,875	0	0	0	352,787	859,229
251831000095	869,257	862,605	0	182,179	90,417	0	0	0	593,092	865,688
251831000100	871,901	871,913	0	43,325	258,872	0	0	0	571,026	873,222
251831110060	507,062	507,071	0	333,412	4,306	538	0	0	168,724	506,980
251831110130	49,453	49,454	0	24,219	0	25,026	0	0	0	49,245
251831110130a	46,492	46,493	0	47,361	0	0	0	0	0	47,361
251831110130b	42,422	42,422	0	41,710	0	0	0	0	0	41,710
251831110130c	442,341	442,349	0	41,710	0	0	0	0	400,687	442,397
251831110150	181,863	181,866	0	50,859	0	0	0	0	131,858	182,717
251831110200	123,205	123,208	0	89,610	12,917	2,153	0	0	19,375	124,054
251831110300	88,285	88,286	0	75,347	0	807	0	0	11,302	87,457
251831120090	43,910	43,910	0	21,528	2,960	19,375	0	0	0	43,863
251831120100	110,644	110,646	0	63,776	0	1,345	0	0	42,787	107,908
251831120120	103,682	103,683	0	50,052	0	0	0	0	52,743	102,795
251831120130	119,795	119,797	0	65,122	0	0	0	0	55,972	121,094
251831120160	188,425	188,428	0	143,429	13,186	16,684	0	0	16,146	189,445
251831120170	156,248	156,250	0	0	13,724	0	0	0	142,353	156,077

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING  
PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							Total
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	
251831120175	72,260	72,261	0	54,358	17,760	0	0	0	0	72,118
251831120185	69,879	69,880	0	27,717	32,830	0	0	0	8,880	69,427
251831120250	105,405	105,406	0	43,863	0	60,278	0	0	3,229	107,370
251831120260	219,221	219,224	0	135,087	0	36,866	0	0	48,707	220,660
251831140050	889,673	884,167	0	10,495	5,920	0	0	0	868,648	885,063
251831210100	56,989	56,990	0	0	0	56,511	0	0	0	56,511
251831210105	59,711	59,712	0	42,248	9,688	807	0	0	7,804	60,547
251831240050	194,791	194,792	0	6,997	11,033	175,452	0	0	1,076	194,558
251831310050	849,828	849,837	0	172,492	93,646	13,993	0	0	566,989	847,120
251831320300	226,998	226,999	0	143,160	26,910	58,394	0	0	0	228,464
251831330075	235,407	235,408	0	43,863	0	26,102	0	0	164,688	234,653
251831330500	83,871	83,871	0	65,929	18,299	0	0	0	0	84,228
251831562020	91,562	91,562	0	32,830	0	59,471	0	0	0	92,301
261817210000	344,557	344,577	0	0	34,983	39,288	0	0	270,981	345,252
261817210000a	1,305,460	1,305,536	0	0	22,066	12,917	1,076	0	1,267,182	1,303,241
261817230050	829,962	830,005	0	0	279,862	16,146	61,085	0	468,499	825,592
261818300060	854,921	854,958	0	0	10,495	50,590	0	0	792,762	853,847
261818400100	565,869	565,895	0	186,216	305,426	538	0	0	73,733	565,913
261818410200	152,833	152,840	0	45,208	97,413	4,844	0	0	4,306	151,771
261818420070	137,157	137,163	0	74,540	22,873	40,365	0	0	0	137,778
261818420080	213,560	213,570	0	151,771	16,953	21,259	0	0	22,604	212,587
261818420090	123,092	123,098	0	20,451	77,500	0	0	0	26,372	124,323
261819000050	221,929	221,938	0	153,386	32,561	35,790	0	0	0	221,737
261819120090	292,902	292,915	0	178,681	15,339	96,606	0	0	0	290,626
261819140055	735,982	736,016	0	247,032	175,183	0	0	0	313,499	735,713
261819210020	89,554	89,558	0	89,879	0	0	0	0	807	90,686

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	Total
261819210030	63,580	63,583	0	64,045	0	0	0	0	0	64,045
261819210030a	194,673	194,681	0	41,172	31,754	4,575	0	0	115,443	192,943
261819210070	32,723	32,724	0	30,408	0	2,422	0	0	0	32,830
261819230050	949,335	673,955	0	53,820	125,669	0	0	0	492,449	671,937
261819410050	853,709	853,749	0	322,648	51,667	0	0	0	478,725	853,040
261819420050	108,681	108,686	0	78,307	31,754	0	0	0	0	110,061
261819420060	185,562	185,570	0	123,247	17,760	8,073	0	0	37,405	186,485
261819420100	108,781	108,786	0	101,988	538	6,997	0	0	0	109,523
261819420150	161,415	161,422	0	47,630	70,235	16,684	0	0	27,179	161,728
261819430090	452,684	452,703	0	358,707	25,295	31,215	0	0	36,328	451,546
261819440050	917,318	917,357	0	235,191	125,130	22,066	0	0	535,236	917,623
261828200300	531,445	531,480	0	198,056	85,035	49,245	33,906	0	163,881	530,123
261828200300a	314,917	314,935	0	195,096	0	13,186	0	0	107,639	315,921
261828200375	350,780	350,803	0	46,016	18,837	115,981	0	0	167,917	348,751
261828200375a	80,183	80,187	0	0	15,877	0	0	0	65,929	81,806
261828200500	26,451	26,453	0	0	0	1,076	0	0	25,026	26,102
261829310050	880,243	880,289	0	94,453	194,558	59,740	0	0	533,890	882,641
261829310100	865,875	865,920	0	117,596	194,289	84,228	0	0	470,652	866,764
261829340170	255,607	255,620	0	121,363	82,613	1,076	11,571	0	38,212	254,836
261829400050	470,956	470,981	0	120,556	28,255	0	0	0	324,532	473,343
261829697060	47,787	47,790	0	0	0	39,826	0	0	6,727	46,554
261829697060a		3,784	0	0	0	0	0	0	3,498	3,498
261830100055	186,041	186,049	0	67,544	0	1,884	0	0	115,174	184,601
261830100150	393,078	393,094	0	81,268	176,259	0	0	0	132,934	390,461
261830120050	283,505	283,516	0	62,431	0	0	0	0	218,777	281,207
261830120055	68,790	68,793	0	9,149	15,069	35,790	0	0	9,688	69,696

**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING  
PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							Total
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	
261830140010	140,394	140,399	0	34,175	0	0	0	0	106,563	140,738
261830200050	577,287	242,846	0	0	0	0	0	0	244,341	244,341
261830400100	372,137	372,153	0	39,826	0	0	0	0	334,489	374,315
261830400150	923,064	923,100	0	77,231	32,292	0	0	0	813,483	923,005
261830410150	385,852	385,868	0	58,663	0	0	0	0	329,107	387,770
261830420300	1,374,890	1,374,940	0	286,051	194,827	30,139	0	0	862,189	1,373,206
261830420300a	395,879	395,895	0	90,686	53,012	0	0	0	254,028	397,727
261830440050	211,768	211,777	0	0	269	0	0	0	211,780	212,049
261831100050	970,513	970,548	0	220,122	167,917	0	0	0	582,866	970,905
261831120150	473,597	473,616	0	2,422	139,393	54,358	11,840	0	264,523	472,536
261831130050	105,675	105,680	0	80,191	269	25,833	0	0	0	106,294
261831130076	112,120	112,124	0	77,769	0	33,368	0	0	0	111,137
261831430100	32,581	32,582	0	0	0	269	0	0	32,561	32,830
261831430100a	395,787	395,801	0	216,086	20,451	44,132	0	0	112,752	393,421
261832110040	46,767	46,770	0	34,983	0	10,495	0	0	2,691	48,169
261832110040a	258,299	258,313	0	59,202	15,069	0	0	0	182,717	256,988
261833100100	117,684	117,692	0	0	0	5,651	0	0	111,406	117,058
261833100100a	718,865	718,913	0	421,138	108,716	15,877	0	0	176,259	721,989
261833130050	1,754,500	1,754,613	0	1,084,733	424,636	0	0	0	247,839	1,757,209
261833140050a	144,917	144,927	0	0	12,917	29,063	0	0	102,795	144,775
261833240150	392,525	392,550	0	22,873	33,637	33,637	0	0	301,928	392,075
261833410100	1,393,790	1,393,884	0	59,471	296,546	135,356	0	0	907,936	1,399,309
261833420150	214,859	214,874	0	0	0	0	0	0	205,322	205,322
261833420250	69,831	69,836	0	54,358	0	16,146	0	0	0	70,504
261833420250a	14,422	14,423	0	9,418	3,229	0	0	0	0	12,648
261833420350	77,022	77,027	0	15,877	538	32,023	0	0	30,408	78,846



**TABLE 4**

**LAND USE TYPES WITHIN CHUMSTICK CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)							
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Winter Wheat	Woodland	Total
261833420350a	30,225	30,227	0	22,604	9,149	0	0	0	0	31,754
261833440050	205,906	205,920	0	0	5,651	46,823	0	0	150,964	203,438
261834120100	58,019	58,023	0	0	20,721	34,714	0	0	1,615	57,049
261834120100a	790,925	790,988	0	14,531	20,451	15,339	0	0	738,943	789,264
261834220050	83,245	83,252	0	19,375	37,943	2,153	0	0	23,950	83,420
261834220050a	366,553	366,579	0	271,520	94,992	0	0	0	0	366,511
261834220100	711,984	712,037	0	460,426	216,086	807	0	0	33,906	711,225
261834220100a	101,990	101,998	0	26,641	39,288	29,063	0	0	8,073	103,064
261834300050	3,290,830	3,291,063	0	878,873	739,212	69,427	0	0	1,603,823	3,291,335
Total			1,664,639	32,256,215	13,289,395	5,714,292	537,927	140,738	49,976,574	103,579,780
Percent of Total Area			1.6%	31.1%	12.8%	5.5%	0.5%	0.1%	48.2%	

Note(s)

1. Parcel Identification Number From Chelan County GIS Database. In cases where more than one parcel had the same identification number, letters were added to distinguish among the parcels.
2. Area included as attribute for the parcel in the Chelan County GIS Database.
3. Area calculated for the Chelan County GIS polygon for the land parcel.
4. U.S. Department of Agriculture (USDA) 1:100,00-Scale 2006 Cropland Data Layer: USDA National Agriculture Statistics Service, Research and Development Division, Geospatial Information Branch, Washington, D.C., <http://datagateway.nrcs.usda.gov/GatewayHome.html> (accessed April 24, 2009).

Abbreviation(s)

GIS = Geographic Information System  
 USDA = U.S. Department of Agriculture

**TABLE 5**

**LAND USE TYPES WITHIN MISSION CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING  
PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Woodland	Total
221926210000	1,005,670	458,587	0	116,250	212,856	0	0	128,091	457,197
231904330300	106,404	106,415	0	0	0	28,524	76,693	0	105,217
231904330625	35,331	35,334	0	0	0	0	35,521	0	35,521
231904330635	30,188	30,191	0	0	0	0	29,601	0	29,601
231904331150	46,712	46,716	0	0	0	36,866	9,688	0	46,554
231904340435	45,315	45,320	0	0	0	28,793	15,069	0	43,863
231905490076	19,186	19,188	0	0	0	19,644	0	0	19,644
231905490077	22,986	22,988	0	0	0	21,797	0	0	21,797
231905520200		1,705	0	0	0	2,153	0	0	2,153
231905520200a	55,675	55,680	0	0	0	56,241	0	0	56,241
231907320000	1,490,820	452,159	0	112,752	308,117	0	0	32,830	453,699
231908110330	28,027	28,030	0	0	0	28,524	0	0	28,524
231908110330a	5,913	5,913	0	0	0	6,727	0	0	6,727
231908110650	48,658	48,662	0	0	0	47,361	0	0	47,361
231908111200	346,425	346,455	0	79,922	0	49,245	24,219	191,867	345,252
231908140300	95,312	95,321	0	41,979	8,073	46,554	0	0	96,606
231908140325	216,342	216,361	0	89,071	128,629	0	0	0	217,700
231908140550	20,365	20,366	0	6,458	0	0	0	14,262	20,721
231908440155	49,008	49,012	43,056	6,189	0	0	0	0	49,245
231908440160	60,658	60,663	25,026	20,721	0	16,953	0	0	62,700
231908440165	78,135	78,142	6,189	40,903	0	29,870	0	0	76,962
231909110000	1,773,310	923,653	0	619,732	262,639	14,262	20,721	0	917,354
231909110050	87,126	86,527	0	86,919	269	0	0	0	87,188
231909220050	218,142	218,163	0	0	0	29,332	188,907	0	218,238
231909220100	153,080	153,095	0	0	0	74,809	77,769	0	152,578
231909220600	34,004	34,007	0	0	0	0	34,445	0	34,445

**TABLE 5**

**LAND USE TYPES WITHIN MISSION CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING  
PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Woodland	Total
231909220850	50,275	50,280	0	0	0	1,615	16,415	33,099	51,129
231909220900	29,655	29,658	0	0	0	0	29,063	0	29,063
231909230150	41,994	41,997	0	0	0	1,076	42,248	269	43,594
231909320100	199,625	199,642	0	6,727	0	0	193,750	0	200,478
231909703020	20,778	20,780	16,415	5,113	0	0	0	0	21,528
231909703020a		2,202	1,615	269	0	0	0	0	1,884
231909703030		771	0	269	0	0	0	0	269
231909703030a	21,604	21,606	3,767	11,033	6,458	0	0	0	21,259
231909818005	155,231	155,246	0	0	33,099	24,488	98,490	0	156,077
231909818006	57,737	57,742	0	0	0	16,146	43,056	0	59,202
231909818015	95,710	95,719	0	0	2,422	7,535	84,228	0	94,184
231909818050	408,670	408,707	0	0	47,092	0	361,129	0	408,221
231909818073	87,394	87,403	0	81,806	2,422	0	4,844	0	89,071
231909818075	94,023	94,032	0	0	0	4,575	89,071	0	93,646
231909818075a		4,413	0	0	0	3,767	269	0	4,036
231909818080	231,337	231,360	0	0	0	0	233,308	0	233,308
231909818095	50,016	50,021	0	0	0	6,189	42,517	0	48,707
231916210100	924,115	924,197	182,987	241,919	287,127	176,259	0	34,714	923,005
231916210150	55,791	55,796	0	0	15,877	38,750	0	0	54,627
231916230050	922,683	922,764	107,101	71,311	492,449	62,431	0	189,445	922,736
231916340050	5,197	5,197	0	0	5,651	807	0	0	6,458
231916340050a	63,894	63,900	0	0	62,162	807	0	0	62,969
231916340070	302,554	302,581	0	0	269,367	8,073	0	26,102	303,542
231916340080	73,692	73,698	0	0	15,877	4,575	0	52,205	72,656
231916340125	6,760	6,760	0	0	6,727	0	0	0	6,727
231916340125a	99,093	99,102	0	0	76,693	0	0	22,604	99,297

**TABLE 5**

**LAND USE TYPES WITHIN MISSION CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING  
PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Woodland	Total
231916340175	120,123	120,134	0	0	102,526	0	0	19,375	121,901
231916340175a	2,042	2,042	0	0	2,422	0	0	0	2,422
231917110050	6,130	6,130	0	0	5,382	1,615	0	0	6,997
231917110070	50,983	50,987	0	44,939	0	5,382	0	0	50,321
231917110070a	6,474	6,474	0	1,345	0	4,036	0	0	5,382
231917110080	27,354	27,356	0	18,837	0	8,073	0	0	26,910
231917110085	26,436	26,438	0	12,917	0	12,378	0	0	25,295
231917110260	163,578	163,592	0	12,378	151,771	0	0	0	164,150
231917110270	86,748	86,756	0	1,615	84,228	0	0	0	85,842
231917110350	58,135	58,140	15,339	34,983	0	8,611	0	0	58,932
231917130075	47,321	47,325	12,917	23,142	0	11,033	0	0	47,092
231917130075a	6,381	6,382	1,884	0	0	0	0	2,960	4,844
231917210050	1,502,060	1,502,180	72,118	329,914	1,100,341	0	0	0	1,502,373
231917230100	746,286	746,341	0	517,744	223,351	5,651	0	0	746,746
231917340100	80,883	80,889	6,997	23,681	50,590	0	0	0	81,268
231918400100	808,907	808,964	0	0	125,400	70,773	0	612,467	808,639
231918400100a	704,903	704,953	0	98,221	608,430	269	0	0	706,920
231918400100b	13,501	13,502	0	0	13,186	1,076	0	0	14,262
231920320050	140,248	140,257	125,669	0	8,880	5,113	0	0	139,662
231920320050a	54,108	54,111	0	0	48,169	6,727	0	0	54,896
231920320150	1,004,760	1,004,827	311,615	181,641	438,091	4,036	0	65,660	1,001,044
231920320150a	144,660	144,669	6,458	38,750	0	47,361	0	50,859	143,429
231929330025	125,260	125,267	5,113	22,066	0	0	0	99,297	126,476
231929330100	94,026	94,031	269	0	86,380	0	0	6,727	93,377
231929330255	130,754	130,762	0	28,793	23,681	0	0	78,577	131,051
231930440050	224,926	224,939	0	0	219,584	0	0	5,651	225,235

**TABLE 5**

**LAND USE TYPES WITHIN MISSION CREEK SUBWATERSHED FOR LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Crop Area <sup>4</sup> (square feet)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apples	Pasture/ Grassland/ Nonag	Shrubland	Urban	Wetlands	Woodland	Total
231931410030	106,008	106,014	17,222	8,880	39,557	0	0	39,557	105,217
231931410030a	14,245	14,246	0	0	6,727	0	0	6,997	13,724
231931410040	194,713	194,723	0	32,023	132,396	0	0	30,946	195,365
231931410040a	16,290	16,291	0	0	15,608	0	0	269	15,877
231931410110	365,217	365,235	0	3,229	346,329	2,153	0	14,262	365,973
231931440050a	218,868	218,878	0	3,767	50,321	60,278	0	104,141	218,507
231932000050	9,002,360	9,002,868	0	1,222,780	3,716,241	0	0	4,066,337	9,005,358
231932220055	262,171	262,187	27,448	9,418	77,500	0	0	148,273	262,639
231932220060	108,814	108,820	18,837	13,186	70,235	0	0	6,189	108,446
<b>Total</b>			<b>1,008,040</b>	<b>4,323,594</b>	<b>9,991,332</b>	<b>1,149,317</b>	<b>1,751,019</b>	<b>6,084,032</b>	<b>24,307,335</b>
<b>Percent of Total Area</b>			<b>4.1%</b>	<b>17.8%</b>	<b>41.1%</b>	<b>4.7%</b>	<b>7.2%</b>	<b>25.0%</b>	

Note(s)

1. Parcel Identification Number From Chelan County GIS Database. In cases where more than one parcel had the same identification number, letters were added to distinguish among the parcels.
2. Area included as attribute for the parcel in the Chelan County GIS Database.
3. Area calculated for the Chelan County GIS polygon for the land parcel.
4. U.S. Department of Agriculture (USDA) 1:100,00-Scale 2006 Cropland Data Layer: USDA National Agriculture Statistics Service, Research and Development Division, Geospatial Information Branch, Washington, D.C., <http://datagateway.nrcs.usda.gov/GatewayHome.html> (accessed April 24, 2009).

Abbreviation(s)

GIS = Geographic Information System  
 USDA = U.S. Department of Agriculture

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
241701220059	206,931	111,302	5.28	6.20	7.10	7.08	4.84	2.96	1.37	0.0223	0.0262	0.0300	0.0299	0.0205	0.0125	0.0058
241701220060	75,800	75,800	4.36	5.27	6.35	6.43	4.50	2.69	1.33	0.0126	0.0152	0.0183	0.0185	0.0129	0.0077	0.0038
241701220120	39,203	6,601	3.45	4.44	5.47	6.95	4.83	4.48	3.06	0.0009	0.0011	0.0014	0.0017	0.0012	0.0011	0.0008
241701550010	857,366	857,370	3.84	4.01	4.82	5.66	3.66	2.49	1.26	0.1251	0.1306	0.1570	0.1844	0.1191	0.0811	0.0412
241701550027	58,568	58,568	3.87	3.79	4.92	6.10	4.08	2.85	1.50	0.0086	0.0084	0.0109	0.0136	0.0091	0.0063	0.0033
241701550028	88,602	88,602	3.92	4.36	4.76	5.95	4.17	3.09	1.85	0.0132	0.0147	0.0160	0.0200	0.0140	0.0104	0.0062
241701550029	302,048	302,049	4.07	4.56	5.25	5.75	4.04	2.56	1.22	0.0466	0.0523	0.0602	0.0660	0.0463	0.0294	0.0139
241701550029a	896	896	3.88	4.91	5.54	5.64	3.94	2.53	1.15	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0000
241701550036	56,459	56,459	2.32	3.71	5.94	5.93	2.98	2.23	1.07	0.0050	0.0080	0.0127	0.0127	0.0064	0.0048	0.0023
241701550039	128,320	128,320	4.58	5.17	4.71	4.70	2.48	1.10	0.40	0.0223	0.0252	0.0229	0.0229	0.0121	0.0054	0.0020
241701550041	49,239	49,239	5.16	5.43	3.48	3.35	2.03	0.40	0.09	0.0096	0.0101	0.0065	0.0063	0.0038	0.0007	0.0002
241701550044	49,928	49,928	5.14	5.80	3.76	4.38	2.65	0.88	0.29	0.0097	0.0110	0.0071	0.0083	0.0050	0.0017	0.0005
241701550046	44,226	44,226	5.07	6.03	5.40	5.45	4.40	2.08	0.99	0.0085	0.0101	0.0091	0.0092	0.0074	0.0035	0.0017
241701550047	50,079	50,079	5.35	6.04	5.20	5.46	4.04	1.74	0.78	0.0102	0.0115	0.0099	0.0104	0.0077	0.0033	0.0015
241701550053	49,366	49,366	4.75	5.78	6.86	6.88	5.13	3.64	2.13	0.0089	0.0108	0.0129	0.0129	0.0096	0.0068	0.0040
241701550070	57,787	57,787	4.65	5.45	5.78	5.85	4.12	3.09	1.68	0.0102	0.0120	0.0127	0.0128	0.0090	0.0068	0.0037
241701550075	197,493	197,493	4.07	5.34	5.65	6.07	4.80	3.29	2.27	0.0305	0.0400	0.0424	0.0455	0.0360	0.0247	0.0170
241701550113	118,184	118,185	5.11	6.04	6.20	6.63	4.93	3.43	2.26	0.0229	0.0271	0.0278	0.0297	0.0221	0.0154	0.0101
241701550121	82,351	82,351	5.21	6.14	6.65	7.06	5.58	4.69	3.12	0.0163	0.0192	0.0208	0.0221	0.0174	0.0147	0.0098
241701550126	44,289	14,427	4.82	5.34	6.40	6.43	4.36	2.75	1.59	0.0026	0.0029	0.0035	0.0035	0.0024	0.0015	0.0009
241701550127	43,811	42,996	4.70	5.75	5.90	6.26	3.76	2.83	1.53	0.0077	0.0094	0.0096	0.0102	0.0061	0.0046	0.0025
241701550128	42,812	42,812	4.88	6.10	6.36	6.55	4.41	3.55	2.12	0.0079	0.0099	0.0103	0.0107	0.0072	0.0058	0.0035
241701550130	43,331	43,331	5.14	6.12	6.57	6.68	4.90	4.06	2.62	0.0085	0.0101	0.0108	0.0110	0.0081	0.0067	0.0043
241701550132	43,934	43,934	5.18	6.19	6.12	6.90	5.10	4.25	2.39	0.0086	0.0103	0.0102	0.0115	0.0085	0.0071	0.0040
241701550134	43,943	43,942	4.68	5.75	6.02	6.83	5.13	4.04	2.25	0.0078	0.0096	0.0100	0.0114	0.0086	0.0067	0.0038



**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
241701550145	216,736	216,736	4.26	4.98	5.22	5.79	3.88	2.61	1.28	0.0351	0.0410	0.0429	0.0476	0.0319	0.0215	0.0105
241701550145a	101,499	101,500	4.45	5.16	5.72	5.77	3.82	2.50	1.23	0.0172	0.0199	0.0221	0.0222	0.0147	0.0096	0.0047
241701550160	43,895	43,895	4.48	5.51	6.33	6.74	4.68	3.47	1.87	0.0075	0.0092	0.0105	0.0112	0.0078	0.0058	0.0031
241701550161	43,803	43,803	4.68	5.69	5.89	7.00	5.00	3.80	2.15	0.0078	0.0095	0.0098	0.0116	0.0083	0.0063	0.0036
241701550162	43,805	43,805	4.62	5.46	5.69	6.69	4.96	3.73	2.22	0.0077	0.0091	0.0095	0.0111	0.0082	0.0062	0.0037
241701550166	44,274	19,844	4.64	5.03	5.48	6.02	3.98	2.57	1.20	0.0035	0.0038	0.0041	0.0045	0.0030	0.0019	0.0009
241701550167	43,711	43,711	4.56	5.37	5.94	6.52	4.43	3.04	1.49	0.0076	0.0089	0.0099	0.0108	0.0074	0.0050	0.0025
241701550183	46,766	46,765	5.48	6.00	5.54	6.33	4.09	2.97	1.52	0.0097	0.0107	0.0098	0.0112	0.0073	0.0053	0.0027
241701550196	32,911	32,910	5.40	6.50	6.20	6.43	4.98	3.27	1.75	0.0067	0.0081	0.0077	0.0080	0.0062	0.0041	0.0022
241701550196a	44,609	16,211	4.73	6.31	6.64	7.21	5.25	3.92	2.23	0.0029	0.0039	0.0041	0.0044	0.0032	0.0024	0.0014
241701550196b		3,278	na <sup>6</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na
241701830001	44,555	44,555	4.60	5.75	5.74	5.82	4.03	2.58	1.50	0.0078	0.0097	0.0097	0.0099	0.0068	0.0044	0.0025
241701835030	42,341	42,341	5.08	6.35	6.34	6.63	4.95	3.01	1.53	0.0082	0.0102	0.0102	0.0107	0.0080	0.0048	0.0025
241701870030	46,497	46,497	5.21	6.35	6.04	6.48	4.80	2.78	1.60	0.0092	0.0112	0.0107	0.0114	0.0085	0.0049	0.0028
241701871020	43,962	43,962	5.23	6.05	6.49	6.71	4.59	3.19	1.65	0.0087	0.0101	0.0108	0.0112	0.0077	0.0053	0.0027
241701872010	43,540	43,540	4.80	6.17	6.61	7.34	5.45	4.81	3.25	0.0079	0.0102	0.0109	0.0121	0.0090	0.0079	0.0054
241701872030	37,026	37,026	5.81	6.26	6.42	6.96	5.61	4.19	2.75	0.0082	0.0088	0.0090	0.0098	0.0079	0.0059	0.0039
241701872040	37,162	37,162	5.80	6.17	6.06	6.79	5.10	3.85	2.36	0.0082	0.0087	0.0086	0.0096	0.0072	0.0054	0.0033
241701872050	45,158	45,158	5.21	5.93	6.13	6.57	4.63	3.53	2.23	0.0089	0.0102	0.0105	0.0113	0.0079	0.0061	0.0038
241701872060	40,272	40,272	5.26	5.96	6.30	6.71	4.88	3.35	2.36	0.0080	0.0091	0.0096	0.0103	0.0075	0.0051	0.0036
241701873030	42,931	42,931	5.03	5.80	6.24	7.02	4.61	3.79	2.14	0.0082	0.0094	0.0102	0.0115	0.0075	0.0062	0.0035
241701873040	37,451	37,451	5.12	5.99	6.37	6.60	4.84	3.41	1.88	0.0073	0.0085	0.0091	0.0094	0.0069	0.0048	0.0027
241701873050	41,210	41,210	4.87	5.69	6.80	6.70	4.57	3.40	2.12	0.0076	0.0089	0.0106	0.0105	0.0071	0.0053	0.0033
241701874020	45,853	45,853	4.10	4.40	5.45	6.20	2.92	2.46	0.72	0.0071	0.0077	0.0095	0.0108	0.0051	0.0043	0.0013
241701874040	45,781	45,781	5.14	5.97	6.11	6.61	5.02	3.02	1.60	0.0089	0.0104	0.0106	0.0115	0.0087	0.0052	0.0028

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
241806210100	176,827	22,565	3.77	4.17	5.25	5.53	3.60	2.58	1.31	0.0032	0.0036	0.0045	0.0047	0.0031	0.0022	0.0011
241806220110		185	na	na	na	na	na	na	na	na	na	na	na	na	na	na
241806220110a	403,263	129,113	3.85	4.24	5.37	5.53	3.71	2.65	1.22	0.0189	0.0208	0.0263	0.0271	0.0182	0.0130	0.0060
241806220120	662,848	351,134	4.07	4.46	5.09	5.54	3.67	2.20	1.00	0.0542	0.0594	0.0679	0.0738	0.0490	0.0294	0.0133
241806220125	406,590	406,595	3.70	3.73	5.16	5.38	3.02	2.29	0.98	0.0572	0.0576	0.0797	0.0831	0.0466	0.0353	0.0152
241806220200	90,398	90,398	4.19	4.90	5.31	5.86	4.07	2.53	1.26	0.0144	0.0168	0.0182	0.0201	0.0140	0.0087	0.0043
241806230100	129,295	129,296	4.21	5.12	5.58	5.88	4.27	2.65	1.26	0.0207	0.0251	0.0274	0.0289	0.0209	0.0130	0.0062
241806570035	78,908	39,703	4.36	5.25	5.46	5.71	3.94	2.33	1.07	0.0066	0.0079	0.0082	0.0086	0.0059	0.0035	0.0016
251724410040	102,188	102,189	5.06	5.49	4.53	5.29	3.51	2.14	1.06	0.0196	0.0213	0.0176	0.0205	0.0136	0.0083	0.0041
251724410050	325,720	325,724	5.14	4.67	3.61	4.08	3.18	1.54	0.99	0.0636	0.0578	0.0447	0.0505	0.0393	0.0190	0.0122
251724410075	170,056	170,058	5.10	4.63	4.88	5.67	3.18	2.79	1.71	0.0329	0.0299	0.0315	0.0366	0.0205	0.0180	0.0111
251724440050	495,000	495,005	4.70	5.61	6.80	7.01	4.70	3.91	2.31	0.0884	0.1054	0.1278	0.1317	0.0884	0.0735	0.0435
251724440150	649,456	649,463	2.77	3.72	6.11	6.26	3.41	2.67	1.39	0.0684	0.0918	0.1506	0.1543	0.0841	0.0658	0.0342
251806000100	895,740	895,762	4.83	5.02	5.75	6.30	3.91	2.67	1.39	0.1643	0.1707	0.1954	0.2144	0.1330	0.0909	0.0472
251806400050	846,037	846,065	5.55	6.18	6.87	7.06	4.66	3.14	1.96	0.1784	0.1986	0.2206	0.2270	0.1498	0.1009	0.0629
251806410040	1,033,620	1,033,652	5.64	6.25	6.88	7.10	4.78	3.22	2.16	0.2214	0.2452	0.2700	0.2787	0.1878	0.1262	0.0849
251806430100	133,234	133,239	4.70	4.31	0.74	2.06	0.73	0.17	0.04	0.0238	0.0218	0.0038	0.0104	0.0037	0.0008	0.0002
251806440050	916,316	916,345	5.98	6.55	6.37	6.95	5.12	3.71	2.59	0.2080	0.2280	0.2217	0.2419	0.1781	0.1290	0.0900
251806440100	849,604	849,632	5.81	6.52	7.12	7.50	5.25	3.91	2.67	0.1876	0.2105	0.2298	0.2418	0.1694	0.1261	0.0860
251806605020	108,763	108,767	3.01	3.44	5.40	5.67	2.86	2.32	1.48	0.0124	0.0142	0.0223	0.0234	0.0118	0.0096	0.0061
251806605030	91,269	91,272	3.47	4.29	3.49	3.74	2.34	1.10	0.70	0.0120	0.0149	0.0121	0.0130	0.0081	0.0038	0.0024
251806605050	147,400	147,405	4.58	4.93	5.34	5.64	3.20	2.10	1.34	0.0256	0.0276	0.0299	0.0316	0.0179	0.0118	0.0075
251806605080	165,297	165,303	3.17	3.20	3.50	4.21	0.84	1.05	0.81	0.0199	0.0201	0.0220	0.0264	0.0052	0.0066	0.0051
251806605090	122,372	122,376	1.96	1.90	0.75	2.07	0.21	0.12	0.06	0.0091	0.0088	0.0035	0.0096	0.0010	0.0005	0.0003



**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
251806605120	96,222	96,225	2.87	2.13	1.57	2.29	0.74	0.47	0.49	0.0105	0.0078	0.0057	0.0084	0.0027	0.0017	0.0018
251806605130	405,803	405,816	3.11	2.70	2.76	3.30	1.12	0.83	0.50	0.0479	0.0415	0.0426	0.0509	0.0173	0.0129	0.0077
251806605170	131,779	131,783	5.62	6.59	7.34	7.63	5.55	4.04	2.69	0.0281	0.0330	0.0367	0.0382	0.0278	0.0202	0.0135
251806605170a	6,015	6,015	4.01	5.09	5.83	6.89	3.41	2.88	1.92	0.0009	0.0012	0.0013	0.0016	0.0008	0.0007	0.0004
251806605190	147,563	147,567	5.16	6.42	7.09	7.56	5.32	4.42	3.03	0.0289	0.0360	0.0397	0.0424	0.0298	0.0248	0.0170
251806605190a		6,417	na	na	na	na	na	na	na	na	na	na	na	na	na	na
251806605210	326,523	326,534	5.66	6.61	6.73	7.24	5.36	3.72	2.33	0.0702	0.0820	0.0834	0.0898	0.0664	0.0461	0.0289
251806605210a	16,362	16,362	3.52	4.99	6.41	6.85	4.21	3.22	2.13	0.0022	0.0031	0.0040	0.0043	0.0026	0.0020	0.0013
251806605240	253,233	253,241	4.40	6.00	7.17	7.49	4.99	3.87	2.33	0.0423	0.0577	0.0690	0.0720	0.0480	0.0372	0.0224
251806605270	896,105	896,133	5.82	6.05	5.91	6.85	5.15	3.73	2.71	0.1979	0.2058	0.2011	0.2331	0.1752	0.1269	0.0921
251806830010	45,865	45,866	3.92	3.80	4.36	4.88	2.37	1.87	1.29	0.0068	0.0066	0.0076	0.0085	0.0041	0.0033	0.0022
251806830020	98,846	98,849	5.15	5.53	4.68	5.06	2.43	1.71	1.17	0.0193	0.0207	0.0176	0.0190	0.0091	0.0064	0.0044
251807120050	235,479	235,487	6.36	6.29	4.54	5.01	2.89	1.51	0.68	0.0569	0.0563	0.0406	0.0448	0.0259	0.0135	0.0061
251807120200	243,945	243,953	5.62	6.27	6.97	7.51	5.40	4.39	2.92	0.0520	0.0581	0.0645	0.0695	0.0500	0.0407	0.0271
251807120300	145,266	145,271	5.70	6.22	7.05	7.28	5.09	3.75	2.30	0.0314	0.0343	0.0389	0.0402	0.0281	0.0207	0.0127
251807130100	46,676	46,677	5.69	7.38	7.27	7.42	5.57	3.90	2.27	0.0101	0.0131	0.0129	0.0131	0.0099	0.0069	0.0040
251807130150	226,329	226,336	5.19	6.16	6.90	6.99	5.04	3.42	1.88	0.0446	0.0529	0.0593	0.0601	0.0433	0.0294	0.0162
251807130163	90,153	90,156	4.46	6.22	7.62	7.70	5.02	4.10	2.39	0.0153	0.0213	0.0261	0.0264	0.0172	0.0140	0.0082
251807130164	104,274	104,277	4.50	6.23	7.34	7.50	4.97	3.78	2.16	0.0178	0.0247	0.0291	0.0297	0.0197	0.0150	0.0086
251807130220	65,102	65,104	5.61	6.37	6.52	7.07	5.35	3.87	2.27	0.0139	0.0157	0.0161	0.0175	0.0132	0.0096	0.0056
251807130230	69,720	69,722	6.27	6.79	7.11	7.35	5.17	3.82	2.20	0.0166	0.0180	0.0188	0.0195	0.0137	0.0101	0.0058
251807130240	112,820	112,824	5.58	6.39	6.56	6.79	4.87	3.53	2.02	0.0239	0.0274	0.0281	0.0291	0.0209	0.0151	0.0086
251807140155	193,067	193,073	4.57	5.31	6.06	6.67	4.52	3.39	1.97	0.0335	0.0389	0.0444	0.0489	0.0331	0.0249	0.0144
251807420160	155,728	155,733	2.94	1.37	4.47	3.81	1.73	0.96	0.14	0.0174	0.0081	0.0264	0.0225	0.0102	0.0057	0.0009

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
251807420180	44,190	44,191	0.99	3.62	3.96	3.89	1.68	0.44	0.04	0.0017	0.0061	0.0066	0.0065	0.0028	0.0007	0.0001
251807420192	102,551	102,555	0.93	3.45	6.55	6.22	3.14	2.09	0.72	0.0036	0.0134	0.0255	0.0242	0.0122	0.0082	0.0028
251807420220	42,364	42,365	0.79	3.00	0.46	0.67	0.16	0.01	cc <sup>7</sup>	0.0013	0.0048	0.0007	0.0011	0.0003	0.0000	cc
251807430040	136,229	136,233	5.18	5.02	3.00	3.23	2.10	1.05	0.51	0.0268	0.0260	0.0155	0.0167	0.0109	0.0054	0.0027
251807440050	922,531	922,560	4.05	4.44	4.26	4.46	2.22	0.77	0.24	0.1420	0.1555	0.1494	0.1562	0.0779	0.0269	0.0085
251807440075	1,003,090	1,003,126	4.27	4.54	5.25	5.79	3.22	1.95	1.05	0.1625	0.1731	0.1998	0.2206	0.1227	0.0743	0.0400
251818120050	594,435	594,453	4.25	4.17	5.19	6.14	3.98	2.87	1.86	0.0959	0.0942	0.1171	0.1387	0.0899	0.0648	0.0420
251818130200	44,097	44,098	2.98	4.84	6.16	6.52	4.68	4.52	3.26	0.0050	0.0081	0.0103	0.0109	0.0078	0.0076	0.0055
251818130350	1,201,650	1,201,682	5.58	6.13	6.08	6.86	5.04	3.86	2.61	0.2545	0.2796	0.2773	0.3132	0.2301	0.1760	0.1190
251818240400	283,184	283,190	0.40	0.56	4.99	5.12	1.53	1.21	0.53	0.0043	0.0060	0.0537	0.0550	0.0164	0.0131	0.0057
251818240400a	97,616	1,182,917	3.57	1.99	2.14	2.33	0.02	cc	cc	0.1602	0.0892	0.0959	0.1047	0.0010	cc	cc
251818410100	240,544	240,550	4.36	6.70	7.49	7.72	5.97	4.49	2.77	0.0398	0.0612	0.0684	0.0705	0.0545	0.0410	0.0253
251818420050	113,261	113,264	1.52	3.65	3.20	3.73	2.36	0.52	0.16	0.0066	0.0157	0.0138	0.0160	0.0102	0.0022	0.0007
251818420100	48,830	48,831	2.89	1.52	5.31	6.28	3.92	2.15	1.12	0.0054	0.0028	0.0098	0.0116	0.0073	0.0040	0.0021
251818420150	52,557	52,558	3.42	2.52	4.69	5.85	2.52	1.86	1.08	0.0068	0.0050	0.0094	0.0117	0.0050	0.0037	0.0022
251818440100	871,641	871,664	2.74	3.40	4.81	4.81	2.41	1.81	0.91	0.0907	0.1126	0.1592	0.1592	0.0798	0.0600	0.0302
251818440150	858,204	858,226	2.62	2.89	3.02	3.34	1.65	0.87	0.38	0.0853	0.0943	0.0984	0.1089	0.0539	0.0284	0.0124
251818440175	887,985	888,008	2.99	3.95	5.80	5.86	2.97	1.97	1.06	0.1009	0.1332	0.1956	0.1977	0.1003	0.0666	0.0358
251819100050	864,829	864,851	4.41	4.33	4.18	5.14	3.23	2.18	1.32	0.1449	0.1423	0.1374	0.1689	0.1060	0.0715	0.0433
251819110050	881,653	881,675	4.40	4.69	5.27	5.93	3.72	2.48	1.40	0.1475	0.1571	0.1763	0.1984	0.1246	0.0831	0.0469
251819120020	87,309	87,311	4.75	5.92	6.63	6.99	4.83	3.54	1.89	0.0158	0.0196	0.0220	0.0232	0.0160	0.0117	0.0063
251819120100	293,242	293,249	6.40	6.75	6.50	6.62	4.62	2.79	1.60	0.0713	0.0751	0.0724	0.0737	0.0514	0.0311	0.0178
251819210060	24,268	24,269	6.00	6.24	7.40	7.52	5.31	3.86	2.36	0.0055	0.0058	0.0068	0.0069	0.0049	0.0036	0.0022
251819210250	241,900	241,904	4.49	3.47	4.66	5.26	2.96	2.43	1.55	0.0413	0.0319	0.0428	0.0483	0.0272	0.0223	0.0143

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
251819210350	17,717	17,717	5.66	6.07	5.84	6.85	4.30	2.90	1.58	0.0038	0.0041	0.0039	0.0046	0.0029	0.0020	0.0011
251819210450	44,350	44,351	5.25	6.06	5.94	7.04	5.35	3.51	2.06	0.0088	0.0102	0.0100	0.0119	0.0090	0.0059	0.0035
251819240200	33,045	33,045	5.58	6.86	7.31	7.69	5.34	3.60	1.91	0.0070	0.0086	0.0092	0.0096	0.0067	0.0045	0.0024
251819240250	103,734	103,737	5.63	6.71	7.39	7.76	5.94	4.44	2.78	0.0222	0.0264	0.0291	0.0306	0.0234	0.0175	0.0110
251819240450	228,368	228,373	3.84	5.06	6.80	7.15	4.21	3.75	2.21	0.0333	0.0439	0.0590	0.0620	0.0365	0.0325	0.0191
251819310100	125,321	125,323	5.60	6.37	6.79	6.74	4.79	2.87	1.44	0.0267	0.0303	0.0323	0.0321	0.0228	0.0136	0.0068
251819310150	170,407	170,410	6.03	5.92	4.75	5.04	3.27	0.98	0.35	0.0390	0.0383	0.0307	0.0326	0.0212	0.0063	0.0023
251819310170	147,542	147,545	6.35	6.84	6.60	6.88	5.13	3.23	1.94	0.0356	0.0383	0.0370	0.0386	0.0288	0.0181	0.0108
251819310200	322,268	322,274	2.63	3.02	4.03	4.40	1.23	0.42	0.18	0.0322	0.0370	0.0493	0.0539	0.0150	0.0052	0.0022
251819310300	81,547	81,549	4.20	4.21	5.55	5.24	2.03	0.27	cc	0.0130	0.0130	0.0172	0.0162	0.0063	0.0008	cc
251819310320	50,583	50,584	5.15	4.51	4.44	4.95	1.32	0.08	cc	0.0099	0.0087	0.0085	0.0095	0.0025	0.0002	cc
251819310330	50,297	50,298	5.83	6.22	4.46	4.60	2.08	0.10	cc	0.0111	0.0119	0.0085	0.0088	0.0040	0.0002	cc
251819330200	566,626	566,633	5.79	6.66	6.64	7.03	5.18	3.37	1.88	0.1247	0.1433	0.1429	0.1512	0.1115	0.0725	0.0404
251819340020		20,582	na	na	na	na	na	na	na	na	na	na	na	na	na	na
251819340020a			na	na	na	na	na	na	na	na	na	na	na	na	na	na
251819340070	88,647	88,649	5.36	6.22	6.93	6.72	4.21	2.52	1.09	0.0180	0.0210	0.0233	0.0226	0.0142	0.0085	0.0037
251819340100	131,819	131,822	5.73	6.45	6.52	7.12	5.03	3.53	1.95	0.0287	0.0323	0.0326	0.0357	0.0252	0.0177	0.0098
251819340140	131,937	131,939	6.06	6.82	7.02	7.34	5.28	3.79	2.12	0.0304	0.0342	0.0352	0.0368	0.0265	0.0190	0.0106
251819340150	131,362	131,365	5.37	6.10	6.74	7.05	5.03	3.43	1.95	0.0268	0.0304	0.0336	0.0352	0.0251	0.0171	0.0097
251819340200	261,224	261,229	4.23	6.62	7.49	7.59	5.21	3.29	1.56	0.0420	0.0656	0.0743	0.0753	0.0516	0.0327	0.0155
251821000000	865,576	865,618	5.45	6.01	6.36	7.28	5.06	4.13	2.78	0.1792	0.1975	0.2092	0.2394	0.1665	0.1358	0.0913
251821310000	864,135	864,175	5.03	4.95	5.08	6.26	3.82	2.74	1.78	0.1649	0.1625	0.1666	0.2054	0.1252	0.0900	0.0584
251821340000	960,240	960,284	5.02	5.63	6.59	6.94	4.46	3.08	1.81	0.1830	0.2053	0.2403	0.2529	0.1625	0.1124	0.0660
251821340100	867,887	867,928	5.36	5.97	6.43	7.00	4.71	3.24	1.97	0.1766	0.1967	0.2121	0.2307	0.1553	0.1068	0.0649
251822140000	979,184	979,248	2.00	3.29	4.91	6.30	3.12	2.54	1.40	0.0743	0.1222	0.1825	0.2343	0.1161	0.0945	0.0522

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
251822410200	264,503	264,521	4.08	3.05	1.76	3.00	1.66	0.97	0.89	0.0410	0.0306	0.0176	0.0301	0.0167	0.0098	0.0089
251822410210	246,655	246,671	2.59	0.75	cc	0.05	cc	cc	cc	0.0242	0.0071	cc	0.0004	cc	cc	cc
251822410260	92,074	92,080	0.99	0.82	0.15	0.59	0.22	0.01	0.10	0.0035	0.0029	0.0005	0.0021	0.0008	0.0000	0.0004
251822420050	748,900	748,948	1.89	2.39	2.32	3.91	1.05	0.75	0.38	0.0538	0.0678	0.0659	0.1113	0.0300	0.0212	0.0108
251822430075	834,695	834,747	0.81	1.14	3.11	3.51	0.95	0.97	0.41	0.0256	0.0362	0.0985	0.1112	0.0301	0.0309	0.0130
251823220075	1,073,230	1,073,310	2.58	2.07	2.04	4.09	0.95	0.88	0.63	0.1053	0.0844	0.0830	0.1667	0.0387	0.0359	0.0257
251823230050	978,899	978,965	1.01	1.20	3.64	4.86	1.79	2.01	1.24	0.0376	0.0446	0.1354	0.1805	0.0666	0.0747	0.0463
251827545050	501,738	501,760	3.11	4.39	6.93	6.95	4.58	3.68	2.16	0.0593	0.0837	0.1320	0.1324	0.0873	0.0700	0.0411
251827545100	880,107	880,154	4.58	5.78	6.27	6.74	4.50	3.06	1.94	0.1530	0.1933	0.2095	0.2252	0.1505	0.1024	0.0647
251827545125	240,832	240,845	4.71	3.92	5.57	5.98	3.24	2.52	1.62	0.0431	0.0358	0.0510	0.0547	0.0296	0.0230	0.0148
251828200040	866,039	866,073	4.71	4.99	6.16	6.57	4.05	3.34	2.01	0.1548	0.1642	0.2025	0.2162	0.1333	0.1097	0.0663
251828200040a	790,362	790,399	5.10	5.19	5.82	6.24	3.65	2.65	1.43	0.1532	0.1559	0.1745	0.1874	0.1095	0.0795	0.0429
251828200100	694,601	694,628	3.92	5.76	6.81	6.85	4.76	3.39	1.93	0.1033	0.1520	0.1797	0.1807	0.1256	0.0893	0.0508
251828200140	74,866	74,868	3.91	4.47	4.31	5.78	3.60	2.85	1.72	0.0111	0.0127	0.0123	0.0164	0.0102	0.0081	0.0049
251828200140a	14,155	14,156	2.89	3.64	5.91	6.11	4.16	2.41	1.96	0.0016	0.0020	0.0032	0.0033	0.0022	0.0013	0.0011
251828230020	88,733	88,736	4.70	4.37	3.00	5.21	4.17	3.44	2.56	0.0158	0.0147	0.0101	0.0175	0.0140	0.0116	0.0086
251828230075	223,483	223,491	4.55	4.42	5.55	5.71	3.04	1.70	0.82	0.0386	0.0376	0.0471	0.0485	0.0258	0.0145	0.0070
251828230090	97,332	97,336	4.96	5.00	5.66	5.85	4.73	3.37	2.43	0.0183	0.0185	0.0209	0.0216	0.0175	0.0125	0.0090
251828240130	112,162	112,167	4.02	6.88	8.13	8.26	6.03	4.53	2.52	0.0171	0.0293	0.0346	0.0352	0.0257	0.0193	0.0107
251828545010	97,024	97,029	4.00	6.60	7.64	7.99	5.95	4.89	3.13	0.0147	0.0243	0.0282	0.0294	0.0219	0.0180	0.0115
251828545011	98,673	98,677	1.58	3.51	7.23	7.07	3.83	3.05	1.57	0.0059	0.0132	0.0271	0.0265	0.0143	0.0114	0.0059
251828545012	117,077	117,082	2.74	4.97	7.60	7.44	4.78	3.64	1.93	0.0122	0.0221	0.0338	0.0331	0.0213	0.0162	0.0086
251828545017	120,983	120,989	3.88	3.91	4.47	5.42	3.48	2.07	1.41	0.0178	0.0180	0.0205	0.0249	0.0160	0.0095	0.0065

**TABLE 6**

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Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
251828545026	105,286	105,291	0.27	2.41	7.82	7.62	4.76	3.60	1.89	0.0011	0.0096	0.0313	0.0305	0.0190	0.0144	0.0075
251828545038	91,563	91,567	2.26	5.13	7.70	7.76	5.09	3.85	2.09	0.0079	0.0179	0.0268	0.0270	0.0177	0.0134	0.0073
251828545046	93,846	93,851	5.20	6.94	7.51	7.69	5.62	4.40	2.51	0.0185	0.0247	0.0268	0.0274	0.0200	0.0157	0.0090
251828545070	376,043	376,062	4.69	4.57	5.07	5.46	3.79	2.49	1.76	0.0670	0.0652	0.0724	0.0780	0.0541	0.0355	0.0252
251828545075	457,846	457,869	4.68	4.55	5.32	5.77	3.73	2.67	1.90	0.0813	0.0792	0.0924	0.1003	0.0649	0.0464	0.0331
251828545085	476,712	476,735	4.74	4.12	3.92	4.37	3.07	2.00	1.43	0.0857	0.0745	0.0709	0.0791	0.0555	0.0362	0.0259
251828545090	669,609	669,642	4.83	4.40	3.99	4.39	2.99	1.89	1.29	0.1228	0.1118	0.1014	0.1116	0.0760	0.0480	0.0327
251828545100	191,053	191,061	1.06	3.44	7.64	7.59	4.35	3.50	1.87	0.0077	0.0250	0.0554	0.0550	0.0316	0.0254	0.0136
251828545200	144,744	144,750	0.93	2.38	6.50	6.31	2.49	1.96	1.03	0.0051	0.0131	0.0357	0.0347	0.0137	0.0108	0.0057
251829100000	1,764,400	1,764,453	2.93	2.72	3.66	3.82	1.78	1.31	0.72	0.1961	0.1823	0.2453	0.2558	0.1190	0.0879	0.0485
251829130050	372,551	372,564	2.66	3.86	7.06	7.54	4.52	4.16	2.65	0.0376	0.0545	0.0999	0.1066	0.0640	0.0588	0.0375
251829140050	233,165	233,174	1.40	0.91	3.25	4.61	1.29	1.43	0.71	0.0124	0.0081	0.0288	0.0408	0.0114	0.0127	0.0063
251829230000	1,570,110	1,570,144	4.80	5.57	6.47	6.81	4.42	3.16	1.78	0.2860	0.3322	0.3858	0.4062	0.2632	0.1883	0.1060
251829230100	54,980	54,982	4.70	4.88	4.90	5.74	3.79	2.44	1.18	0.0098	0.0102	0.0102	0.0120	0.0079	0.0051	0.0025
251829230150	86,502	86,504	4.68	5.07	5.11	5.81	3.94	2.60	1.40	0.0154	0.0167	0.0168	0.0191	0.0129	0.0085	0.0046
251829240175	366,679	366,686	3.71	4.25	6.09	6.19	4.06	2.71	1.45	0.0517	0.0591	0.0848	0.0861	0.0566	0.0377	0.0202
251829240300	166,632	166,637	1.85	2.74	5.89	6.44	3.97	3.80	2.30	0.0117	0.0173	0.0372	0.0408	0.0251	0.0241	0.0146
251829300023	102,192	102,194	4.42	4.81	5.49	5.78	3.65	2.04	1.05	0.0172	0.0187	0.0213	0.0224	0.0142	0.0079	0.0041
251829300050	1,157,350	1,157,383	4.04	3.95	4.66	5.00	2.90	1.85	0.92	0.1778	0.1737	0.2049	0.2198	0.1273	0.0813	0.0406
251829300150	148,399	148,402	6.45	6.38	5.71	6.61	5.11	3.04	1.75	0.0363	0.0360	0.0322	0.0372	0.0288	0.0171	0.0099
251829300151	239,682	239,687	3.49	3.32	3.16	4.20	2.34	0.71	0.22	0.0317	0.0302	0.0287	0.0382	0.0213	0.0064	0.0020
251829300153	203,967	203,971	4.73	5.37	6.36	6.51	3.94	2.61	1.22	0.0366	0.0416	0.0493	0.0504	0.0305	0.0202	0.0095
251829330050	220,467	220,472	4.24	6.09	7.22	7.80	5.73	5.08	3.42	0.0355	0.0510	0.0604	0.0653	0.0480	0.0426	0.0287
251829330060	14,784	14,784	6.15	7.15	7.41	7.84	6.06	4.87	3.16	0.0035	0.0040	0.0042	0.0044	0.0034	0.0027	0.0018

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
251830100050	1,789,190	1,789,233	4.91	4.90	4.51	5.09	3.53	2.56	1.72	0.3335	0.3328	0.3063	0.3461	0.2400	0.1738	0.1166
251830130100	853,796	853,810	4.10	4.34	4.76	5.75	3.91	3.13	2.01	0.1330	0.1409	0.1543	0.1866	0.1268	0.1016	0.0652
251830210130	63,014	63,014	0.69	1.25	7.17	7.37	3.82	4.69	2.96	0.0017	0.0030	0.0172	0.0176	0.0091	0.0112	0.0071
251830230000	1,798,640	1,798,657	4.72	5.11	5.23	5.78	4.09	2.65	1.61	0.3225	0.3491	0.3570	0.3950	0.2794	0.1807	0.1101
251830240150	24,854	24,854	5.43	6.51	6.72	6.93	5.89	3.99	2.48	0.0051	0.0061	0.0063	0.0065	0.0056	0.0038	0.0023
251830240220	120,349	120,352	5.13	3.01	0.33	0.52	cc	cc	cc	0.0234	0.0137	0.0015	0.0024	cc	cc	cc
251830310220	162,839	162,842	6.69	6.99	6.81	7.17	5.41	4.11	2.43	0.0414	0.0432	0.0421	0.0443	0.0335	0.0254	0.0150
251830310230	44,727	44,728	6.46	6.84	7.05	7.32	5.21	4.07	2.21	0.0110	0.0116	0.0120	0.0124	0.0088	0.0069	0.0038
251830310250	72,967	72,967	4.70	5.54	5.74	6.56	4.56	3.63	2.23	0.0130	0.0153	0.0159	0.0182	0.0126	0.0100	0.0062
251830340050	602,034	602,042	0.42	0.45	3.65	3.70	0.82	1.07	0.54	0.0095	0.0102	0.0835	0.0845	0.0187	0.0244	0.0123
251830340050a	103,523	103,524	0.11	0.34	2.61	2.67	0.81	1.01	0.43	0.0004	0.0013	0.0103	0.0105	0.0032	0.0040	0.0017
251830340100	315,547	315,552	5.58	4.52	1.45	1.59	0.83	0.16	0.04	0.0668	0.0542	0.0173	0.0191	0.0100	0.0019	0.0005
251830340100a	107,396	107,397	5.69	4.57	0.75	0.73	cc	cc	cc	0.0232	0.0186	0.0031	0.0030	cc	cc	cc
251830340110	68,276	68,277	3.99	0.70	1.32	1.52	0.02	cc	cc	0.0104	0.0018	0.0034	0.0040	0.0001	cc	cc
251830340150	63,743	63,744	2.69	0.27	0.08	0.05	cc	cc	cc	0.0065	0.0007	0.0002	0.0001	cc	cc	cc
251830340250	60,614	60,614	5.53	5.85	1.43	1.65	0.62	cc	cc	0.0127	0.0135	0.0033	0.0038	0.0014	cc	cc
251830440100	61,694	61,695	2.44	0.25	1.98	2.21	0.23	0.23	0.01	0.0057	0.0006	0.0046	0.0052	0.0005	0.0005	0.0000
251831000050	1,925,310	1,925,320	4.44	5.32	6.55	6.95	5.06	4.03	2.59	0.3249	0.3893	0.4786	0.5084	0.3696	0.2948	0.1895
251831000050a	877,439	877,454	4.73	5.37	6.21	6.48	4.36	3.29	2.02	0.1576	0.1790	0.2070	0.2160	0.1454	0.1095	0.0674
251831000055	873,643	855,759	3.80	3.87	4.18	4.03	2.09	1.19	0.63	0.1234	0.1257	0.1358	0.1309	0.0678	0.0388	0.0205
251831000075	862,201	738,358	4.89	4.99	5.23	5.39	4.08	3.07	1.93	0.1370	0.1399	0.1466	0.1512	0.1144	0.0862	0.0542
251831000075a	867,265	841,565	4.16	5.04	5.98	6.41	4.62	3.02	1.60	0.1331	0.1610	0.1909	0.2048	0.1477	0.0964	0.0513
251831000080	840,760	807,433	4.24	4.91	5.27	6.13	4.66	3.33	1.89	0.1299	0.1505	0.1615	0.1879	0.1428	0.1020	0.0579
251831000090	861,450	861,461	5.60	6.00	6.15	6.64	5.10	4.18	2.71	0.1833	0.1961	0.2011	0.2171	0.1668	0.1368	0.0886

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
251831000095	869,257	862,605	4.34	4.69	5.48	5.89	4.42	3.80	2.43	0.1421	0.1538	0.1795	0.1929	0.1447	0.1245	0.0795
251831000100	871,901	871,913	5.60	5.88	5.39	5.90	4.75	3.27	2.18	0.1856	0.1948	0.1786	0.1953	0.1571	0.1082	0.0723
251831110060	507,062	507,071	4.08	5.89	6.38	6.55	4.60	3.71	2.13	0.0786	0.1134	0.1229	0.1261	0.0885	0.0714	0.0411
251831110130	49,453	49,454	cc	0.16	3.62	4.94	1.55	2.51	0.70	cc	0.0003	0.0068	0.0093	0.0029	0.0047	0.0013
251831110130a	46,492	46,493	1.82	0.21	3.45	3.96	1.71	1.04	0.22	0.0032	0.0004	0.0061	0.0070	0.0030	0.0018	0.0004
251831110130b	42,422	42,422	0.11	cc	3.99	4.45	2.94	2.07	0.73	0.0002	cc	0.0064	0.0072	0.0047	0.0033	0.0012
251831110130c	442,341	442,349	5.29	4.69	2.44	2.51	1.49	0.64	0.28	0.0888	0.0788	0.0411	0.0421	0.0251	0.0107	0.0046
251831110150	181,863	181,866	3.92	2.76	0.81	0.92	0.33	0.13	0.08	0.0271	0.0190	0.0056	0.0063	0.0023	0.0009	0.0006
251831110200	123,205	123,208	4.30	1.62	1.07	1.24	0.34	0.06	0.06	0.0201	0.0076	0.0050	0.0058	0.0016	0.0003	0.0003
251831110300	88,285	88,286	2.14	3.06	5.18	5.44	2.78	2.17	1.11	0.0072	0.0103	0.0174	0.0182	0.0093	0.0073	0.0037
251831120090	43,910	43,910	7.06	6.98	7.19	7.62	6.04	4.72	2.96	0.0118	0.0116	0.0120	0.0127	0.0101	0.0079	0.0049
251831120100	110,644	110,646	3.13	5.54	7.10	7.24	4.70	3.96	2.07	0.0131	0.0233	0.0298	0.0304	0.0198	0.0166	0.0087
251831120120	103,682	103,683	2.07	4.13	6.52	6.99	5.37	4.27	2.87	0.0081	0.0163	0.0257	0.0275	0.0211	0.0168	0.0113
251831120130	119,795	119,797	1.97	4.69	6.81	7.52	4.98	4.91	2.98	0.0090	0.0213	0.0310	0.0342	0.0226	0.0223	0.0136
251831120160	188,425	188,428	6.13	6.48	6.95	7.01	4.43	2.63	1.01	0.0439	0.0464	0.0497	0.0501	0.0317	0.0188	0.0072
251831120170	156,248	156,250	5.70	6.39	6.24	6.78	5.26	3.18	1.84	0.0338	0.0379	0.0370	0.0402	0.0312	0.0188	0.0109
251831120175	72,260	72,261	6.22	6.96	6.91	7.32	6.10	3.81	2.57	0.0171	0.0191	0.0190	0.0201	0.0168	0.0104	0.0071
251831120185	69,879	69,880	5.67	6.28	6.64	7.19	5.64	3.70	2.40	0.0151	0.0167	0.0176	0.0191	0.0150	0.0098	0.0064
251831120250	105,405	105,406	5.13	6.79	7.45	7.61	5.68	4.71	3.06	0.0205	0.0272	0.0298	0.0304	0.0227	0.0188	0.0123
251831120260	219,221	219,224	2.38	4.34	6.25	6.55	4.31	3.42	1.95	0.0198	0.0361	0.0520	0.0546	0.0359	0.0285	0.0162
251831140050	889,673	884,167	3.82	4.34	5.36	5.19	3.04	2.16	1.27	0.1281	0.1459	0.1798	0.1743	0.1020	0.0726	0.0426
251831210100	56,989	56,990	6.67	7.08	6.63	7.51	5.92	4.40	2.54	0.0144	0.0153	0.0144	0.0163	0.0128	0.0095	0.0055
251831210105	59,711	59,712	6.65	6.99	6.08	7.05	5.74	4.19	2.57	0.0151	0.0158	0.0138	0.0160	0.0130	0.0095	0.0058
251831240050	194,791	194,792	4.02	3.64	2.60	2.87	2.68	1.17	0.61	0.0298	0.0269	0.0192	0.0212	0.0198	0.0087	0.0045

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
251831310050	849,828	849,837	5.95	5.85	5.19	6.01	4.84	3.55	2.53	0.1921	0.1886	0.1674	0.1940	0.1562	0.1146	0.0816
251831320300	226,998	226,999	4.91	4.98	4.90	5.44	3.33	2.55	1.35	0.0423	0.0429	0.0423	0.0469	0.0287	0.0220	0.0116
251831330075	235,407	235,408	4.21	4.28	4.29	4.91	3.79	2.34	1.64	0.0376	0.0383	0.0383	0.0439	0.0339	0.0209	0.0146
251831330500	83,871	83,871	4.07	4.06	4.71	5.11	3.93	2.05	0.94	0.0130	0.0129	0.0150	0.0163	0.0125	0.0065	0.0030
251831562020	91,562	91,562	2.24	0.97	0.07	0.55	cc	cc	cc	0.0078	0.0034	0.0002	0.0019	cc	cc	cc
261817210000	344,557	344,577	5.47	5.42	5.49	4.82	2.87	2.06	0.89	0.0716	0.0709	0.0719	0.0631	0.0376	0.0269	0.0117
261817210000a	1,305,460	1,305,536	3.53	3.33	4.43	3.22	1.53	0.78	0.44	0.1749	0.1650	0.2197	0.1597	0.0759	0.0384	0.0216
261817230050	829,962	830,005	4.58	4.41	5.99	5.37	2.41	1.53	0.75	0.1444	0.1389	0.1887	0.1693	0.0758	0.0481	0.0237
261818300060	854,921	854,958	4.37	4.43	5.65	5.43	3.25	2.05	1.00	0.1420	0.1439	0.1834	0.1762	0.1055	0.0664	0.0326
261818400100	565,869	565,895	4.17	5.44	7.18	6.95	4.39	2.85	1.25	0.0897	0.1169	0.1543	0.1494	0.0943	0.0612	0.0269
261818410200	152,833	152,840	2.49	2.46	3.69	3.23	0.49	0.40	0.03	0.0145	0.0143	0.0214	0.0187	0.0028	0.0023	0.0002
261818420070	137,157	137,163	2.87	3.61	6.11	5.72	2.81	1.63	0.45	0.0150	0.0188	0.0318	0.0298	0.0146	0.0085	0.0023
261818420080	213,560	213,570	4.60	5.22	5.87	5.53	3.05	1.56	0.41	0.0373	0.0423	0.0476	0.0449	0.0248	0.0127	0.0033
261818420090	123,092	123,098	4.20	5.03	5.04	4.68	2.03	0.40	cc	0.0196	0.0235	0.0236	0.0219	0.0095	0.0018	cc
261819000050	221,929	221,938	4.41	5.44	6.65	6.89	4.36	2.99	1.45	0.0372	0.0458	0.0560	0.0580	0.0367	0.0252	0.0123
261819120090	292,902	292,915	4.84	5.16	5.03	5.39	3.50	1.97	0.86	0.0538	0.0574	0.0560	0.0599	0.0389	0.0219	0.0096
261819140055	735,982	736,016	5.06	5.82	6.03	6.26	4.35	2.98	1.52	0.1416	0.1626	0.1686	0.1751	0.1217	0.0834	0.0426
261819210020	89,554	89,558	4.57	5.32	5.93	6.04	3.53	2.33	1.02	0.0155	0.0181	0.0202	0.0205	0.0120	0.0079	0.0035
261819210030	63,580	63,583	4.98	5.41	5.31	5.61	3.41	1.97	0.65	0.0120	0.0131	0.0128	0.0135	0.0082	0.0047	0.0016
261819210030a	194,673	194,681	4.95	5.84	6.89	6.83	4.77	3.23	1.56	0.0366	0.0432	0.0510	0.0505	0.0353	0.0239	0.0116
261819210070	32,723	32,724	5.24	5.99	5.25	5.57	2.61	1.80	0.55	0.0065	0.0074	0.0065	0.0069	0.0032	0.0022	0.0007
261819230050	949,335	673,955	4.70	5.50	6.41	6.56	4.32	2.84	1.28	0.1202	0.1407	0.1640	0.1679	0.1106	0.0726	0.0328
261819410050	853,709	853,749	5.14	5.75	6.39	6.47	4.45	3.08	1.61	0.1665	0.1865	0.2073	0.2099	0.1441	0.0998	0.0523
261819420050	108,681	108,686	4.67	5.26	5.86	6.34	4.21	3.32	1.81	0.0193	0.0217	0.0242	0.0262	0.0174	0.0137	0.0075



**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
261819420060	185,562	185,570	5.96	6.85	7.15	7.12	4.87	3.08	1.59	0.0420	0.0483	0.0504	0.0501	0.0343	0.0217	0.0112
261819420100	108,781	108,786	5.06	5.08	5.25	5.81	4.35	3.34	1.89	0.0209	0.0210	0.0217	0.0240	0.0180	0.0138	0.0078
261819420150	161,415	161,422	4.85	5.35	5.34	6.01	3.94	2.95	1.58	0.0297	0.0328	0.0327	0.0368	0.0241	0.0181	0.0097
261819430090	452,684	452,703	5.17	6.07	7.24	7.20	4.66	3.32	1.62	0.0888	0.1043	0.1244	0.1238	0.0802	0.0570	0.0278
261819440050	917,318	917,357	5.12	5.67	6.05	6.09	3.72	2.29	1.04	0.1784	0.1977	0.2107	0.2122	0.1295	0.0798	0.0361
261828200300	531,445	531,480	4.22	4.84	5.18	5.64	3.35	2.16	0.97	0.0852	0.0976	0.1045	0.1139	0.0675	0.0437	0.0196
261828200300a	314,917	314,935	4.32	4.79	4.79	5.33	2.28	1.27	0.53	0.0517	0.0573	0.0573	0.0637	0.0273	0.0152	0.0064
261828200375	350,780	350,803	4.32	4.53	5.12	5.99	2.96	2.39	1.15	0.0576	0.0603	0.0682	0.0798	0.0395	0.0319	0.0153
261828200375a	80,183	80,187	4.26	4.24	3.13	3.74	2.14	1.46	0.74	0.0130	0.0129	0.0095	0.0114	0.0065	0.0044	0.0023
261828200500	26,451	26,453	5.26	2.88	0.12	2.54	0.25	0.07	0.02	0.0053	0.0029	0.0001	0.0025	0.0003	0.0001	0.0000
261829310050	880,243	880,289	5.62	5.97	4.35	4.98	3.20	1.81	0.96	0.1877	0.1995	0.1454	0.1664	0.1070	0.0605	0.0320
261829310100	865,875	865,920	5.62	6.11	5.99	6.43	4.15	2.86	1.65	0.1848	0.2009	0.1969	0.2116	0.1364	0.0940	0.0542
261829340170	255,607	255,620	4.60	5.50	5.64	6.76	4.17	3.18	1.71	0.0446	0.0534	0.0548	0.0656	0.0405	0.0309	0.0166
261829400050	470,956	470,981	5.08	5.55	4.84	6.45	4.40	3.16	1.78	0.0909	0.0993	0.0866	0.1154	0.0787	0.0565	0.0318
261829697060	47,787	47,790	3.32	4.35	6.55	6.67	4.15	2.53	1.08	0.0060	0.0079	0.0119	0.0121	0.0075	0.0046	0.0020
261829697060a		3,784	na	na	na	na	na	na	na	na	na	na	na	na	na	na
261830100055	186,041	186,049	5.37	6.32	7.76	7.54	4.40	2.81	1.20	0.0379	0.0446	0.0548	0.0532	0.0310	0.0199	0.0085
261830100150	393,078	393,094	4.54	5.38	6.53	6.78	4.41	3.14	1.59	0.0677	0.0803	0.0975	0.1012	0.0658	0.0468	0.0237
261830120050	283,505	283,516	5.21	6.19	6.78	6.79	4.50	2.90	1.37	0.0561	0.0666	0.0730	0.0731	0.0484	0.0312	0.0147
261830120055	68,790	68,793	5.51	6.63	6.98	6.96	4.62	2.86	1.41	0.0144	0.0173	0.0182	0.0182	0.0121	0.0075	0.0037
261830140010	140,394	140,399	5.23	5.67	6.31	6.95	4.87	3.16	1.67	0.0279	0.0302	0.0336	0.0370	0.0260	0.0168	0.0089
261830200050	577,287	242,846	5.58	6.44	7.08	7.17	4.85	2.86	1.36	0.0514	0.0594	0.0653	0.0661	0.0447	0.0264	0.0126
261830400100	372,137	372,153	5.02	6.10	6.64	6.89	4.57	2.96	1.39	0.0709	0.0862	0.0939	0.0974	0.0645	0.0418	0.0197
261830400150	923,064	923,100	5.21	6.46	6.92	7.02	4.60	2.93	1.35	0.1826	0.2266	0.2424	0.2462	0.1611	0.1027	0.0474

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
261830410150	385,852	385,868	5.08	6.01	6.77	6.99	4.65	3.03	1.48	0.0744	0.0880	0.0992	0.1024	0.0681	0.0445	0.0217
261830420300	1,374,890	1,374,940	4.50	5.15	5.77	6.43	4.10	2.68	1.24	0.2352	0.2687	0.3015	0.3359	0.2138	0.1399	0.0646
261830420300a	395,879	395,895	4.69	5.64	6.60	6.80	4.46	2.66	1.15	0.0705	0.0849	0.0992	0.1023	0.0670	0.0399	0.0173
261830440050	211,768	211,777	3.79	4.98	7.04	7.05	4.62	3.10	1.41	0.0305	0.0401	0.0567	0.0567	0.0372	0.0249	0.0114
261831100050	970,513	970,548	1.65	3.27	6.88	6.73	3.41	2.25	0.91	0.0608	0.1207	0.2534	0.2479	0.1255	0.0831	0.0335
261831120150	473,597	473,616	4.87	6.33	7.70	7.60	5.07	3.38	1.66	0.0875	0.1138	0.1385	0.1366	0.0912	0.0609	0.0298
261831130050	105,675	105,680	0.82	3.18	7.12	7.01	3.67	2.53	1.06	0.0033	0.0128	0.0286	0.0281	0.0147	0.0101	0.0043
261831130076	112,120	112,124	0.35	1.29	5.98	5.84	2.11	1.26	0.21	0.0015	0.0055	0.0255	0.0249	0.0090	0.0054	0.0009
261831430100	32,581	32,582	5.24	6.05	7.28	7.56	4.71	3.72	2.31	0.0065	0.0075	0.0090	0.0094	0.0058	0.0046	0.0029
261831430100a	395,787	395,801	5.57	6.32	7.20	7.36	4.91	3.53	2.12	0.0838	0.0950	0.1083	0.1106	0.0738	0.0531	0.0319
261832110040	46,767	46,770	4.16	3.50	7.40	7.30	3.99	2.78	1.16	0.0074	0.0062	0.0131	0.0130	0.0071	0.0049	0.0021
261832110040a	258,299	258,313	5.85	5.29	6.07	6.08	2.00	1.27	0.44	0.0573	0.0519	0.0596	0.0597	0.0196	0.0125	0.0043
261833100100	117,684	117,692	0.21	1.92	7.39	7.78	4.01	3.26	1.64	0.0009	0.0086	0.0330	0.0348	0.0179	0.0146	0.0073
261833100100a	718,865	718,913	4.16	5.46	5.80	6.54	4.08	2.32	1.13	0.1135	0.1490	0.1584	0.1784	0.1114	0.0634	0.0309
261833130050	1,754,500	1,754,613	3.60	3.77	3.42	4.07	1.93	0.88	0.31	0.2401	0.2511	0.2276	0.2709	0.1286	0.0583	0.0209
261833140050a	144,917	144,927	0.80	2.47	7.25	7.63	3.98	3.23	1.46	0.0044	0.0136	0.0399	0.0420	0.0219	0.0178	0.0081
261833240150	392,525	392,550	4.02	4.44	5.08	5.40	2.56	0.92	0.24	0.0600	0.0661	0.0757	0.0806	0.0381	0.0137	0.0036
261833410100	1,393,790	1,393,884	3.38	3.39	3.68	4.16	1.70	0.77	0.46	0.1788	0.1795	0.1946	0.2201	0.0898	0.0410	0.0244
261833420150	214,859	214,874	4.16	3.83	4.27	4.63	1.57	1.01	0.42	0.0340	0.0312	0.0349	0.0378	0.0128	0.0082	0.0034
261833420250	69,831	69,836	3.41	3.52	3.36	4.18	0.85	1.13	0.40	0.0090	0.0093	0.0089	0.0111	0.0023	0.0030	0.0011
261833420250a	14,422	14,423	3.73	3.17	3.52	5.06	1.13	3.32	1.45	0.0020	0.0017	0.0019	0.0028	0.0006	0.0018	0.0008
261833420350	77,022	77,027	2.91	3.67	2.00	4.01	1.33	1.83	0.56	0.0085	0.0107	0.0058	0.0117	0.0039	0.0054	0.0016
261833420350a	30,225	30,227	4.16	3.57	1.60	4.37	0.89	2.41	1.01	0.0048	0.0041	0.0018	0.0050	0.0010	0.0028	0.0012
261833440050	205,906	205,920	3.02	3.19	4.99	5.45	2.72	1.30	0.55	0.0236	0.0250	0.0390	0.0426	0.0213	0.0101	0.0043
261834120100	58,019	58,023	4.79	4.73	3.70	4.32	2.12	0.16	cc	0.0106	0.0104	0.0082	0.0095	0.0047	0.0004	cc

**TABLE 6**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR CHUMSTICK CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
261834120100a	790,925	790,988	4.85	4.95	5.06	6.22	3.77	2.43	cc	0.1457	0.1487	0.1519	0.1868	0.1132	0.0730	cc
261834220050	83,245	83,252	4.85	6.10	6.86	7.20	3.98	2.83	1.36	0.0153	0.0193	0.0217	0.0228	0.0126	0.0089	0.0043
261834220050a	366,553	366,579	4.16	5.39	6.88	7.12	4.04	2.82	1.37	0.0579	0.0750	0.0957	0.0991	0.0562	0.0392	0.0191
261834220100	711,984	712,037	5.44	6.14	5.57	6.83	4.60	3.61	2.38	0.1471	0.1661	0.1507	0.1846	0.1243	0.0977	0.0643
261834220100a	101,990	101,998	4.25	5.41	6.04	7.27	4.95	3.98	2.88	0.0165	0.0210	0.0234	0.0282	0.0192	0.0154	0.0111
261834300050	3,290,830	3,291,063	1.69	1.87	3.08	4.08	0.96	0.38	0.08	0.2112	0.2343	0.3852	0.5096	0.1199	0.0469	0.0097
Minimum AET			0.11	0.16	0.07	0.05	0.02	0.01	0.01	16.7	18.4	20.9	22.6	13.9	9.7	5.5
Maximum AET			7.06	7.38	8.13	8.26	6.10	5.08	3.42							
Permit-Exempt Parcel Average			4.28	4.83	5.43	5.83	3.74	2.66	1.52							

Note(s)

1. Parcel Identification Number From Chelan County GIS Database. In cases where more than one parcel had the same identification number, letters were added to distinguish among the parcels.
2. Area included as attribute for the parcel in the Chelan County GIS Database.
3. Area calculated for the Chelan County GIS polygon for the land parcel.
4. Average AET value calculated from one satellite image within the specified month.
5.  $(\text{AET mm/day} * 0.003280833 \text{ ft/mm}) * (\text{Calculated Parcel Area in square feet}) \div (24 \text{ hrs/day}) \div (60 \text{ min/hr}) \div (60 \text{ sec/min})$ .
6. na = not available. AET values were calculated for points spaced 30 meters apart. No grid points fell within the parcel boundaries.
7. cc = cloud cover prevented calculation of AET.

Abbreviation(s)

AET = actual evapotranspiration  
cfs = cubic feet per second  
ft = feet  
GIS = Geographic Information System  
mm = millimeter

**TABLE 7**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR MISSION CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct
221926210000	1,005,670	458,587	4.78	5.04	5.5	5.77	3.76	2.22	1.35	0.083	0.088	0.096	0.101	0.065	0.039	0.024
231904330300	106,404	106,415	3.75	5.12	6.53	7.07	4.85	2.92	1.59	0.015	0.021	0.026	0.029	0.020	0.012	0.006
231904330625	35,331	35,334	4.14	5.23	6.85	7.02	4.82	2.89	1.48	0.006	0.007	0.009	0.009	0.006	0.004	0.002
231904330635	30,188	30,191	4.15	5.21	6.89	6.96	4.77	2.91	1.54	0.005	0.006	0.008	0.008	0.005	0.003	0.002
231904331150	46,712	46,716	5.12	5.69	6.73	7.03	4.83	2.94	1.51	0.009	0.010	0.012	0.012	0.009	0.005	0.003
231904340435	45,315	45,320	3.95	5.11	6.36	7.04	4.82	2.9	1.52	0.007	0.009	0.011	0.012	0.008	0.005	0.003
231905490076	19,186	19,188	3.13	4.85	5.82	6.64	4.51	2.66	1.31	0.002	0.004	0.004	0.005	0.003	0.002	0.001
231905490077	22,986	22,988	3.23	4.85	5.77	6.72	4.5	2.56	1.27	0.003	0.004	0.005	0.006	0.004	0.002	0.001
231905520200		1,705	na <sup>6</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na
231905520200a	55,675	55,680	3.48	5.03	6.05	6.66	4.5	2.6	1.31	0.007	0.011	0.013	0.014	0.010	0.005	0.003
231907320000	1,490,820	452,159	3.37	4.52	4.83	4.86	3.57	2.87	1.98	0.058	0.078	0.083	0.083	0.061	0.049	0.034
231908110330	28,027	28,030	4.27	4.81	6.13	6.46	4.07	2.51	1.24	0.005	0.005	0.007	0.007	0.004	0.003	0.001
231908110330a	5,913	5,913	4.13	4.78	5.86	6.22	4.04	2.53	1.22	0.001	0.001	0.001	0.001	0.001	0.001	0.0003
231908110650	48,658	48,662	3.47	4.28	5.68	5.96	3.87	2.24	1.06	0.006	0.008	0.010	0.011	0.007	0.004	0.002
231908111200	346,425	346,455	3.57	4.01	5.1	5.51	3.16	1.79	0.68	0.047	0.053	0.067	0.072	0.042	0.024	0.009
231908140300	95,312	95,321	0.04	0.43	3.4	2.54	0.67	0.57	0.12	0.0001	0.002	0.012	0.009	0.002	0.002	0.0004
231908140325	216,342	216,361	cc <sup>7</sup>	cc	0.61	0.43	cc	cc	0.01	cc	cc	0.005	0.004	cc	cc	0.0001
231908140550	20,365	20,366	0.51	cc	cc	cc	cc	cc	cc	0.0004	cc	cc	cc	cc	cc	cc
231908440155	49,008	49,012	2.78	2.33	cc	cc	cc	cc	cc	0.0052	0.004	cc	cc	cc	cc	cc
231908440160	60,658	60,663	3.03	2.97	0.35	0.74	1.36	0.01	0.03	0.007	0.007	0.001	0.002	0.003	0.00002	0.0001
231908440165	78,135	78,142	2.91	2.69	1.39	1.58	1.47	0.17	0.07	0.009	0.008	0.004	0.005	0.004	0.000	0.000
231909110000	1,773,310	923,653	1.53	1.74	2.82	4.08	1.72	1.16	0.47	0.054	0.061	0.099	0.143	0.060	0.041	0.016
231909110050	87,126	86,527	4.35	4.9	5.23	5.82	3.75	2.39	1.22	0.014	0.016	0.017	0.019	0.012	0.008	0.004
231909220050	218,142	218,163	4.38	5.66	6.81	6.72	4.45	3.04	1.44	0.036	0.047	0.056	0.056	0.037	0.025	0.012
231909220100	153,080	153,095	4.36	5.62	6.69	6.6	4.23	2.95	1.26	0.025	0.033	0.039	0.038	0.025	0.017	0.007
231909220600	34,004	34,007	3.07	0.87	5.67	5.67	1.72	1.3	0.25	0.004	0.001	0.007	0.007	0.002	0.002	0.0003

**TABLE 7**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR MISSION CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep		Apr	May	Jun	Jul	Aug	Sep	Oct
231909220850	50,275	50,280	3.58	4.36	3.05	3.23	0.65	0.17	cc	0.007	0.008	0.006	0.006	0.001	0.0003	cc
231909220900	29,655	29,658	1.92	3.44	0.82	0.91	0.06		cc cc	0.002	0.004	0.001	0.001	0.0001		cc cc
231909230150	41,994	41,997	3.09	4.16	4.61	4.73	2.5	1.33	0.37	0.005	0.007	0.007	0.008	0.004	0.002	0.0006
231909320100	199,625	199,642	3.02	2.46	0.01	0.02	0.08		cc cc	0.023	0.019	0.0001	0.0001	0.001		cc cc
231909703020	20,778	20,780	2.97	3.31	cc	cc	cc	cc	cc	0.002	0.003	cc	cc	cc	cc	cc
231909703020a		2,202	na	na	na	na	na	na	na	na	na	na	na	na	na	na
231909703030		771	na	na	na	na	na	na	na	na	na	na	na	na	na	na
231909703030a	21,604	21,606	3.21	2.81	0.11	0.34	0.74		cc cc	0.003	0.002	0.000	0.0003	0.001	cc	cc
231909818005	155,231	155,246	2.22	3.82	5.99	5.63	3.07	2.02	0.59	0.013	0.022	0.035	0.033	0.018	0.012	0.0035
231909818006	57,737	57,742	3.11	4.85	6.01	5.77	3.24	2.17	0.68	0.007	0.011	0.013	0.013	0.007	0.005	0.0015
231909818015	95,710	95,719	0.61	1.92	5.37	4.96	2.03	1.46	0.18	0.002	0.007	0.020	0.018	0.007	0.005	0.0007
231909818050	408,670	408,707	2.49	2.06	1.08	3.44	2.19	1.36	2.33	0.039	0.032	0.017	0.053	0.034	0.021	0.0361
231909818073	87,394	87,403	0.43	1.46	2.54	4.45	1.02	1.02	0.37	0.001	0.005	0.008	0.015	0.003	0.003	0.0012
231909818075	94,023	94,032	4.28	5.51	6.78	6.88	4.6	3.07	1.56	0.015	0.020	0.024	0.025	0.016	0.011	0.0056
231909818075a		4,413	na	na	na	na	na	na	na	na	na	na	na	na	na	na
231909818080	231,337	231,360	4.19	5.14	6.56	6.53	4.21	2.87	1.41	0.037	0.045	0.058	0.057	0.037	0.025	0.012
231909818095	50,016	50,021	cc	cc	0.09	cc	cc	cc	cc	cc	cc	0.0002	cc	cc	cc	cc
231916210100	924,115	924,197	3.03	4.16	3.9	6.18	3.97	3.83	cc	0.106	0.146	0.137	0.217	0.139	0.134	cc
231916210150	55,791	55,796	1.86	0.67	1.48	2.65	2.4	0.84	cc	0.004	0.001	0.003	0.006	0.005	0.002	cc
231916230050	922,683	922,764	0.38	1.38	4	5.02	2.72	2.88	0.55	0.013	0.048	0.140	0.176	0.095	0.101	0.019
231916340050	5,197	5,197	5.56	6.16	6.81	7.48	5.1	4.01	cc	0.001	0.001	0.001	0.001	0.001	0.001	cc
231916340050a	63,894	63,900	2.88	5.76	7.02	7.08	4.52	3.31	cc	0.007	0.014	0.017	0.017	0.011	0.008	cc
231916340070	302,554	302,581	cc	0.04	2.53	2.11	0.67	0.82	cc	cc	0.000	0.029	0.024	0.008	0.009	cc
231916340080	73,692	73,698	cc	0.77	6.03	6	3.54	2.77	cc	cc	0.002	0.017	0.017	0.010	0.008	cc
231916340125	6,760	6,760	5.58	6.2	6.38	7.61	5.23	3.65	cc	0.001	0.002	0.002	0.002	0.001	0.001	cc
231916340125a	99,093	99,102	2.66	5.27	6.95	6.87	4.37	3.12	cc	0.010	0.020	0.026	0.026	0.016	0.012	cc
231916340175	120,123	120,134	4.45	5.84	6.6	7.03	4.7	3.17	cc	0.020	0.027	0.030	0.032	0.021	0.014	cc

**TABLE 7**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR MISSION CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
 Wenatchee Watershed Water Resource Technical Assistance  
 Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep		Apr	May	Jun	Jul	Aug	Sep	Oct
231916340175a	2,042	2,042	4.62	5.96	6.84	6.96	4.4	3.19	cc	0.0004	0.0005	0.001	0.001	0.000	0.0002	cc
231917110050	6,130	6,130	4.28	4.41	2.93	4.49	4.04	2.83	2.19	0.001	0.001	0.001	0.001	0.001	0.001	0.001
231917110070	50,983	50,987	2.44	2.56	0.19	2.7	2.17	0.73	1.37	0.005	0.005	0.0004	0.005	0.004	0.001	0.003
231917110070a	6,474	6,474	1.79	3.3	0.13	2.61	2.54	0.23	1.21	0.0004	0.001	0.00003	0.001	0.001	0.0001	0.0003
231917110080	27,354	27,356	2.86	2.1	2	4.17	2.44	1.53	1.27	0.003	0.002	0.002	0.004	0.003	0.002	0.001
231917110085	26,436	26,438	3.32	3.14	2.68	4.14	3.27	1.34	1.03	0.003	0.003	0.003	0.004	0.003	0.001	0.001
231917110260	163,578	163,592	3.34	3.46	3.65	4.57	2.65	1.83	1.43	0.021	0.021	0.023	0.028	0.016	0.011	0.009
231917110270	86,748	86,756	4.6	4.8	3.17	4.36	3.4	1.2	0.7	0.015	0.016	0.010	0.014	0.011	0.004	0.002
231917110350	58,135	58,140	0.93	1.47	0.65	2.89	1.55	0.52	0.83	0.002	0.003	0.001	0.006	0.003	0.001	0.002
231917130075	47,321	47,325	1.31	1.32	1.49	4.81	2.96	1.95	1.81	0.002	0.002	0.003	0.009	0.005	0.004	0.003
231917130075a	6,381	6,382	4.95	4.7	0.61	2.1	1.52	0.32	0.71	0.001	0.001	0.000	0.001	0.0004	0.0001	0.0002
231917210050	1,502,060	1,502,180	2.91	2.86	1.94	3.28	1.83	1.4	1.53	0.166	0.163	0.111	0.187	0.104	0.080	0.088
231917230100	746,286	746,341	1.75	1.7	1.88	2.59	1.87	1.82	1.6	0.050	0.048	0.053	0.074	0.053	0.052	0.045
231917340100	80,883	80,889	2.06	1.67	0.02	cc	0.01	cc	cc	0.006	0.005	0.000	cc	0.00003	cc	cc
231918400100	808,907	808,964	4.13	5.57	6.13	6.89	5.7	4.61	3.5	0.127	0.171	0.188	0.212	0.175	0.142	0.108
231918400100a	704,903	704,953	1.27	1.15	0.67	1.03	0.64	0.02	0.12	0.034	0.031	0.018	0.027	0.017	0.001	0.003
231918400100b	13,501	13,502	3.75	4.74	1.08	3.14	3.54	0.76	1.38	0.002	0.002	0.001	0.002	0.002	0.000	0.001
231920320050	140,248	140,257	1.8	3.47	4.57	5.79	1.51	4.44	cc	0.010	0.018	0.024	0.031	0.008	0.024	cc
231920320050a	54,108	54,111	0.24	1.25	3.98	3.51	1.41	2.26	cc	0.001	0.003	0.008	0.007	0.003	0.005	cc
231920320150	1,004,760	1,004,827	2.04	1.98	2.7	3.33	1.4	2.03	cc	0.078	0.076	0.103	0.127	0.054	0.077	cc
231920320150a	144,660	144,669	4.67	4.95	1.68	1.75	1.56	0.47	cc	0.026	0.027	0.009	0.010	0.009	0.003	cc
231929330025	125,260	125,267	3	4.14	5.01	5.51	3.59	1.8	0.89	0.014	0.020	0.024	0.026	0.017	0.009	0.004
231929330100	94,026	94,031	2.27	2.12	2.05	2.17	0.75	0.07	0.21	0.008	0.008	0.007	0.008	0.003	0.000	0.001
231929330255	130,754	130,762	1.33	2.11	4.88	5.13	2.6	2.08	1.53	0.007	0.010	0.024	0.025	0.013	0.010	0.008
231930440050	224,926	224,939	2.86	3.31	2.42	3.99	1.12	1.45	1.13	0.024	0.028	0.021	0.034	0.010	0.012	0.010
231931410030	106,008	106,014	1.75	1.76	3	4.57	1.21	1.17	0.89	0.007	0.007	0.012	0.018	0.005	0.005	0.004
231931410030a	14,245	14,246	1.99	0.45	0.2	0.47	cc	cc	cc	0.001	0.0002	0.0001	0.000	cc	cc	cc

**TABLE 7**

**AVERAGE ACTUAL EVAPOTRANSPIRATION FOR MISSION CREEK SUBWATERSHED LAND PARCELS IDENTIFIED AS HAVING PERMIT-EXEMPT WELLS INSTALLED AFTER JUNE 3, 1983**  
Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

Parcel Number <sup>1</sup>	Parcel Area (square feet)		Average Parcel AET <sup>4</sup> (mm water/day)							Average Parcel AET <sup>5</sup> (cfs)						
	GIS Attribute <sup>2</sup>	Calculated <sup>3</sup>	Apr	May	Jun	Jul	Aug	Sep		Apr	May	Jun	Jul	Aug	Sep	Oct
231931410040	194,713	194,723	2.54	1.63	1.89	3.04	0.95	0.33	0.42	0.019	0.012	0.014	0.023	0.007	0.002	0.003
231931410040a	16,290	16,291	2.86	0.97	0.14	0.92	cc	cc	cc	0.002	0.001	0.0001	0.001	cc	cc	cc
231931410110	365,217	365,235	2.85	2.95	3.72	5.16	3.09	2.59	2.03	0.039	0.041	0.052	0.072	0.043	0.036	0.028
231931440050a	218,868	218,878	3.34	3.09	3.36	4.26	2.22	1.7	1.24	0.028	0.026	0.028	0.035	0.018	0.014	0.010
231932000050	9,002,360	9,002,868	3.61	3.49	3.4	4.35	2.72	1.86	1.68	1.233	1.192	1.164	1.488	0.931	0.636	0.576
231932220055	262,171	262,187	3.1	2.54	1	1.4	0.55	0.05	0.06	0.031	0.025	0.010	0.014	0.005	0.0005	0.001
231932220060	108,814	108,820	5.65	5.93	3.58	6.14	4.21	1.87	2.9	0.023	0.024	0.015	0.025	0.017	0.008	0.012
Minimum AET			0.04	0.04	0.01	0.02	0.01	0.01	0.01							
Maximum AET			5.65	6.2	7.02	7.61	5.7	4.61	3.5							
Permit-Exempt Parcel Average			3.03	3.48	3.69	4.5	2.82	1.95	1.13							

Note(s)

1. Parcel Identification Number From Chelan County GIS Database. In cases where more than one parcel had the same identification number, letters were added to distinguish among the parcels.
2. Area included as attribute for the parcel in the Chelan County GIS Database.
3. Area calculated for the Chelan County GIS polygon for the land parcel.
4. Average AET value calculated from one satellite image within the specified month.
5.  $(\text{AET mm/day} * 0.003280833 \text{ ft/mm}) * (\text{Calculated Parcel Area in square feet}) \div (24 \text{ hrs/day}) \div (60 \text{ min/hr}) \div (60 \text{ sec/min})$ .
6. na = not available. AET values were calculated for points spaced 30 meters apart. No grid points fell within the parcel boundaries.
7. cc = cloud cover prevented calculation of AET.

Abbreviation(s)

AET = actual evapotranspiration  
cfs = cubic feet per second  
ft = feet  
GIS = Geographic Information System  
mm = millimeter

**TABLE 8**

**COMPARISON OF THE CUMULATIVE OUTDOOR WATER USE FROM PERMIT-EXEMPT WELLS IN THE  
CHUMSTICK CREEK SUBWATERSHED WITH MEAN FLOW IN CHUMSTICK CREEK  
AND MINIMUM INSTREAM FLOWS IN THE WENATCHEE RIVER AT PESHASTIN**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>
Permit Exempt AET (cfs) <sup>1</sup>	16.7	18.4	20.9	22.6	13.9	9.7	5.5
Mean Gage Flow (cfs) <sup>2</sup>	23.6	16.2	9.2	4.0	2.8	3.9	1.7
AET Percent of Mean Gage Flow	70.8%	113.6%	227.2%	565.0%	496.4%	248.7%	323.5%
Minimum Instream Flow Day 1 (cfs) <sup>3</sup>	1,300	2,200	3,500	1,900	1,000	820	750
Minimum Instream Flow Day 15 (cfs) <sup>3</sup>	1,750	2,800	2,600	1,400	840	780	700

Note(s)

1. Sum of average parcel AET values for parcels with permit-exempt wells installed after the 1983 Instream Flow Rule.
2. Mean flow for the 3-year record at Gage 45C060 near the mouth of Chumstick Creek.
3. WAC 173-545-050: 1983 Minimum instream flows for control station 12-4590.00 located in the Wenatchee River at Peshastin.

Abbreviation(s)

AET = actual evapotranspiration  
cfs = cubic feet per second  
RM = river mile  
WAC = Washington Administrative Code



**TABLE 9**

**COMPARISON OF THE CUMULATIVE OUTDOOR WATER USE FROM PERMIT-EXEMPT WELLS IN THE MISSION CREEK SUBWATERSHED WITH MEAN FLOW IN MISSION CREEK AND MINIMUM INSTREAM FLOWS**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>
Permit Exempt AET (cfs) <sup>1</sup>	2.7	2.9	3.1	3.9	2.4	1.8	1.1
Mean Gage Flow (cfs) <sup>2</sup>	40.3	38.4	17.2	2.9	0.5	0.8	2.1
AET Percent of Mean Gage Flow	6.7	7.6	18.2	133.8	465.3	232.8	54.3
Instream Flow Day 1 (cfs) <sup>3</sup>	22	40	28	14	7	4	4
Instream Flow Day 15 (cfs) <sup>3</sup>	40	40	20	10	5	4	5

Note(s)

1. Sum of average parcel AET values for parcels with permit-exempt wells installed after the 1983 Instream Flow Rule.
2. Mean flow for the 3-year record at the instream control point Gage 45E070 at RM 0.2 of Mission Creek.
3. WAC 173-545-050: 1983 Minimum Instream flows.

Abbreviation(s)

AET = actual evapotranspiration  
cfs = cubic feet per second  
RM = river mile  
WAC = Washington Administrative Code

**TABLE 10**

**EVALUATION OF THE UNCERTAINTY OF ACTUAL EVAPOTRANSPIRATION ESTIMATES IN  
CHUMSTICK CREEK SUBWATERSHED ASSUMING AN ACCURACY OF +/- 15 PERCENT**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

	Apr	May	Jun	Jul	Aug	Sep	Oct
Lower Estimate of AET <sup>1</sup>	14.2	15.6	17.8	19.2	11.8	8.2	4.7
Higher Estimate of AET <sup>2</sup>	19.2	21.2	24.0	26.0	16.0	11.2	6.3
Mean Gage Flow (cfs) <sup>3</sup>	23.63	16.2	9.2	4.0	2.8	3.9	1.7
Lower AET Percent of Mean Gage Flow	60.1%	96.7%	193.3%	480.3%	426.5%	210.3%	279.9%
Higher AET Percent of Mean Gage Flow	81.3%	130.9%	261.5%	649.8%	577.1%	284.6%	378.7%
Instream Flow Day 1 (cfs) <sup>4</sup>	1,300	2,200	3,500	1,900	1,000	820	750
Instream Flow Day 15 (cfs) <sup>4</sup>	1,750	2,800	2,600	1,400	840	780	700

Note(s)

1. 15% less than the sum of average parcel AET values for parcels with permit-exempt wells installed after the 1983 Instream Flow Rule.
2. 15% greater than the sum of average parcel AET values for parcels with permit-exempt wells installed after the 1983 Instream Flow Rule.
3. Mean flow for the 3-year record at Gage 45C060 near the mouth of Chumstick Creek..
4. WAC 173-545-050: 1983 Minimum instream flows for control station 12-4590.00 located in the Wenatchee River at Peshastin.
5. WAC 173-545-100: Maximum amount of water flow that can be withdrawn at control station 12-4590.00 located in the Wenatchee River at Peshastin.

Abbreviation(s)

AET = actual evapotranspiration  
cfs = cubic feet per second  
RM = river mile  
WAC = Washington Administrative Code

**TABLE 11**

**EVALUATION OF THE UNCERTAINTY OF ACTUAL EVAPOTRANSPIRATION ESTIMATES IN  
MISSION CREEK SUBWATERSHED ASSUMING AN ACCURACY OF +/- 15 PERCENT**

Wenatchee Watershed Water Resource Technical Assistance  
Chelan County, Washington

	Apr	May	Jun	Jul	Aug	Sep	Oct
Lower Estimate of AET <sup>1</sup>	2.3	2.5	2.6	3.3	2.0	1.5	1.0
Higher Estimate of AET <sup>2</sup>	3.1	3.4	3.6	4.5	2.7	2.0	1.3
Mean Gage Flow (cfs) <sup>3</sup>	40.3	38.4	17.2	2.9	0.5	0.8	2.1
Lower AET Percent of Mean Gage Flow	5.7%	6.5%	15.4%	113.7%	395.5%	197.9%	46.1%
Higher AET Percent of Mean Gage Flow	7.8%	8.8%	20.9%	153.9%	535.1%	267.7%	62.4%
Instream Flow Day 1 (cfs) <sup>4</sup>	22	40	28	14	7	4	4
Instream Flow Day 15 (cfs) <sup>4</sup>	40	40	20	10	5	4	5

Note(s)

1. 15% less than the sum of average parcel AET values for parcels with permit-exempt wells installed after the 1983 Instream Flow Rule.
2. 15% greater than the sum of average parcel AET values for parcels with permit-exempt wells installed after the 1983 Instream Flow Rule.
3. Mean flow for the 3-year record at the instream control point Gage 45E070 at RM 0.2 of Mission Creek.
4. WAC 173-545-050: 1983 Minimum Instream flows.

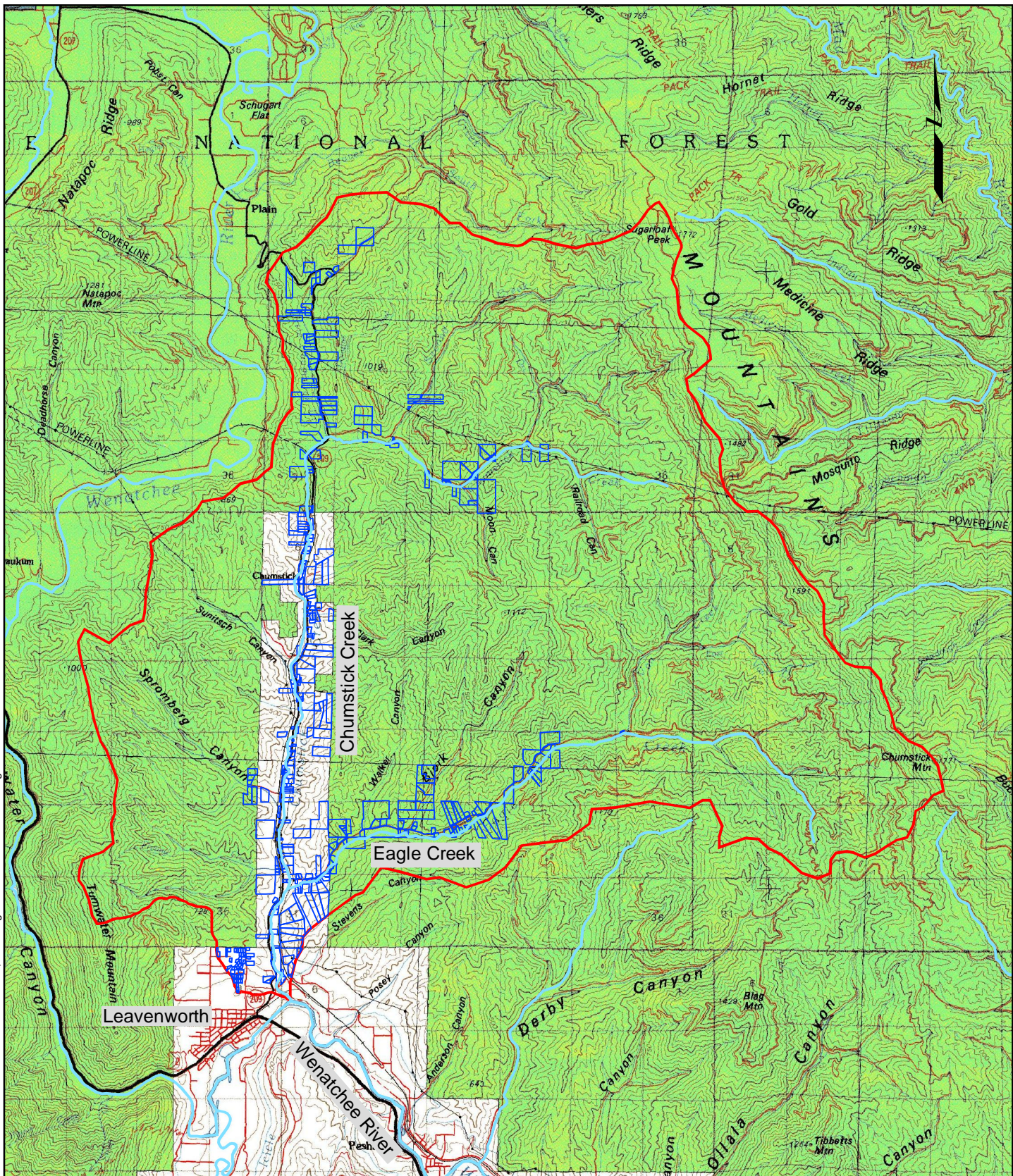
Abbreviation(s)

AET = actual evapotranspiration  
cfs = cubic feet per second  
RM = river mile  
WAC = Washington Administrative Code

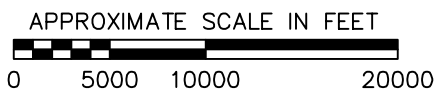
**FIGURES**

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Map Courtesy of USGS



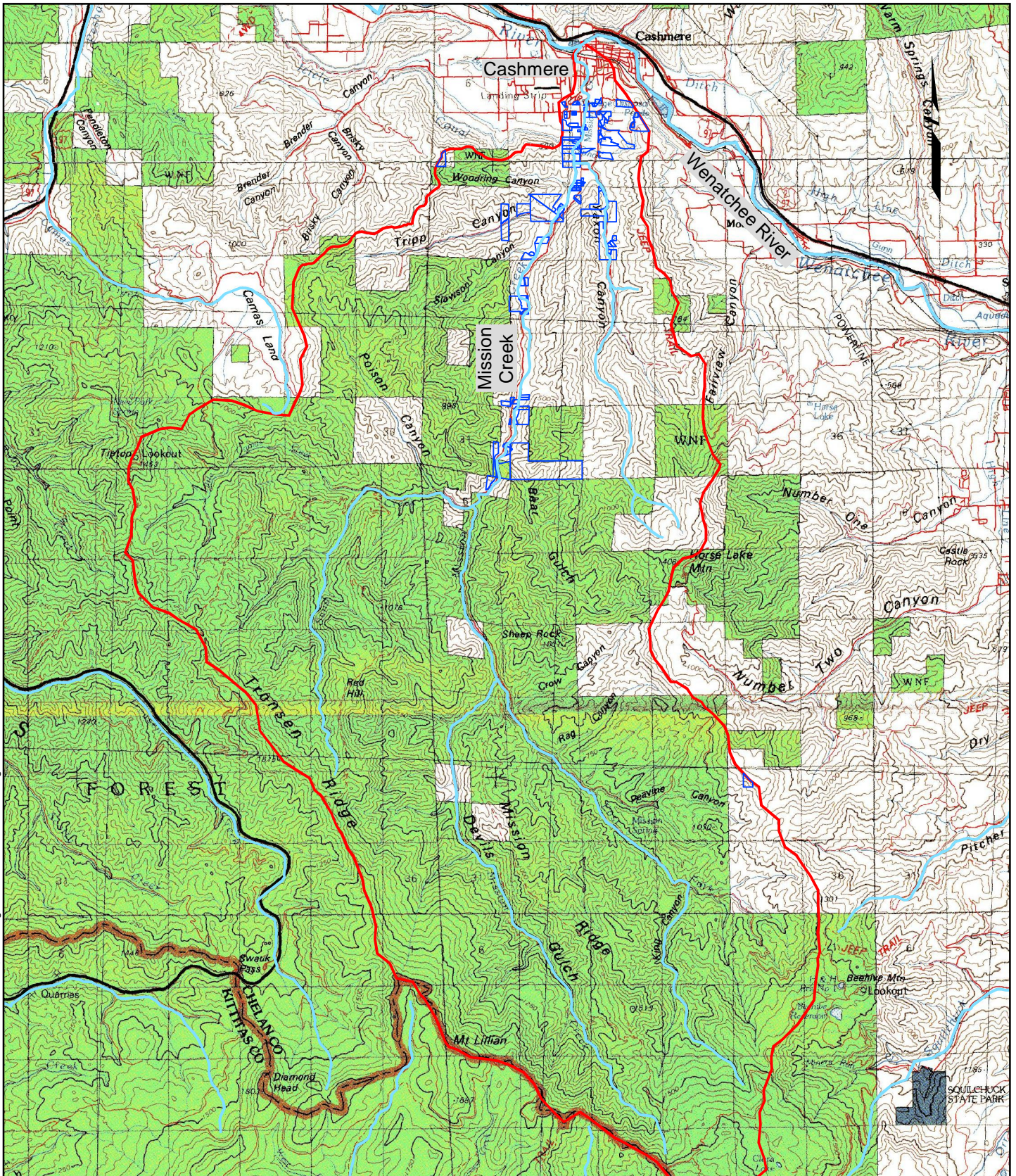
- Subwatershed Boundary
- Parcel with Permit-Exempt Well

**CHUMSTICK CREEK SUBWATERSHED LAND  
 PARCELS WITH PERMIT-EXEMPT WELLS**  
 Wenatchee Watershed Water Resource  
 Technical Assistance  
 Chelan County, Washington

By: GSM	Date: 5-28-2009	Project No. 12817-002
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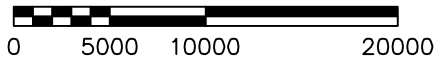
<b>AMEC Geomatrix</b>	Figure 1
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Map Courtesy of USGS

APPROXIMATE SCALE IN FEET



- Subwatershed Boundary
- Parcel with Permit-Exempt Well

**MISSION CREEK SUBWATERSHED  
 LAND PARCELS WITH PERMIT-EXEMPT WELLS**  
 Wenatchee Watershed Water Resource  
 Technical Assistance  
 Chelan County, Washington

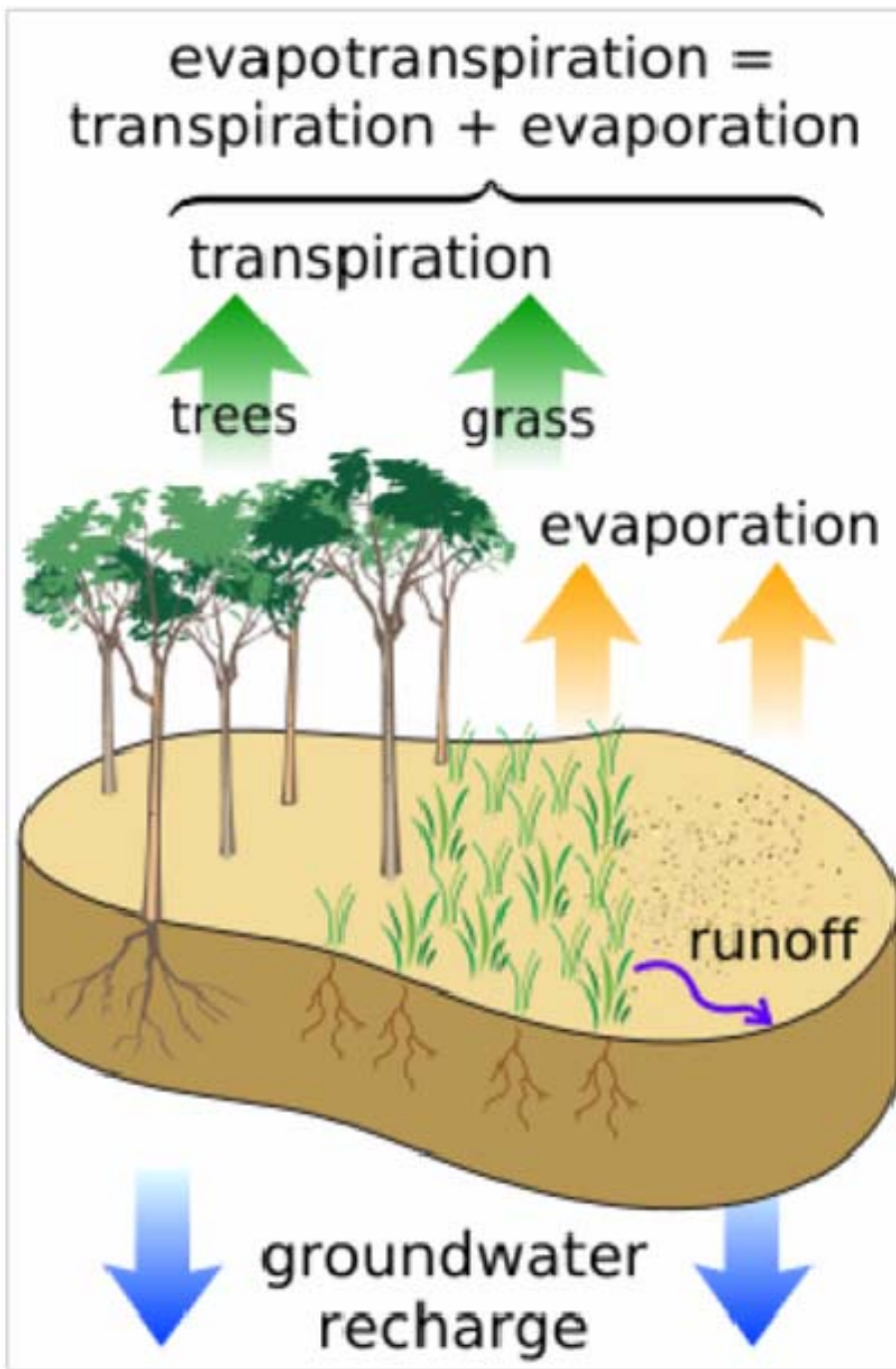
By: GSM

Date: 5-28-2009

Project No. 12817-002

**AMEC Geomatrix**

Figure 2



Water cycle of the Earth's surface, showing the individual components of transpiration and evaporation that make up evapotranspiration. Other closely related processes shown are runoff and groundwater recharge.

Resource: Wikipedia, 2004, Evapotranspiration: Wikipedia, The Free Encyclopedia, July 22, 2004, 10:55 UTC, Wikimedia Foundation, Inc., August 10, 2004, <http://en.wikipedia.org/w/index.php?title=Plagiarism&oldid=5139350> (accessed May 19, 2009).

WATER CYCLE OF THE EARTH'S SURFACE  
Wenatchee Watershed Water Resource  
Technical Assistance  
Chelan County, Washington

By: SGE	Date: 05/19/09	Project No. 12817.002
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**AMEC Geomatrix**

Figure 3