



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
 Application for Change
REPORT OF EXAMINATION
 TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

- Surface Water** (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)
- Ground Water** (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE May 1, 1944	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER 808-D
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NAME
Sun Ranch, Inc

ADDRESS (STREET) 5769 Road 3 NE	(CITY) Moses Lake	(STATE) WA	(ZIP CODE) 98837
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PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE DENIED	MAXIMUM ACRE -FEET PER YEAR DENIED
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QUANTITY, TYPE OF USE, PERIOD OF USE
DENIED

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL
 Well 1, original well, 1,600 feet South and 500 feet West from the NE corner of Section 24, within the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$
 Well 2, proposed well, approximately 700 feet North and 700 feet West from the SE corner of Section 13, within the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
SE $\frac{1}{4}$ NE $\frac{1}{4}$	24	19 N.	27 E.	41	Grant
SE $\frac{1}{4}$ SE $\frac{1}{4}$ (Proposed)	13	19 N.	27 E.	41	Grant

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)
Parcel 161495001		
Parcel 161428000		

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

DENIED

DESCRIPTION OF PROPOSED WORKS

Sun Ranch, Inc. plan to provide single domestic, stock watering and irrigation of 38 acres from two wells.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE: NA	COMPLETE PROJECT BY THIS DATE: NA	WATER PUT TO FULL USE BY THIS DATE: NA
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REPORT

BACKGROUND

The examination of Change/Transfer Application CG3-*00896S submitted by Sun Ranch, Inc. (Sun Ranch) on October 4, 2007 was led by consultants from GeoEngineers, Inc. contracted as part of Ecology's cost reimbursement program to facilitate the phased processing of the application. Karen Tusa of the Water Resources Program, Eastern Region, Department of Ecology (Ecology) oversaw the examination and Kevin Brown of Ecology also provided review.

A Declaration of Ground Water Claim (Declaration Claim Number 896) was made by Clinton Cordell for 1,000 gpm and 400 acre feet from a well for domestic, stock watering and seasonal irrigation use on 70 acres within a portion of the NE $\frac{1}{4}$ of Section 24, T.19 N., R. 27 E. A Certified Ground Water Right 808-D, with a priority date of May 1, 1944, was issued on November 19, 1948 for 1,000 gpm and 315 acre-feet. The applicant owns 65.48 acres (including 6.38 acres owned by the applicant's daughter) of the 70-acre original place of use according to Grant County tax parcel information.

Sun Ranch proposes to add a point of withdrawal and transfer the place of use from the original 70 acres in Section 24 to 60 acres in Section 24 and 10 acres in Section 13 near Moses Lake, Washington. A summary of the proposed changes to Ground Water Certificate No. 808-D is presented in Table 1.

Table 1 Summary of Existing Water Right and Proposed Changes

Attributes	Existing	Proposed
Name	Clinton Cordell	Sun Ranch, Inc.
Priority Date/Date of Change Application	Priority Date: May 1944	Date of Change Application: June 4, 2007
Instantaneous Quantity (Qi)	1,000 gpm	Same
Annual Quantity (Qa)	315 acre-feet per year	Same
Source	Well	Two Wells
Point of Withdrawal	Well: SE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 24, T.19N., R.27E. W.M.	Proposed Additional Well: SE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 13, T.19N., R.27E. W.M.
Purpose of Use	Domestic, Stock Watering and Irrigation Supply	Same
Period of Use	Seasonal (Irrigation) Year-Round (Domestic, Stock Watering)	Same
Place of Use	70 acres E $\frac{1}{2}$ NE $\frac{1}{4}$ and E $\frac{1}{2}$ SW $\frac{1}{4}$ of Section 24; T.19N., R.27E. W.M.	60 acres (a portion of the existing area) and 10 acres: SE $\frac{1}{4}$ of Section 13; T.19N., R.27E. W.M.

A notice of application was duly published in accordance with RCW 90.03.280 in the Columbia Basin Herald on October 8 and 15, 2007 and no protests were received.

SEPA

Environmental review under State Environmental Policy Act (SEPA) is required for many projects; however, some minor projects are categorically exempt from SEPA. Appropriations of one cfs or less of surface water, or of 2,250 gpm or less of ground water, for any purpose, and appropriations of 50 cfs or less for surface water used for irrigation are categorically exempt from SEPA. See WAC 197-11-305. This application is categorically exempt from the provisions of the SEPA of 1971, Chapter 43.21C RCW

INVESTIGATION

The examination team of GeoEngineers and Ecology reviewed Sun Ranch's change application and supporting documents contained in the Ecology file, communicated regularly with senior Ecology staff to discuss direction of the work and any issues that arose, met and communicated with the applicant to review the water rights examination process and obtain current information, obtained and reviewed reports and other documents relevant to the application, and conducted a field examination of the key features of the application (e.g., proposed point of withdrawal, pumping and conveyance systems, and place of use).

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

- the State Water Code, specifically WACs 173-124A and 173-134A;
- United States Geological Survey (USGS) topographic maps;
- Ecology's water right files, water right database (WRTS), and on-line Washington State Well Log Viewer;
- Hansen, A. J., Jr., Vaccaro, J. J., and Bauer, H. H., 1994, Ground-water flow simulation of the Columbia Plateau Regional Aquifer System, Washington, Oregon, and Idaho: U.S. Geological Survey (USGS) Water-Resources Investigations (WRI) Report 91-4187;
- Bauer, H. H, and Hansen, A. J., Jr., 2000, Hydrology of the Columbia Plateau Regional Aquifer System, Washington, Oregon, and Idaho, USGS WRI 96-4106;
- aerial photographs of Grant County from 1983, 1996, and 1999 to 2007;
- Washington Irrigation Guide Appendix A, Climate Stations for Consumptive Use (USDA 1985);
- information submitted by and conversations and/or meetings with John Enright; and
- a site visit on April 23, 2008.

Existing Water Right Documents

The original Declaration Ground Water Claim (896) for the subject water right change (CG3-*00896S), one of three submitted by Clinton Cordell in June 1948, resulted in the allocation of Certificate of Ground Water Right (808-D) on November 19, 1948. At the time of the Declaration, the water requirement was calculated as 4.5 acre-feet per acre for the 70 acres. Sun Ranch has also requested a change (CG3-*00897S) for one of the other Declarations (897) with a Certificate of Ground Water Right (809-D). The second change application is also being processed concurrently as part of the cost reimbursement program. In total, the two Sun Ranch change applications request the withdrawal of 2,000 gpm and 765 acre-feet from four wells, with new wells proposed to be used for both change applications. The points of withdrawal and the places of use are unique to both Sun Ranch water rights.

State Water Code

Chapters 90.03 and 90.44 RCW authorize the appropriation of public water for beneficial use and describe the process for obtaining water rights including the process to amend or change existing rights. Laws specifically governing the water right permitting process are RCW 90.03.250 through 90.03.340 and RCW 90.44.060.

The existing and proposed project lies within the Quincy Ground Water Subarea. Management policy is provided in WAC 173-134A.

Source Area

The existing and proposed points of withdrawal are both within the Quincy ground water subarea as established pursuant to RCW 90.44.130 and set forth in Chapter 173-134 WAC. The likely source aquifer for both is/will be the Quincy shallow zone unconsolidated "basalt zone" of rock units in the Quincy ground water subarea consisting of basalt flows of Tertiary age (WAC 173-124-050). The horizontal boundaries of the extent of the Quincy groundwater subarea are provided in WAC 173-124-060. Ground water permit changes are permitted under WAC 173-134A-070. The Quincy ground water subarea was used for identifying water rights and applications that may be impacted by the requested change application.

Site Visit

Joel Purdy, a Senior Hydrogeologist with GeoEngineers, conducted a site visit on April 23, 2008. John Enright of Sun Ranch gave a tour of the facilities and property. The tour included the inspection of three wells. The well that was subject to the original Declaration (Cordell Well) is located adjacent to a residence in the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 24. It is reportedly a 32-inch-diameter well dug to 55 feet. The Cordell Well is used to serve a single residence and irrigation of several fruit trees and reportedly the 28 acres of land to the west. The well is currently equipped with 3- and 5-hp pumps while a 30-hp pump is being repaired. Plans exist to reinstall the 30-hp pump. Another well (the "Circle" well) was examined that is constructed with a 12-inch-diameter casing reportedly to 150 feet. The well, located in the SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 24, was equipped with two pumps, 30-hp and 50-hp. No well log or other information was provided for this well. The association with the subject water right is unclear. This "Circle" well apparently will be used as the source of irrigation water in 2008 for the approximately 28 acres in southwest corner of the applicant's property and the water is applied by an existing center-pivot irrigation system installed shortly before the site visit. The third well (the "Office" well) is a 12-inch-diameter well reportedly drilled to 63 feet. It is located in the NW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 24 on parcel 161474000 and is reportedly used only for the nearby office. Its association with the subject water right is unknown. There are no active storage tanks or reservoirs in the system.

The 10-acre property (parcel 161429000) that is the location for the change of place of use in Section 13 was also examined. A concrete pad and unused, unconnected center-pivot irrigation system is located in the center of the 10-acre plot. An abandoned large-diameter dug well is located approximately 100 feet northwest of the concrete pad.

Hydrogeology in the Vicinity of CG3-*00896S

The project site lies within the Columbia River drainage basin within the lower Crab Water Resource Inventory Area (WRIA) 41. The hydrogeologic setting described below is applicable to the area in the vicinity of the Sun Ranch wells.

Wells in this area rely on unconsolidated and basalt aquifers. The basalt aquifer is a thick sequence of basalt flows known as the Columbia River Basalt (CRB) Group from the Tertiary Period. The overall thickness of these basalts varies from a few hundred feet to over 10,000 feet in eastern Washington. The basalt flows include the Saddle Mountain, Wanapum and Grande Ronde aquifers. The two main basalt aquifers in the vicinity are the relatively shallow Wanapum and the deep Grande Ronde. The most productive zones within the CRB occur principally in tabular zones at the contact between basalt flows. These zones generally form confined aquifers that are composed of scoriaceous basalts, cinder beds,

sediments, or volcanic ash. In the area around Moses Lake, the basalts are overlain by Quaternary deposits forming an unconsolidated near-surface zone that in places hosts an unconfined aquifer. The existing Sun Ranch Cordell well is completed in the unconsolidated aquifer.

The vertical groundwater movement component is generally downward except near discharge areas. These geologic structures may cause local anomalies to groundwater movement. Lateral groundwater movement is generally toward surface-drainage features where groundwater discharges (Bauer and Hansen 2000). The lateral groundwater movement in the shallow Wanapum unit is toward Moses Lake and Potholes Reservoir, whereas the groundwater in the deeper Grande Ronde unit is to the south and west toward the Columbia River (Hansen and others 1994).

There are records of over 200 wells in the vicinity of the Sun Ranch project, mostly used for domestic supply and irrigation of 80 acres or less. There have been no reported declines or well interference problems in the shallow management unit in this area.

The Sun Ranch well presumably draws water from the unconsolidated deposits overlying the Columbia River Basalts. Limited pumping test data for the well and historical withdrawal rates suggest that the source aquifer is capable of producing water at the requested instantaneous rate of 1,000 gpm.

Administrative Status of Water Bodies

The proposed project lies within the boundaries of the Quincy Ground Water Management Subarea as defined in Chapter 173-124 WAC. This Subarea covers the northern portion of the Columbia Basin Project (developed by the U.S. Department of Interior, Bureau of Reclamation), and lies mostly within Grant County. The Quincy Subarea is divided into two major ground water management units, deep and shallow, as defined by rule (Chapter 173-134A WAC). The Sun Ranch existing Cordell Well and proposed well are in the shallow water management unit.

The shallow water management unit is defined as the ground water hydraulically continuous between land surface and a depth of 200 feet into the Quincy basalt zone and includes all of the Quincy unconsolidated zone (WAC 173-134-040[9]). This area is subject to artificial recharge of ground water. This recharge results from leakage associated with the Bureau of Reclamation's Columbia Basin Irrigation Project that is comprised of a series of canals used for irrigation. Most of the canals system is unlined and significant leakage from this canal system recharges the shallow groundwater table. Deep percolation of applied irrigation water also contributes to groundwater recharge in the Subarea. Therefore, much of the water in the shallow management unit is artificially stored and is under the jurisdiction of the Bureau of Reclamation.

The deep water management unit is defined as all ground waters underlying the shallow water management unit (WAC 173-134A-040(4)). The basalt aquifers of the Quincy Ground Water Management Subarea are part of a large ground water reservoir occurring in a thick sequence of basalt flows known as the Columbia River Basalt Group.

Existing and Proposed Points of Withdrawal

The existing point of withdrawal associated with the subject change application produces water from the shallow management unit. The proposed new well would also be required to be constructed into unconsolidated sand and gravel deposits of the shallow water management unit to be in the same body of water.

The point of withdrawal for the original Declaration is reportedly a 32-inch-diameter well dug to 55 feet (the Cordell Well). The proposed additional point of withdrawal is a well that has not been drilled yet.

Water Rights

A search area to identify adjacent senior water rights was defined using a nominal 1-mile radius to include all adjacent Sections surrounding the Sun Ranch wells. The resulting area of approximately 9 square miles was conservatively chosen because impairment of groundwater rights beyond this distance is unlikely. This is based on the well reportedly being originally pumped at 1,000 gpm with 2 feet of drawdown. There are 52 ground water and two surface water permits and certificated rights located within the search area based on the search of Ecology's WRTS database reported on April 16, 2008.

There are 75 ground water and eight surface water claims that potentially could be within the search area based on the WRTS database. Only the sections are recorded for the claim locations. The claims process allowed users of water developed before 1917 for surface water and 1945 for ground water to register withdrawals. The state required users to register withdrawals during a "claims period" between 1969 and 1974, 1985 and again in 1998. A claim is not authorization to use the water, but a statement of claim. The validity of existing claims has not been determined in most cases and can only be determined by the Superior Court through adjudication.

GeoEngineers conducted a search of Ecology's well log files on May 7, 2008. There are records of over 200 wells located within the search area of the Sun Ranch irrigation supply wells. It is unknown how many of these are exempt domestic supply wells.

Evaluation of the Right and Beneficial Use Analysis

The Washington State Supreme Court, in *Okanogan Wilderness v. Town of Twisp and Department of Ecology*, 133 Wn.2d 769, 947 P.2d 732 (1997), found that applications for change may be granted only to the extent the water has been historically put to beneficial use, as beneficial use determines the measure of a water right. They also found that the existence and quantification of a water right must be determined, including whether or not the water right has been lost for non-use before the Department can approve a change or transfer of the water right.

The applicant owns 65.48 acres (including 6.38 acres owned by the applicant's daughter) of the 100-acre legal description of the original place of use according to Grant County tax parcel information. Examination of aerial photographs of the place of use indicated that there has been irrigation of three small portions of the applicant's land: a 9.25-acre area directly north of the daughter's residence in the northwest corner of the property; a 1.2-acre area of fruit trees near the Cordell Well; and a 27.4-acre pasture near the center of the property. The three areas total 37.85 acres. The evaluation of aerial photographs from 1983, 1996, and 1999 to 2007 indicates that the irrigation appears to have occurred every year within the 1.2-acre area. Irrigation in the 9.25-acre area occurred since 1996, but not in 1983 and was not intense, likely to grow pasture grass for grazing. Irrigation appears to have occurred on the 27.4-acre pasture only in 2005, 2006 and 2007. According to the applicant, the area was proposed to be irrigated in 2008. Irrigation occurred in 2003 through 2007 on approximately 6 acres in five parcels within the original 100-acre place of use not owned by Sun Ranch. The conclusion is that only the 1.2-acre area has been consistently irrigated and the remaining 63.28 acres are subject to relinquishment for non-use during the period from 1983 to 2005.

On March 10, 2009, Ecology issued a letter to the applicant notifying him of the information obtained during the investigation, the lack of evidence of beneficial use, and a tentative determination that the right may have relinquished for non-use. The letter requested the applicant to provide any additional information to support the application. No additional information was submitted.

FINDINGS

Extent and Validity of G3-*00896S

The examination of historical aerial photographs indicates that Sun Ranch has consistently irrigated a total of approximately 1.2 acres. The remaining portion of the right on their property appears to have relinquished. Lacking evidence of beneficial use, the application for change is DENIED. Based on the tentative evaluation the right may have relinquished, an evaluation of public interest or impairment was not completed.

CONCLUSIONS

Based on the investigation conducted for this Application for Change, the application is denied.

REPORT BY: _____ Date: _____
Joel W. Purdy, LG, LHG

REVIEWED BY: _____ Date: _____
Kevin Brown, Dept. of Ecology

FINDINGS OF FACT AND DECISION

Upon reviewing the above report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Therefore, I ORDER a change be DENIED under Ground Water Change/Transfer Application Number CG3-*000896S specified in the foregoing report.

Signed at Spokane, Washington, this _____ day of _____, 2009.

Keith L. Stoffel
Water Resources Section Manager
Eastern Regional Office