OWYHEE IRRIGATION DISTRICT

Water Management and Conservation Plan

October 2018

This Water Management and Conservation Plan satisfies the State of Oregon requirements found in Oregon Administrative Rules (OAR) Chapter 690, Division 86 and the mandated federal contract requirements for water conservation and management under Section 210(b) of the Reclamation Reform Act.

Owyhee Irrigation District
Water Management and Conservation Plan

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Owyhee Irrigation District
Water Management and Conservation Plan

1. Introduction

Under the State of Oregon's regulations, Oregon Administrative Rules (OAR) Chapter 690, Division 86, irrigation districts are encouraged to develop a Water Management Conservation Plan (WMCP) to improve water resource management and ensure long-term water supply. A WMCP provides the framework for assessing existing and future water resource supply and demand. Additionally, a WMCP must be submitted if the irrigation district needs to transfer water rights from a place within their district to prevent forfeiture or when a district contracts for water from a federal project. Additionally, in order to meet the federal requirements for conservation and management under section 210 of the Reclamation Reform Act, irrigation districts must prepare a WMCP and submit it to the Oregon Water Resources Department (OWRD) for review and approval.

In December 2002, OWRD approved the Owyhee Irrigation District (OID) WMCP. This update of the OID WMCP has been prepared to comply with the latest OWRD WMCP guidance. Updated information will include improvements to the OID system, any additional acquired water sources, permits or right updates, and recent data on the efficiency and functionality of the operating system.

1.1. History of Area and the Owyhee Irrigation District

In the early 1800's scouts, Hudson's Bay trappers and traders visited the lands now associated with the Owyhee Project. According to local legend, the area was named for, or by, trappers native to Hawaii. The current pronunciation of Owyhee is only vaguely similar to the pronunciation of Hawaii by natives of the island. The Oregon Trail was established through the area in 1843, which brought permanent settlements to the area. Farming in the area was limited to the lands adjacent to streams where water could be lifted by waterwheels or diverted by small diversion structures for irrigating crops. At the beginning of the 20th century only about 6,000 acres (AC) were irrigated from the Owyhee Ditch which diverted water from the Owyhee River, from the Wilson Ditch which diverted from the Snake River and individual diversions from Succor Creek. The Gem Pumping Plant was constructed in 1912-13. At one time there were eight pumping districts in the area. Due to the high cost of pumping, interest became strong in developing storage for late-season irrigation; but site inaccessibility and construction costs were prohibitive at the time. In 1903 the Reclamation Service (today's Bureau of Reclamation) made surveys of irrigable lands and potential reservoir sites, to prepare investigative reports of possible storage sites. Based on investigation reports, the Bureau of Reclamation (Reclamation) issued a feasibility report in January of 1925 for the recommended construction of the Owyhee Project. The Owyhee Project was determined feasible on October 9, 1926 by the Secretary of the Interior, Hubert Work, and authorized for construction by President Calvin Coolidge on October 12, 1926.

The project plan was a single purpose project for irrigation, which included construction of the Owyhee Dam, main and lateral irrigation canals, and the drainage facilities for irrigation of 124,000 AC. Of the 124,000 AC planned for irrigation, 70,000 AC were new lands not irrigated, 41,000 AC were irrigated with water supplied by districts that pumped from the Snake River and 13,000 AC were irrigated with water supplied by the Owyhee Ditch which had an insufficient water supply. Construction of the project was completed in 1932, with the first irrigation water being delivered in 1935. The responsibility for operation and maintenance of the facilities except Owyhee Dam and related appurtenances were

transferred to the water users in 1952 by the Reclamation. In 1954 responsibilities for the operation and maintenance of Owyhee Dam were also transferred to the water users by Reclamation.

The water users include the seven irrigation districts once known as the North Board of Control and the Gem and Ridgeview Irrigation Districts known as the South Board of Control. The seven irrigation districts, once known as the North Board of Control, have been combined to form OID. OID lies to the west of the Snake River in Malheur County, Oregon and Owyhee County, Idaho near the towns of Ontario, Adrian and Nyssa, Oregon and Homedale, Idaho.

Source of water for the Owyhee Project is primarily late fall, winter and spring runoff from the Owyhee River Basin above the Owyhee Dam, which contains approximately 11,160 square miles and averages about 760,000 acre-feet (AF) of runoff annually. Irrigation water is stored behind Owyhee Dam in Lake Owyhee which has a storage capacity of 1,120,000 AF and a surface area of 13,900 AC when filled to its capacity. Irrigation water is released from Lake Owyhee through a 3.5 mile tunnel to Tunnel Canyon where headworks for the North and South Canals are located. The North Canal supplies water to the Mitchell Butte and Dead Ox Flat Divisions and the South Canal distributes water south to the Succor Creek Division. Water users try to maintain a two year supply of irrigation water in storage in Lake Owyhee due to the irregular flow of the Owyhee River. Pumping plants on the Snake River which provide irrigation water to 30,000 to 35,000 AC of lower elevation lands make possible the two year water supply in Lake Owyhee.

OID is governed by five directors each elected to a 3-year term. The OID Manager is responsible for daily operations oversight. There are 1,084 farms within OID that support a population of 4,173 people. Included are 646 full time farms with an average acreage of 85 acres, 438 part time farms with an average acreage of 24 acres, and 336 acres of urban lands that receive full irrigation service. There is a total of 67,267 acres serviced by OID, which will be used for analysis in this plan.

1.2. Location and Climate

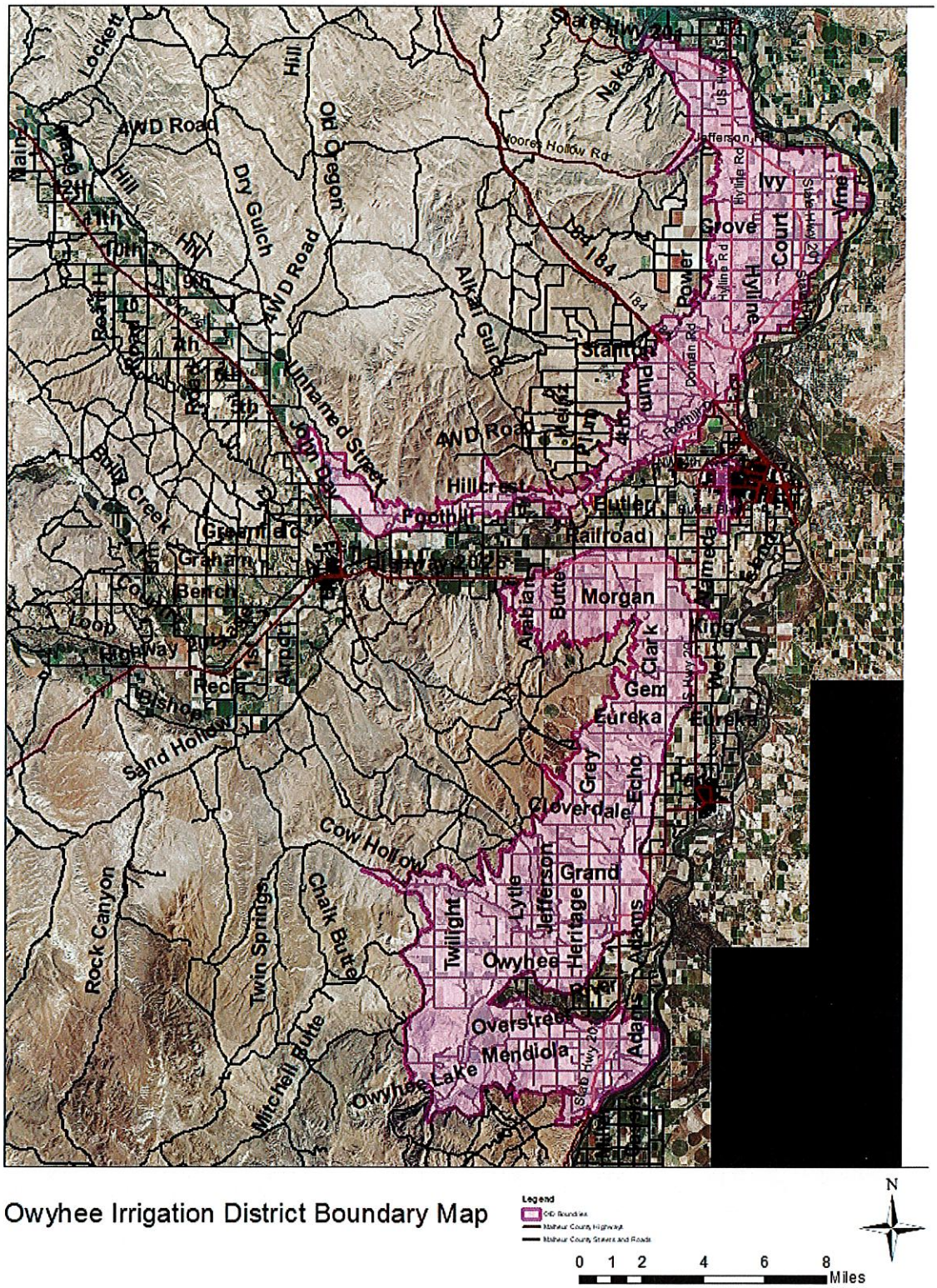
1.2.1. Location

OID is located in Malheur County, Oregon along the Snake River which forms the eastern boundary of Oregon and the western boundary of Idaho. The Malheur and Owyhee Rivers provide the main drainage through OID. Figure 1 displays the OID boundaries.

1.2.2. Climate

Climate in the area is characterized by low annual precipitation, moderate to high temperatures, and a good growing season. From weather data recorded at the Malheur Branch Experiment Station average annual precipitation is 10 .1 inches, with only 1. 5 inches falling during the months of June, July and August. July temperature averages 75 °F and normal maximum daily temperatures in July and August are typically ± 90 °F, with 39 days exceeding 90 °F. Maximum temperatures recorded during July and August have been 105 °F and 108 °F respectively.

Figure 1: OID District Boundary Map



Owyhee Irrigation District Boundary Map

The area has an average annual growing season of 178 days, with a maximum growing season of 198 days based on a minimum temperature of 28 °F (i.e. killing frost). Irrigation is required for all locally grown crops.

The irrigation season is typically from April 1st to October 15th. The OID board of directors may adjust the initial spring and last fall delivery dates if an extremely dry or early spring or a prolonged dry spell in the fall occurs.

Elevation of the irrigated area ranges from 2250 feet (ft) to approximately 2500 ft above mean sea level.

2. Water Supplier Description – OAR 690-086-0240

The purpose of the water supply description section is to provide an inventory of OIDs' sources of water and the facilities used to divert and deliver that water, as well as to assess the adequacy and reliability of supplies subject to potential future restrictions.

2.1. Summary of Water Rights – OAR 690-086-0240 (1)

Table 1 includes all water rights held and shared by OID, both certificated and permitted. Some of the water rights listed are held by the U.S. Bureau of Reclamation and are indicated as such. Attachment A includes all OID related water rights.

Table 1: OID Summary of Water Rights

OID SUMMARY OF WATER RIGHTS				
Water Right Certificates and Permits	**Location of Water Right Acreage**	**Acreage or Acre Feet of Storage**	**Conditions of Water Rights**	**Seasons of Use**
Certificates				
Certificate 75668 (held by OID & Reclamation)	Snake River, Dead Ox PP T15-17 R47	2088.3 AC	27.6 cfs 11/25/1912	April - October
Certificate 75671 (held by OID) Supplemental	Snake River, Dunaway PP T18-20 R46-47	5120.2 AC	64.0 cfs 6/7/1912 1/80 of 1 cfs/AC	April - October
Certificate 75672 (held by OID) Supplemental	Snake River, Dunaway PP T19-20 R46	894.1 AC	11.18 cfs 1/3/1921 1/80 of 1 cfs/AC	April - October
Certificate 75688 (held by Reclamation) Supplemental	Snake River, Dead Ox PP T15-17 R46,47,48	9315.2 AC	176.0 cfs 10/1/1951 1/40 of 1 cfs/AC and NTE 6.7 AF/AC	April - October

OID SUMMARY OF WATER RIGHTS				
Water Right Certificates and Permits	**Location of Water Right Acreage**	**Acreage or Acre Feet of Storage**	**Conditions of Water Rights**	**Seasons of Use**
Certificate 75689 (held by Reclamation) Supplemental	Snake River, Dunaway PP T18-19 R47	564.2 AC	14.1 cfs 10/1/1951 1/40 of 1 cfs/AC and NTE 6.7 AF/AC	April - October
Certificate 75690 (held by Reclamation) Supplemental	Snake River, Dunaway PP T18-20 R46-47	9987.2 AC	204.9 cfs 10/1/1951 1/40 of 1 cfs/AC and NTE 6.7 AF/AC	April - October
Certificate 75691 (held by the Bureau of Reclamation)	Owyhee Reservoir T15-21 R 45-47	59,546.1 AC-FT 357,276.5 AC-FT	Standard conditions for storage in impoundment over 10' in height and over 9.2 AF 2/15/1916 8/20/1924 Direct & Stored – 6.7 AF/A	November – March
Certificate 75691 (Held by the Bureau of Reclamation) Right to use waters of Owyhee River and water stored in Owyhee Reservoir	Downstream from Owyhee Reservoir at the North Canal T15-21 R 45-47	56,776.1 AC Supplemental 4,656.3 AC	Standard conditions for irrigation and must have Reclamation contract 446.6 cfs 2/14/1916 576.4 cfs 08/19/1924 1023 cfs of live flow Direct Flow - 1/60 of 1 cfs/AC and NTE 3.0 AF/AC	April - October
Certificate 75708 (held by OID) Supplemental	Snake River, Dunaway PP T18 R47 Sections 4, 5, 8, 9 & 17	262.5 AC	Standard conditions of irrigation 3.28 cfs (7/8/1913) 1/80 of 1 cfs/AC	April - October
Certificate 75709 (held by OID) Supplemental	Snake River, Dunaway PP T18 R47 Sections 9 & 16	71.0 AC	Standard conditions of irrigation 0.89 cfs (7/8/1913) 1/80 of 1 cfs/AC	April - October

OID SUMMARY OF WATER RIGHTS				
Water Right Certificates and Permits	**Location of Water Right Acreage**	**Acreage or Acre Feet of Storage**	**Conditions of Water Rights**	**Seasons of Use**
Certificate 75710 (held by OID) Supplemental	Snake River, Dunaway PP T18 R46 Sections 22-24	1300.8 AC	Standard conditions of irrigation 15.42 cfs (2/17/1912) 1/80 of 1 cfs/AC	April - October
Certificate 75712 (held by OID)	Snake River, Dead Ox Pump Plant (PP) T15-17 R46-47	6,715.6 AC	Standard conditions of irrigation 25.9 cfs (2/10/1912)	April - October
Certificate 75819 (held by OID)	Owyhee Reservoir and Owyhee River Hydropower T21 R45-46	2,825 Horsepower	95 cfs stored water (10/7/1981 & 10/15/1983) 15 cfs direct flow (9/9/1987)	Year Round
Certificate 75820 (held by OID)	Owyhee Reservoir and Owyhee River Hydropower T22 R45	7.926 Horsepower	225 cfs (10/13/1981)	Year Round
Certificate 75821 (held by OID)	Owyhee Reservoir and Owyhee River Hydropower T22 R45	13,419 Horsepower	1,640 cfs stored water (7/21/1986) & direct flow (9/9/1987)	Year Round
Permits				
Permit S54398 (held by Reclamation) - Secondary right related to Owyhee Reservoir	Downstream from Owyhee Reservoir at the North Canal T15-21 R45-47	1679.5 AC	Standard conditions for irrigation and must have Reclamation contract 7015.6 AC-FT (3/25/1991) 4.0 AF/AC	April - October
Permit S54398 (held by Reclamation - Supplemental Water Right for Owyhee Reservoir	Owyhee Reservoir T15-21 R46-47	Supplemental 74.4 AC	Standard conditions for storage in impoundment over 10' in height and over 9.2 AF 3/25/1991	November - March

2.2. Description of Supplier's Sources – OAR 690-086-0240 (2)

OID has two sources of water supply, the Owyhee River and the Snake River. These water supply sources are described in the following sections.

2.2.1. Owyhee River

Late fall, winter and spring runoff from the Owyhee River Basin above the Owyhee Dam is one of the primary water supply sources for OID. The Owyhee River Basin contains approximately 11,160 square miles, with an average annual runoff of approximately 760,000 AF. Irrigation water is stored behind Owyhee Dam in Lake Owyhee, which has a storage capacity of 1,120,000 AF and a surface area of 13,900 AC when filled to capacity. Irrigation water is released through a 3.5 mile tunnel to Tunnel Canyon, where the headworks for the North and South Canals are located. The North Canal supplies water to the Mitchell Butte and Dead Ox Flat divisions and the South Canal distributes water to the Succor Creek division. OID tries to maintain a two-year water supply in Lake Owyhee due to irregular runoff from the Owyhee River Basin from year to year.

The Owyhee Dam point of diversion is specifically described as within the NW ¼ SE ¼, Section 20; (**Owyhee Dam**) 200 ft south and 2010 ft west of the common corner to Sections 20 and 21 and (**Glory Hole Spillway)** 200 ft south and 1680 ft west from the common corner to Section 20 and 21 and within the NW ¼ SW ¼, Section 21, (**Tunnel No. 1**) 495 ft east and 264 ft south from the common corner to Sections 20 and 21, all in T 22 S, R 45 E.

The river outlet works is located near the left side of the dam and consists of a trashrack structure on the upstream face of the dam and three parallel 4.74 foot diameter steel-lined discharge conduits. Each of the steel conduits has a 4-by 4-foot emergency gate located 19 ft downstream of the intake. The conduit discharges are regulated by three 54-inch jet-flow gates.

The sluice gates are located near the right center of the dam and consist of a trashrack structure and three circular conduits, each controlled by two 5 by 5 foot slide gates. These gates were installed to divert the river when the diversion tunnel was plugged and considered non-operational. The controls for the gates have been removed and the electrical power has been disconnected. The gates were last operated sometime in the 1930s.

OID also operates a single unit 5 megawatt hydropower plant at Owyhee Dam. The hydropower plant is parallel to the tunnel and came on-line in spring 1985. A penstock for the hydropower plant is located downstream from the gate chamber.

Table 2 provides general, dimensional and hydraulics and hydrology information about Owyhee Dam.

Table 2: Owyhee Dam Information

General	
Reservoir	Lake Owyhee
Dam Type	Concrete, Gravity Arch
Watercourse	Owyhee River
Original Construction	1928-1932
National ID Number	OR00582
Longitude	-117.2430896
Latitude	43.6422
Dimensions	
Crest Elevation	2675 ft
Base Width	265 ft
Structural Height	417 ft
Hydraulic Height (Normal Operating Depth at Dam)	325 ft
Crest Length	833 ft
Crest Width	30 ft
Top of Archive Conservation Pool (Elevation)	2670 ft
Volume of Dam Construction Materials	537,500 cubic yards
Spillway Crest Elevation	2658 ft

Hydraulic & Hydrology	
Normal Water Surface Elevation	2670 ft
Spillway Type	Morning Glory controlled by a 60 ft. x 12 ft. ring gate
Total Water Storage at Elevation	715,000 AF
Spillway Capacity at Elevation	30,000 cfs at 2670 ft
Outlet Works Capacity at Elevation	2,200 cfs at 2670 ft
Hydrometeorological Report (HMR)	HMR 57
Auxiliary Spillway	No

The North Canal extends from the diversion works, located 3.5 miles from Owyhee Dam, northward 70 miles to the Snake River near Weiser, Idaho. Diversion capacity is 1,190 cubic ft per second (cfs). The canal contains several siphons and tunnels. The most noteworthy structure is the Malheur River Siphon, which carries water from the Mitchell Butte Division across the Malheur Valley to the Dead Ox Flat Division. The Malheur River Siphon consists of an 80-inch steel pipe siphon approximately 4.3 miles long with a monolithic concrete pipe section at each end. The design capacity of the siphon is 325 cfs.

The South Canal extends from the diversion works, located 3.5 miles from Owyhee Dam, through a 5-mile tunnel and then southward 37 miles to the Snake River south of Marsing, Idaho. The diversion capacity of the canal is 490 cfs. This canal provides water to the South Board of Control.

The extent of the OID distribution system facilities is summarized in Table 3.

Table 3: OID Distribution System Information

Distribution System Facilities	
Delivery System Component	Total Length in Miles
Tunnels-	7.7
Canals-	172
Unlined	145
Bentonite Lined	19
Concrete Lined	8
Laterals-	543
Unlined	441
Bentonite Lined	2
Concrete Lined	11
Converted to Pipelines	89
Gravity Pipelines-	89
Siphons-	8
Drains-	227

2.2.2. Snake River

In addition to the diversion works at Owyhee Dam, there are 3 pumping plants that divert water from the Snake River to different areas within OID.

The Dead Ox Pumping Plant is located on the Snake River about 5 miles north of Payette, Idaho delivers water to several areas in the Dead Ox Flat Division of OID. The Dead Ox pumping plant has five pump units with a total capacity of 190 cfs.

Dead Ox Pumping Plant (5 pump units): Lot 6, SE ¼ NE ¼, Section 2, T 17 S, R 47 E, WM.; 2630 ft south and 2050 east from N ¼ corner of Section 2 (Snake River Mile 363.08).

The Dunaway pumping facility includes both the Owyhee Ditch and Ontario-Nyssa Pumping Plants. These pumping plants are located on the Snake River about 5 miles south of Nyssa, deliver water to areas within the Mitchell Butte Division of OID. The Owyhee Ditch Pumping Plant has a capacity of 226 cfs and the Ontario-Nyssa Pumping Plant has a capacity of 130 cfs.

Dunaway Pumping Plant - Ontario-Nyssa Pumping Plant (4 pump units): Lot 3 (NE ¼ SW ¼), Section 18, T 20 S, R 47 E, WM. (Snake River Mile 394.2).

The Kingman Pump Lateral has 1 pump that is located 11.3 miles downstream from the Owyhee Dam has a pumping capacity of 5 cfs.

Kingman Pump Lateral: #1 - NW ¼ SW ¼, Section 31, T 20 S, R 47 E, WM; #2 – SE ¼ SE ¼, Section 12; #3 – NE ¼ SE ¼, Section 14, #4 – NE ¼ SE ¼, Section 22, T 21 S, R 46 E, WM.

2.2.3. MOU with Old Owyhee Ditch Improvement District

The Memorandum of Understanding (MOU) signed on May 27, 2014 between the Joint Committee of the Owyhee Project and the Old Owyhee Ditch Improvement District documents agreed to calculations and formulas for determining stored water used, natural river flow used and pump water used by the Old Owyhee Ditch Improvement District. This MOU serves as a long-term agreement with regard to the interpretation of the three contracts (i.e. 1928 Contract, 1967 Contract, and 1935 Contract) that exist between the districts and Old Owyhee, along with the U.S. Bureau of Reclamation. The MOU can be found as Attachment B.

2.3. System Schematic – OAR 690-086-0240 (3)

The schematics of OID's operational system with flow direction and points of diversion can be found in Attachment C. The flow measurement stations can be found in Attachment E.

2.4. Current Water Use and Return Flows – OAR 690-086-0240 (4)

2.4.1. Current Water Use

OID diverts approximately 312,000 AF of water in a normal year to fields of hay, wheat, sugar beets, onions, corn, beans, potatoes and barley. Table 4 shows the seasonal water diversions (i.e. average, high and low water years) and Table 5 shows the tabulated OID water use summaries for 2006 through 2016 for each major point of diversion including total annual diversions and peak month diversions. On an annual basis, the peak month diversions for each permit and the highest monthly total diversions also need to be reported to OWRD.

On an average year, the water allotment is four AF per acre of irrigated land. Plus excess water with an additional cost per acre foot of usage.

Table 4: Seasonal Water Diversions (2006 - 2017)

Seasonal Water Diversions (2006 - 2017)			
Total Diversion	**Average, AF**	**High (2007), AF**	**Low (2014), AF**
Seasonal Total	312,679 AF	388,450 AF	228,032 AF

2.4.2. Return Flows and Water Reuse

The lands of the Owyhee Project lay in a valley running south to north. The canal system is a gravity flow system. The north canal, which is the main canal, runs high on the hillside above the valley floor and has sub-laterals that run down through the valley supplying water to all the project lands.

Lower down through the middle of the valley are canals that run parallel with the north canal. They recapture irrigation return flows from the north canal to supplement their flows, and these flows are delivered to lands under these smaller canals.

The Old Owyhee Improvement District's main canal is the third lowest canal system in the valley. They will recapture for a second time the same water and deliver it to their water users downstream.

Additionally, main drainage canals within OID provide outlets for on-farm surface and sub-surface drainage systems. Approximately 30% of the water entering main drainage canals is reused within OID for irrigation, improving the overall district water use efficiency. When drain water is insufficient to meet delivery requirements, district ditch riders add to the flow by turning out additional water from the main canals. Accumulated unused water in the drain system is spilled into the Owyhee, Malheur or Snake Rivers. Delivery records include the reuse of the return flows within OID. There are many outflow points from OID but there are no return flows entering OID from any other irrigation districts.

The Owyhee Project was constructed to maximize water use in a very dry and arid part of Oregon. Therefore, during very dry and or drought years this effects the complete system because there is much less field run off because many farm operations move from a 24 hour to 12-hour water set which will cause no or very little run off back to the lower canal system. This water return flow problem compounds itself two to three times, affecting each canal system with less water to provide to the growers during drought years.

Table 5: OID Water Deliveries for 2006 - 2017

Year	Diversion	Permits	Time of Use	Annual Diversion (AF/year)	Peak Diversion (AF/month)	Peak Diversion (CFS)
2006	North Canal	75791, S54398	Apr - Oct	319,337	64,859	32,700
	Dead Ox Canal	75668, 75712	May - Sep	46,308	11,578	5,837
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Apr - Oct	12,003	4,899	2,470
	Kingman Pump Lateral	75791	May - Oct	1,801	482	243
	Total			**379,449**	**81,818**	**41,250**
2007	North Canal	75791, S54398	Apr - Oct	325,297	64,742	32,641
	Dead Ox Canal	75668, 75712	Apr -Sep	52,393	11,621	5,859
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Jun - Aug	9,729	5,127	2,585
	Kingman Pump Canal	75791	Apr - Oct	1,031	215	109
	Total			**388,450**	**81,706**	**41,194**
2008	North Canal	75791, S54398	Apr - Oct	315,513	63,681	32,106
	Dead Ox Canal	75668, 75712	Apr - Oct	50,739	10,623	5,356
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Jun - Aug	7,914	4,106	2,070
	Kingman Pump Canal	75791	Apr - Oct	1,077	238	120
	Total			**375,243**	**78,649**	**39,652**
2009	North Canal	75791, S54398	Apr - Oct	301,757	64,122	32,328
	Dead Ox Canal	75668, 75712	Apr - Oct	47,113	11,621	5,859
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Jun - Aug	7,755	4,661	2,350
	Kingman Pump Canal	75791	Apr - Oct	1,177	274	138
	Total			**357,802**	**80,678**	**40,675**
2010	North Canal	75791, S54398	Apr - Oct	291,923	65,306	32,925
	Dead Ox Canal	75668, 75712	May - Oct	39,868	11,585	5,841
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Jun - Aug	11,921	5,772	2,910
	Kingman Pump Canal	75791	Apr - Oct	1,010	194	98
	Total			**344,722**	**82,857**	**41,774**
2011	North Canal	75791, S54398	Apr - Oct	330,900	65,579	33,063
	Dead Ox Canal	75668, 75712	May - Oct	46,566	11,585	5,841
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Jun - Sep	7,894	3,650	1,840
	Kingman Pump Canal	75791	Apr - Oct	1,390	278	140
	Total			**386,750**	**81,092**	**40,884**
2012	North Canal	75791, S54398	Apr - Oct	309,082	65,341	32,943

Table 5: OID Water Deliveries for 2006 - 2017

Year	Diversion	Permits	Time of Use	Annual Diversion (AF/year)	Peak Diversion (AF/month)	Peak Diversion (CFS)
	Dead Ox Canal	75668, 75712	Apr - Oct	50,743	11,621	5,859
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Jun - Sep	15,054	5,534	2,790
	Kingman Pump Canal	75791	Jun - Oct	1,095	307	155
	Total			**375,974**	**82,804**	**41,747**
2013	North Canal	75791, S54398	Apr - Oct	270,194	60,008	30,254
	Dead Ox Canal	75668, 75712	Apr - Sep	52,421	11,621	5,859
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Apr - Sep	28,245	6,526	3,290
	Kingman Pump Canal	75791	Apr -Sep	966	244	123
	Total			**351,826**	**78,399**	**39,526**
2014	North Canal	75791, S54398	Apr - Aug	137,871	45,098	22,737
	Dead Ox Canal	75668, 75712	Apr - Oct	56,428	11,621	5,859
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Apr - Oct	32,906	7,914	3,990
	Kingman Pump Canal	75791	Apr - Aug	827	215	109
	Total			**228,032**	**64,849**	**32,695**
2015	North Canal	75791, S54398	Apr - Sep	166,806	44,634	22,503
	Dead Ox Canal	75668, 75712	Apr - Sep	51,390	11,353	5,724
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Apr - Sep	32,509	7,240	3,650
	Kingman Pump Canal	75791	Apr - Sep	521	179	90
	Total			**251,226**	**63,406**	**31,967**
2016	North Canal	75791, S54398	Apr - Oct	282,746	58,495	29,491
	Dead Ox Canal	75668, 75712	Apr - Oct	47,435	11,282	5,688
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Jun - Sep	16,066	4,423	2,230
	Kingman Pump Canal	75791	Jun - Oct	256	73	37
	Total			**346,503**	**74,273**	**37,446**
2017	North Canal	75791, S54398	Apr - Oct	299,236	58,495	29,491
	Dead Ox Canal	75668, 75712	Apr - Oct	41,230	11,282	5,688
	Ontario-Nyssa Canal	75710, 75671, 75708, 75709, 75672, 75689, 75690	Jun - Sep	6,347	4,423	2,230
	Kingman Pump Canal	75791	Jun - Oct	591	73	37
	Total			**347,404**	**74,273**	**37,446**
	Averages			**344,448**	**77,067**	**38,855**

Return flows were estimated by evaluating the average annual deep percolation component of on-farm losses within OID that were estimated to be approximately 114,000 AF (Table 6).

Table 6: Estimate of OID Return Flows

Estimate of OID Return Flows (Average Water Year)				
System Type	**Estimated Acreage**	**Delivery, AF[1]**	**Percolation %[2]**	**Percolation, AF**
Surface Irrigation	39,839	206,365	40	82,546
Sprinkler	23,047	119,383	25	29,846
Drip/Trickle	4,381	22,695	10	2,270
Total	**67,267**	**348,443**		**114,661**

Even though deep percolation can be the largest component of return flows, deep percolation losses are typically non-recoverable within OID due to the geology of the area. Additionally, there is a small amount of shallow subsurface flow that returns to drainage canals and side tributaries of the Malheur and Owyhee Rivers. A scientific investigation has not been done to analyze the source, but it is thought that this flow is due to deep percolation from upslope surface irrigation and canal seepage. The flow is small and becomes a part of accumulated flows in the drainage system that are used for delivery within OID or outlet into the Malheur, Owyhee and Snake Rivers.

There could be potential water savings for reduction of deep percolation from both surface and sprinkler irrigated lands in OID by improving on-farm water management. Typically, deep percolation losses from surface irrigation systems on medium intake rate soils can only be reasonably reduced by conversion from surface irrigation systems to a higher efficiency irrigation water application system, i.e. sprinkler, drip, etc. As a result of the extreme drought in 2012 – 2015, OID water users continue to convert to higher efficiency irrigation systems to more efficiently use the water that is available.

2.5. Summary of Water User Classification - OAR 690-086-0240 (5)

The only major classification use for the water within OID is irrigation. For water year 2016 there were 1084 water users on the system with 67,267 AC served by OID.

2.6. Types of On-Farm Irrigation Systems - OAR 690-086-0240 (6)

In May 2016, OID Ditch Riders conducted a visual survey of the on-farm irrigation systems that are being used within OID. Table 7 provides the results of those visual surveys. The main irrigation systems employed within OID is surface irrigation, accounting for 59% of the systems. Surface irrigation systems include both furrow and flood systems. Sprinkler systems account for 34% of the on-farm irrigation systems which are primarily wheel lines and pivot systems. The other system includes drip and sprinkler

[1] Based on 2006 - 2016 OID average delivery of 5.18 AF/AC.
[2] Agricultural Water Management and Conservation Planning, Oregon Water Resources Department, September 2007, page 27, table 5.

systems, which include wheel lines and pivot systems. Drip lines comprise 6.5% of the on-farm irrigation systems within OID.

Table 7: OID On-Farm Irrigation Systems (2016 OID Ditchrider Survey)

OID On-Farm Irrigation Systems				
Ditch Rider Route	**Total AC**	**Surface AC**	**Sprinkler AC**	**Drip AC**
1	7,459	3,743	2,849	867
3	6,177	2,821	2,772	584
4	9,926	5,883	3,491	552
6	7,259	5,501	1,286	472
7	5,601	2,884	2,656	61
8	5,643	5,013	156	474
9	4,509	952	3,527	30
10	4,707	3,022	1,685	0
11	6,386	2,735	3,175	476
12	9,354	7,038	1,450	866
Total	**67,021**	**39,593**	**23,047**	**4,381**
Percentage		**59.1%**	**34.4%**	**6.5%**

2.7. Crops Commonly Grown and Consumptive Use - OAR 690-086-240 (7)

The types of crops grown within OID occasionally rotate, but the most commonly grown fields are represented in Table 8. The acreages for 2016 were chosen to represent the field crops that are most commonly used by landowners in Malheur County.

Table 8: Malheur County Field Crop Summary

Malheur County Field Crop Summary (2016)[3]		
Items	**AC**	**% of Total AC**
Barley	1,476	1.0
Beans, dry edible	6,810	4.8
Corn	26,048	18.3
Forage (e.g. alfalfa, grass)	63,617	44.7
Oats	548	0.4
Onions	10,773	7.6
Potatoes	1,823	1.3
Sugar Beets	7,778	5.5
Vegetables, fresh & seed	4,324	3.0
Wheat	19,155	13.5
Total AC	**142,351**	

Estimated Crop Consumptive Use

Table 9 calculates the crop ET and irrigation requirement (IR) for OID. The table uses the AgriMet ET totals for the Ontario AgriMet station and the previously estimated effective precipitation for each crop type within OID. For an average water year, the annual crop IR is approximately 188,000 AF.

[3] 2016 FSA Crop Acreage Report for Malheur County, adjusted to include only irrigated acreage.

Table 9: Crop Evapotranspiration (ET) and Irrigation Requirement (IR) for OID

Crop Evapotranspiration (ET) and Irrigation Requirement (IR) for OID						
Crop	**% of Total Acres**	**Acres**	**Annual Crop ET (Acre-Inch/Acre)**	**Effective Precipitation (Acre-Inch/Acre)**	**Annual Crop IR (Acre-Inch/Acre)**	**Annual Crop IR (Acre-Feet)**
Barley	1.0	698	28.9	0.8	28.1	1,633
Beans, dry edible	4.8	3,218	23.1	0.5	22.6	6,061
Corn	18.3	12,309	28.7	0.8	27.9	28,617
Forage (e.g. hay, grass)	44.7	30,062	42.6	1.1	41.5	103,963
Oats	0.4	259	27.3	0.8	26.5	572
Onions	7.6	5,091	30.4	0.7	29.7	12,600
Potatoes	1.3	862	28.5	0.4	28.1	2,017
Sugar beets	5.5	3,675	35.2	0.8	34.4	10,536
Vegetables, fresh & seed	3.0	2,043	24	0.5	23.5	4,001
Wheat	13.5	9,052	24.8	0.9	23.9	18,028
Typical Crop Year	**100**	**67,267**	**34.5**	**1.0**	**33.4**	**188,028**

2.8. Operation and Maintenance Program – OAR 690-086-0240 (8)

OID is managed under the direction of the OID manager. The five (5) OID board members oversee policy, budgeting, and operations. The OID manager reports to the board anything outside of normal procedures. Included in management staff are the OID Manager, Assistant Manager, Watermaster, Power Plant Supervisor, two (2) Maintenance Foremen and three (3) Facility Supervisors. Position descriptions for OID management positions can be found in Attachment D.

The OID conveyance and distribution system consists of many miles of canal, lateral and pipeline that requires a high degree of maintenance. In general, operation and maintenance activities are balancing acts between the ever-increasing cost of doing business and the revenue earning capability of OID. It is an OID goal to provide a high degree of maintenance and reduce maintenance costs wherever possible by upgrading the conveyance and distribution system facilities.

The conveyance and distribution system is primarily made up of open watercourses except for where laterals have been piped. Pipe materials usually consist of PVC pipe for pipe diameters less than 30 inches and reinforced concrete for pipes larger than 30 inches in diameter. OID has a program in which the district will assist landowners with the installation of pipe to replace on farm laterals if the landowner purchases the pipe needed.

Canals have been lined with bentonite or shotcrete in high seepage areas to conserve water. Canal linings have reduced seepage losses approximately 50% in some isolated areas. Within these canals and laterals are many siphons, flumes and bridges that cross the many draws, side tributaries, and small drainage ways entering the valley, and state and county roads.

In addition to the irrigation water conveyance and distribution system, OID also maintains electrical power generation and distribution facilities that consist of approximately 20 miles of powerline and 3 power plants.

2.8.1. Periodic Operation and Maintenance Procedures and Inspections

OID performs the operation and maintenance procedures and inspections on a periodic basis. Table 10 outlines the operation and maintenance procedures and inspections that are performed by OID staff.

Table 10: OID Operation and Maintenance Procedures and Inspections

OID Operation and Maintenance Procedures and Inspections				
O&M Procedure or Inspection	**Location or Quantity**	**Staff Responsible**	**Time of Year**	**Frequency & Reporting Required**
Clean Ditches	250 miles	Maintenance Crew	Off-Season	Annually
Clean Drains	227 miles	Maintenance Crew	Year-Round	7-Year Rotation
Vibration Test Pumps and Motors	Dead Ox & Dunaway Pumping Plants	Maintenance Crew	Off-Season	Annually
Inspect Coatings, Bearings and Impellers for Pumps and Motors	Dead Ox & Dunaway Pumping Plants	Maintenance Crew	Off-Season	Annually
Inspect Canals	All Operating Canals	Ditch Riders	Irrigation Season	Daily & Submit Monthly Inspection Report
Inspect North Canal	North Canal	Watermaster or Assistant Manager	Irrigation Season	Once a week & Submit Monthly Inspection Report
Inspect North Canal Siphon	North Canal Siphon	Management Staff	Irrigation Season	Twice a week & Submit Monthly Inspection Report
Inspect Pressurized Pipe System	Pressurized Pipe System	Maintenance Crew	Prior to & During Irrigation Season	Once a week
Drain and Inspect Pressurized Pipe System	Pressurized Pipe System	Maintenance Crew	After Irrigation Season	Annually
Inspect Tunnels and Liners	Tunnels and Liners	Management Staff	After Irrigation Season	5-Year Rotation
Vibration Test and General Maintenance of Hydropower Plants	Three Hydropower Plants	Power Plant Supervisor	During low power demand period	Annually, test and maintain one plant at a time

2.8.2. Reoccurring Operational Problems

Due to the changes in irrigation practices such as micro-managed watering schedules and the increasing use of drip type irrigation, it has become a constant struggle for OID to manage and maintain correct and consistent water levels within the open canal delivery system.

OID has obtained LiDar data and layers which are used in conjunction with a GIS system to map OID's inventory of structures such as head-gates, flow-meters, pipelines, canals, water rights and other pertinent structures.

The LiDar data covers all the irrigated acres within the OID and is heavily used for elevation readings, pre-engineering of projects such as pipelines and to aid landowners in irrigation system decisions.

2.8.3. Major Past Operation and Maintenance Problems

The stabilization of the Malheur Siphon legs has been an ongoing problem since the early 1940s. The Siphon has been identified in reports to be in "failure mode." OID has continuously battled the movement of the soil under the support structure. While the Siphon's metal pipe is in good condition, the supporting leg structures are now the focus of concern. Reclamation has reviewed the engineering plans and has agreed to the proposed solution. OID has prepared engineering plans and construction bids were solicited in early 2018.

The age of the total project is over 80 years old, and all of the concrete liners, siphons, and pipelines show significant wear as well as cracking. In the lined sections, we can cut out the compromised sections and replace them. OID continues to look at new technology for answers.

3. Water Conservation – OAR 690-086-0250

3.1. Progress Report on Scheduled Conservation Measures and Previously Approved Conservation Plans – OAR 690-086-0250 (1)

Table 11 outlines the conservation measures that were evaluated and the progress made in implementing the conservation measures that were proposed in the 2002 OID WMCP.

Table 11: OID Reporting
2002 Conservation Measures and
2018 Evaluation of Conservation Measures

Conservation Measure	Goal of Measure	2002 Conservation Plan	Accomplishments since 2002	Evaluation of Conservation Measures for 2018 WMCP
Promotion of Energy Audits for OID Water Users	Energy Trust of Oregon and others offer energy audits for district water users. The rationale for these programs is to reduce energy demands. Energy use can be related to water use so the net effect may include a reduction in water use. Energy audits offer an immediate benefit to many water users whose pumping plants may be operating at very low efficiencies.	Idaho Power has provided free energy audits that focus on energy conservation and not water conservation. This is a voluntary program for OID users. Not financially feasible and reasonable to provide energy audits without the support of the energy companies. Pump audits about $500 per pump and 2 staff person's time. With low percentage of sprinkler irrigated land in OID total water saving benefit to OID versus cost is questionable.	Energy audits were done on all OID pumps and pump modifications were completed for all pumping stations. These were completed in 2015. Lighting audit were funded by Idaho Power and BPA in 2017. Have completed a few minor improvements	Working on action plan and budget for lighting improvements. As funding is available, improvements will be implemented.
Conversion to Metered and Pressurized Deliveries for Parcels of 1 acre or less	Another option for improved distribution systems is conversion to metered, pressurized deliveries to all parcels of one acre or less. This assessment should include the number of small parcels within district boundaries, potential for future division of larger parcels, and the type of beneficial use expected on these parcels. Local price estimates should be provided for construction of pump and meter systems to deliver pressurized water to small parcels. Metered delivery may also be considered under a different rate structure than that applied to gravity flow delivery systems.	Proposed to evaluate potential conversion to metered and pressurized operation where water is used in small parcel developments. In 2002, there were a few developments that converted to community water systems. All new developments within OID will be evaluated during the development planning process for potential metered and pressurized delivery.	No development has occurred since 2002.	Same action as 2002. Zoning is not allowing developments because of HB 3111.
Lining/Piping of Earthen Canals and Laterals to Reduce Losses	Having already estimated loss rates for different classes of canals, one immediate option is to investigate piping or lining of earthen canals. OID can contact local contractors to obtain cost estimates of piping or lining canals suspected of having high seepage loss rates. The results might be summarized in terms of alternative methods of piping, lining, cost per foot of lining and estimated reductions in seepage rates. Additionally, the economic analysis should account for the value of water saved.	District will actively pursue additional canal lining projects to reduce seepage and operation and maintenance costs. Project evaluated on a site-by-site basis for OID's water needs versus water saving versus cost effectiveness. Program to be pursued aggressively as technical assistance and funds become available, user interest increases and where sufficient gravity pressure can be developed. Benchmarks: ?? Miles of canals had been lined or replaced with box culverts or pipes by 2002 14% of laterals had been piped by 2002	14 miles have been converted from open ditch laterals to buried pressurized and gravity pipelines.	Have entered into agreement with FCA to complete a evaluation of the System Improvement Plan that will evaluate system improvement and potential funding mechanisms.

Table 11: OID Reporting
2002 Conservation Measures and
2018 Evaluation of Conservation Measures

Conservation Measure	Goal of Measure	2002 Conservation Plan	Accomplishments since 2002	Evaluation of Conservation Measures for 2018 WMCP
Modifying Facilities and Policies to Increase Flexibility of Water Deliveries	Modifying the distribution systems and district policies to increase the flexibility of water deliveries may also lead to increased water use efficiency and must be evaluated. Operational spills or bypass losses may be reduced by better forecasting of water demands, revised procedures for district operations, and provision of re-regulating reservoirs or other in-line storage facilities for increased flexibility of water deliveries. Some ideas a district might consider include: • Operation strategies to increase water delivery capability to specific areas, • Structural modifications to improve delivery efficiency, • A short-term goal to identify opportunities to improve delivery flexibility, • A long-term goal to secure funding for infrastructure improvements.	OID operated an "on-order" delivery type system, with 24-72 hour notice for all demand delivery orders. SCADA technology was proposed and scheduled to be fully implemented in 2003. Also, proposed to move to a total accounting system that allows OID to improve the management of water deliver, reducing spills and reductions in overall water loss to the delivery system.	Water deliveries are evaluated and adjusted according to water supply. SCADA was operation in 2003 for the main canal. Expansion of the SCADA capability is on-going and one new site has been constructed each year since 2003. Telemetry is in place on laterals - in sensitive areas where certain water levels are needed for water delivery and safety.	Committed to doing this in the future.
Provision of On-Farm Scheduling Assistance	OID to can support a water user education program by distributing educational modules designed to raise awareness and provide more extensive information on on-farm irrigation scheduling and efficiencies. An educational module on irrigation scheduling and on-farm efficiency is provided with this OWRD Ag WMCP guidebook. Additionally, districts can alert patrons to informational web sites, dispense additional informational bulletins provided by the Extension Service, NRCS, energy utilities, BOR and other institutions, and host OSU Extension Service workshops.	Proposed that OID would provide educational support for water users for conservation improvements (i.e. on-farm water management, use of Agrimet for irrigation scheduling) .	Customer information Portal - track usage and see billing history.	Website - add Appendix G to the educational material section.
Construction of Re-regulation Reservoirs	Where operations spills are significant, construction and operational costs for re-regulating reservoirs should be evaluated. Funding and construction may be judged to be long term goals, but an evaluation of the benefits of reduced spillage should include an estimate of the potential water savings.	Re-regulation reservoirs within OID boundaries would allow for more efficient delivery of water to users. Many sites have been evaluated and it has been determined that there are no adequate sites for this purpose. No further study required.	Have evaluated a couple of locations, but these are not economically feasible.	Continue to look for sites and funding to build these types of project. FCA SIP will be evaluating potential sites.

Table 11: OID Reporting
2002 Conservation Measures and
2018 Evaluation of Conservation Measures

Conservation Measure	Goal of Measure	2002 Conservation Plan	Accomplishments since 2002	Evaluation of Conservation Measures for 2018 WMCP
Adoption of Rate Structures that Support and Encourage Water Conservation	While the rules require a District's to evaluate the adoption of rate structures that encourage conservation, there may be statutory or contractual provisions that prescribe the district's rate structure. You should check Oregon statutes and any contracts the district has with individual water users, other districts, or government agencies for such provisions that might relate to OID. If you find such provisions, they should be acknowledged in this section of the WMCP. Rate structures, such as volumetric pricing, have been successful in encouraging water conservation for many years. Additional fees for pressurized water delivered to small parcels may also be evaluated to account for greater energy input by the OID. A district may propose alternative rate structures, billing practices, and other programs as applicable to the district. If alternative approaches are proposed, the district should demonstrate in the WMCP that their proposed approach meets the requirement to support and encourage conservation.	OID had an existing rate Structure. O&M charge was $31.65 per acre up to 4 acre-feet at the irrigator's headgate. $10 per acre-foot for every acre-foot over 4 acre-feet delivered. $25 service charge plus $31.65 per acre-foot for water delivered to parcels less than 5 acres in size. Board determined there was no need to pursue another rate structure.	The 2017 rate structure is as follows: O&M charge was $60.50 per irrigated acre. Special assessment $1.50 for Malheur Siphon repair. $19.37 per acre-foot for every acre-foot over 4 acre-feet delivered. $75 service charge plus a total O&M charge of $62.00 per irrigated acre for water delivered to parcels less than 5 acres in size.	OID will evaluate system charges based on system O&M costs and major infrastructure improvements.
Conversion from Surface to Sprinkler or Micro Irrigation Systems	This is an on-farm efficiency measure that would reduce OID water demand. OWRD does not require that this be considered, but seems like one that OID should evaluate.	OID will give strong consideration to projects that involve piping a lateral that would also produce gravity pressure for a sprinkler irrigation system. An analysis for new water use versus savings would be provided for all areas affected, including downstream users where OID provides water reuse distribution.	Comparison Between 2002 and 2016: Surface - 84.5% to 59.1% (reduction of 25.4%) Sprinkler - 15% to 34.4% (increase of 19.4%) Drip/Trickle - 0.5% to 6.5% (increase of 6%)	OID will continue to encourage district partons to install improvements to on-farm irrigation systems, although farmers are doing this becasue of the many economic and operational advantages. Installation of more efficient on-farm delivery system offer many benefits for farmers including improving delivery effciency, equaling annual variations in water supply and improving food safety.
Sharing Water	(2002 Conservation Plan) not required by OWRD.	Sharing water between users is recognized and somewhat encouraged as long as existing delivery facilities and delivery methods can accommodate the sharing. Physical features limit opportunities for sharing water delivery with adjoining irrigation districts.	No action proposed.	No action proposed.

Table 11: OID Reporting
2002 Conservation Measures and
2018 Evaluation of Conservation Measures

Conservation Measure	Goal of Measure	2002 Conservation Plan	Accomplishments since 2002	Evaluation of Conservation Measures for 2018 WMCP
Retirement of Irrigated Lands, Water Pricing and Water Rate Structure	(2002 Conservation Plan) not required by OWRD.	It was determined that retirement of irrigated lands within OID was not a viable option since other water sources are not readily available, nor is converting to dry land farming practices. Within OID, most crops will not produce marketable products without an adequate full season water supply.	No action proposed.	No action proposed.
New Storage Reservoirs	(2002 Conservation Plan) not required by OWRD.	New storage sites to reduce seasonal water supply deficient are very limited and construction of these types of project is very unpopular.	No action proposed. Reservation for water for economic development, storage of future potential water (60,000 AF). Department of Agriculture (DOA) study - will get document.	As funding becomes available, OID will further pursue the reservation water identified in the DOA study.

- Invasive species (i.e. quagga and zebra mussels)
- Some urbanization

3.4.2. Goals

It is recognized, pursuit of all of the following goals will be expensive and time consuming, however OID will actively pursue what is physically and financially feasible. The cumulative effect of all of these goals would improve OID operations and water accountability, increase water conservation by reducing seepage in open canals, and improve watershed enhancement in the Owyhee, Malheur, and Snake River.

The following is a list of **Short-Term** goals, of importance that OID will pursue in the next 2 – 5 years:

- Meet delivery needs for irrigated lands within OID.
- Implement patron-driven piping projects to benefit OID and patrons.
- Develop the OID System Improvement Plan (SIP) that identifies, evaluates, and prioritizes projects; also identifies funding sources/opportunities) piping and other conservation projects.
- Identify easily implementable conservation projects from the SIP.
- Support education of users in water delivery and irrigation water management.
- Where feasible, install pipelines to eliminate canal pest problems and non-environmentally sound preventative measures.
- Seek grant opportunities to fund infrastructure and conservation projects.
- Provide additional flow measurement where needed for accountability of all water flow, including return flows and spills.
- Improve measurement of water for individual deliveries for both water control improvement and water accountability.
- On appropriately sized canal and laterals support and assist with development and implementation of environmentally sound pest management (aquatic vegetation control).
- Provide design and construction assistance to landowners installing buried pipe in open laterals.
- Stay engaged in prevention and potential presence of invasive species.
- Work with Malheur County and evaluate all new developments within OID during the development planning process for potential metered and pressurized delivery.

The following is a list of **Long-Term** goals, in order of importance that OID will pursue in the next 2 – 10 years:

- Provide irrigation water delivery to OID users.
- During drought periods, attempt to meet irrigation water needs keeping deficit deliveries to a minimum.
- Implement the OID SIP based on priority of projects and availability of funding.
- Maintain water rights for patrons within OID.
- Continue to improve the OID distribution system, to improve water control, decrease seepage losses, decrease maintenance costs, and improve delivery.
- Continue to improve the remote accessed flow measurement system and installation of automated gate control facilities.
- OID will explore the opportunity to automate pumping facilities.

3.2. Water Measurement Program Description – OAR 690-086-250 (2)

OID has water measurement facilities at all points of diversion and at all key points within the delivery system. Attachment E includes the schematics of the OID Flow Measurement System.

Farm deliveries are measured using a 2 or 3-foot standard on-farm delivery weirs. Orifice plates measuring ½-2 ft^2 in area, flowmeters and ramp-flume measurement devices are all used to measure on-farm deliveries. All on-farm deliveries are measured in AF. Ditch riders record all on-farm delivery daily.

The following is a summary of measuring sites that provide continuous data loggers of OID system flows:

- Outflow from the reservoir is measured and recorded using a rated section with a continuous recording staff gauge and data logger, or flowmeter.
- All major points of diversion are measured and recorded using a rated section with a continuous recording staff gauge and data logger.
- Measuring devices are available in most main canals and turnouts to laterals.
- OID staff continually evaluate prospective locations for additional flow measurement that will improve operation and water management.

Water accounting software was implemented in 2009, moving from a paper water accounting system to an electronic system. In 2015 a TruPoint water reporting system was installed allowing OID water users to access daily water use through the OID Water User Portal. Annual water use reports indicating water used each month are provided to OWRD and Reclamation. OID's water measurement program complies with OAR Chapter 690, Division 85.

3.3. Currently Implemented Conservation Measures – OAR 690-086-0250 (3)

Past and on-going conservation activities are summarized in Table 11. These conservation activities relate to all facets of OID operation, maintenance, water management and water user education.

3.4. Short and Long-Term Goals to Improve Water Management – OAR 690-086-0250 (4)

3.4.1. Issues/Concerns

The following are OID issues and concerns from highest to lowest priority as listed:

- Aging Infrastructure
- Long-term droughts and associated water management
- Maintaining water rights
- Maintaining fiscal responsibility stability
- Canal and lateral seepage losses
- Water management challenge with respect to on-farm efficiency improvements (On-farm irrigation systems, improving efficiency, reducing labor. Capacity issues for the lower canals since the overall system was designed to capture the upper canals' runoff. The runoff from the upper canals has been reduced due to higher efficiency on-farm systems, reducing the amount of water delivered to the lower canals.)

- Patron and Public Education.

3.5. Opportunities for Improving Water Use Efficiency – OAR 690-086-0250 (5a-d)

Improving water use efficiency can be done by several methods. In order to determine what methods are best for a particular water supplier, an evaluation of specific opportunities was conducted by OID. The following two (2) sections evaluate opportunities for improving water use efficiency for OID.

3.6. Assessment of Delivery System Losses – AOR 690-086-0250 (5a)

Table 12 is the summary of OID delivery system losses and crop irrigation requirements. The delivery system losses fall into 2 major categories:

1. Seepage losses for the canals and laterals.
2. Operational spills that includes initial system filling flows, system flushing flows and operational spills.

Earthen canal and lateral seepage losses are relatively high throughout OID's conveyance and delivery system. Many techniques for reducing seepage losses have been tried and several are in use. Techniques used include: concrete lining, shotcreting, incorporating bentonite clay material and installing pipelines.

Transport losses within OID have been estimated to be as high as 30% in isolated reaches in canals, and 50% in isolated reaches in laterals. Water lost to seepage enters ground water of which a portion becomes interflow entering the Malheur, Owyhee and Snake River Systems.

Operational spills are a result of the 3.78 mile distance from Lake Owyhee to the OID first point of diversion and the 172 miles of main canals. Canal flows vary due to daily temperature changes, effective rainfall and pump cycling. Ditch riders provide the necessary manual and automated operation of main canal gates to minimize operational spills and maintain reservoir capacity for possible later use. In order to reduce operational spill, OID will be evaluating both piping and automation projects as part of the SIP that will be developed during 2018-2020. The SIP will also make recommendation on how conservation projects will be funded.

Table 12: OID System Losses and Water Deliveries for Crop Needs

OID System Losses and Water Deliveries for Crop Needs (AC-FT/Year)				
	Average Water Year (2016)	High Water Year (2011)	Low Water Year (2014)	
Total Water Diverted[4]	**346,503**	**386,750**	**228,032**	
Canal & Lateral Seepage (28%)[5]	28% 97,021	28% 108,290	63,849	28%
Initial System Filling[6]	11.2% 3,888	1% 3,888	3,888	1.7%
System Flushing[7]	4.6% 15,843	4% 15,843	15,843	6.9%
Operational Spills[8]	2.4% 8,340	5.2% 20,422	3,606	1.6%
Total OID System Losses	36% **125,092**	38.4% **148,442**	**87,186**	38%
Water Available for On-Farm Delivery	**229,752**	**258,729**	**144,452**	
Crop Irrigation Requirement (IR)[9]	188,028	188,028	188,028	
On-Farm Losses (+)/Shortage for Crop Needs (-)	41,723	70,701	-43,576	

3.7. Assessment of Extent to Which Water Deliveries are Insufficient for Crop Needs – OAR 690-086-0250 (5b)

Table 12 shown in the above section, summarizes the OID system losses and estimates when water deliveries are insufficient for crop water needs for average, high and low water years. For low water years, OID water deliveries are not meeting crop needs.

Due to the original system design and capacity issues there are critical areas within OID that experience shortages. These critical areas include: Black Willow, 36.7 Lateral, Malheur Siphon, and V Siphon.

[4] Table 5: OID Water Deliveries for 2006 – 2016
[5] Canal & Lateral Seepage based on approximately 24% loss for canals and 29% loss for laterals. This accounts for canals & laterals that are lined or piped.
[6] Initial filling volume for both canals & laterals.
[7] System flushing volume assuming nominal carrying capacity of the system is 1065 cfs, an average flushing duration of 15 days and flushing at a rate of 50%.
[8] Total operational spills as measured at 8 locations along the main canal.
[9] Table 9: Crop Evapotranspiration (ET) & Irrigation Requirements (IR).

3.8. Any Alternative Conservation Measures Identified to Reduce Losses and to Address the Insufficiencies in Water Deliveries Identified in Sections 3.6 and 3.7 – OAR 690-086-0250 (5c)

The largest issue facing OID with respect to water use is the seepage losses from canals and major laterals that are greater than 50 percent. Although OID operational spills are low, OID will investigate low-cost ways to reduce operational spills.

The following are the primary and secondary strategies for improving water use efficiency within OID:

- Primary: Piping or lining of canals and larger laterals.
- Primary: Promoting on-farm irrigation scheduling assistance by holding distributing OWRD Appendix G and hold an OID water user workshop.
- Secondary: Modifying distribution facilities at Dead Ox Pumping. Investigate using variable drive pumps.
- Secondary: Look at the feasibility of constructing re-regulating reservoirs for operational spills.

3.8.1. Canal and Lateral Piping Projects

OID will actively seek funding for high priority canal lining projects to reduce seepage, operation and maintenance costs. Each project will be evaluated on a site-by-site basis for OID's water needs versus water savings versus cost effectiveness. Suspect leakage areas will be evaluated with ponding tests and/or flow measuring devices to determine seepage loss rates. Applicable lining materials and costs vs water savings will be considered.

OID will continue to actively pursue evaluation and installation of pipeline projects that reduce seepage, decrease maintenance (i.e. moss control costs), improve operation and management and the potential to provide gravity pressure. Each will be evaluated on a site-by-site basis for benefits (e.g. water savings, O & M cost reduction, gravity pressurize potential) versus cost (e.g. materials, installation, engineering, annual maintenance).

A SIP will be initiated in 2018 that will evaluate the feasibility of OID conservation and infrastructure needs. This evaluation will include project cost versus water savings and maintenance cost reduction analysis for each potential project to assist the OID Board in determining conservation measure priorities within OID. Many other needs and opportunities for OID also enter into the feasibility evaluation comparison that include:

- Projected installation and annual cost for materials and/or construction
- Projected total estimated water savings and opportunities for future use of the water, i.e. beneficiary of the conserved water, i.e. OID, Community, Watershed Enhancement, etc.
- Comparing present and future annual O & M cost
- Pipeline pressurization potential for canals, laterals, etc.
- Water needs for users within OID
- User interest and support
- Cost to user
- Availability and cost of funds- within OID as well as outside
- Is the project practical and technically feasible?

3.9. Assessment of Existing and Future Alternatives to Finance Conservation Measures, Including Analysis of Allocation of Conserved Water - OAR 690-086-0250 (5d)

The SIP evaluation process has been generally followed by OID to determine priority and final selection of conservation measures that have been recently installed when using OID, public and private funding. Also, the SIP that will be developed during 2018-2020 will make recommendations on how conservation projects will be financed and funded. The SIP will include the analysis the potential allocation of conserved water.

3.10. Evaluation of Specific Strategies for Improving Water Use Efficiency – 690-086-0250 (6)

Table 11, that is found on pages 21-24, includes the OID evaluation of specific strategies for improving water efficiency within the District. The feasibility of these strategies will be further evaluated during the development of the OID SIP.

3.11. Schedule for Implementation of Proposed Conservation Measures – OAR 690-086-0250 (7)

OID is in the process performing a major rehabilitation of the Malheur Siphon. This project is expected to take up most of the OIDs' financial flexibility for the foreseeable future.

In late 2017, OID has entered into the Irrigation Modernization Program and will be working with Farmers Conservation Alliance to develop a SIP that will include a modernization strategy for OID. The SIP will be developed over the next two years. Economically feasible conservation projects will be aggressively pursued and installed within OID, based the detailed evaluations that will be included in the SIP.

In order to continue progress on constructing conservation projects while the SIP is being developed, the following major piping projects have been identified and are scheduled for completion prior to 2021.

- Vista view pipeline, 38.7 lateral: Convert 11,340 ft of open water-way lateral to a closed, gravity pressurized pipeline. This project will include 11,340 ft of buried polyvinyl chloride (pvc) pipe carrying 17 cfs of water, eight delivery points, a pressure reducing station, multiple air vents and pressure relief valves. The pipeline will service 675 AC of farm ground including the Oregon State University experiment station and will supply gravity irrigation water pressures between 50-90 pounds. Completion of this project is expected to be in March of 2019.
- Hartley pipeline, Mitchell Butte 9.1 Lateral: Convert 2,800 ft of open waterway lateral to a buried pipe lateral. This project will include 2,800 ft of 18 inch pvc pipe. The pipeline will be installed to replace a large section of the open lateral that has a high amount of water loss due to very sandy soils and an embankment erosion problem. Completion of this project is scheduled to in the **spring of 2019**.

- 46.7 lateral spillway: Replace a section of an open water lateral spillway with buried pvc pipe. This project will be replacing a section of open lateral, controlled spillway that is seriously eroding a hillside with buried pvc pipe. 1,400 ft of buried pvc pipe will be installed to stop the erosion. This project is scheduled to be completed by **spring of 2019**.

In addition to major piping project, OID will continue to implement small system delivery improvements with OID water users as they are identified, based on the availability of funds.

There are also opportunities within OID to automate headgates and pumping plants for remote monitoring and control. Remote monitoring and control is achieved using a cell phone, radio or other telemetry network to control valves and switches at headgates and pumping plants. These automation projects will be implemented based on availability of funding. These automation strategies are described below:

- Headgates: Automation of headgates would allow OID more timely control for distribution of water within OID, which would cause an increase in the overall delivery efficiency. To automate main lateral headgates would require an investment of approximately $15,000 per headgate to provide the necessary hardware.

- Pumping Plants: Automation of pumping plants has advantages and disadvantages. Some advantages include reduced labor costs, quicker response times to adjustments in pumping rates, and better monitoring of overall pumping plant operation. Disadvantages include the requirement to implement more precise operation and maintenance procedures.

3.12. Public Education Program – OAR 690-086-0250 (7a)

OID continues to improve their water users and public education and outreach through the following activities:

- Keep users updated on water supply projections (drought condition) and water delivery processes by way of the annual water users meeting, annual newsletter, website, social media, alert-sense system, texting/telephone service, ditch riders, etc.
- Provide water users with pre-drought water supply projections, planning and decision making processes, so they can be informed as to the potential effects on water availability, crop plantings and seasonal irrigation needs.
- Provide on-demand water use through customer portal, daily/bi- weekly (as-needed analysis of water availability, crop water needs (i.e. "Agrimet" data) to water users and to staff.
- Work closely with federal, state and local agencies, i.e. NRCS, OSU, by providing accurate and timely information to users for on-farm irrigation management decisions including techniques to minimize water use and optimize production or quality.

Additionally, OID fully cooperates with other local federal and state agencies involved in on-farm water conservation efforts (i.e. NRCS, FSA, OSU Extension, Reclamation, OWRD, Malheur SWCD, Watershed Councils). On-farm measures OID wholeheartedly supports without any financial contribution include:

- Using gated pipe to reduce length of runs and control flow into each furrow or corrugate.
- Using solid set sprinkler systems for irrigating potatoes.
- Using micro systems for irrigating onions.

- Using tailwater recovery systems to improve surface irrigation water use efficiency.
- Use of turbulent fountain screens to remove trash and weed seeds from irrigation water.
- Lining ditches and conversion of laterals to pipelines to reduce seepage losses.
- Use of straw mulching and PAM to reduce erosion on graded surface irrigation systems.
- Using filter strips at edge of fields to reduce sediment in irrigation runoff
- Use laser controlled land leveling and smoothing equipment to improve water distribution efficiency.
- SWCD provided soil moisture monitoring program for scheduling irrigations using soil moisture monitoring equipment and "Agrimet" consumptive use data.

3.13. Other Conservation Measures Identified by the OID – OAR 690-086-0250 (7b)

Other conservation measures will be evaluated in the OID SIP that will be completed in 2020.

3.14. Program for Evaluating Effectiveness of Conservation Measures

Plans for evaluating each conservation measure will be developed as part of the OID SIP.

4. Water Curtailment Plan – OAR 690-086-0260

4.1. Past Supply Deficiencies and Current Capacity Limitations – OAR 690-086-0260 (1)

Typically, OID can maintain two years of water supply from winter and spring runoff from the Owyhee River as stored water in Owyhee Reservoir. Although OID relies principally on stored water in Lake Owyhee for their irrigation water supply, they do have water rights on the Snake River that can be pumped for irrigation. Pumping water from the Snake River incurs higher operational costs, therefore releasing water from storage is preferred to pumping.

Eastern Oregon experienced an extreme four-year drought from 2012 – 2015, which was caused by warmer winter temperatures that robbed the mountains of snowpack. The Owyhee Basin is very dependent on winter snowpack to fill the Owyhee Reservoir in the spring.

During extreme drought years, 2014 and 2015, only 1.5 AF per AC and 1.3 AF per AC, respectively, were delivered to farms which normally receive 4 AF per AC during the irrigation season. As for most drought years, reduced water deliveries were provided uniformly to all users until it was shut off in August. With less water available for irrigation, OID irrigators switched from onions and sugar beets to grain and seed crops that required less water. Also, in 2015, it was estimated that up to 20 percent of the OID irrigable land laid fallow so that farmers could double-up their water rations on other plots.

During the 2012 – 2015 drought, OID reduced the operational and management spills, requiring more intensive water control by ditch riders than for normal years. Seepage losses could not be eliminated and were a higher percentage of the OID supply than for normal and above normal years. All users were asked to use extreme caution in use of their water and reduce or eliminate runoff. Extra time was spent by the ditch riders for increased water control which also increased OID operation costs.

Also in response to the continued extreme drought conditions in 2014, the Owyhee Project Irrigation Districts entered into a Memorandum of Understanding (MOU) regarding the interpretation and implementation of the three contracts which relate to Old Owyhee Ditch Improvement District's storage rights and the Dunaway Pumping Station. The MOU now serves as a long-term template for how the system is to be operated in both drought and normal irrigation years.

Vandalism to existing water control structures and water supply facilities, or accidental contamination of the water supply could potentially occur, and depending on severity, could produce a severe water shortage. Major vandalism or water contamination has not occurred in the past. It is felt, critical infrastructure is adequately protected. If a condition occurred where storage or stream flow was lost (or partially lost), curtailment and allotment procedures would be followed, as outlined in section 4.2. Situations That Trigger Curtailment Plans.

4.2. Situations That Trigger Curtailment Plans – OAR 690-086-0260 (2)

4.2.1. Curtailment Triggers

In early March, OID will use the following information to prepare the annual OID water supply forecast:

- National Weather Service runoff forecast for Owyhee and Snake River Basins[10]
- Reclamation Hydromet System data
- NRCS Snotel System data and runoff projection[11]
- OID self-evaluation of snow survey data [12]

Using the OID water supply forecast, the Joint Committee will then determine the potential for reducing water deliveries when all of the following triggers occur:

- Lack of low elevation winter precipitation becomes critical at 50% of normal by March 1
- March 1 Owyhee Reservoir storage is at, or less than 75% of normal
- Projected runoff for April - June is predicted to be not greater than 75% of normal

4.2.2. Curtailment Courses of Action

If all of the above drought triggers are met, OID will proceed with the following actions:

1. **OID Curtailment and Allocation Determination:** Based on the OID water supply projection and the recommendation of the OID Manager, the Board of Directors would provide the final decision concerning curtailment procedures and the reduced allocation of water for OID water users.

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[10] NRCS and National Weather Service provides public forecast information for potential runoff from January through early spring months in all river basins in Oregon. This information is readily available on websites for Reclamation, USGS, NRCS and National Weather Service.

[11] NRCS in maintaining current awareness of snow pack in the upper watershed of the Owyhee River. Snotel sites in the Owyhee River Watershed include, Battle Creek, Big Bend, Bull Basin, Columbia Basin, Fry Canyon, Gold Creek, Lower Jack Creek, Upper Jack Creek, Jacks Peak, Laurel Draw, Lookout Butte, Louse Canyon, Quinn Ridge, Red Canyon, Rodeo Flat, Silver City, Succor Creek, Taylor Canyon, Toe Jam Trout Creek, and Vaught Ranch.

[12] When Snotel data appears to have holes, on-site visits are made by OID staff to verify or refute gauge data.

2. **OID Water User Communication:** Water users will be informed of the curtailment procedures and the reduced water allocation through the OID annual users meeting, local media, website, social media, and annual newsletters as early as possible so they can plan crops to be planted and establish priorities for fields to be irrigated.
3. **Coordination with Local, State, and Federal Agencies:** At any time after January 1 when it appears a water shortage may potentially occur, Owyhee Project irrigation districts, local, state and federal agencies will cooperatively assess the watershed conditions and jointly coordinate their actions. The OID Staff, Board of Directors and users would be involved in this assessment and coordination.
4. **Drought Declaration Process and Subsequent Tools:** When a potential drought condition is viewed as a real issue, OID and other local agencies will discuss the potential for drought declaration with Malheur County officials. When warranted, Malheur County would first make their drought declaration and then ask for a state drought declaration from the Governor. The Governor has the authority and sole discretion to declare a drought emergency in any county/geographical boundary. OID would then be allowed to use any of the following applicable tools under OAR 690-15-300 and ORS 540.523, for temporary water right transfers, water supplementation, and potentially qualify for federal relief funds.
5. **Continue to Monitor Weather Patterns:** Variations in weather patterns may correct a drought situation before it becomes critical, (i.e. heavier than normal spring and early summer rains and lower than normal temperatures) possibly alleviating the effect of a warmer or dry winter. At any time in the spring or early summer, should a potential drought condition change to what shows to be more near a normal water supply year, the same communication procedures will be followed.

4.3. Procedure to Allocate Water During Shortages – OAR 690-086-0260 (3)

Based on the OID water supply projection and the recommendation of the OID Manager, the Board of Directors would provide the final decision and direction for curtailment and allocation of water each year based on the projected water supply. Degree of curtailment and allocation will be based on projected water supply reduction as to how it fits in with OIDs water rights and to other prior water rights within the basin.

4.3.1. Curtailment Considerations

The following is a list OID curtailment considerations:

- Delay the delivery turn-on date and possibly move up the turn-off date to conserve water for peak consumptive use period based on a shortened estimated seasonal water delivery requirement.
- Provide intensive management and control of all water within OID.
- Decrease operation and management spills to near zero.
- Provide intensive information program to users on reducing on-farm water use, including critical plant water use periods.
- Aggressively cooperate with local state and federal agencies providing assistance to irrigators on improving on-farm water use.
- Intensify weed control in and along canals and laterals to reduce water use.

- As in every water year, the customer Portal will provide on-demand analysis of water availability during irrigation delivery.
- Work closely with the other Owyhee Project irrigation districts.

4.3.2. Allocation for OID Water Users

Water delivery to all users will be reduced unilaterally in accordance with established water rights and projected percentage reduction in water supply. OID water users will make their own choices to reduce their water requirements with actions such as:

- Reducing irrigated acres.
- Temporarily transfer water to high value crops.
- Not irrigating during selected months, i.e. during peak use period, or quit irrigating for the remainder of the season after a selected month/day.

During extreme drought conditions, under direction of the Board of Directors, water will be shut off when it is deemed impractical to maintain canal and lateral flow for deliveries to users for the remainder of the year.

5. Water Supply Element – OAR 690-086-0270

5.1. Estimate Long-Term Water Demand Projections – OAR 690-086-0270 (1)

With the exception of drought years, existing OID water supplies currently meet users' delivery needs and will continue to do so if current resources are not adversely impacted. The following sections discuss both OID controlled and outside factors that will impact OIDs future water supply.

5.1.1. OID Controlled Factors

Conserved Water. OID will continue to assess and pursue conservation throughout its 960 miles infrastructure. OID has initiated the development of a SIP that will identify, evaluate and prioritize infrastructure projects. High priorities for OID will be piping unlined canals and large laterals. Securing funding for the high priority infrastructure projects will be the biggest challenge for OID.

Telemetry and Water Management. A far less expensive method of potentially conserving water, or at a minimum diverting less water, is by better managing the water within the OID. Significant investment has been given to the installation and operation of telemetry stations throughout OID. Indications are that better monitoring information and data will require less water to be diverted. OID will also investigate ways to monitor operational spills

5.1.2. Outside Factors

Agricultural Trends. With changes in cropping pattern and smaller acreages of specialty crops, adjustments must be made by the ditch riders in delivery schedules and amounts of water. Typically, orders are more frequent for smaller amounts of water, almost reaching a demand type delivery system for these few.

Urbanization. As Malheur and Owyhee River basins become more populated (i.e. Vale, Nyssa, Ontario, etc.), demands for the region's water resources continues to increase. There is interest to maintain and preserve agriculture resource lands from conversion. Although the number of acres impacted by urbanization is small, these changes results in either land being taken out of agriculture or smaller farms that result in increased OID operational costs.

OID will continue to work closely with developers, community planners and water distributors to implement water conservation facilities that include appropriate rate structure, suitable distribution systems and delivery pipelines, flow meters, and preferably delivered under pressure for sprinkler or drop delivery.

Climate Change. Regional and localized climate models are indicating warmer weather but no significant change in overall precipitation totals to the Owyhee Basin. There are indications that there will be a change in seasonally available precipitation between snowfall and rainfall. As winter temperatures become warmer there will be less snowpack to melt into the spring and summer, therefore, the timing of the spring run-off will be earlier and lower in quantity. Also, warmer, dryer summers will increase the demand for irrigation water for irrigation throughout OID.

Long range water use needs for existing crops may increase as climate change occurs. Local research may provide crops and crop varieties that will provide similar yields, acceptable quality and economic benefit, with nearly the same water requirements.

Legislation. From time to time there may be instances of proposed or enacted legislation at the local, state or federal levels that may have impact on OID operations. It is very speculative to describe or ascertain impacts from any current or contemplated legislation at any level that will result in increased demand for water rights currently held by OID.

That being said, the use of conserved water from OID to other locations inside or outside existing OID boundaries is an opportunity that could be evaluated by OID. OID anticipated that overtime there will be other water uses that will compete for OIDs water rights.

5.2. Comparison of the Projected Water Need and Currently Available Sources – OAR 690-086-0270 (2)

With the exception of drought years, existing OID water supply sources currently meet OIDs' delivery needs and will continue to do so if current resources are not adversely impacted. OID will continue to implement conservation projects so that their delivery needs are met in drought and below normal water years.

5.3. List of Potential Sources of Water to Supply the Long-Term Needs – OAR 690-086-0270 (3)

The majority of future water supply needs could be met through water conservation projects. Piping and lining of OID canals and laterals would gain 40,000 AC-FT to 70,000 AC-FT of water[13].

Additionally, an Oregon Department of Agriculture Study concluded that there was approximately 60,000 AC-FT of additional water available from the Owyhee River basin during the period of February through May. A water right reservation application was filed (RN81101A) in November 1992 for this storage reservation. A 20-year extension was filed for this reservation on May 31, 2016 by Oregon Department of Agriculture. If OID deems that this water may be needed in the future, the first step would be to conduct a reconnaissance level study of potential storage sites for this reservation water. OID plans on conducting this reconnaissance study in the next 5 years. The request for the 20-year extension can be found in Attachment F.

5.4. Comparison of Potential Supplemental Water Supply Sources – OAR 690-086-0270 (4)

OID will be further evaluating conservation projects in the development of the OID SIP. OID conservation projects will be the most feasible means for meeting water supply demand during drought years for the next 20 years.

5.5. Impacts of Various Factors on Long Range Needs – OAR 690-086-0270 (5)

Various factors on the OID water supply needs are discussed in section 5.1. OID will be evaluating and prioritizing conservation projects in the SIP that will be completed in 2019.

6. Additional Requirements - OAR 690-086-0225

6.1. List of Affected Local Governments Provided a Copy of the WMCP - OAR 690-086-225(5)

OID provided a copy of their draft WMCP to the following affected local governments for review and comment on April 3, 2018:

- City of Nyssa
- City of Adrian
- City of Ontario
- Malheur County Planning Department
- Nyssa Rural Road District
- Ontario Rural Road District
- Malheur County Soil and Water Conservation District
- Natural Resources Conservation Service of Oregon

[13] This assumes that major canals and lateral would be either piped (50%) or lined (50%). Low end of estimate is for drought years and high end is for high water years.

- Old Owyhee Ditch Improvement District
- South Board of Control
- Warm Springs Irrigation District
- Malheur County Drainage District

Additionally, OID provided a copy of their draft WMCP to the U.S. Bureau of Reclamation for their review and comment. As of May 23, 2018, no comments were received by OID from any of the affected local governments or the U.S. Bureau of Reclamation.

6.2. Schedule for Preparing Updated WMCP – OAR 690-086-225(6)

OID proposes to submit an updated WMCP in 2028. This will provide sufficient time to implement the high priority conservation projects that will be identified in the SIP that will be completed 2020. OID will also provide a written progress report on the implementation of conservation projects in five years, in early 2023.

ATTACHMENTS

Attachment A
OID Related Water Rights

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE IRRIGATION DISTRICT
17 SOUTH 1ST STREET
NYSSA, OREGON 97913

confirms the right to use the waters of **SNAKE RIVER**, tributary of COLUMBIA RIVER for the purpose of **IRRIGATION** of **2088.3 acres.**

This right was perfected under Permit 1380. The date of priority is **NOVEMBER 25, 1912.** The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed **27.6 CUBIC FEET PER SECOND** or its equivalent in case of rotation.

The point of diversion is located as follows:

(Dead Ox Pumping Plant) LOT 6, SE¼NE¼, SECTION 2, T. 17 S., R. 47 E., W.M.; 2630 FEET SOUTH AND 2050 FEET EAST from N¼ corner of SECTION 2. (River Mile 363.08)

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:
Description is based on Willamette Meridia; all Townships are South and all Ranges are East.

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
15	47	31	SWSE		6200	19.6
15	47	31	SWSE		6500	4.9
15	47	31	SESE		6200	2.7
15	47	31	SESE		6400	28.7
16	47	4	SWNW		400	34.9
16	47	4	SENW	3	400	32.4
16	47	4	NESW		500	37.0
16	47	4	NWSW		500	34.7
16	47	4	SWSW		700	35.2
16	47	4	SESW		700	38.9
16	47	4	NWSE	4	500	0.9
16	47	4	SWSE	5	700	5.8
16	47	5	NENE	1	800	57.4
16	47	5	NWNE	2	900	51.5
16	47	5	NWNE	2	1000	13.3
16	47	5	SWNE		1000	38.0
16	47	5	SENE		1100	38.5
16	47	5	NENW	3	1200	36.8
16	47	5	NENW	3	1300	24.5
16	47	5	NWNW	4	1200	3.9
16	47	5	NWNW	4	1300	7.6

16	47	5	SWNW		1400	38.2
16	47	5	SENW	3	1400	35.1
16	47	5	NESW		1600	38.5
16	47	5	NWSW		1500	38.5
16	47	5	SWSW		2100	37.4
16	47	5	SESW		2000	32.0
16	47	5	NESE		1100	17.3
16	47	5	NESE		1701	19.4
16	47	5	NWSE		1701	37.6
16	47	5	SWSE		1700	37.6
16	47	5	SESE		1100	8.8
16	47	5	SESE		1700	17.9
16	47	5	SESE		1800	8.4
16	47	6	NENE	1	2200	63.7
16	47	6	NWNE	2	2300	60.2
16	47	6	SWNE		2500	25.8
16	47	6	SENE		2500	37.3
16	47	6	NENW	3	2300	32.6
16	47	6	NWNW	4	2400	8.2
16	47	6	NESE		2600	38.3
16	47	6	NWSE		2600	8.2
16	47	6	SESE		2700	26.0
16	47	7	NENE		2800	5.0
16	47	7	SENE		2900	4.6
16	47	8	NENE		3500	35.4
16	47	8	NWNE		3500	37.9
16	47	8	SWNE		3600	39.0
16	47	8	SENE		3600	36.4
16	47	8	NENW		3700	34.3
16	47	8	NWNW		3700	37.0
16	47	8	SWNW		3701	37
16	47	8	SENW		3702	36.8
16	47	9	SWNE		4400	20.6
16	47	9	NENW		4400	38.1
16	47	9	NWNW		4400	27.2
16	47	9	SWNW		4400	38.0
16	47	9	SENW		4400	38.4
16	47	9	NESW		4600	39.1
16	47	9	NWSW		4600	37.2
16	47	9	SWSW		4700	37.5
16	47	9	SESW		4800	34.4
16	47	9	NESE		5200	11.7
16	47	9	NWSE		4900	22.9
16	47	9	NWSE		5000	14.1
16	47	9	SWSE		4900	13.3
16	47	9	SWSE		5000	22.9
16	47	9	SESE		5100	36.4

16	47	15	NENW	2	1100	44.0
16	47	27	NENW		5701	23.2
16	47	27	SENW		5701	6.8
17	47	2	NWNW	4	100	16.3

This certificate describes the new location and type of use of the water right confirmed by certificate 3205 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel

Martha O. Pagel, Director

COUNTY OF MALHEUR

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE IRRIGATION DISTRICT
17 SOUTH 1ST STREET
NYSSA, OREGON 97913

confirms the right to use the waters of **SNAKE RIVER** for the purpose of **SUPPLEMENTAL IRRIGATION of 5120.2 acres.**

This right was perfected under Permit 1233. The date of priority is **JUNE 7, 1912.** The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed **64.0 CUBIC FEET PER SECOND** or its equivalent in case of rotation, measured at the point of diversion from the source.

The point of diversion is located as follows:

(Dunaway Pumping Plant) LOT 3 (NE¼ SW¼), SECTION 18, T. 20 S., R. 47 E., W.M. (River Mile 394.2)

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, is limited to a diversion of **ONE-EIGHTIETH** of one cubic foot per second for each acre irrigated during the irrigation season of each year, or the equivalent in case of rotation.

A description of the place of use to which this right is appurtenant is as follows:

Location is based on Willamette Meridian, all Townships are South, all Ranges are East.

TOWNSHIP	RANGE	SECTION	¼, ¼	Lot	Tax Lot	ACRES
18	46	22	NENE		100	26.0
18	46	22	NWNE		100	24.9
18	46	22	SWNE		500	38.0
18	46	22	SENE		500	37.0
18	46	22	NENW		100	13.8
18	46	22	NWNW		100	1.0
18	46	22	SWNW		100	33.7
18	46	22	SENW		100	37.5
18	46	22	NESW		900	28.9
18	46	22	NESE		1300	37.7
18	46	22	NWSE		1100	38.1
18	46	22	SWSE		1200	19.9
18	46	22	SESE		1200	23.0

TOWNSHIP	RANGE	SECTION	¼, ¼	Lot	Tax Lot	ACRES
18	46	23	NENE		2500	31.4
18	46	23	NWNE		2400	28.1
18	46	23	SWNE		1400	36.1
18	46	23	SWNE		1401	0.7
18	46	23	SENE		2300	37.0
18	46	23	NENW		1400	26.5
18	46	23	NENW		1500	6.3
18	46	23	NWNW		1400	9.1
18	46	23	NWNW		1500	18.9
18	46	23	NWNW		1600	1.8
18	46	23	SWNW		1500	17.1
18	46	23	SWNW		1600	17.5
18	46	23	SENW		1400	11.0
18	46	23	SENW		1500	24.1
18	46	23	NESW		1800	38.0
18	46	23	NWSW		1600	33.7
18	46	23	NWSW		1800	2.2
18	46	23	SWSW		1600	15.0
18	46	23	SESW		1901	19.5
18	46	23	NESE		2100	32.0
18	46	23	NESE		2200	4.9
18	46	23	NWSE		1800	9.5
18	46	23	NWSE		2100	29.1
18	46	23	SWSE		1802	8.0
18	46	23	SWSE		1901	8.2
18	46	23	SWSE		2000	12.7
18	46	23	SESE		2000	23.8
18	46	24	NENE		4600	30.0
18	46	24	NWNE		2600	14.7
18	46	24	NWNE		4100	17.4
18	46	24	SWNE		3900	7.3
18	46	24	SWNE		4000	11.1
18	46	24	SWNE		4101	11.7
18	46	24	SWNE		4200	2.0
18	46	24	SWNE		4300	4.9
18	46	24	SENE		4400	18.3
18	46	24	SENE		4500	16.2
18	46	24	NENW		2600	33.6
18	46	24	NWNW		2500	13.6
18	46	24	NWNW		2600	14.8
18	46	24	SWNW		2700	19.3
18	46	24	SWNW		2800	18.8
18	46	24	SENW		2900	38.2
18	46	24	NESW		3001	38.0
18	46	24	NWSW		3100	36.8
18	46	24	SWSW		3200	23.2
18	46	24	SESW		3200	23.3

TOWNSHIP	RANGE	SECTION	¼, ¼	Lot	Tax Lot	ACRES
18	46	24	NWSE		3400	17.8
18	46	24	NWSE		3500	0.1
18	46	24	NWSE		3600	3.8
18	46	24	NWSE		3700	14.5
18	46	24	SWSE		3300	36.0
18	46	24	SESE		3300	35.6
18	46	25	NENE		3300	10.2
18	46	25	NWNE		3300	9.1
18	47	19	SWNW	2	1300	23.1
18	47	19	NWSW	3	1300	37.8
18	47	19	SWSW	4	1400	37.2
18	47	30	NWNE		1400	1.6
18	47	30	NENW		1400	37.4
18	47	30	NWNW	1	1400	36.3
18	47	30	SWNW	2	6900	38.3
18	47	30	SENW		6900	39.8
18	47	30	NESW		6900	39.6
18	47	30	NWSW	3	6900	37.8
18	47	30	SWSW	4	7100	36.1
18	47	30	SESW		7100	38.1
18	47	30	NWSE		6200	30.2
18	47	30	SWSE		6200	35.6
18	47	30	SESE		6200	0.5
18	47	31	NWNE		7800	31.5
18	47	31	SWNE		7700	39.7
18	47	31	NENW		7200	26.6
18	47	31	SENW		7700	4.5
18	47	31	NESW		7600	14.4
18	47	31	SWSW	4	7600	1.3
18	47	31	SESW		7600	30.7
18	47	31	NWSE		7600	39.0
18	47	31	SWSE		7600	38.6
19	46	1	SESE		800	7.1
19	46	1	SESE		900	1.9
19	46	12	NENE		2500	16.3
19	46	12	SENE		2500	10.8
19	46	12	NESE		2500	0.4
19	46	12	NESE		3100	5.0
19	46	13	NESE		4300	2.7
19	46	13	SWSE		4400	8.9
19	46	13	SESE		4300	30.4
19	46	24	NENE		1800	33.0
19	46	24	NWNE		1800	12.7
19	46	24	SWNE		2000	3.0
19	46	24	SENE		2100	25.7
19	46	24	SENE		2102	0.6
19	46	24	NESW		2300	3.6

TOWNSHIP	RANGE	SECTION	¼, ¼	Lot	Tax Lot	ACRES
19	46	24	NESE		2100	23.3
19	46	24	NWSE		2500	14.0
19	46	24	SWSE		2500	32.2
19	46	24	SESE		2500	22.4
19	46	25	NWNE		2800	35.0
19	46	25	SWNE		2800	37.1
19	46	25	NENW		2900	18.2
19	46	25	SWNW		3001	9.5
19	46	25	SENW		2900	32.2
19	46	25	NESW		3103	37.7
19	46	25	NWSW		3103	23.2
19	46	25	SWSW		3103	14.0
19	46	25	SESW		3103	38.2
19	46	25	NWSE		3103	29.2
19	46	25	SWSE		3103	26.5
19	46	26	SENE		3001	8.2
19	46	35	NESE		6100	12.7
19	46	35	SESE		6100	24.3
19	46	36	SWNE		6500	8.0
19	46	36	NENW		6600	12.6
19	46	36	NENW		6601	16.3
19	46	36	NWNW		6700	30.9
19	46	36	SWNW		6500	19.2
19	46	36	SWNW		6700	19.9
19	46	36	SENW		6500	37.8
19	46	36	NESW		6500	23.1
19	46	36	NESW		7000	4.0
19	46	36	NWSW		7000	38.2
19	46	36	SWSW		7000	38.2
19	46	36	SESW		7000	37.7
19	46	36	NWSE		6500	6.9
19	46	36	SWSE		7000	1.6
19	47	6	NENE	1	1100	1.8
19	47	6	NWNE	2	1100	36.2
19	47	6	SWNE		1100	38.0
19	47	6	SENE		1100	1.3
19	47	6	NENW	3	1100	39.6
19	47	6	NWNW	4	1200	24.6
19	47	6	SWNW	5	1200	37.4
19	47	6	SENW		1100	38.7
19	47	6	NESW		1301	40.2
19	47	6	NWSW	6	1301	36.1
19	47	6	SWSW	7	1800	38.4
19	47	6	SESW		1700	38.6
19	47	6	NESE		1301	0.9
19	47	6	NWSE		1301	40.0
19	47	6	SWSE		1600	38.0

TOWNSHIP	RANGE	SECTION	¼, ¼	Lot	Tax Lot	ACRES
19	47	7	NENE		2100	4.9
19	47	7	NWNE		2000	39.6
19	47	7	SWNE		2000	33.6
19	47	7	SENE		2000	0.3
19	47	7	NENW		2000	38.5
19	47	7	NWNW	1	1900	37.1
19	47	7	SWNW	2	1900	38.3
19	47	7	SENW		2000	38.1
19	47	7	NESW		2500	40.1
19	47	7	NWSW	3	2500	38.7
19	47	7	SWSW	4	2500	5.6
19	47	7	SWSW	4	2601	10.3
19	47	7	SWSW	4	2700	0.2
19	47	7	SESW		2500	3.4
19	47	7	SESW		2800	0.5
19	47	7	SESW		2900	33.8
19	47	7	NWSE		2500	36.3
19	47	7	SWSE		2500	34.4
19	47	18	NWNE		5601	6.0
19	47	18	NENW		5601	35.2
19	47	18	NWNW	1	5700	22.8
19	47	18	SWNW	2	5800	37.9
19	47	18	SENW		5601	8.4
19	47	18	SENW		5602	2.4
19	47	18	NWSW	3	5900	29.7
19	47	18	SWSW	4	6002	20.6
19	47	19	NWNW	1	100	18.8
20	46	1	SESW		100	17.0
20	46	11	NESE		3200	4.0
20	46	11	SESE		3300	22.6
20	46	12	NWNE		3500	22.7
20	46	12	SWNE		3300	24.8
20	46	12	NENW		3500	38.8
20	46	12	NENW		3700	0.1
20	46	12	NWNW		3500	15.7
20	46	12	NWNW		3700	17.9
20	46	12	NWNW		3800	0.4
20	46	12	SWNW		3700	3.9
20	46	12	SWNW		3800	0.4
20	46	12	SWNW		3801	29.7
20	46	12	SENW		3500	10.0
20	46	12	SENW		3700	2.7
20	46	12	SENW		3801	24.9
20	46	12	NESW		3300	39.7
20	46	12	NWSW		3300	36.9
20	46	12	SWSW		3300	34.5
20	46	12	SESW		3300	37.5

TOWNSHIP	RANGE	SECTION	¼, ¼	Lot	Tax Lot	ACRES
20	46	12	NWSE		3300	35.2
20	46	12	SWSE		3300	36.9
20	46	12	SESE		3300	23.1
20	46	13	NWSW		4100	0.7
20	46	14	NENE		4600	29.6
20	46	14	SENE		4600	23.8
20	46	14	NESE		4600	19.4
20	46	14	SESE		4600	21.3
20	46	24	NWNE		2300	26.1
20	46	24	NENW		2300	38.7
20	46	24	NWNW		2500	36.4
20	46	24	SWNW		2500	36.8
20	46	24	SWNW		2501	0.4
20	46	24	SENW		2300	37.0
20	46	24	NWSW		2500	1.3
20	47	18	NWNW	1	3900	3.1
20	47	18	SWNW	2	3900	9.6
20	47	18	NWSW	3	2400	1.0

DEFICIENCY IN RATE LAYER

TOWNSHIP	RANGE	SECTION	¼, ¼	Lot	Tax Lot	ACRES
18	47	30	SWNW	2	6900	38.3
18	47	30	SENW		6900	39.8
18	47	30	NESW		6900	39.6
18	47	30	NWSW	3	6900	37.8
18	47	30	SWSW	4	7100	36.1
18	47	30	SESW		7100	38.1
18	47	30	NWSE		6200	30.2

This Certificate describes the new location and type of use of the water right confirmed by Certificate 4853 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999, approving a petition by the Owyhee Irrigation District under ORS 541.329.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel

Martha O. Pagel, Director

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE IRRIGATION DISTRICT
17 SOUTH 1ST STREET
NYSSA, OREGON 97913

confirms the right to use the waters of **SNAKE RIVER**, tributary of THE COLUMBIA RIVER for the purpose of **SUPPLEMENTAL IRRIGATION of 894.1 acres.**

This right was perfected under Permit 4904. The date of priority is **JANUARY 3, 1921.** The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed **11.18 CUBIC FEET PER SECOND** or its equivalent in case of rotation.

The point of diversion is located as follows:

(Dunaway Pumping Plant) LOT 3 NE1/4SW1/4, SECTION 18, T. 20 S., R. 47 E., W.M. (River Mile 394.2)

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, is limited to a diversion of **ONE-EIGHTIETH** of one cubic foot per second for each acre irrigated during the irrigation season of each year, or the equivalent in case of rotation.

A description of the place of use to which this right is appurtenant is as follows:
Location is based on Willamette Meridian, all Townships are South, all Ranges are East.

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	46	35	NENE		5800	4.4
19	46	35	SENE		6100	3.5
20	46	1	NENE	1	100	20.3
20	46	1	NWNE	2	101	26.1
20	46	1	SWNE		101	34.1
20	46	1	SENE		100	23.0
20	46	1	NENW	3	100	26.7
20	46	1	NWNW	4	100	4.6
20	46	1	SWNW		100	18.0
20	46	1	SENW		100	38.1
20	46	1	NESW		100	38.0
20	46	1	NWSW		100	24.4
20	46	1	SWSW		100	18.7
20	46	1	SWSW		300	2.7
20	46	1	SESW		100	21.2
20	46	1	NESE		100	4.0

20	46	1	NWSE		100	27.6
20	46	1	NWSE		101	3.6
20	46	1	SWSE		100	20.9
20	46	13	NENE		3900	24.7
20	46	13	NWNE		3900	38.8
20	46	13	SWNE		2900	39.9
20	46	13	SENE		2900	30.6
20	46	13	NENW		3900	38.6
20	46	13	NWNW		3900	37.3
20	46	13	SWNW		2900	37.9
20	46	13	SENW		2900	40.0
20	46	13	NESW		4000	12.8
20	46	13	NESW		4200	26.9
20	46	13	NWSW		4000	36.5
20	46	13	NWSW		4100	0.8
20	46	13	SWSW		4000	37.9
20	46	13	SESW		4000	26.4
20	46	13	SESW		4200	12.8
20	46	13	NESE		4200	8.2
20	46	13	NWSE		4200	39.7
20	46	13	SWSE		4200	36.6
20	46	13	SESE		4200	7.8

This certificate describes the new location and type of use of the water right confirmed by Certificate 4871 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel

Martha O. Pagel, Director

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

UNITED STATES OF AMERICA
BUREAU OF RECLAMATION
214 BROADWAY AVENUE
BOISE IDAHO 83702-7298

confirms the right to use the waters of **SNAKE RIVER**, tributary of COLUMBIA RIVER for the purpose of **SUPPLEMENTAL IRRIGATION of 9315.2 acres.**

The beneficial use of the water represented hereby is for the landowners within the **Owyhee Irrigation District** pursuant to relationships established by the Federal Reclamation Laws and repayment contract number Ilr-876 dated August 29, 1951, as amended and supplemented, between the United States and the full supply districts of the Owyhee Project.

This right was perfected under Permit 24286. The date of priority is **OCTOBER 1, 1951** The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed **176.0 CUBIC FEET PER SECOND** or its equivalent in case of rotation.

The point of diversion is located as follows:

(Dead Ox Pumping Plant) SE¼ NE¼, SECTION 2, T. 17 S., R. 47 E., W.M. (River Mile 363.08)

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, is limited to **ONE-FORTIETH** of one cubic foot per second per acre, or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed **6.7 acre-feet** for each acre irrigated during the irrigation season of each year.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:
All Townships are South, all Ranges are East, location based on Willamette Meridian

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
15	46	25	NESW	3	2800	24.8
15	46	25	NWSW	4	2800	2.8
15	46	25	SWSW	4	2800	15.4
15	46	25	SESW		2800	24.0
15	46	25	NESE		3001	36.9
15	46	25	NWSE		2800	13.6
15	46	25	SWSE		2800	31.7
15	46	25	SESE		3200	37.2
15	46	36	NENE		3600	34.1
15	46	36	NWNE		3700	31.8
15	46	36	SWNE		3700	13.6

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
15	46	36	SENE		3600	0.5
15	46	36	SENE		4000	31.9
15	46	36	NENW		3700	3.2
15	46	36	NESE		6101	8.6
15	47	30	SWSW	4	5400	17.5
15	47	30	SWSW	4	6000	1.3
15	47	30	SESW		5900	0.2
15	47	31	NENE		5603	14.4
15	47	31	NWNE		5800	29.6
15	47	31	SWNE		5800	23.9
15	47	31	SWNE		6400	11.1
15	47	31	SENE		5800	37.0
15	47	31	SENE		6400	1.0
15	47	31	NENW		5900	37.7
15	47	31	NWNW	1	6000	34.6
15	47	31	SWNW	3	6000	2.3
15	47	31	SWNW	3	6101	32.6
15	47	31	SENW		5900	9.9
15	47	31	SENW		6200	25.4
15	47	31	NESW		6200	35.6
15	47	31	NWSW	3	6100	2.3
15	47	31	NWSW	3	6101	32.6
15	47	31	SWSW	4	6300	15.3
15	47	31	SESW		6200	38.4
15	47	31	NESE		5800	1.2
15	47	31	NESE		6400	28.6
15	47	31	NESE		6501	0.7
15	47	31	NWSE		6400	36.1
15	47	31	NWSE		6401	0.2
15	47	31	NWSE		6501	1.6
15	47	31	SWSE		6200	30.3
15	47	31	SWSE		6500	4.9
15	47	31	SESE		6200	2.7
15	47	31	SESE		6400	28.7
15	47	32	SWNE		7500	17.2
15	47	32	SENE		7500	5.3
15	47	32	NENW		7500	1.0
15	47	32	NWNW		7500	4.5
15	47	32	SWNW		7500	37.3
15	47	32	SENW		7500	30.1
15	47	32	NESW		7600	26.8
15	47	32	NESW		7800	9.5
15	47	32	NWSW		7600	12.7
15	47	32	NWSW		7700	23.3
15	47	32	SWSW		7700	36.7
15	47	32	SESW		7800	37.0
15	47	32	NESE		7500	33.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
15	47	32	NWSE		7500	38.9
15	47	32	SWSE		7500	2.2
15	47	32	SWSE		7800	32.5
15	47	32	SWSE		7900	1.9
15	47	32	SESE		7500	13.1
15	47	32	SESE		7900	19.1
15	47	33	SWNW		8500	3.0
15	47	33	NWSW	4	8500	18.0
15	47	33	SWSW	5	300	2.6
15	47	33	SWSW	5	8500	4.6
15	47	33	SWSW	5	9304	8.7
16	47	4	NENW	2	300	8.2
16	47	4	NWNW	1	300	43.6
16	47	4	SWNW		400	34.9
16	47	4	SENW	3	400	32.4
16	47	4	NESW		500	37.0
16	47	4	NWSW		500	34.7
16	47	4	SWSW		700	35.2
16	47	4	SESW		700	38.9
16	47	4	NWSE	4	500	0.9
16	47	4	SWSE	5	700	5.8
16	47	5	NENE	1	800	57.4
16	47	5	NWNE	2	900	51.5
16	47	5	NWNE	2	1000	13.3
16	47	5	SWNE		1000	38.0
16	47	5	SENE		1100	38.5
16	47	5	NENW	3	1200	36.8
16	47	5	NENW	3	1300	24.5
16	47	5	NWNW	4	1200	3.9
16	47	5	NWNW	4	1300	7.6
16	47	5	NWNW	4	1400	48.6
16	47	5	SWNW		1400	38.2
16	47	5	SENW	3	1400	35.1
16	47	5	NESW		1600	38.5
16	47	5	NWSW		1500	38.5
16	47	5	SWSW		2100	37.4
16	47	5	SESW		2000	32.0
16	47	5	NESE		1100	17.3
16	47	5	NESE		1701	19.4
16	47	5	NWSE		1701	37.6
16	47	5	SWSE		1700	37.6
16	47	5	SESE		1100	8.8
16	47	5	SESE		1700	17.9
16	47	5	SESE		1800	8.4
16	47	6	NENE	1	2200	63.7
16	47	6	NWNE	2	2300	60.2
16	47	6	SWNE		2500	25.8

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	6	SENE		2500	37.3
16	47	6	NENW	3	2300	32.6
16	47	6	NWNW	4	2400	8.2
16	47	6	NESE		2600	38.3
16	47	6	NWSE		2600	8.2
16	47	6	SESE		2700	26.0
16	47	7	NENE		2800	5.0
16	47	7	SENE		2900	4.6
16	47	8	NENE		3500	35.4
16	47	8	NWNE		3500	37.9
16	47	8	SWNE		3600	39.0
16	47	8	SENE		3600	36.4
16	47	8	NENW		3700	34.3
16	47	8	NWNW		3700	37.0
16	47	8	SWNW		3701	37.0
16	47	8	SENW		3702	36.8
16	47	8	NESW		3901	3.8
16	47	8	NESE		3901	36.6
16	47	8	NWSE		3901	37.7
16	47	8	SWSE		4200	23.9
16	47	8	SESE		3901	37.6
16	47	9	NWNE	1	4400	10.4
16	47	9	SWNE		4400	20.6
16	47	9	NENW		4400	38.1
16	47	9	NWNW		4400	27.2
16	47	9	SWNW		4400	38.0
16	47	9	SENW		4400	38.4
16	47	9	NESW		4600	39.1
16	47	9	NWSW		4600	37.2
16	47	9	SWSW		4700	37.5
16	47	9	SESW		4800	34.4
16	47	9	NESE		5200	11.7
16	47	9	NWSE		4900	22.9
16	47	9	NWSE		5000	14.1
16	47	9	SWSE		4900	13.3
16	47	9	SWSE		5000	22.9
16	47	9	SESE		5100	36.4
16	47	10	SWSW		200	17.1
16	47	13	NENW	2	1100	44.0
16	47	13	SWNW		1500	35.0
16	47	13	NESW		1500	33.5
16	47	13	NWSW		1500	38.0
16	47	13	SWSW		1700	4.8
16	47	13	SWSW		1701	10.4
16	47	13	SWSW		1800	3.0
16	47	13	SWSW		1900	19.6
16	47	13	SESW		1600	36.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	13	SWSE		1400	29.3
16	47	13	SESE		1400	39.7
16	47	14	NESW		2200	21.3
16	47	14	NWSW		2600	0.3
16	47	14	SWSW		2500	30.3
16	47	14	SESW		2400	38.0
16	47	14	NESE		2100	32.6
16	47	14	NWSE		2100	34.1
16	47	14	SWSE		2300	38.7
16	47	14	SESE		2100	33.8
16	47	15	NENE		2800	26.3
16	47	15	NWNE		2800	23.4
16	47	15	SWNE		2700	33.8
16	47	15	SWNE		3501	0.4
16	47	15	SENE		2600	0.6
16	47	15	SENE		2700	5.0
16	47	15	NENW		2900	32.0
16	47	15	NWNW		200	36.1
16	47	15	SWNW		3000	34.9
16	47	15	SENW		3000	36.2
16	47	15	NESW		3100	26.1
16	47	15	NESW		3401	0.7
16	47	15	NWSW		3300	32.4
16	47	15	NWSW		3400	1.1
16	47	15	SWSW		3300	11.4
16	47	15	SWSW		3400	0.6
16	47	15	SWSW		3401	15.8
16	47	15	SESW		3401	34.8
16	47	15	NESE		2600	24.2
16	47	15	NWSE		3501	35.0
16	47	15	SWSE		3501	35.9
16	47	15	SESE		2500	32.9
16	47	16	NENE		5300	32.7
16	47	16	NENE		5500	2.1
16	47	16	NWNE		5400	10.7
16	47	16	NWNE		5500	2.9
16	47	16	NWNE		5600	18.5
16	47	16	SWNE		5500	8.6
16	47	16	SWNE		5600	29.5
16	47	16	SENE		5300	2.9
16	47	16	SENE		5500	34.8
16	47	16	NENW		5700	33.4
16	47	16	NWNW		5700	35.2
16	47	16	SWNW		5700	33.5
16	47	16	SENW		5700	39.1
16	47	16	NESW		5700	20.9
16	47	16	NWSW		5700	1.0

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	16	NESE		6100	38.4
16	47	16	NWSE		6000	37.0
16	47	16	SWSE		6000	32.7
16	47	16	SESE		6100	35.0
16	47	17	NENE		6200	36.6
16	47	17	NWNE		6303	5.0
16	47	17	SENE		6200	9.4
16	47	21	NENE		700	32.5
16	47	21	NWNE		800	1.8
16	47	21	SWNE		800	1.4
16	47	21	SENE		700	30.3
16	47	22	NENE		100	33.8
16	47	22	NENE		400	0.2
16	47	22	NWNE		100	38.0
16	47	22	SWNE		200	34.2
16	47	22	SENE		200	18.7
16	47	22	SENE		300	17.5
16	47	22	NENW		400	33.4
16	47	22	NWNW		500	36.3
16	47	22	SWNW		500	29.7
16	47	22	SENW		400	31.8
16	47	22	NESW		700	30.8
16	47	22	NWSW		600	30.1
16	47	22	SWSW		600	13.7
16	47	22	SESW		700	34.8
16	47	22	NESE		800	33.3
16	47	22	NWSE		900	36.6
16	47	22	SWSE		1000	22.2
16	47	22	SWSE		1100	10.3
16	47	22	SESE		1100	34.1
16	47	23	NENE		1200	35.9
16	47	23	NWNE		1200	38.9
16	47	23	SWNE		1200	39.1
16	47	23	SENE		1200	34.4
16	47	23	NENW		1400	37.6
16	47	23	NWNW		1400	37.0
16	47	23	SWNW		1400	37.0
16	47	23	SENW		1400	37.0
16	47	23	NESW		1500	38.4
16	47	23	NWSW		1500	37.4
16	47	23	SWSW		1500	37.2
16	47	23	SESW		1500	10.0
16	47	23	SESW		1700	27.6
16	47	23	NESE		2000	36.7
16	47	23	NWSE		1900	36.0
16	47	23	SWSE		1800	36.6
16	47	23	SESE		2000	36.8

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	24	NENE		2200	19.2
16	47	24	NENE		2400	17.5
16	47	24	NWNE		2400	38.6
16	47	24	SWNE		2401	39.7
16	47	24	SENE		2300	36.7
16	47	24	NENW		2500	35.8
16	47	24	NWNW		2600	34.3
16	47	24	SWNW		2700	37.7
16	47	24	SENW		2500	37.0
16	47	24	NESW		2700	7.7
16	47	24	NESW		2800	27.8
16	47	24	NWSW		2700	37.2
16	47	24	SWSW		2700	36.5
16	47	24	SESW		2700	1.9
16	47	24	SESW		2800	34.7
16	47	24	SESW		2801	0.5
16	47	24	NESE		2401	38.8
16	47	24	NWSE		2401	39.7
16	47	24	SWSE		2401	37.0
16	47	24	SESE		2401	37.3
16	47	25	NWNE		3000	35.4
16	47	25	NENW		3200	35.9
16	47	25	NWNW		3300	36.2
16	47	25	SWNW		3300	38.2
16	47	25	SENW		3200	34.6
16	47	25	NESW		3100	19.5
16	47	25	NESW		3200	14.5
16	47	25	NWSW		3300	36.6
16	47	25	SWSW		3400	13.6
16	47	25	SWSW		3401	21.6
16	47	25	SESW		3100	37.1
16	47	26	NENE		3500	37.5
16	47	26	NWNE		1800	34.9
16	47	26	SWNE		1800	15.6
16	47	26	SENE		3600	37.1
16	47	26	SWNE		3600	15.0
16	47	26	NENW		4500	36.5
16	47	26	NWNW		4500	9.4
16	47	26	NWNW		4700	1.8
16	47	26	NWNW		4800	12.6
16	47	26	NWNW		4901	0.6
16	47	26	SWNW		4300	1.3
16	47	26	SWNW		4800	3.4
16	47	26	SWNW		4901	13.9
16	47	26	SWNW		5000	15.6
16	47	26	SENW		4200	1.5
16	47	26	SENW		4300	17.1

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	26	SENW		4400	18.3
16	47	26	NESW		3800	21.5
16	47	26	NESW		4000	4.7
16	47	26	NESW		4100	3.0
16	47	26	NWSW		4901	0.1
16	47	26	NWSW		5200	30.3
16	47	26	NWSW		5300	5.6
16	47	26	SWSW		5300	35.1
16	47	26	SESW		3800	3.7
16	47	26	SESW		4000	27.8
16	47	26	SESW		4001	2.0
16	47	26	NESE		3700	37.7
16	47	26	NWSE		3800	37.1
16	47	26	SWSE		3900	36.3
16	47	26	SESE		3700	37.7
16	47	27	NENE		5400	26.2
16	47	27	NENE		5500	8.9
16	47	27	NWNE		5500	36.5
16	47	27	SWNE		5600	38.2
16	47	27	SENE		5400	5.9
16	47	27	SENE		5600	30.3
16	47	27	NENW		5701	23.2
16	47	27	SENW		5701	6.8
16	47	27	NESE		6100	27.1
16	47	27	NESE		6200	9.9
16	47	27	NWSE		6100	17.7
16	47	27	NWSE		6200	4.2
16	47	27	SWSE		6200	37.4
16	47	27	SESE		6200	35.7
16	47	34	NENE		6300	28.0
16	47	34	NWNE		6400	8.0
16	47	34	NWNE		6500	26.0
16	47	34	SWNE		6500	34.8
16	47	34	SENE		6300	31.5
16	47	34	NENW		6600	8.5
16	47	34	SENW		6600	19.9
16	47	34	NESE		6300	33.8
16	47	34	NWSE		6300	19.4
16	47	34	SWSE		6300	2.9
16	47	34	SESE		6300	24.1
16	47	35	NENE		7490	38.0
16	47	35	NWNE		7490	33.5
16	47	35	SWNE		7490	36.2
16	47	35	SENE		7490	38.3
16	47	35	NENW		7400	32.5
16	47	35	NWNW		7700	18.8
16	47	35	NWNW		7800	19.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	35	SWNW		7900	38.8
16	47	35	SENW		7500	31.4
16	47	35	SENW		7501	1.0
16	47	35	SENW		7600	0.6
16	47	35	NESW		8500	0.7
16	47	35	NESW		8600	0.7
16	47	35	NESW		8601	0.8
16	47	35	NESW		8602	0.6
16	47	35	NESW		8603	0.9
16	47	35	NESW		8604	0.3
16	47	35	NESW		8605	0.8
16	47	35	NESW		8700	0.5
16	47	35	NESW		8702	0.4
16	47	35	NESW		8800	26.8
16	47	35	NWSW		8000	34.8
16	47	35	NWSW		8101	3.6
16	47	35	SWSW		8000	2.2
16	47	35	SWSW		8100	3.5
16	47	35	SWSW		8101	20.0
16	47	35	SWSW		8200	1.6
16	47	35	SESW		8400	30.2
16	47	35	NESE		8901	8.0
16	47	35	NESE		8903	9.0
16	47	35	NESE		9000	13.0
16	47	35	NWSE		8800	37.7
16	47	35	SWSE		8400	27.8
16	47	36	NENW	1	9400	10.2
16	47	36	NWNW		9300	33.3
16	47	36	SWNW		8900	1.9
16	47	36	SWNW		9300	0.5
16	47	36	SWNW		9600	1.8
16	47	36	SWNW		9700	9.8
16	47	36	NWSW		8900	1.8
16	48	19	NESW	3	200	23.6
16	48	19	NWSW		200	10.0
16	48	19	NWSW		300	28.5
16	48	19	SWSW		400	39.3
16	48	19	SESW	4	400	15.9
17	47	2	NWNE	2	500	3.8
17	47	2	NENW	3	200	18.3
17	47	2	NWNW	4	100	16.3
17	47	2	SWNW		1100	14.7
17	47	2	SENW		400	2.0
17	47	2	SENW		1100	26.3
17	47	2	NESW		2000	30.9
17	47	2	NWSW		1600	31.0
17	47	2	SWSW		2500	37.1

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	3	SESW		3908	6.0
17	47	3	NESE		700	7.3
17	47	3	NESE		1100	3.0
17	47	3	NESE		1200	1.4
17	47	3	NWSE		700	9.7
17	47	3	SWSE		700	4.0
17	47	3	SWSE		2100	8.6
17	47	3	SWSE		2200	3.0
17	47	3	SESE		1200	18.4
17	47	10	NENE		4800	37.0
17	47	10	NWNE		4900	9.8
17	47	10	NWNE		5000	7.9
17	47	10	SWNE		5502	24.9
17	47	10	SENE		5300	18.0
17	47	10	SENE		5400	18.0
17	47	10	NENW		3900	24.0
17	47	10	NWNW		5800	5.9
17	47	10	SWNW		5800	13.1
17	47	10	SENW		5600	11.8
17	47	10	SENW		5601	3.3
17	47	10	NESE		6600	17.0
17	47	10	NESE		6700	4.0
17	47	10	NESE		6704	3.0
17	47	10	NESE		6705	3.0
17	47	10	NWSE		6500	38.0
17	47	11	SWNW		7400	18.0

This Certificate describes the new location and type of use of the water right confirmed by Certificate 24703 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel

Martha O. Pagel, Director

COUNTY OF MALHEUR

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

UNITED STATES OF AMERICA
BUREAU OF RECLAMATION
214 BROADWAY AVENUE
BOISE IDAHO 83702-7298

confirms the right to use the waters of **SNAKE RIVER**, tributary of COLUMBIA RIVER for the purpose of **SUPPLEMENTAL IRRIGATION of 564.2 acres.**

The beneficial use of the water represented hereby is for the landowners within the **Owyhee Irrigation District** pursuant to relationships established by the Federal Reclamation Laws and repayment contract number Ilr-876 dated August 29, 1951, as amended and supplemented, between the United States and the full supply districts of the Owyhee Project.

This right was perfected under Permit 24285. The date of priority is **OCTOBER 1, 1951** The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed **14.1 CUBIC FEET PER SECOND** or its equivalent in case of rotation.

The point of diversion is located as follows:
(Dunaway Pumping Plant) LOT 3 NE1/4SW1/4, SECTION 18, T. 20 S., R. 47 E., W.M.
(River Mile 394.2)

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, is limited to **ONE-FORTIETH** of one cubic foot per second per acre, or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed **6.7 acre-feet** for each acre irrigated during the irrigation season of each year.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:
All Townships are South, all Ranges are East, location based on Willamette Meridian

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	47	4	NWNW	4	1600	2.6
18	47	4	NWNW	4	1601	1.0
18	47	4	NWNW	4	1602	1.7
18	47	4	SENW		300	1.8
18	47	5	NENE	1	700	0.4
18	47	5	NENE	1	800	0.6
18	47	5	NENE	1	1002	0.5
18	47	5	NENE	1	1005	0.1
18	47	5	NENE	1	1100	1.0
18	47	5	NENE	1	1200	0.4
18	47	5	NENE	1	1300	0.5
18	47	5	NENE	1	2200	0.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	47	5	NENE	1	2502	0.1
18	47	5	NENE	1	3100	1.0
18	47	5	NENE	1	3200	0.4
18	47	5	NWNE	2	1201	0.4
18	47	5	NWNE	2	1292	2.0
18	47	5	NWNE	2	1300	0.6
18	47	5	SWNE		100	0.8
18	47	5	SWNE		200	1.5
18	47	5	SWNE		300	3.7
18	47	5	SWNE		900	0.5
18	47	5	SENE		100	4.2
18	47	5	SENE		200	8.2
18	47	5	SENE		300	4.1
18	47	5	SENE		700	0.4
18	47	5	SENE		800	0.4
18	47	5	SENE		1000	0.2
18	47	5	SENE		1100	0.1
18	47	5	SENW		3000	0.6
18	47	5	SENW		3001	0.4
18	47	5	SENW		3002	0.4
18	47	5	SENW		3003	0.5
18	47	5	SENW		3004	0.4
18	47	5	SENW		3006	0.2
18	47	5	SENW		3007	0.6
18	47	5	SENW		3008	0.5
18	47	5	SENW		3009	0.4
18	47	5	SENW		3010	0.4
18	47	5	SENW		3011	0.4
18	47	5	SENW		3012	0.4
18	47	5	SENW		3013	0.5
18	47	5	SENW		3014	0.5
18	47	5	SENW		3015	0.5
18	47	5	SENW		3100	6.0
18	47	5	SENW		3400	2.0
18	47	5	SENW		3500	3.7
18	47	5	NESE		700	0.8
18	47	5	NWSE		2000	0.5
18	47	5	NWSE		2100	0.8
18	47	5	NWSE		2102	0.5
18	47	5	NWSE		2400	2.3
18	47	5	NWSE		2500	1.0
18	47	5	NWSE		6300	0.3
18	47	5	NWSE		7800	0.3
18	47	5	NWSE		7900	0.4
18	47	5	SWSE		800	0.5
18	47	5	SWSE		1100	0.3
18	47	5	SWSE		1200	0.6

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	47	5	SWSE		1300	1.0
18	47	5	SESE		1400	0.4
18	47	5	SESE		1600	0.7
18	47	8	NENE		800	0.6
18	47	8	NENE		1500	2.7
18	47	8	SWNE		1100	1.4
18	47	8	SENE		900	9.0
18	47	8	SENE		1000	9.4
18	47	8	SENE		1100	4.6
18	47	8	SENE		1200	3.2
18	47	8	SENE		1300	4.4
18	47	8	NESE		1000	15.7
18	47	8	NESE		3800	1.9
18	47	8	NESE		3900	0.7
18	47	8	NESE		3902	4.7
18	47	8	NESE		4900	0.9
18	47	8	NESE		4901	1.1
18	47	8	NWSE		3600	5.5
18	47	8	NWSE		3700	1.2
18	47	8	NWSE		3800	1.4
18	47	8	SWSE		3600	15.2
18	47	8	SWSE		3601	0.3
18	47	8	SWSE		3602	0.6
18	47	8	SESE		4100	8.7
18	47	8	SESE		4200	7.5
18	47	8	SESE		4201	1.3
18	47	8	SESE		4300	6.4
18	47	8	SESE		4301	0.2
18	47	8	SESE		4400	0.2
18	47	8	SESE		4401	1.9
18	47	8	SESE		4500	1.1
18	47	8	SESE		4700	1.0
18	47	8	SESE		4800	4.7
18	47	9	SWNW		1100	1.0
18	47	9	SWNW		1400	0.4
18	47	9	NWSW		2700	8.5
18	47	9	NWSW		2800	4.3
18	47	9	NWSW		4101	2.4
18	47	9	NWSW		4102	0.4
18	47	9	NWSW		4104	0.2
18	47	9	NWSW		4106	0.1
18	47	9	NWSW		4107	0.3
18	47	9	NWSW		4400	2.0
18	47	9	NWSW		4500	2.1
18	47	9	NWSW		4600	4.1
18	47	9	SWSW		3701	2.2
18	47	9	SWSW		3702	0.4

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	47	9	SWSW		4600	0.5
18	47	9	SWSW		4900	0.4
18	47	9	SWSW		5000	4.4
18	47	9	SWSW		5100	4.4
18	47	17	NENE		3500	7.8
18	47	17	NENE		3600	0.2
18	47	17	NENE		3700	1.4
18	47	17	NENE		3800	8.3
18	47	17	NENE		3900	0.1
18	47	17	NENE		3901	1.5
18	47	17	NENE		4003	0.2
18	47	17	NWNE		400	0.4
18	47	17	NWNE		701	0.5
18	47	17	NWNE		900	0.7
18	47	17	NWNE		1000	0.6
18	47	17	NWNE		1200	0.4
18	47	17	NWNE		1300	0.5
18	47	17	NWNE		1400	0.8
18	47	17	NWNE		1500	0.3
18	47	17	NWNE		1600	0.4
18	47	17	NWNE		1800	0.1
18	47	17	NWNE		1900	0.4
18	47	17	SWNE		2500	0.5
18	47	17	SWNE		2600	0.6
18	47	17	SWNE		3200	0.7
18	47	17	SENE		3801	4.1
18	47	17	SENE		4300	0.1
18	47	17	SENE		4301	0.3
18	47	17	SENE		4302	0.6
18	47	17	SENE		4303	0.2
18	47	17	SENE		4400	3.9
18	47	17	SENE		4900	0.9
18	47	17	SENE		5100	0.7
18	47	17	SENE		5300	0.7
18	47	17	SENE		5500	0.7
18	47	30	SWSE		6200	35.6
18	47	30	SESE		6200	0.5
18	47	31	NWNE		7800	31.5
18	47	31	SWNE		7700	39.7
18	47	31	NENW		7200	26.6
18	47	31	SWSW	4	7600	1.3
18	47	31	SESW		7600	30.7
18	47	31	NWSE		7600	39.0
18	47	31	SWSE		7600	38.6
19	47	7	NWSW	3	2500	38.7
19	47	7	SWSW	4	2500	5.6
19	47	7	SWSW	4	2601	10.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	47	7	SWSW	4	2700	0.2
19	47	7	SESW		2500	3.4

This Certificate describes the new location and type of use of the water right confirmed by Certificate 24704 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329. This Certificate together with Certificate 75690 supercedes Certificate 24704.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel, Director

COUNTY OF MALHEUR

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

UNITED STATES OF AMERICA
BUREAU OF RECLAMATION
214 BROADWAY AVENUE
BOISE IDAHO 83702-7298

confirms the right to use the waters of **SNAKE RIVER**, tributary of COLUMBIA RIVER for the purpose of **SUPPLEMENTAL IRRIGATION of 9987.2 acres.**

This right was perfected under Permit 24285. The date of priority is **OCTOBER 1, 1951** The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed **204.9 CUBIC FEET PER SECOND** or its equivalent in case of rotation.

The point of diversion is located as follows:
(Dunaway Pumping Plant) LOT 3 NE1/4 SW1/4, SECTION 18, T. 20 S., R. 47 E., W.M.
(River Mile 394.2)

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, is limited to **ONE-FORTIETH** of one cubic foot per second per acre, or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed **6.7 acre-feet** for each acre irrigated during the irrigation season of each year.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:
All Townships are South, all Ranges are East, location based on Willamette Meridian
USE IS WITHIN THE OWYHEE DITCH COMPANY

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	ACRES
18	46	12		NENE	11.2
18	46	12		SWNE	4.0
18	46	12		SENE	35.2
18	46	12		NESE	34.1
18	46	14		NWSE	24.1
18	46	14		SWSE	33.0
18	47	4		SWNE	21.0
18	47	4	3	NENW	30.6
18	47	4	4	NWNW	14.2
18	47	4		SWNW	37.8
18	47	4		SENW	37.0
18	47	4		NESW	39.7
18	47	4		NWSW	39.2
18	47	5		SENW	10.0
18	47	5		NESW	40.0

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	ACRES
18	47	5		NWSW	40.0
18	47	5		SWSW	38.8
18	47	5		SESW	38.8
18	47	6		NESE	40.0
18	47	6		SESE	38.8
18	47	7		SESE	30.0
18	47	8		SWNE	36.2
18	47	8		NENW	39.3
18	47	8		NWNW	38.5
18	47	8		SWNW	39.2
18	47	8		SENW	40.0
18	47	8		NESW	40.0
18	47	8		NWSW	39.2
18	47	8		SWSW	38.8
18	47	8		SESW	39.4
18	47	8		NWSE	29.1
18	47	8		SWSE	18.2
18	47	9		NENW	13.0
18	47	9		NWNW	12.0
18	47	9		NESW	20.7
18	47	9		NWSW	6.9
18	47	9		SWSW	16.0
18	47	9		SWSE	19.0
18	47	16		NWNE	19.0
18	47	16		SWNE	39.8
18	47	16		NENW	38.2
18	47	16		NWNW	32.6
18	47	16		SWNW	39.2
18	47	16		SENW	38.8
18	47	16		NESW	38.8
18	47	16		NWSW	38.5
18	47	16		SWSW	37.5
18	47	16		SESW	38.0
18	47	16		NWSE	39.2
18	47	16		SWSE	30.6
18	47	17		NWNE	26.0
18	47	17		SWNE	31.0
18	47	17		NENW	39.3
18	47	17		NWNW	38.6
18	47	17		SWNW	39.2
18	47	17		SENW	40.0
18	47	17		NESW	40.0
18	47	17		NWSW	39.2
18	47	17		SWSW	38.5
18	47	17		SESW	39.2
18	47	17		NWSE	28.5
18	47	17		SWSE	36.8

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	ACRES
18	47	17		SESE	37.5
18	47	18		NENE	38.2
18	47	18		NWNE	39.2
18	47	18		SWNE	40.0
18	47	18		SENE	39.2
18	47	18		NENW	39.2
18	47	18	1	NWNW	22.8
18	47	18	2	SWNW	14.5
18	47	18		SENW	35.5
18	47	18		NESW	8.4
18	47	18	3	NWSW	33.2
18	47	18	4	SWSW	36.0
18	47	18		SESW	34.5
18	47	18		NESE	39.2
18	47	18		NWSE	40.0
18	47	18		SWSE	39.2
18	47	18		SESE	37.4
18	47	19		NENE	37.5
18	47	19		NWNE	11.0
18	47	19		SENE	39.5
18	47	19		NENW	12.3
18	47	19	1	NWNW	30.0
18	47	19	2	SWNW	8.0
18	47	19		NESW	15.0
18	47	19		SESW	9.0
18	47	19		NESE	39.5
18	47	19		NWSE	13.8
18	47	19		SESE	13.6
18	47	20		NENE	35.2
18	47	20		NWNE	35.2
18	47	20		SWNE	40.0
18	47	20		SENE	40.0
18	47	20		NENW	35.6
18	47	20		NWNW	34.2
18	47	20		SWNW	39.0
18	47	20		SENW	40.0
18	47	20		NESW	40.0
18	47	20		NWSW	39.2
18	47	20		SWSW	39.2
18	47	20		SESW	39.5
18	47	20		NESE	39.6
18	47	20		NWSE	39.6
18	47	20		SWSE	36.5
18	47	20		SESE	39.3
18	47	28		NWNW	29.5
18	47	28		SWNW	31.2
18	47	29		NENE	35.0

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	ACRES
18	47	29		NWNE	38.6
18	47	29		SWNE	40.0
18	47	29		SENE	40.0
18	47	29		NENW	40.0
18	47	29		NWNW	38.7
18	47	29		SWNW	37.0
18	47	29		SENW	2.0
18	47	29		NESW	40.0
18	47	29		NWSW	39.2
18	47	29		SWSW	40.0
18	47	29		SESW	34.2
18	47	29		NESE	33.1
18	47	29		NWSE	39.0
18	47	29		SWSE	39.7
18	47	29		SESE	21.0
18	47	30		NENE	38.2
18	47	30		NWNE	24.7
18	47	30		SWNE	38.4
18	47	30		SENE	39.2
18	47	30		NESE	39.0
18	47	30		SESE	40.4
18	47	31		NENE	30.0
18	47	31		SENE	30.0
18	47	31		NESE	35.0
18	47	31		SESE	35.0
18	47	32		NENE	9.9
18	47	32		NWNE	38.8
18	47	32		SWNE	38.7
18	47	32		NENW	38.3
18	47	32		NWNW	38.7
18	47	32		SWNW	35.8
18	47	32		SENW	38.2
18	47	32		NESW	34.1
18	47	32		NWSW	39.2
18	47	32		SWSW	34.5
18	47	32		SESW	39.0
18	47	32		NWSE	35.5
18	47	32		SWSE	20.5
18	47	32		SESE	34.8
19	46	24		SENE	2.5
19	46	24		NESE	23.6
19	46	24		SESE	15.2
19	46	25		NENE	30.0
19	46	25		SENE	36.0
19	46	25		NESE	39.6
19	46	25		NWSE	7.0
19	46	25		SWSE	8.3

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	ACRES
19	46	25		SESE	39.6
19	46	36		NENE	38.5
19	46	36		NWNE	34.3
19	46	36		SWNE	28.5
19	46	36		SENE	39.2
19	46	36		NESE	38.8
19	46	36		NWSE	27.2
19	46	36		SWSE	37.0
19	46	36		SESE	39.6
19	47	5	1	NENE	21.1
19	47	5	2	NWNE	15.2
19	47	5		SWNE	15.3
19	47	5	3	NENW	39.2
19	47	5	4	NWNW	39.2
19	47	5		SWNW	39.2
19	47	5		SENW	39.8
19	47	5		NESW	40.0
19	47	5		NWSW	40.0
19	47	5		SWSW	40.0
19	47	5		SESW	40.0
19	47	5		NWSE	20.0
19	47	5		SWSE	14.6
19	47	6	1	NENE	29.1
19	47	6		SENE	31.9
19	47	6		NESE	30.3
19	47	6		SESE	30.5
19	47	7		NENE	26.5
19	47	7		NWNE	2.8
19	47	7		SENE	35.0
19	47	7		NESE	38.6
19	47	7		NWSE	1.0
19	47	7		SWSE	10.0
19	47	7		SESE	37.7
19	47	8		NENW	25.8
19	47	8		NWNW	40.0
19	47	8		SWNW	39.0
19	47	8		SENW	27.0
19	47	8		NESW	35.4
19	47	8		NWSW	39.2
19	47	8		SWSW	38.7
19	47	8		SESW	39.2
19	47	17		NENW	10.0
19	47	17		NWNW	38.8
19	47	17		SWNW	35.0
19	47	17		NWSW	38.9
19	47	17		SWSW	38.9
19	47	18		NENE	38.2

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	ACRES
19	47	18		NWNE	24.7
19	47	18		SWNE	40.0
19	47	18		SENE	40.0
19	47	18		NENW	2.1
19	47	18		SENW	25.4
19	47	18		NESW	39.8
19	47	18	3	NWSW	5.9
19	47	18	4	SWSW	12.0
19	47	18		SESW	40.0
19	47	18		NESE	36.2
19	47	18		NWSE	34.7
19	47	18		SWSE	39.4
19	47	18		SESE	39.2
19	47	19		NENE	38.2
19	47	19		NWNE	39.1
19	47	19		SWNE	40.0
19	47	19		SENE	39.1
19	47	19		NENW	40.0
19	47	19	1	NWNW	15.2
19	47	19	2	SWNW	38.6
19	47	19		SENW	40.0
19	47	19		NESW	40.0
19	47	19	3	NWSW	39.1
19	47	19	4	SWSW	38.2
19	47	19		NESE	39.1
19	47	19		NWSE	36.8
19	47	19		SWSE	40.0
19	47	19		SESE	20.0
19	47	20		NENW	9.4
19	47	20		NWNW	34.2
19	47	20		SWNW	37.2
19	47	20		SENW	4.0
19	47	20		NWSW	14.4
19	47	20		SWSW	40.0
19	47	20		SESW	20.0
19	47	29		NWNW	38.3
19	47	29		SWNW	20.0
19	47	29		NWSW	20.0
19	47	29		SWSW	38.0
19	47	30		NENE	32.5
19	47	30		NWNE	35.0
19	47	30		SWNE	35.0
19	47	30		SENE	39.1
19	47	30		NENW	39.1
19	47	30	1	NWNW	38.2
19	47	30	2	SWNW	39.1
19	47	30		SENW	37.8

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	ACRES
19	47	30		NESW	40.0
19	47	30	3	NWSW	39.6
19	47	30	4	SWSW	39.4
19	47	30		SESW	39.0
19	47	30		NESE	39.1
19	47	30		NWSE	40.0
19	47	30		SWSE	37.5
19	47	30		SESE	39.1
19	47	31		NENE	25.0
19	47	31		NWNE	39.1
19	47	31		SWNE	39.1
19	47	31		SENE	39.8
19	47	31		NENW	39.2
19	47	31	1	NWNW	38.5
19	47	31	2	SWNW	39.5
19	47	31		SENW	39.1
19	47	31		NESW	39.1
19	47	31	3	NWSW	38.5
19	47	31	4	SWSW	38.8
19	47	31		SESW	39.2
19	47	31		NESE	35.6
19	47	31		NWSE	38.8
19	47	31		SWSE	38.4
19	47	31		SESE	4.0
19	47	32		NWNW	15.0
20	46	1	1	NENE	5.0
20	46	1		SENE	10.0
20	46	1		NESE	35.4
20	46	1		NWSE	2.6
20	46	1		SWSE	11.5
20	46	1		SESE	39.1
20	46	12		NENE	39.1
20	46	12		NWNE	14.5
20	46	12		SWNE	5.8
20	46	12		SENE	38.6
20	46	12		NESE	27.0
20	46	12		SESE	10.0
20	47	5	3	NWNW	20.0
20	47	6	1	NENE	28.9
20	47	6	2	NWNE	28.5
20	47	6		SWNE	38.4
20	47	6	5	SENE	20.0
20	47	6	3	NENW	24.0
20	47	6	4	NWNW	28.0
20	47	6		SWNW	40.0
20	47	6		SENW	39.1
20	47	6		NESW	39.1

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	ACRES
20	47	6		NWSW	40.0
20	47	6		SWSW	39.1
20	47	6		SESW	35.8
20	47	6	6	NWSE	24.5
20	47	6	7	SWSE	26.5
20	47	7		NWNE	17.5
20	47	7		SWNE	8.1
20	47	7		SENE	27.4
20	47	7		NENW	35.6
20	47	7		NWNW	38.5
20	47	7		SWNW	39.4
20	47	7		SENW	36.8
20	47	7	5	NESW	28.7
20	47	7		NWSW	38.2
20	47	7		SWSW	27.6
20	47	7	6	SESW	10.0
20	47	7	3	NESE	31.0
20	47	7	4	NWSE	25.5
20	47	7	2	SESE	1.0
20	47	18	1	NWNW	22.0

This Certificate describes that portion of the water right confirmed by Certificate 24704 State Record of Water Right Certificates, NOT modified by the provisions of the following orders of the State Engineer and the Water Resources Director:

entered on November 12, 1970 and recorded in Special Order Volume 20, page 210, canceling a portion of 3 water rights.

entered on September 27, 1979 and recorded in Special Order Volume 32, page 417, approving Transfer Application 4289;

entered on September 10, 1981 and recorded in Special Order Volume 35, page 190, approving Transfer Application M-129;

entered on January 13, 1984 and recorded in Special Order Volume 38, page 99, approving Transfer Application 5418;

entered on February 2, 1984 and recorded in Special Order Volume 38, page 131, approving Transfer Application 5424;

entered on February 15, 1984 and recorded in Special Order Volume 38, page 149, approving Transfer Application 5427;

entered on March 2, 1984 and recorded in Special Order Volume 38, page 169, approving Transfer Application 5425;

entered on September 12, 1984 and recorded in Special Order Volume 38, page 431, approving Transfer Application 5506;

entered on October 18, 1984 and recorded in Special Order Volume 38, page 466, approving Transfer Application 5522;

entered on November 2, 1984 and recorded in Special Order Volume 38, page 509, approving Transfer Application 5530;

entered on November 2, 1984 and recorded in Special Order Volume 38, page 511, approving Transfer Application 5529;

entered on July 7, 1986 and recorded in Special Order Volume 40, page 216, approving Transfer Application 5530;

entered on January 21, 1987 and recorded in Special Order Volume 41, page 16, approving Transfer Application 5872;

entered on March 19, 1987 and recorded in Special Order Volume 41, page 125, approving Transfer Application 5459;

entered on March 19, 1987 and recorded in Special Order Volume 41, page 128, approving Transfer Application 5460;

entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329. This Certificate together with Certificate 75689 supersedes Certificate 24704.

The issuance of this superseding certificate does not confirm the status of the water right in regard to the provisions of ORS 540.610 pertaining to forfeiture or abandonment.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel, Director

COUNTY OF MALHEUR

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

UNITED STATES OF AMERICA
BUREAU OF RECLAMATION
214 BROADWAY AVENUE
BOISE IDAHO 83702-7298

confirms the right to use the waters of the **OWYHEE RIVER** and water stored in **OWYHEE RESERVOIR** constructed under permint R-599, tributaries of the SNAKE RIVER; for **IRRIGATION** of **56,776.1** acres and **SUPPLEMENTAL IRRIGATION** of **4,656.3** acres.

The beneficial use of the water represented hereby is for the landowners within the **Owyhee Irrigation District** pursuant to relationships established by the Federal Reclamation Laws and repayment contract number Ilr-876 dated August 29, 1951, as amended and supplemented, between the United States and the full supply districts of the Owyhee Project.

This right was perfected under Permit 8171. The dates of priority for direct flow are **FEBRUARY 14, 1916** for **446.6 cfs** and **AUGUST 19, 1924** for **576.4 cfs**. The dates of priority for stored water from Owyhee Reservoir are **FEBRUARY 15, 1916** for **59,546.1** acre feet and **AUGUST 20, 1924** for **357,276.5** acre feet. The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed **1023.0 cubic feet per second** of live flow, or its equivalent in case of rotation, measured at the points of diversion from the source.

The points of diversion are located as follows:

> within the NW¼ SE¼, SECTION 20; (**Owyhee Dam**) 200 FEET SOUTH AND 2010 FEET WEST from common corner corner to Sections 20 and 21 and (**Glory Hole Spillway**) 200 FEET SOUTH AND 1680 FEET WEST from common corner corner to Sections 20 and 21 AND within the NW¼ SW¼, SECTION 21, (**Tunnel No. 1**) 495 FEET EAST and 264 FEET SOUTH from common corner corner to Sections 20 and 21, all in T. 22 S., R. 45 E., W.M.

The amount of water from direct flow of the Owyhee River used for irrigation shall be limited to **1/60th** of one cubic foot per second per acre, or its equivalent for each acre irrigated and shall be further limited to **3.0 acre feet** per acre for each acre irrigated during the irrigation season of each year. The amount of water from direct flow of the Owyhee River together with water stored in Owyhee Reservoir and with the amount secured under any other water right existing for the same lands, shall be limited to a diversion of not to exceed **6.7 acre feet** for each acre irrigated during the irrigation season of each year, and shall conform to any reasonable rotation system as may be ordered by the proper state officer.

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A description of the place of use to which this right is appurtenant is as follows:

All Townships are South, all Ranges are East, location based on Willamette Meridian

PRIMARY IRRIGATION

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
15	46	25	NWSE		2800	11.4
15	46	25	SWSE		2800	28.4
15	46	25	SESE		3200	14.8
15	46	36	NWNE		3700	6.7
15	46	36	SWNE		3700	7.0
15	46	36	NENW		3700	0.9
15	47	30	SWSW	4	5400	17.5
15	47	30	SWSW	4	6000	1.3
15	47	30	SESW		5900	0.2
15	47	31	NENE		5603	14.4
15	47	31	SWNE		6400	3.1
15	47	31	SENE		5800	37.0
15	47	31	SENE		6400	1.0
15	47	31	SWNW	3	6101	32.6
15	47	31	NWSW	3	6100	2.3
15	47	31	NWSW	3	6101	32.6
15	47	31	NESE		5800	1.2
15	47	31	NESE		6400	28.6
15	47	31	NESE		6501	0.7
15	47	31	NWSE		6400	6.5
15	47	32	SWNE		7500	7.2
15	47	32	SENE		7500	5.3
15	47	32	NESE		7500	33.3
15	47	32	NWSE		7500	14.8
15	47	32	SWSE		7500	2.2
15	47	32	SWSE		7800	27.0
15	47	32	SWSE		7900	1.9
15	47	32	SESE		7500	13.1
15	47	32	SESE		7900	12.9
15	47	33	SWNW		8500	3.0
15	47	33	NWSW	4	8500	10.8
15	47	33	SWSW	5	300	2.6
15	47	33	SWSW	5	8500	2.2
15	47	33	SWSW	5	9304	3.0
16	47	4	NENW	2	300	7.7
16	47	4	NENW	2	400	0.3
16	47	4	NWNW	1	300	8.6
16	47	6	NWNE	2	2300	1.8
16	47	6	SWNE		2500	11.1
16	47	6	NENW	3	2300	29.7
16	47	6	NWNW	4	2400	12.8
16	47	6	SENW		2500	12.2

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	6	NWSE		2600	17.8
16	47	6	SWSE		2700	24.8
16	47	6	SESE		2700	8.7
16	47	7	NENE		2800	26.4
16	47	7	NWNE		2800	24.4
16	47	7	SWNE		2800	10.5
16	47	7	SENE		2900	27.2
16	47	7	NESE		2900	36.3
16	47	7	SWSE		3200	25.8
16	47	7	SESE		3400	16.0
16	47	8	NESW		2900	0.2
16	47	8	NESW		3800	30.6
16	47	8	NWSW		2900	24.8
16	47	8	NWSW		3800	5.4
16	47	8	SWSW		3400	1.0
16	47	8	SESW		3400	22.6
16	47	8	NWSE		3901	0.7
16	47	8	SWSE		4200	12.1
16	47	16	NESW		5901	13.5
16	47	16	NWSW		5901	24.4
16	47	16	SWSW		5901	28.2
16	47	16	SESW		5901	28.9
16	47	17	NENE		6200	36.1
16	47	17	NWNE		6300	12.0
16	47	17	NWNE		6303	5.0
16	47	17	SWNE		6400	13.5
16	47	17	SENE		6200	9.4
16	47	17	NESE		6700	6.7
16	47	17	NWSE		6600	17.9
16	47	17	SWSE		6804	21.5
16	47	18	NWNE		3200	22.4
16	47	18	NENW		3200	10.1
16	47	18	SENW		3200	21.3
16	47	20	NENE		100	31.3
16	47	20	NWNE		100	25.5
16	47	20	SWNE		500	0.9
16	47	20	SENE		100	3.5
16	47	20	NENW		100	6.3
16	47	20	NESW		500	12.8
16	47	20	SESW		600	1.4
16	47	20	NESE		200	35.1
16	47	20	NWSE		500	31.8
16	47	20	SWSE		600	38.8
16	47	20	SESE		600	23.1
16	47	21	NWNE		800	27.6
16	47	21	SWNE		800	30.2
16	47	21	SENE		800	2.6

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	21	SENE		1400	0.5
16	47	21	NENW		900	25.3
16	47	21	NWNW		900	25.6
16	47	21	SWNW		900	36.0
16	47	21	SENW		900	36.2
16	47	21	NESW		1000	34.1
16	47	21	NWSW		1000	34.9
16	47	21	NWSW		1001	3.0
16	47	21	SWSW		1100	21.2
16	47	21	SESW		1100	30.9
16	47	21	NESE		1400	28.1
16	47	21	NWSE		1300	38.4
16	47	21	SWSE		1300	13.3
16	47	21	SESE		1400	34.3
16	47	22	NWSW		600	35.5
16	47	22	SWSW		600	34.0
16	47	27	NENW		5700	14.8
16	47	27	NWNW		5700	32.9
16	47	27	SWNW		5700	38.4
16	47	27	SENW		5700	30.0
16	47	27	NESW		5800	34.7
16	47	27	NESW		6100	4.8
16	47	27	NWSW		5900	35.9
16	47	27	SWSW		5900	23.4
16	47	27	SWSW		6000	10.0
16	47	27	SESW		5800	7.9
16	47	27	SESW		6000	22.6
16	47	27	NWSE		6100	12.9
16	47	28	NENE		1500	35.7
16	47	28	NWNE		1500	23.6
16	47	28	NWNE		1600	1.0
16	47	28	NWNE		1700	5.4
16	47	28	SWNE		1500	35.9
16	47	28	SENE		1500	35.6
16	47	28	NENW		1800	39.2
16	47	28	NWNW		1800	36.6
16	47	28	SWNW		1900	37.9
16	47	28	SENW		1900	39.8
16	47	28	NESW		2100	39.7
16	47	28	NWSW		2100	39.7
16	47	28	SWSW		2100	33.6
16	47	28	SESW		2100	37.3
16	47	28	NESE		2200	36.4
16	47	28	NWSE		2200	37.4
16	47	28	SWSE		2300	24.8
16	47	28	SWSE		2301	12.7
16	47	28	SESE		2300	34.5

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	28	SESE		2301	2.8
16	47	29	NENE		600	26.9
16	47	29	NWNE		600	34.1
16	47	29	SWNE		600	23.9
16	47	29	SENE		600	28.2
16	47	29	SESW		2600	7.3
16	47	29	NESE		2400	36.6
16	47	29	NWSE		2400	24.3
16	47	29	SWSE		2600	37.0
16	47	29	SESE		2500	25.0
16	47	29	SESE		2600	5.7
16	47	32	NENE		3300	34.9
16	47	32	NWNE		3300	36.1
16	47	32	SWNE		3400	38.2
16	47	32	SENE		3400	37.8
16	47	32	NENW		3500	1.4
16	47	32	SENW		3500	5.3
16	47	32	NESW		3600	14.5
16	47	32	SESW		3601	5.3
16	47	32	SESW		3602	11.7
16	47	32	NESE		3700	31.1
16	47	32	NWSE		3700	39.1
16	47	32	SWSE		3800	38.9
16	47	32	SESE		3800	25.6
16	47	33	NENE		3900	38.5
16	47	33	NWNE		3900	39.0
16	47	33	SWNE		4100	39.3
16	47	33	SENE		4000	12.5
16	47	33	SENE		4100	23.8
16	47	33	NENW		4201	39.0
16	47	33	NWNW		4300	38.7
16	47	33	SWNW		4400	39.0
16	47	33	SENW		4200	36.6
16	47	33	NESW		4500	40.0
16	47	33	NWSW		4500	37.5
16	47	33	SWSW		4600	20.9
16	47	33	SESW		4600	35.9
16	47	33	NESE		4700	26.9
16	47	33	NWSE		4700	34.5
16	47	33	SWSE		4800	36.0
16	47	33	SESE		4900	35.0
16	47	34	NENW		6700	17.4
16	47	34	NWNW		6800	15.8
16	47	34	NWNW		6801	22.3
16	47	34	SWNW		6700	14.0
16	47	34	SWNW		6800	1.2
16	47	34	SWNW		6801	16.1

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	34	SENW		6700	7.5
16	47	34	SENW		6900	4.2
16	47	34	NESW		6900	33.9
16	47	34	NESW		6901	3.0
16	47	34	NWSW		7000	36.6
16	47	34	SWSW		7100	34.7
16	47	34	SWSW		7203	1.8
16	47	34	SESW		7100	5.4
16	47	34	SESW		7200	6.0
16	47	34	SESW		7201	6.2
16	47	34	SESW		7203	5.9
16	47	34	NWSE		7301	15.3
16	47	34	SWSE		7300	4.0
16	47	34	SWSE		7301	25.0
16	47	34	SESE		7301	7.3
17	45	31	SWNE		3300	3.9
17	45	31	NENW		3300	7.3
17	45	31	SENW		3300	36.5
17	45	31	NESW		3300	37.6
17	45	31	NWSW	3	3300	36.7
17	45	31	SWSW	4	3300	7.7
17	45	31	SWSW	4	3500	20.9
17	45	31	SESW		3500	36.4
17	45	31	NWSE		3300	17.5
17	45	31	SWSE		3300	25.9
17	46	12	SESW		2900	4.6
17	46	12	NESE		3000	5.4
17	46	12	SWSE		2900	21.2
17	46	12	SWSE		3000	0.1
17	46	12	SESE		3000	36.1
17	46	13	SWNE		3300	16.9
17	46	13	SENE		3200	18.0
17	46	13	SENE		3300	9.3
17	46	13	SESW		3500	33.6
17	46	13	SESW		3502	2.3
17	46	13	NESE		3300	37.4
17	46	13	NWSE		3300	30.7
17	46	13	SWSE		3300	7.8
17	46	13	SWSE		3400	15.7
17	46	13	SESE		3300	34.4
17	46	23	NENE		302	21.3
17	46	23	SWNE		400	11.0
17	46	23	SENE		400	32.4
17	46	23	NESE		400	8.6
17	46	23	NESE		800	28.1
17	46	23	NWSE		800	17.3
17	46	23	SWSE		900	28.1

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	46	23	SESE		1100	37.3
17	46	24	NENE		1200	33.9
17	46	24	NWNE		1200	37.4
17	46	24	SWNE		1400	30.7
17	46	24	SENE		1300	3.0
17	46	24	SENE		1301	32.3
17	46	24	NENW		3500	34.1
17	46	24	NWNW		300	33.1
17	46	24	NWNW		3500	1.5
17	46	24	SWNW		1600	27.9
17	46	24	SENW		1400	38.9
17	46	24	NESW		1700	36.2
17	46	24	NWSW		1600	38.9
17	46	24	SWSW		1100	34.2
17	46	24	SWSW		1800	2.0
17	46	24	SESW		1900	35.0
17	46	24	NESE		2000	23.2
17	46	24	NWSE		2100	19.0
17	46	24	SWSE		2200	0.9
17	46	24	SWSE		2202	0.7
17	46	24	SWSE		2203	4.0
17	46	24	SWSE		2204	17.0
17	46	24	SWSE		2205	0.4
17	46	24	SWSE		2206	7.9
17	46	24	SWSE		2207	0.3
17	46	24	SWSE		2208	0.2
17	46	24	SESE		2000	35.5
17	46	25	NENE		2300	25.5
17	46	25	NWNE		2300	37.0
17	46	25	NWNE		2400	1.1
17	46	25	SWNE		2500	20.8
17	46	25	SWNE		2501	14.7
17	46	25	SENE		2300	38.3
17	46	25	NENW		2400	35.0
17	46	25	NWNW		2600	36.6
17	46	25	SWNW		2701	4.5
17	46	25	SWNW		2800	28.5
17	46	25	SENW		2400	9.0
17	46	25	SENW		2800	27.4
17	46	25	NESW		2800	9.1
17	46	25	NESW		2900	30.1
17	46	25	NWSW		3000	29.9
17	46	25	SWSW		2900	13.2
17	46	25	SWSW		3201	3.6
17	46	25	SESW		2900	11.4
17	46	25	SESW		3201	2.0
17	46	25	SESW		3300	2.7

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	46	25	NESE		3400	35.0
17	46	25	NWSE		3500	37.7
17	46	25	SWSE		3500	10.8
17	46	25	SWSE		3600	0.5
17	46	26	NENE		2600	9.4
17	46	26	NENW		2600	23.2
17	46	26	NWNE		900	5.1
17	46	26	SWNE		2700	3.5
17	46	26	SENE		2700	29.4
17	46	26	SWSW		4202	3.9
17	46	26	SESW		4202	0.1
17	46	26	NESE		3000	12.8
17	46	26	SWSE		4500	35.0
17	46	26	SESE		4600	18.3
17	46	26	SESE		4602	3.2
17	46	34	NESE		4700	0.1
17	46	34	SESE		4700	4.8
17	46	35	NENE		4800	15.0
17	46	35	NWNE		4900	24.8
17	46	35	NWNE		4901	6.0
17	46	35	SWNE		4900	28.0
17	46	35	SENE		5000	35.8
17	46	35	NENW		4202	37.5
17	46	35	NWNW		4202	10.6
17	46	35	SWNW		5100	9.6
17	46	35	SWNW		5102	2.7
17	46	35	SENW		4201	28.4
17	46	35	SENW		4205	8.7
17	46	35	NESW		5200	17.8
17	46	35	NWSW		4700	0.4
17	46	35	NWSW		5102	10.3
17	46	35	SWSW		4700	30.2
17	46	35	SESW		5200	4.1
17	46	35	NESE		5300	8.1
17	46	35	NESE		5301	27.1
17	46	35	NWSE		5400	22.9
17	46	35	SWSE		5400	17.9
17	46	35	SESE		5500	31.0
17	46	36	NENE		3600	21.4
17	46	36	NWNE		3600	27.6
17	46	36	SWNE		5600	37.8
17	46	36	SENE		5600	33.7
17	46	36	NENW		3200	14.5
17	46	36	NENW		3300	24.3
17	46	36	NWNW		3200	36.9
17	46	36	SWNW		3200	30.0
17	46	36	SENW		3200	13.0

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	46	36	SENW		3300	22.0
17	46	36	NESW		3300	4.0
17	46	36	NESW		5700	11.9
17	46	36	NWSW		5700	30.8
17	46	36	SWSW		5700	23.3
17	46	36	SESW		5800	2.8
17	46	36	SESW		5801	5.7
17	46	36	NESE		6000	3.9
17	46	36	NWSE		6000	7.4
17	46	36	SWSE		6100	23.5
17	46	36	SESE		6100	21.4
17	47	2	NWNW	4	100	14.7
17	47	2	SWNW		100	4.7
17	47	3	NENE	1	600	30.6
17	47	3	NENE	1	601	3.0
17	47	3	NWNE	2	600	6.0
17	47	3	NWNE	2	602	19.9
17	47	3	SWNE		600	2.1
17	47	3	SWNE		602	33.0
17	47	3	SENE		700	12.2
17	47	3	NENW	3	300	4.7
17	47	3	NENW	3	400	11.4
17	47	3	NWNW	4	100	1.0
17	47	3	NWNW	4	200	21.0
17	47	3	NWNW	4	300	8.8
17	47	3	NWNW	4	901	5.0
17	47	3	SWNW		800	13.5
17	47	3	SWNW		901	23.5
17	47	3	SENW		800	32.1
17	47	3	NESW		1005	18.4
17	47	3	NESW		1006	9.0
17	47	3	NWSW		1005	37.2
17	47	3	SWSW		2700	5.5
17	47	3	SWSW		2800	2.1
17	47	3	SWSW		2900	0.7
17	47	3	SWSW		3000	16.1
17	47	3	NWSE		701	2.2
17	47	4	NENE	1	900	37.1
17	47	4	NWNE	2	200	31.7
17	47	4	SWNE		200	39.9
17	47	4	SENE		100	3.0
17	47	4	SENE		101	28.5
17	47	4	SENE		3000	5.3
17	47	4	NENW	3	300	33.8
17	47	4	NWNW	4	401	37.3
17	47	4	SWNW		400	36.6
17	47	4	SWNW		402	0.7

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	4	SENW		200	37.1
17	47	4	NESW		500	40.3
17	47	4	NWSW		500	38.6
17	47	4	SWSW		500	37.6
17	47	4	SESW		500	34.1
17	47	4	NESE		3000	39.3
17	47	4	NWSE		600	38.8
17	47	4	SWSE		600	35.4
17	47	4	SESE		3000	37.3
17	47	5	NENE	1	700	34.0
17	47	5	NWNE	2	700	35.1
17	47	5	SWNE		900	39.8
17	47	5	SENE		901	27.7
17	47	5	NENW	3	1000	10.1
17	47	5	NENW	3	1100	9.0
17	47	5	NWNW	4	1000	2.8
17	47	5	SENW		1000	30.7
17	47	5	NESW		1200	35.8
17	47	5	SWSW		1300	16.5
17	47	5	SESW		1300	36.4
17	47	5	NESE		1500	34.2
17	47	5	NWSE		1500	38.8
17	47	5	SWSE		1400	38.4
17	47	5	SESE		1600	37.0
17	47	7	SWNE		2001	8.3
17	47	7	SENE		2001	27.6
17	47	7	NESW		2200	2.4
17	47	7	NWSW	3	2200	5.1
17	47	7	SWSW	4	2200	33.2
17	47	7	SESW		2200	30.2
17	47	7	NESE		2400	3.9
17	47	7	NWSE		2200	9.0
17	47	7	SWSE		2200	38.0
17	47	7	SESE		2400	36.8
17	47	8	NENE		2500	36.0
17	47	8	NWNE		2700	34.3
17	47	8	SWNE		2700	40.1
17	47	8	SENE		2600	30.0
17	47	8	SENE		2601	2.8
17	47	8	SENE		2602	0.5
17	47	8	SENE		2603	5.0
17	47	8	NENW		2800	37.4
17	47	8	NWNW		2900	38.2
17	47	8	SWNW		2900	37.7
17	47	8	SENW		2800	36.7
17	47	8	NESW		3000	28.8
17	47	8	NWSW		2400	14.9

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	8	SWSW		2400	20.3
17	47	8	SESW		3000	19.2
17	47	8	NESE		3200	36.8
17	47	8	NWSE		3100	32.6
17	47	8	SWSE		3100	15.4
17	47	8	SESE		3200	39.5
17	47	9	NENE		3300	4.0
17	47	9	NENE		3400	23.1
17	47	9	NWNE		3500	35.1
17	47	9	SWNE		3400	15.9
17	47	9	SWNE		3500	12.7
17	47	9	SENE		3400	13.6
17	47	9	NENW		3600	36.8
17	47	9	NWNW		3700	35.9
17	47	9	SWNW		3800	36.0
17	47	9	SENW		3800	37.3
17	47	9	NESW		100	12.3
17	47	9	NWSW		200	35.7
17	47	9	SWSW		300	3.7
17	47	9	SWSW		301	1.0
17	47	9	SWSW		400	2.8
17	47	9	SWSW		401	1.0
17	47	9	SWSW		500	2.7
17	47	9	SWSW		600	2.0
17	47	9	SWSW		700	3.0
17	47	9	SWSW		800	3.0
17	47	9	SWSW		900	2.1
17	47	9	SWSW		1000	1.5
17	47	9	SWSW		1500	0.4
17	47	9	SWSW		1600	1.0
17	47	9	SWSW		1700	2.5
17	47	9	SWSW		1800	3.0
17	47	9	SWSW		1900	1.6
17	47	9	SWSW		2000	2.0
17	47	9	SESW		1100	1.6
17	47	9	SESW		1200	2.0
17	47	9	SESW		1300	2.0
17	47	9	SESW		1301	1.5
17	47	9	SESW		1302	2.0
17	47	9	SESW		1303	2.0
17	47	9	SESW		1304	1.5
17	47	9	SESW		1305	2.0
17	47	9	SESW		1306	2.0
17	47	9	SESW		1307	2.0
17	47	9	SESW		1308	0.5
17	47	9	SESW		1309	1.5
17	47	9	SESW		1400	1.0

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	9	SESW		1500	1.6
17	47	9	SESW		1501	4.0
17	47	9	SESW		1600	1.0
17	47	9	SESW		1700	0.5
17	47	9	NESE		100	18.4
17	47	9	NWSE		300	4.3
17	47	9	NWSE		500	2.0
17	47	9	NWSE		600	2.0
17	47	9	NWSE		700	1.0
17	47	9	NWSE		800	1.0
17	47	9	NWSE		900	1.0
17	47	9	NWSE		1100	1.0
17	47	9	NWSE		1200	2.0
17	47	9	NWSE		1300	2.0
17	47	9	NWSE		1400	1.6
17	47	9	SWSE		100	9.8
17	47	9	SWSE		1400	0.4
17	47	9	SESE		100	11.5
17	47	9	SESE		1800	13.7
17	47	9	SESE		1900	6.7
17	47	10	NWSW		4500	34.9
17	47	10	SWSW		6100	33.2
17	47	10	SESW		6100	35.5
17	47	16	NWNE		4505	9.4
17	47	16	NWNE		5000	14.2
17	47	16	SWNE	2	5104	30.6
17	47	16	NENW		5300	15.0
17	47	16	NENW		5301	3.3
17	47	16	NWNW		5400	8.0
17	47	16	NWNW		5405	5.1
17	47	16	NWNW		5406	6.0
17	47	16	NWNW		5407	5.0
17	47	16	SENW		5100	2.0
17	47	16	SENW		5103	1.0
17	47	16	SENW		5104	9.9
17	47	16	NESW	3	5800	7.7
17	47	16	NESW	3	5801	1.9
17	47	16	NESW	3	5802	5.1
17	47	16	NESW	3	5900	7.1
17	47	16	NESW	3	5901	2.0
17	47	16	NESW	3	6100	0.3
17	47	16	NWSW		6100	21.2
17	47	16	SWSW		6100	28.0
17	47	16	SESW	4	6000	1.1
17	47	16	SESW	4	6001	6.0
17	47	16	SESW	4	6002	0.3
17	47	16	SESW	4	6100	3.7

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	16	NWSE		5802	1.2
17	47	17	NENE		3200	23.5
17	47	17	NWNE		6400	15.5
17	47	17	SWNE		6302	4.2
17	47	17	SWNE		6303	4.0
17	47	17	SWNE		6400	8.5
17	47	17	SWNE		6500	7.8
17	47	17	SENE		6500	7.1
17	47	17	NENW		3000	0.2
17	47	17	NENW		6500	16.5
17	47	17	NWNW		6600	3.2
17	47	17	NWNW		6700	19.5
17	47	17	NWNW		6701	4.0
17	47	17	SWNW		6500	5.2
17	47	17	SWNW		7000	0.7
17	47	17	SWNW		7003	20.7
17	47	17	SENW		6500	29.3
17	47	17	SENW		7001	1.1
17	47	17	NESW		6500	7.8
17	47	17	NESW		7001	3.5
17	47	17	NESW		7100	10.8
17	47	17	NWSW		7200	38.3
17	47	17	SWSW		7300	19.9
17	47	17	SWSW		7400	10.9
17	47	17	SWSW		7401	2.0
17	47	17	SWSW		7402	3.0
17	47	17	SESW		7100	27.6
17	47	17	NESE		7500	30.1
17	47	17	NWSE		7500	37.1
17	47	17	SWSE		6100	21.3
17	47	17	SESE		6100	29.0
17	47	18	NENE		7600	14.0
17	47	18	NENE		7700	22.8
17	47	18	NWNE		7800	37.0
17	47	18	SWNE		7900	39.6
17	47	18	SENE		7900	36.2
17	47	18	NENW		8000	37.0
17	47	18	NWNW	1	8100	24.6
17	47	18	SWNW	2	8100	35.8
17	47	18	SENW		8000	39.3
17	47	18	NESW		8201	29.0
17	47	18	NWSW	3	8201	15.1
17	47	18	NWSW	3	8300	9.2
17	47	18	SWSW	4	8300	30.7
17	47	18	SESW		8201	17.2
17	47	18	SESW		8300	4.1
17	47	18	SESW		8600	2.0

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	18	NESE		7400	8.2
17	47	18	NESE		8500	29.6
17	47	18	NWSE		7400	13.8
17	47	18	NWSE		8500	24.1
17	47	18	SWSE		7400	36.6
17	47	18	SESE		7400	36.0
17	47	19	NENE		100	38.8
17	47	19	NWNE		100	15.2
17	47	19	NWNE		200	8.6
17	47	19	NWNE		201	0.2
17	47	19	SWNE		200	1.2
17	47	19	SWNE		300	25.7
17	47	19	SENE		100	16.7
17	47	19	NENW		200	6.9
17	47	19	NENW		202	5.1
17	47	19	NENW		400	20.6
17	47	19	NWNW	1	300	1.0
17	47	19	NWNW	1	400	1.0
17	47	19	NWNW	1	601	13.0
17	47	19	NWNW	1	602	3.7
17	47	19	NWNW	1	800	5.5
17	47	19	SWNW	2	601	31.3
17	47	19	SENW		200	0.9
17	47	19	SENW		400	16.6
17	47	19	NWSW	3	800	17.7
17	47	19	SWSW	4	800	37.0
17	47	19	SESW		800	17.3
17	47	19	SESW		900	10.0
17	47	19	NESE		1700	20.1
17	47	19	SWSE		900	19.9
17	47	19	SESE		1100	16.3
17	47	19	SESE		1101	1.2
17	47	19	SESE		1102	0.9
17	47	20	NENE		1200	7.7
17	47	20	NENE		1209	10.9
17	47	20	NWNE		1300	24.1
17	47	20	SWNE		1209	29.6
17	47	20	SENE		1200	25.0
17	47	20	SENE		1209	5.5
17	47	20	NENW		1300	30.4
17	47	20	NENW		1301	1.8
17	47	20	NWNW		1400	35.4
17	47	20	SWNW		1400	7.0
17	47	20	SENW		1500	31.5
17	47	20	NESW		2002	9.8
17	47	20	NESW		2003	9.7
17	47	20	NWSW		1700	9.3

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	20	SWSW		500	0.6
17	47	20	SWSW		600	0.6
17	47	20	SWSW		700	0.5
17	47	20	SWSW		900	0.6
17	47	20	SWSW		1000	0.7
17	47	20	SWSW		1100	0.8
17	47	20	SWSW		1200	0.8
17	47	20	SWSW		1300	0.7
17	47	20	SWSW		1400	0.2
17	47	20	SWSW		1500	0.3
17	47	20	SWSW		1600	0.8
17	47	20	SWSW		1700	0.8
17	47	20	SWSW		1800	0.5
17	47	20	SWSW		1900	0.4
17	47	20	SWSW		2000	0.3
17	47	20	SWSW		2100	0.6
17	47	20	SWSW		2400	0.6
17	47	20	SWSW		2500	0.7
17	47	20	SWSW		2600	0.9
17	47	20	SWSW		2700	0.9
17	47	20	SWSW		2800	0.8
17	47	20	SWSW		2900	0.7
17	47	20	SWSW		3000	0.2
17	47	20	SWSW		3100	0.7
17	47	20	SWSW		3200	0.6
17	47	20	SWSW		3300	0.6
17	47	20	SWSW		3400	2.0
17	47	20	SWSW		3401	1.3
17	47	20	NESE		2200	38.5
17	47	20	NWSE		2001	11.0
17	47	20	NWSE		2003	1.3
17	47	20	NWSE		2005	1.6
17	47	20	NWSE		2100	5.3
17	47	20	SESE		2200	2.2
17	47	21	NENW	1	100	7.0
17	47	21	NWNW		200	32.0
17	47	21	SWNW		1000	16.8
17	47	21	SENW	2	100	13.0
17	47	29	NENE		2205	9.9
17	47	29	NWNE		2205	18.9
17	47	29	NWNW		2000	0.3
17	47	29	NWNW		2300	0.7
17	47	29	NWNW		3700	6.2
17	47	29	NWNW		3711	4.9
17	47	29	SWNW		3700	7.8
17	47	29	SWNW		3703	3.5
17	47	29	SWNW		3704	1.0

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	29	SWNW		3707	2.8
17	47	29	SWNW		3708	6.0
17	47	29	SWNW		3709	2.0
17	47	29	SWNW		3710	3.0
17	47	29	SWNW		3713	7.0
17	47	29	SWNW		3714	5.1
17	47	29	SENW		3706	7.8
17	47	29	NWSW		4508	17.9
17	47	29	SWSW		4500	3.5
17	47	29	SWSW		4501	0.2
17	47	29	SWSW		4505	6.7
17	47	30	NENE		4600	7.3
17	47	30	NWNE		4600	2.8
17	47	30	NWNE		4700	10.9
17	47	30	SWNE		4600	9.5
17	47	30	SWNE		4700	30.4
17	47	30	SENE		4600	26.7
17	47	30	NENW		4700	2.0
17	47	30	NENW		4800	18.8
17	47	30	NWNW	1	4800	34.9
17	47	30	SWNW		4800	38.5
17	47	30	SENW		4700	18.6
17	47	30	SENW		4800	2.4
17	47	30	NESW		5302	28.0
17	47	30	NESW		5303	9.0
17	47	30	NWSW	3	5204	1.3
17	47	30	NWSW	3	5700	33.8
17	47	30	SWSW	4	5200	4.0
17	47	30	SWSW	4	5204	14.7
17	47	30	SWSW	4	5205	2.8
17	47	30	SWSW	4	5211	4.7
17	47	30	SWSW	4	5700	1.8
17	47	30	SESW		5300	9.0
17	47	30	SESW		5302	26.2
17	47	30	SESW		5303	1.8
17	47	30	NESE		4504	22.8
17	47	30	NESE		4508	6.1
17	47	30	NWSE		5400	30.0
17	47	30	SWSE		5400	34.2
17	47	30	SESE		4500	3.5
17	47	30	SESE		4501	0.8
17	47	30	SESE		4502	5.6
17	47	30	SESE		4504	4.4
17	47	30	SESE		4505	1.1
17	47	30	SESE		4509	20.3
17	47	31	NENE		100	3.0
17	47	31	NENE		200	1.5

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
17	47	31	NENE		300	1.1
17	47	31	NENE		400	0.3
17	47	31	NENE		500	0.7
17	47	31	NENE		600	1.0
17	47	31	NENE		700	1.7
17	47	31	NENE		1000	1.1
17	47	31	NENE		1200	0.5
17	47	31	NENE		1300	1.5
17	47	31	NENE		1400	0.4
17	47	31	NWNE		1100	5.3
17	47	31	NWNE		1101	10.0
17	47	31	NWNE		1102	4.6
17	47	31	NWNE		1103	7.2
17	47	31	NWNE		1104	1.5
17	47	31	SWNE		1700	27.1
17	47	31	SENE		1800	29.0
17	47	31	NENW		1200	3.5
17	47	31	NENW		1201	4.8
17	47	31	NENW		1202	2.5
17	47	31	NENW		1203	4.0
17	47	31	NENW		1204	3.0
17	47	31	NENW		1207	6.5
17	47	31	NENW		1208	4.0
17	47	31	NENW		1209	2.0
17	47	31	NWNW	1	1300	8.7
17	47	31	NWNW	1	1302	3.0
17	47	31	SWNW	2	1602	16.0
17	47	31	SENW		1203	1.0
17	47	31	SENW		1600	10.0
17	47	31	NESW		2300	34.1
17	47	31	NWSW	3	2302	10.0
17	47	31	NWSW	3	2600	6.8
17	47	31	SWSW		2600	7.9
18	45	1	NESE		102	3.7
18	45	1	SESE		102	6.0
18	45	4	NWSW		200	0.2
18	45	4	SWSW		200	19.8
18	45	5	NENW	3	600	3.9
18	45	5	NWNW	4	600	29.0
18	45	5	SWNW		600	40.0
18	45	5	SENW		600	33.5
18	45	5	NESW		500	30.6
18	45	5	NWSW		700	31.7
18	45	5	SWSW		700	38.1
18	45	5	SESW		500	37.2
18	45	5	NESE		300	10.6
18	45	5	NWSE		400	6.1

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TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	45	5	SWSE		400	26.6
18	45	5	SESE		300	34.9
18	45	6	NENE	1	701	10.2
18	45	6	SENE		701	27.1
18	45	6	NESE		701	32.0
18	45	6	SESE		701	38.5
18	45	7	NENE		1900	0.6
18	45	7	NENE		1901	0.3
18	45	7	NENE		1902	30.9
18	45	8	NENE		300	25.2
18	45	8	NWNE		3200	36.8
18	45	8	SWNE		3200	19.5
18	45	8	SWNE		3501	14.9
18	45	8	SENE		3300	35.8
18	45	8	NENW		3000	36.3
18	45	8	NWNW		3000	36.1
18	45	8	SWNW		3100	25.0
18	45	8	SENW		3100	30.9
18	45	8	NESW		3501	0.8
18	45	8	NESE		3300	25.6
18	45	8	NWSE		3501	30.0
18	45	8	SWSE		3501	3.9
18	45	8	SESE		3300	10.8
18	45	8	SESE		3400	20.0
18	45	9	SWNE		4400	2.8
18	45	9	NENW		3900	6.2
18	45	9	NWNW		200	27.8
18	45	9	SWNW		4200	5.4
18	45	9	SENW		3900	6.4
18	45	9	SENW		4100	7.8
18	45	9	NESW		4100	25.8
18	45	9	NESW		4101	1.7
18	45	9	NWSW		4200	31.5
18	45	9	SWSW		4200	30.2
18	45	9	SESW		4300	13.7
18	45	9	SESW		4301	18.5
18	45	9	NESE		4401	22.9
18	45	9	NWSE		4400	32.9
18	45	9	SWSE		4400	28.2
18	45	9	SWSE		4401	9.3
18	45	9	SESE		4401	36.1
18	45	10	SENW		700	0.3
18	45	10	NESW		700	26.5
18	45	10	NWSW		601	20.1
18	45	10	SWSW		601	35.5
18	45	10	SESW		700	32.6
18	45	10	SESE		800	14.0

Recorded in State Record of water right Certificates numbered 75691 .

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	45	11	SWSW		800	0.1
18	45	11	SESW		1100	16.3
18	45	11	NESE		1200	24.5
18	45	11	NWSE		1100	20.3
18	45	11	SWSE		1100	36.5
18	45	11	SESE		1200	34.4
18	45	12	NENE		1601	17.4
18	45	12	SWNE		1400	24.9
18	45	12	SENE		1601	36.0
18	45	12	SWNW		1400	1.5
18	45	12	SENW		1400	18.2
18	45	12	NESW		1901	38.2
18	45	12	NWSW		1901	9.3
18	45	12	SWSW		1901	38.1
18	45	12	SESW		1901	36.6
18	45	12	NESE		1700	38.0
18	45	12	NWSE		1700	39.2
18	45	12	SWSE		1700	29.7
18	45	12	SESE		1700	20.7
18	45	13	NENW		1901	4.4
18	45	13	NWNW		1901	28.9
18	45	14	NENE		2400	32.6
18	45	14	NWNE		2400	13.4
18	45	14	NWNE		2402	20.9
18	45	14	NENW		2402	36.7
18	45	14	NWNW		2401	3.4
18	45	14	SENW		2500	4.6
18	45	15	NENE		3000	24.9
18	45	15	NWNE		3100	29.4
18	45	15	SENE		3400	1.3
18	45	15	SWNE		3400	20.4
18	45	15	NENW		3200	24.9
18	45	15	NWNW		3500	1.1
18	45	15	SWNW		3500	14.9
18	45	15	SENW		3400	4.6
18	45	16	NWNE		4700	30.9
18	45	16	SWNE		4700	3.5
18	45	16	NENW		4800	18.0
18	45	16	NWNW		4900	34.6
18	45	16	SWNW		5000	18.4
18	45	16	SENW		5100	17.4
18	45	16	NESW		5100	14.2
18	45	17	NENE		5600	7.6
18	46	1	NENW	3	1000	18.0
18	46	1	NENW	3	1100	2.7
18	46	1	NENW	3	1105	7.0
18	46	1	NWNW	4	1102	4.0

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	46	1	NWNW	4	1104	8.7
18	46	2	NENE	1	1200	17.9
18	46	2	NWNE	2	1200	11.3
18	46	2	SWNE		1301	21.2
18	46	2	SWNE		1303	10.3
18	46	2	SENE		1301	26.5
18	46	2	NENW	3	1900	12.8
18	46	2	NWNW	4	1900	17.2
18	46	2	SENW		1800	7.0
18	46	2	SENW		1900	4.2
18	46	2	NESW		1600	36.2
18	46	2	NWSW		1700	11.0
18	46	3	SWSE		2200	8.2
18	46	3	SESE		2200	25.2
18	46	6	NWNW	4	1100	10.0
18	46	6	SWNW	5	1100	25.2
18	46	6	SENW		1100	1.4
18	46	6	NESW		1000	12.6
18	46	6	NWSW	6	1200	28.4
18	46	6	SWSW	7	1200	33.0
18	46	6	SESW		1000	31.9
18	46	6	SWSE		1000	1.0
18	46	7	NENE		2300	18.2
18	46	7	NWNE		2300	36.1
18	46	7	SWNE		2200	1.5
18	46	7	SWNE		2201	36.9
18	46	7	SENE		2201	39.4
18	46	7	NENW		1400	38.1
18	46	7	NWNW	1	1300	35.8
18	46	7	SWNW		1300	35.8
18	46	7	SENW		1500	37.1
18	46	7	NESW		1800	35.1
18	46	7	NWSW	3	1600	36.8
18	46	7	SWSW	4	1700	15.5
18	46	7	SESW		1700	16.8
18	46	7	NESE		2100	14.6
18	46	7	NWSE		1800	8.6
18	46	7	NWSE		2100	29.8
18	46	7	SWSE		1901	35.9
18	46	8	SWNE		3900	34.4
18	46	8	SENE		2900	15.5
18	46	8	NWNW		2500	10.3
18	46	8	SWNW		2600	21.4
18	46	8	SENW		2600	19.1
18	46	9	SWNE		3000	0.2
18	46	9	SWNW		3000	17.2
18	46	9	SENW		3000	2.9

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	46	9	SWSW		3200	7.5
18	46	9	SESW		3200	28.6
18	46	9	NWSE		3000	20.0
18	46	9	SWSE		3300	34.5
18	46	9	SESE		3401	10.6
18	46	10	NENE		2200	22.6
18	46	10	NWNE		2200	0.7
18	46	10	NENW		2400	8.6
18	46	10	SENW		2500	28.8
18	46	10	NESW		2500	5.4
18	46	20	SWSE		1600	11.4
18	46	20	SESE		1700	27.3
18	46	21	SWNE		2700	4.2
18	46	21	SENE		2700	14.7
18	46	21	SENE		2800	1.7
18	46	21	NESW		2500	3.3
18	46	21	SWSW		2400	0.2
18	46	21	SWSW		2401	18.8
18	46	21	SESW		2400	0.8
18	46	21	SESW		2401	34.2
18	46	21	SESW		2602	0.6
18	46	21	NESE		2700	1.0
18	46	21	NESE		2900	33.8
18	46	21	NWSE		2601	0.7
18	46	21	NWSE		2602	16.1
18	46	21	NWSE		2700	11.5
18	46	21	SWSE		2602	38.7
18	46	21	SESE		2900	38.2
18	46	22	NENE		100	26.0
18	46	22	NWNE		100	24.9
18	46	22	SWNE		500	38.0
18	46	22	SENE		500	37.0
18	46	22	NENW		100	13.8
18	46	22	NWNW		100	1.0
18	46	22	SWNW		100	33.7
18	46	22	SENW		100	37.5
18	46	22	NESW		800	9.6
18	46	22	NESW		900	28.9
18	46	22	NWSW		700	5.3
18	46	22	NWSW		800	28.3
18	46	22	SWSW		1000	32.1
18	46	22	SESW		1000	39.2
18	46	22	NESE		1300	37.7
18	46	22	NWSE		1100	38.1
18	46	22	SWSE		1200	36.4
18	46	22	SESE		1200	33.9
18	46	23	NENE		2500	31.4

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	46	23	NWNE		2400	28.1
18	46	23	SWNE		1400	36.1
18	46	23	SWNE		1401	0.7
18	46	23	SENE		2300	37.0
18	46	23	NENW		1400	26.5
18	46	23	NENW		1500	6.3
18	46	23	NWNW		1400	9.1
18	46	23	NWNW		1500	18.9
18	46	23	NWNW		1600	1.8
18	46	23	SWNW		1500	17.1
18	46	23	SWNW		1600	17.5
18	46	23	SENW		1400	11.0
18	46	23	SENW		1500	24.1
18	46	23	NESW		1800	38.0
18	46	23	NWSW		1600	33.7
18	46	23	NWSW		1800	2.2
18	46	23	SWSW		1600	37.0
18	46	23	SESW		1800	14.7
18	46	23	SESW		1901	19.5
18	46	23	NESE		2100	32.0
18	46	23	NESE		2200	4.9
18	46	23	NWSE		1800	9.5
18	46	23	NWSE		2100	29.1
18	46	23	SWSE		1802	8.0
18	46	23	SWSE		1901	17.1
18	46	23	SWSE		2000	12.7
18	46	23	SESE		1900	0.2
18	46	23	SESE		1901	12.4
18	46	23	SESE		2000	23.8
18	46	24	NENE		4600	30.0
18	46	24	NWNE		2600	14.7
18	46	24	NWNE		4100	17.4
18	46	24	SWNE		3900	7.3
18	46	24	SWNE		4000	11.1
18	46	24	SWNE		4101	11.7
18	46	24	SWNE		4200	2.0
18	46	24	SWNE		4300	4.9
18	46	24	SENE		4400	18.3
18	46	24	SENE		4500	16.2
18	46	24	NENW		2600	33.6
18	46	24	NWNW		2500	13.6
18	46	24	NWNW		2600	14.8
18	46	24	SWNW		2700	19.3
18	46	24	SWNW		2800	18.8
18	46	24	SENW		2900	38.2
18	46	24	NESW		3001	38.0
18	46	24	NWSW		3100	36.8

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	46	24	SWSW		3200	23.2
18	46	24	SWSW		3201	0.1
18	46	24	SESW		3200	23.3
18	46	24	NESE		3800	36.6
18	46	24	NWSE		3400	17.8
18	46	24	NWSE		3500	0.1
18	46	24	NWSE		3600	3.8
18	46	24	NWSE		3700	14.5
18	46	24	SWSE		3300	38.6
18	46	24	SESE		3300	35.6
18	46	25	NENE		3300	34.4
18	46	25	NENE		4700	3.1
18	46	25	NWNE		3300	37.0
18	46	25	NWNE		4700	0.8
18	46	25	SWNE		4700	38.6
18	46	25	SENE		4700	30.7
18	46	25	SENE		4701	6.2
18	46	25	NENW		5200	39.6
18	46	25	NWNW		5200	38.3
18	46	25	SWNW		5201	39.2
18	46	25	SENW		5201	39.2
18	46	25	NESW		4800	7.0
18	46	25	NESW		5000	31.1
18	46	25	NWSW		5102	38.6
18	46	25	SWSW		5100	1.7
18	46	25	SWSW		5101	6.0
18	46	25	SWSW		5102	26.4
18	46	25	SESW		5000	36.8
18	46	25	NESE		4800	37.0
18	46	25	NWSE		4800	38.5
18	46	25	SWSE		4902	38.8
18	46	25	SESE		4900	0.5
18	46	25	SESE		4901	1.0
18	46	25	SESE		4902	34.1
18	46	26	NENE		5300	9.6
18	46	26	NENE		5301	12.0
18	46	26	NWNE		5300	37.4
18	46	26	NWNE		6200	0.4
18	46	26	SWNE		5400	12.5
18	46	26	SWNE		5401	23.3
18	46	26	SENE		5500	35.0
18	46	26	NENW		5300	3.9
18	46	26	NENW		6200	32.6
18	46	26	NWNW		6300	38.6
18	46	26	SWNW		6300	31.9
18	46	26	SENW		6100	0.4
18	46	26	SENW		6200	32.1

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	46	26	NESW		6100	27.6
18	46	26	NWSW		5900	2.9
18	46	26	NWSW		6100	27.5
18	46	26	SWSW		5800	37.4
18	46	26	SESW		5800	35.8
18	46	26	NESE		5600	37.2
18	46	26	NWSE		5400	32.2
18	46	26	NWSE		5401	5.9
18	46	26	SWSE		5700	36.4
18	46	26	SESE		5701	35.0
18	46	27	NENE		6400	6.9
18	46	27	NENE		6403	1.6
18	46	27	NENE		6404	2.8
18	46	27	NENE		6405	12.5
18	46	27	NENE		6406	11.7
18	46	27	NWNE		6500	30.6
18	46	27	SWNE		6600	13.5
18	46	27	SENE		6400	1.1
18	46	27	SENE		6401	12.5
18	46	27	SENE		6404	1.2
18	46	27	SENE		6405	1.2
18	46	27	SENE		6408	2.5
18	46	27	SENE		6409	2.5
18	46	27	NENW		6900	22.7
18	46	27	NENW		6901	3.5
18	46	27	NWNW		7000	20.5
18	46	27	SWNW		7000	28.1
18	46	27	SENW		6900	26.8
18	46	27	NESW		6600	9.4
18	46	27	NESW		7100	15.5
18	46	27	NWSW		7100	34.6
18	46	27	SWSW		7100	31.4
18	46	27	SESW		6600	10.8
18	46	27	SESW		7100	1.5
18	46	27	NESE		6700	26.1
18	46	27	NESE		6701	2.2
18	46	27	NWSE		6600	31.0
18	46	27	SWSE		6600	29.5
18	46	27	SESE		6700	25.9
18	46	27	SESE		6800	6.0
18	46	28	NENE		3000	37.5
18	46	28	NENE		3100	1.4
18	46	28	NWNE		3000	34.5
18	46	28	SWNE		3100	4.6
18	46	28	SWNE		3200	33.7
18	46	28	SENE		3100	32.9
18	46	28	SENE		3101	4.6

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	46	28	NENW		3900	22.2
18	46	28	NWNW		3900	23.2
18	46	28	SWNW		3800	18.7
18	46	28	SENW		3800	30.0
18	46	28	NESW		3700	23.7
18	46	28	NWSW		3702	20.1
18	46	28	SWSW		3701	12.9
18	46	28	SWSW		3702	21.1
18	46	28	SESW		3700	6.8
18	46	28	SESW		3702	2.8
18	46	28	NESE		3300	37.3
18	46	28	NWSE		3300	4.6
18	46	28	NWSE		3500	30.6
18	46	28	SWSE		3500	34.1
18	46	28	SESE		3400	6.4
18	46	28	SESE		3500	24.9
18	46	29	NENE		4000	17.1
18	46	29	NWNE		4800	20.7
18	46	29	SWNE		4200	9.5
18	46	29	SENE		4200	17.8
18	46	29	NENW		4800	17.3
18	46	29	SWNW		4800	12.6
18	46	29	SENW		4800	26.0
18	46	29	NESW		4400	27.9
18	46	29	NWSW		4500	18.0
18	46	29	NWSW		4600	13.2
18	46	29	SWSW		4500	33.0
18	46	29	SESW		4400	20.6
18	46	29	NESE		4200	17.2
18	46	29	NWSE		4302	31.3
18	46	29	SWSE		4300	2.9
18	46	29	SWSE		4302	24.7
18	46	29	SESE		4302	18.3
18	46	30	SWNE		5200	9.1
18	46	30	SENE		5200	15.2
18	46	30	NESE		5200	28.9
18	46	30	NWSE		5200	4.8
18	46	30	SESE		5200	27.3
18	46	32	NENE		6500	21.4
18	46	32	NWNE		6400	35.1
18	46	32	SWNE		6400	39.2
18	46	32	SENE		6500	35.5
18	46	32	NENW		6000	20.0
18	46	32	NWNW		5900	20.0
18	46	32	SWNW		5900	13.7
18	46	32	SENW		6000	35.3
18	46	32	NESW		6100	12.0

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	46	32	NESE		6200	22.5
18	46	32	NWSE		6300	8.1
18	46	32	SESE		6200	19.5
18	46	33	NENE		7400	35.0
18	46	33	NWNE		7300	34.5
18	46	33	SWNE		7300	39.3
18	46	33	SENE		7400	28.7
18	46	33	NENW		6800	19.5
18	46	33	NWNW		6600	34.3
18	46	33	SWNW		7000	35.5
18	46	33	SENW		6800	16.2
18	46	33	NESW		7100	24.7
18	46	33	NWSW		7100	6.6
18	46	33	SWSW		7100	29.5
18	46	33	SESW		7100	21.4
18	46	33	NESE		7200	30.6
18	46	33	NESE		7201	2.0
18	46	33	NWSE		7200	33.2
18	46	33	SWSE		7201	1.1
18	46	33	SESE		7201	29.6
18	46	34	NENE		8000	38.5
18	46	34	NWNE		7901	25.6
18	46	34	SWNE		7900	38.8
18	46	34	SENE		8000	39.3
18	46	34	NENW		7300	34.7
18	46	34	NWNW		7200	22.1
18	46	34	SWNW		7201	35.6
18	46	34	SENW		7300	39.3
18	46	34	NESW		7501	36.1
18	46	34	NWSW		7500	17.7
18	46	34	NWSW		7501	15.2
18	46	34	SWSW		7500	31.6
18	46	34	SESW		7501	24.7
18	46	34	NESE		7800	9.1
18	46	34	NESE		7801	28.5
18	46	34	NWSE		7801	38.0
18	46	34	SWSE		7700	23.7
18	46	34	SESE		7700	8.5
18	46	35	NENE		8400	26.5
18	46	35	NWNE		8205	23.8
18	46	35	NWNE		8300	6.0
18	46	35	NWNE		8302	3.0
18	46	35	NWNE		8303	2.4
18	46	35	SWNE		8205	11.4
18	46	35	SWNE		8303	2.5
18	46	35	NENW		8205	39.5
18	46	35	NWNW		8100	7.4

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	46	35	NWNW		8201	3.9
18	46	35	NWNW		8205	16.8
18	46	35	SWNW		8100	7.2
18	46	35	SWNW		8205	4.3
18	46	35	SENW		8205	15.4
18	46	35	NESW		8100	1.3
18	46	35	NWSW		8100	24.2
18	46	35	SWSW		8100	0.7
18	46	35	SESW		8100	0.7
18	46	35	SESE		8800	0.5
18	46	36	NENE		9100	35.8
18	46	36	NWNE		9100	37.6
18	46	36	SWNE		9100	38.7
18	46	36	SENE		9100	37.9
18	46	36	NENW		8600	4.9
18	46	36	NENW		8603	5.0
18	46	36	NENW		8616	8.5
18	46	36	NENW		8618	13.1
18	46	36	NWNW		8500	32.3
18	46	36	NWNW		8501	3.8
18	46	36	SWNW		8607	0.5
18	46	36	SWNW		8700	5.1
18	46	36	SENW		8604	1.0
18	46	36	SENW		8605	5.0
18	46	36	SENW		8606	4.2
18	46	36	SENW		8607	0.5
18	46	36	SENW		8610	19.5
18	46	36	NESW		8800	18.5
18	46	36	NESW		8808	20.1
18	46	36	NWSW		8808	25.0
18	46	36	SWSW		8800	16.2
18	46	36	SWSW		8801	9.3
18	46	36	SWSW		8802	2.3
18	46	36	SWSW		8804	1.4
18	46	36	SESW		8800	3.7
18	46	36	SESW		8802	2.7
18	46	36	SESW		8803	5.1
18	46	36	SESW		8804	3.0
18	46	36	SESW		8805	4.6
18	46	36	SESW		8807	4.0
18	46	36	NESE		9000	38.2
18	46	36	NWSE		8800	39.8
18	46	36	SWSE		8900	37.3
18	46	36	SESE		9000	33.8
18	47	4	NWNW	4	1600	2.6
18	47	4	NWNW	4	1601	1.0
18	47	4	NWNW	4	1602	1.7

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	47	4	SENW		300	1.8
18	47	5	NENE	1	700	0.4
18	47	5	NENE	1	800	0.6
18	47	5	NENE	1	1002	0.5
18	47	5	NENE	1	1005	0.1
18	47	5	NENE	1	1100	1.0
18	47	5	NENE	1	1200	0.4
18	47	5	NENE	1	1300	0.5
18	47	5	NENE	1	2200	0.3
18	47	5	NENE	1	2502	0.1
18	47	5	NENE	1	3100	1.0
18	47	5	NENE	1	3200	0.4
18	47	5	NWNE	2	1201	0.4
18	47	5	NWNE	2	1292	2.0
18	47	5	NWNE	2	1300	0.6
18	47	5	SWNE		100	0.8
18	47	5	SWNE		200	1.5
18	47	5	SWNE		300	3.7
18	47	5	SWNE		900	0.5
18	47	5	SENE		100	4.2
18	47	5	SENE		200	8.2
18	47	5	SENE		300	4.1
18	47	5	SENE		700	0.4
18	47	5	SENE		800	0.4
18	47	5	SENE		1000	0.2
18	47	5	SENE		1100	0.1
18	47	5	SENW		3000	0.6
18	47	5	SENW		3001	0.4
18	47	5	SENW		3002	0.4
18	47	5	SENW		3003	0.5
18	47	5	SENW		3004	0.4
18	47	5	SENW		3006	0.2
18	47	5	SENW		3007	0.6
18	47	5	SENW		3008	0.5
18	47	5	SENW		3009	0.4
18	47	5	SENW		3010	0.4
18	47	5	SENW		3011	0.4
18	47	5	SENW		3012	0.4
18	47	5	SENW		3013	0.5
18	47	5	SENW		3014	0.5
18	47	5	SENW		3015	0.5
18	47	5	SENW		3100	6.0
18	47	5	SENW		3400	2.0
18	47	5	SENW		3500	3.7
18	47	5	NESE		700	0.8
18	47	5	NWSE		2000	0.5
18	47	5	NWSE		2100	0.8

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	47	5	NWSE		2102	0.5
18	47	5	NWSE		2400	2.3
18	47	5	NWSE		2500	1.0
18	47	5	NWSE		6300	0.3
18	47	5	NWSE		7800	0.3
18	47	5	NWSE		7900	0.4
18	47	5	SWSE		800	0.5
18	47	5	SWSE		1100	0.3
18	47	5	SWSE		1200	0.6
18	47	5	SWSE		1300	1.0
18	47	5	SESE		1400	0.4
18	47	5	SESE		1600	0.7
18	47	8	NENE		800	0.6
18	47	8	NENE		1500	2.7
18	47	8	SWNE		1100	1.4
18	47	8	SENE		900	9.0
18	47	8	SENE		1000	9.4
18	47	8	SENE		1100	4.6
18	47	8	SENE		1200	3.2
18	47	8	SENE		1300	4.4
18	47	8	NESE		1000	15.7
18	47	8	NESE		3800	1.9
18	47	8	NESE		3900	0.7
18	47	8	NESE		3902	4.7
18	47	8	NESE		4900	0.9
18	47	8	NESE		4901	1.1
18	47	8	NWSE		3600	5.5
18	47	8	NWSE		3700	1.2
18	47	8	NWSE		3800	1.4
18	47	8	SWSE		3600	15.2
18	47	8	SWSE		3601	0.3
18	47	8	SWSE		3602	0.6
18	47	8	SESE		4100	8.7
18	47	8	SESE		4200	7.5
18	47	8	SESE		4201	1.3
18	47	8	SESE		4300	6.4
18	47	8	SESE		4301	0.2
18	47	8	SESE		4400	0.2
18	47	8	SESE		4401	1.9
18	47	8	SESE		4500	1.1
18	47	8	SESE		4700	1.0
18	47	8	SESE		4800	4.7
18	47	9	SWNW		1100	1.0
18	47	9	SWNW		1400	0.4
18	47	9	NWSW		2700	8.5
18	47	9	NWSW		2800	4.3
18	47	9	NWSW		4101	2.4

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	47	9	NWSW		4102	0.4
18	47	9	NWSW		4104	0.2
18	47	9	NWSW		4106	0.1
18	47	9	NWSW		4107	0.3
18	47	9	NWSW		4400	2.0
18	47	9	NWSW		4500	2.1
18	47	9	NWSW		4600	4.1
18	47	9	SWSW		3701	2.2
18	47	9	SWSW		3702	0.4
18	47	9	SWSW		4600	0.5
18	47	9	SWSW		4900	0.4
18	47	9	SWSW		5000	4.4
18	47	9	SWSW		5100	4.4
18	47	17	NENE		3500	7.8
18	47	17	NENE		3600	0.2
18	47	17	NENE		3700	1.4
18	47	17	NENE		3800	8.3
18	47	17	NENE		3900	0.1
18	47	17	NENE		3901	1.5
18	47	17	NENE		4003	0.2
18	47	17	NWNE		400	0.4
18	47	17	NWNE		701	0.5
18	47	17	NWNE		900	0.7
18	47	17	NWNE		1000	0.6
18	47	17	NWNE		1200	0.4
18	47	17	NWNE		1300	0.5
18	47	17	NWNE		1400	0.8
18	47	17	NWNE		1500	0.3
18	47	17	NWNE		1600	0.4
18	47	17	NWNE		1800	0.1
18	47	17	NWNE		1900	0.4
18	47	17	SWNE		2500	0.5
18	47	17	SWNE		2600	0.6
18	47	17	SWNE		3200	0.7
18	47	17	SENE		3801	4.1
18	47	17	SENE		4300	0.1
18	47	17	SENE		4301	0.3
18	47	17	SENE		4302	0.6
18	47	17	SENE		4303	0.2
18	47	17	SENE		4400	3.9
18	47	17	SENE		4900	0.9
18	47	17	SENE		5100	0.7
18	47	17	SENE		5300	0.7
18	47	17	SENE		5500	0.7
18	47	19	SWNW	2	1300	23.1
18	47	19	NWSW	3	1300	37.8
18	47	19	SWSW	4	1400	37.2

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
18	47	30	NWNE		1400	1.6
18	47	30	NENW		1400	37.4
18	47	30	NWNW	1	1400	36.3
18	47	30	SWNW	2	6900	38.3
18	47	30	SENW		6900	39.8
18	47	30	NESW		6900	39.6
18	47	30	NWSW	3	6900	37.8
18	47	30	SWSW	4	7100	36.1
18	47	30	SESW		7100	38.1
18	47	30	NWSE		6200	30.2
18	47	30	SWSE		6200	35.6
18	47	30	SESE		6200	0.5
18	47	31	NWNE		7800	31.5
18	47	31	SWNE		7700	39.7
18	47	31	NENW		7200	31.6
18	47	31	NWNW	1	7200	32.8
18	47	31	NWNW	1	7300	3.0
18	47	31	SWNW	2	7400	37.4
18	47	31	SENW		7700	36.5
18	47	31	NESW		7500	10.5
18	47	31	NESW		7600	14.4
18	47	31	NWSW	3	7500	37.7
18	47	31	SWSW	4	7500	25.3
18	47	31	SWSW	4	7600	1.3
18	47	31	SESW		7500	1.0
18	47	31	SESW		7600	30.7
18	47	31	NWSE		7600	39.0
18	47	31	SWSE		7600	38.6
19	46	1	NENE	1	100	34.6
19	46	1	NWNE	2	200	35.2
19	46	1	SWNE		300	27.6
19	46	1	SENE		300	37.4
19	46	1	NENW	3	200	29.3
19	46	1	NWNW	4	400	8.0
19	46	1	SWNW		400	35.0
19	46	1	SENW		400	36.0
19	46	1	NESW		500	26.4
19	46	1	NWSW		500	30.0
19	46	1	SWSW		700	25.2
19	46	1	SESW		1000	37.5
19	46	1	NESE		800	32.8
19	46	1	NWSE		800	0.8
19	46	1	NWSE		1000	0.9
19	46	1	SWSE		1000	26.5
19	46	1	SESE		800	31.7
19	46	1	SESE		900	1.9
19	46	2	SENE		500	6.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	46	2	NESE		500	5.3
19	46	2	SESE		700	9.3
19	46	3	NENW	3	1600	1.1
19	46	3	NWNW		1601	1.2
19	46	4	NENE	1	7200	1.7
19	46	4	NWNW	4	302	22.0
19	46	4	SWNW	2	302	1.8
19	46	5	NENE	1	302	2.7
19	46	5	SENE		302	0.3
19	46	11	NENE		200	24.5
19	46	11	NWNE		2101	0.6
19	46	11	SWNE		2101	29.0
19	46	11	SENE		2100	9.0
19	46	11	SENE		2101	2.7
19	46	11	NENW		2101	11.2
19	46	11	SENW		2101	27.0
19	46	11	NESW		2300	12.0
19	46	11	SWSW		2200	14.2
19	46	11	SESW		2300	5.4
19	46	11	NESE		2400	34.2
19	46	11	NWSE		2300	40.0
19	46	11	SWSE		2300	37.0
19	46	11	SESE		2400	32.5
19	46	12	NENE		2500	29.5
19	46	12	NWNE		2600	19.5
19	46	12	NWNE		2601	11.2
19	46	12	SWNE		2600	7.1
19	46	12	SWNE		2601	9.8
19	46	12	SENE		2500	32.7
19	46	12	NENW		2701	25.0
19	46	12	NENW		2702	9.6
19	46	12	NWNW		2700	3.2
19	46	12	NWNW		2703	26.8
19	46	12	SWNW		2800	18.0
19	46	12	SWNW		2801	19.0
19	46	12	SENW		2801	23.0
19	46	12	NESW		2900	30.5
19	46	12	NWSW		2900	24.5
19	46	12	SWSW		3001	37.5
19	46	12	SESW		3000	2.2
19	46	12	SESW		3001	33.5
19	46	12	NESE		2500	0.4
19	46	12	NESE		3100	35.1
19	46	12	NWSE		2900	30.0
19	46	12	SWSE		3200	37.1
19	46	12	SESE		3200	37.8
19	46	13	NENE		3300	36.0

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	46	13	NWNE		3300	39.5
19	46	13	SWNE		3300	37.5
19	46	13	SENE		3300	29.3
19	46	13	NENW		3501	36.2
19	46	13	NWNW		3600	32.9
19	46	13	SWNW		3700	38.5
19	46	13	SENW		3300	32.1
19	46	13	SENW		3700	4.2
19	46	13	NESW		3800	36.2
19	46	13	NESW		4001	1.4
19	46	13	NWSW		3900	32.0
19	46	13	NWSW		5300	1.5
19	46	13	SWSW		4000	17.8
19	46	13	SWSW		4001	2.7
19	46	13	SWSW		4002	2.8
19	46	13	SWSW		4003	6.0
19	46	13	SESW		3800	19.4
19	46	13	SESW		4001	6.2
19	46	13	NESE		3300	33.3
19	46	13	NESE		4300	2.7
19	46	13	NWSE		3800	37.4
19	46	13	SWSE		4400	8.9
19	46	13	SWSE		4500	21.0
19	46	13	SESE		3300	2.1
19	46	13	SESE		4300	30.4
19	46	14	NENE		4700	28.1
19	46	14	NENE		4701	2.1
19	46	14	NWNE		4700	0.1
19	46	14	NWNE		4800	28.3
19	46	14	SWNE		4701	24.4
19	46	14	SENE		4700	3.2
19	46	14	SENE		4701	30.5
19	46	14	NENW		4900	37.4
19	46	14	NWNW		2200	28.8
19	46	14	SWNW		2200	38.1
19	46	14	SENW		4900	32.6
19	46	14	NESW		5000	28.3
19	46	14	NWSW		2202	33.7
19	46	14	SWSW		5100	35.5
19	46	14	SESW		5200	31.6
19	46	14	NESE		5300	18.0
19	46	14	NESE		5400	1.2
19	46	14	NWSE		5000	22.4
19	46	14	SWSE		5200	20.4
19	46	14	SESE		4000	23.1
19	46	15	SENE		2200	11.6
19	46	15	NESE		2202	32.6

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	46	15	NWSE		5600	6.6
19	46	15	SWSE		5600	1.1
19	46	15	SESE		5600	31.6
19	46	21	SESE		300	6.8
19	46	22	NENE		100	29.5
19	46	22	NWNE		100	29.6
19	46	22	SWNE		200	3.7
19	46	22	SWNE		300	27.4
19	46	22	SENE		200	29.1
19	46	22	SENE		300	0.8
19	46	22	NENW		401	19.2
19	46	22	NENW		402	7.3
19	46	22	NWNW		401	24.3
19	46	22	SWNW		401	10.5
19	46	22	SENW		401	39.0
19	46	22	NESW		501	36.4
19	46	22	NWSW		600	13.2
19	46	22	SWSW		600	36.2
19	46	22	SESW		500	5.0
19	46	22	SESW		501	30.9
19	46	22	NESE		200	5.1
19	46	22	NESE		300	19.9
19	46	22	NWSE		300	35.9
19	46	22	SWSE		700	32.5
19	46	22	SESE		700	36.9
19	46	23	NENE		801	35.3
19	46	23	NWNE		900	32.4
19	46	23	SWNE		1000	25.6
19	46	23	SENE		1100	27.0
19	46	23	NENW		1200	23.5
19	46	23	NWNW		1300	18.5
19	46	23	SWNW		200	38.1
19	46	23	SENW		1000	39.2
19	46	23	NESW		1000	38.4
19	46	23	NWSW		1000	2.1
19	46	23	NWSW		1401	29.4
19	46	23	SWSW		1400	20.7
19	46	23	SWSW		1401	2.0
19	46	23	SESW		1500	22.5
19	46	23	SESW		1501	3.0
19	46	23	NESE		1701	39.0
19	46	23	NWSE		1000	38.2
19	46	23	SWSE		1601	34.5
19	46	23	SESE		1700	12.2
19	46	23	SESE		1701	2.4
19	46	23	SESE		1702	7.7
19	46	24	NENE		1800	33.9

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	46	24	NWNE		1800	31.4
19	46	24	SWNE		1901	27.9
19	46	24	SWNE		2000	3.0
19	46	24	SENE		2100	25.7
19	46	24	SENE		2102	0.6
19	46	24	NENW		803	0.5
19	46	24	NENW		1800	33.1
19	46	24	NWNW		801	4.1
19	46	24	NWNW		803	13.0
19	46	24	SWNW		1100	20.0
19	46	24	SENW		1900	24.7
19	46	24	SENW		1901	3.8
19	46	24	NESW		1900	5.0
19	46	24	NESW		1901	6.6
19	46	24	NESW		2300	3.6
19	46	24	NESW		2301	9.4
19	46	24	NWSW		2301	33.4
19	46	24	SWSW		2301	0.6
19	46	24	SWSW		2400	29.3
19	46	24	SESW		2300	9.7
19	46	24	SESW		2301	8.3
19	46	24	NESE		2100	23.3
19	46	24	NWSE		1900	0.8
19	46	24	NWSE		1901	14.1
19	46	24	NWSE		2500	14.0
19	46	24	SWSE		2500	32.2
19	46	24	SESE		2500	22.4
19	46	25	NWNE		2800	35.0
19	46	25	SWNE		2800	37.1
19	46	25	NENW		2900	18.2
19	46	25	NWNW		1600	33.1
19	46	25	SWNW		3001	18.4
19	46	25	SENW		2900	32.2
19	46	25	NESW		3103	37.7
19	46	25	NWSW		3103	23.2
19	46	25	SWSW		3103	14.0
19	46	25	SESW		3103	38.2
19	46	25	NWSE		3103	29.2
19	46	25	SWSE		3103	26.5
19	46	26	NENE		1600	24.7
19	46	26	NWNE		1600	29.9
19	46	26	SWNE		3001	15.7
19	46	26	SWNE		3500	12.9
19	46	26	SENE		3001	21.7
19	46	26	NENW		3402	23.2
19	46	26	NWNW		3401	31.2
19	46	26	SWNW		3600	20.7

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	46	26	SENW		3600	22.9
19	46	26	NESW		3700	28.3
19	46	26	NWSW		3700	26.6
19	46	26	SWSW		3700	33.3
19	46	26	SESW		3700	35.7
19	46	26	NESE		3900	27.7
19	46	26	NESE		3902	2.6
19	46	26	NWSE		3900	28.7
19	46	26	SWSE		3900	13.4
19	46	26	SWSE		3901	6.0
19	46	26	SESE		4000	16.0
19	46	27	NENE		4100	19.4
19	46	27	NWNE		4100	19.8
19	46	27	NWNE		4200	7.9
19	46	27	SWNE		4200	2.8
19	46	27	SWNE		4300	30.6
19	46	27	SENE		4300	33.4
19	46	27	NENW		4100	1.0
19	46	27	NENW		4200	26.0
19	46	27	NWNW		4200	3.0
19	46	27	NWNW		4400	31.5
19	46	27	SWNW		4200	0.6
19	46	27	SWNW		4400	21.6
19	46	27	SWNW		4500	15.9
19	46	27	SENW		4200	7.4
19	46	27	SENW		4600	22.7
19	46	27	NESW		4600	37.8
19	46	27	NWSW		4500	37.8
19	46	27	SWSW		4500	26.8
19	46	27	SESW		4600	37.1
19	46	27	NESE		4700	34.7
19	46	27	NWSE		4700	38.4
19	46	27	SWSE		4800	37.5
19	46	27	SESE		4800	29.9
19	46	27	SESE		4801	0.6
19	46	28	NENE		701	32.6
19	46	28	SENE		701	35.9
19	46	28	NWNW		600	0.6
19	46	28	NWNW		701	8.3
19	46	28	SWNW		701	8.4
19	46	28	SENW		701	12.9
19	46	28	NESW		701	12.4
19	46	28	NESE		701	21.4
19	46	28	NWSE		701	20.0
19	46	28	SWSE		701	20.9
19	46	28	SESE		701	21.6
19	46	32	SESE		1000	23.8

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	46	33	NENE		1200	39.0
19	46	33	NWNE		1200	23.4
19	46	33	SWNE		1200	37.6
19	46	33	SENE		1200	38.2
19	46	33	SENW		1300	8.9
19	46	33	NESW		1300	38.4
19	46	33	NWSW		1300	18.0
19	46	33	SWSW		1400	33.9
19	46	33	SESW		1501	38.1
19	46	33	NESE		1500	38.6
19	46	33	NWSE		1200	39.1
19	46	33	SWSE		1500	20.9
19	46	33	SWSE		1501	15.3
19	46	33	SESE		1500	36.4
19	46	33	SESE		1501	0.8
19	46	34	NENE		4900	37.1
19	46	34	NWNE		5000	37.5
19	46	34	SWNE		5100	39.0
19	46	34	SENE		5100	34.3
19	46	34	NENW		5200	36.2
19	46	34	NWNW		5200	21.1
19	46	34	SWNW		5300	32.7
19	46	34	SENW		5200	36.2
19	46	34	NESW		5400	19.0
19	46	34	NESW		5500	1.7
19	46	34	NWSW		5500	36.0
19	46	34	SWSW		5500	35.1
19	46	34	SESW		5400	0.9
19	46	34	SESW		5500	31.0
19	46	34	NESE		5600	38.2
19	46	34	NWSE		5400	38.2
19	46	34	SWSE		5400	23.3
19	46	34	SWSE		5500	1.3
19	46	34	SESE		5600	35.6
19	46	35	NENE		5701	7.7
19	46	35	NENE		5800	4.4
19	46	35	NWNE		5701	31.6
19	46	35	SWNE		5701	39.8
19	46	35	SENE		5701	16.1
19	46	35	SENE		6100	3.5
19	46	35	NENW		5700	25.1
19	46	35	NWNW		3700	36.4
19	46	35	SWNW		3700	34.7
19	46	35	SENW		5701	39.0
19	46	35	NESW		5701	2.4
19	46	35	NESW		6000	36.9
19	46	35	NWSW		6000	36.2

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	46	35	SWSW		6000	35.1
19	46	35	SESW		6000	33.0
19	46	35	NESE		5701	5.7
19	46	35	NESE		6000	5.1
19	46	35	NESE		6100	12.7
19	46	35	NWSE		5701	13.8
19	46	35	NWSE		6000	24.3
19	46	35	SWSE		6000	30.5
19	46	35	SESE		6000	10.9
19	46	35	SESE		6100	24.3
19	46	36	SWNE		6500	8.0
19	46	36	NENW		6600	12.6
19	46	36	NENW		6601	16.3
19	46	36	NWNW		6700	30.9
19	46	36	SWNW		6500	19.2
19	46	36	SWNW		6700	19.9
19	46	36	SENW		6500	37.8
19	46	36	NESW		6500	23.1
19	46	36	NESW		7000	4.0
19	46	36	NWSW		7000	38.2
19	46	36	SWSW		7000	38.2
19	46	36	SESW		7000	37.7
19	46	36	NWSE		6500	6.9
19	46	36	SWSE		7000	1.6
19	47	6	NENE	1	1100	1.8
19	47	6	NWNE	2	1100	36.2
19	47	6	SWNE		1100	38.0
19	47	6	SENE		1100	1.3
19	47	6	NENW	3	1100	39.6
19	47	6	NWNW	4	1200	24.6
19	47	6	SWNW	5	1200	37.4
19	47	6	SENW		1100	38.7
19	47	6	NESW		1301	40.2
19	47	6	NWSW	6	1301	36.1
19	47	6	SWSW	7	1800	38.4
19	47	6	SESW		1700	38.6
19	47	6	NESE		1301	0.9
19	47	6	NWSE		1301	40.0
19	47	6	SWSE		1600	38.0
19	47	6	SESE		1600	4.0
19	47	7	NENE		2100	4.9
19	47	7	NWNE		2000	39.6
19	47	7	SWNE		2000	33.6
19	47	7	SENE		2000	0.3
19	47	7	NENW		2000	38.5
19	47	7	NWNW	1	1900	37.1
19	47	7	SWNW	2	1900	38.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
19	47	7	SENW		2000	38.1
19	47	7	NESW		2500	40.1
19	47	7	NWSW	3	2500	38.7
19	47	7	SWSW	4	2500	5.6
19	47	7	SWSW	4	2600	16.4
19	47	7	SWSW	4	2601	10.3
19	47	7	SWSW	4	2700	0.2
19	47	7	SESW		2500	3.4
19	47	7	SESW		2800	0.5
19	47	7	SESW		2900	33.8
19	47	7	NWSE		2500	36.3
19	47	7	SWSE		2500	34.4
19	47	18	NWNE		5601	6.0
19	47	18	NENW		5601	35.2
19	47	18	NWNW	1	5700	34.0
19	47	18	SWNW	2	5800	37.9
19	47	18	SENW		5601	8.4
19	47	18	SENW		5602	2.4
19	47	18	NWSW	3	5900	29.7
19	47	18	SWSW	4	6002	20.6
19	47	19	NWNW	1	100	18.8
20	45	10	NESW		200	27.4
20	45	10	NWSW		200	20.0
20	45	10	SWSW		200	0.2
20	45	10	SESW		400	14.6
20	45	10	NWSE		400	4.5
20	45	10	SWSE		400	22.5
20	45	10	SESE		400	4.8
20	45	11	NESW		500	10.5
20	45	11	NWSW		500	2.3
20	45	11	SWSW		500	9.5
20	45	11	SESW		500	28.7
20	45	11	NESE		600	0.4
20	45	11	NWSE		600	8.5
20	45	11	SWSE		600	27.2
20	45	11	SESE		600	24.2
20	45	12	SWSW		700	17.5
20	45	13	NENE		800	14.1
20	45	13	NWNE		800	25.4
20	45	13	SWNE		1000	30.5
20	45	13	SENE		900	25.3
20	45	13	NENW		800	13.4
20	45	13	NENW		1100	13.8
20	45	13	NWNW		1200	25.8
20	45	13	SWNW		1200	25.2
20	45	13	SENW		1100	33.5
20	45	13	SENW		1400	4.2

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	45	13	NESW		1100	1.1
20	45	13	NESW		1400	34.7
20	45	13	NWSW		1400	13.6
20	45	13	NWSW		1500	2.9
20	45	13	SWSW		1400	1.5
20	45	13	SWSW		1500	33.1
20	45	13	SESW		1400	25.0
20	45	13	SESW		1500	9.3
20	45	13	NESE		900	36.8
20	45	13	NWSE		1000	23.9
20	45	13	SWSE		1000	12.6
20	45	13	SWSE		1600	17.1
20	45	13	SESE		900	1.8
20	45	13	SESE		1700	2.0
20	45	14	NENE		1800	29.5
20	45	14	NWNE		1800	24.3
20	45	14	NWNE		1900	11.8
20	45	14	SWNE		1800	17.0
20	45	14	SWNE		1900	3.5
20	45	14	SWNE		2100	4.3
20	45	14	SENE		1800	2.3
20	45	14	SENE		2100	9.0
20	45	14	NENW		1900	22.8
20	45	14	NWNW		1900	14.9
20	45	14	SENW		1900	0.1
20	45	14	NESE		2100	36.8
20	45	14	NWSE		2100	13.3
20	45	14	SWSE		2200	0.6
20	45	14	SESE		2200	32.1
20	45	15	NENE		400	7.5
20	45	23	NENE		200	19.1
20	45	23	SENE		200	8.9
20	45	23	SESW		400	5.0
20	45	23	NESE		300	24.7
20	45	23	NWSE		300	33.7
20	45	23	SWSE		400	36.4
20	45	23	SESE		400	37.1
20	45	24	NENE		501	34.3
20	45	24	NWNE		600	34.6
20	45	24	SWNE		600	38.6
20	45	24	SENE		500	2.5
20	45	24	SENE		501	33.8
20	45	24	NENW		700	39.3
20	45	24	NWNW		700	37.6
20	45	24	SWNW		800	36.9
20	45	24	SENW		800	38.9
20	45	24	NESW		900	39.4

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	45	24	NWSW		900	36.1
20	45	24	SWSW		1000	33.0
20	45	24	SESW		1000	38.6
20	45	24	NESE		1100	30.6
20	45	24	NESE		1300	34.8
20	45	24	NWSE		1100	3.6
20	45	24	SWSE		1400	37.3
20	45	24	SESE		1100	3.2
20	45	24	SESE		1400	33.3
20	45	25	NENE		1500	36.6
20	45	25	NWNE		1600	36.7
20	45	25	SWNE		1600	39.0
20	45	25	SENE		1500	38.9
20	45	25	NENW		1700	37.8
20	45	25	NWNW		1700	34.4
20	45	25	SWNW		1700	38.4
20	45	25	SENW		1700	38.7
20	45	25	NESW		1800	36.1
20	45	25	NWSW		1800	34.7
20	45	25	SWSW		1900	35.8
20	45	25	SESW		1900	36.7
20	45	25	NESE		2000	38.0
20	45	25	NWSE		1800	37.0
20	45	25	SWSE		2100	36.6
20	45	25	SESE		2100	34.5
20	45	26	NENE		2200	32.9
20	45	26	NWNE		2200	36.3
20	45	26	SWNE		2300	38.7
20	45	26	SENE		2300	37.0
20	45	26	NENW		2500	36.5
20	45	26	NWNW		2500	23.1
20	45	26	SWNW		2600	27.9
20	45	26	SENW		2600	38.8
20	45	26	NESW		2701	25.7
20	45	26	NWSW		2701	2.5
20	45	26	SESW		2800	2.7
20	45	26	NESE		2700	37.2
20	45	26	NWSE		2700	38.5
20	45	26	SWSE		2800	34.9
20	45	26	SESE		2900	37.7
20	45	27	NENE		2500	0.4
20	45	35	NENE		2900	37.2
20	45	35	NWNE		3002	20.5
20	45	35	SWNE		3001	3.3
20	45	35	SENE		3001	28.5
20	45	35	NESE		3200	22.5
20	45	35	NWSE		3200	9.1

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	45	35	SWSE		3200	9.5
20	45	35	SESE		3200	31.0
20	45	36	NWNE		3400	34.7
20	45	36	SWNE		3300	39.1
20	45	36	SENE		3300	25.8
20	45	36	NENW		3500	37.4
20	45	36	NWNW		3501	36.2
20	45	36	SWNW		3600	37.9
20	45	36	SENW		3300	38.5
20	45	36	NESW		3700	39.5
20	45	36	NWSW		3600	36.5
20	45	36	SWSW		3600	33.3
20	45	36	SESW		3600	3.3
20	45	36	SESW		3801	28.3
20	45	36	NESE		3700	37.6
20	45	36	NWSE		3700	39.2
20	45	36	SWSE		3800	0.1
20	45	36	SWSE		3801	31.9
20	45	36	SESE		3801	29.4
20	46	1	NENE	1	100	20.3
20	46	1	NWNE	2	101	26.1
20	46	1	SWNE		101	34.1
20	46	1	SENE		100	23.0
20	46	1	NENW	3	100	26.7
20	46	1	NWNW	4	100	4.6
20	46	1	NWNW	4	200	15.8
20	46	1	SWNW		100	18.0
20	46	1	SWNW		200	11.9
20	46	1	SWNW		301	0.1
20	46	1	SENW		100	38.1
20	46	1	NESW		100	38.0
20	46	1	NWSW		100	24.4
20	46	1	NWSW		301	9.9
20	46	1	SWSW		100	18.7
20	46	1	SWSW		300	12.5
20	46	1	SESW		100	38.2
20	46	1	NESE		100	4.0
20	46	1	NWSE		100	27.6
20	46	1	NWSE		101	3.6
20	46	1	SWSE		100	20.9
20	46	2	NENE	1	200	23.0
20	46	2	NWNE	2	500	28.7
20	46	2	SWNE		600	39.1
20	46	2	SENE		200	23.9
20	46	2	NENW	3	500	20.0
20	46	2	NWNW	4	700	13.6
20	46	2	SWNW		800	25.5

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	2	SENW		500	13.9
20	46	2	SENW		800	8.2
20	46	2	NESW		1000	20.2
20	46	2	NWSW		900	34.5
20	46	2	SWSW		900	33.0
20	46	2	SESW		1000	37.6
20	46	2	NESE		600	0.2
20	46	2	NESE		1100	34.6
20	46	2	NWSE		600	29.6
20	46	2	NWSE		1000	0.5
20	46	2	NWSE		1100	0.4
20	46	2	SWSE		1000	22.5
20	46	2	SWSE		1200	3.7
20	46	2	SESE		1000	26.1
20	46	3	NENE	1	1301	23.4
20	46	3	NWNE	2	1300	12.2
20	46	3	NWNE	2	1301	8.2
20	46	3	SWNE		1400	33.4
20	46	3	SENE		1301	0.3
20	46	3	SENE		1400	24.8
20	46	3	NENW	3	1500	29.0
20	46	3	NWNW	4	1500	29.0
20	46	3	SWNW		1600	37.9
20	46	3	SENW		1600	38.7
20	46	3	NESW		1700	38.1
20	46	3	NWSW		1700	35.3
20	46	3	SWSW		1700	36.2
20	46	3	SESW		1700	33.2
20	46	3	NESE		1400	36.5
20	46	3	NWSE		1400	38.1
20	46	3	SWSE		2000	34.4
20	46	3	SESE		2000	28.0
20	46	4	NENE	1	100	28.9
20	46	4	NWNE	2	100	24.0
20	46	4	SWNE		100	34.7
20	46	4	SENE		100	33.6
20	46	4	NENW	3	200	29.9
20	46	4	NWNW	4	200	0.8
20	46	4	SWNW		300	13.3
20	46	4	SENW		200	17.9
20	46	4	SENW		402	18.4
20	46	4	NESW		402	38.7
20	46	4	NWSW		300	35.9
20	46	4	SWSW		500	28.1
20	46	4	SESW		400	1.7
20	46	4	SESW		401	0.5
20	46	4	SESW		402	33.5

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	4	NESE		600	35.4
20	46	4	NWSE		600	36.8
20	46	4	SWSE		700	37.7
20	46	4	SESE		700	37.1
20	46	5	SWNE		902	0.5
20	46	5	SENE		903	11.5
20	46	5	SWSW		1100	3.9
20	46	5	SESW		1100	11.3
20	46	5	NESE		902	9.5
20	46	5	NESE		903	12.5
20	46	5	NESE		1200	3.5
20	46	5	NWSE		1200	13.7
20	46	5	SWSE		1200	34.0
20	46	5	SESE		1200	35.1
20	46	7	NWNE		1500	6.3
20	46	7	SWNE		1500	13.5
20	46	7	NENW		1500	0.1
20	46	7	SENW		1500	0.1
20	46	7	NESE		1500	2.7
20	46	7	NWSE		1500	24.3
20	46	7	SWSE		1500	19.6
20	46	7	SESE		1500	16.9
20	46	8	NENE		1800	31.8
20	46	8	NWNE		1800	38.4
20	46	8	SWNE		1800	39.5
20	46	8	SENE		1900	35.8
20	46	8	NENW		2000	34.1
20	46	8	NWNW		2000	9.0
20	46	8	SWNW		2000	12.6
20	46	8	SENW		2000	40.1
20	46	8	NESW		2100	38.1
20	46	8	NWSW		2100	19.3
20	46	8	SWSW		2100	20.6
20	46	8	SESW		2200	35.2
20	46	8	NESE		2300	30.9
20	46	8	NWSE		2300	35.1
20	46	8	SWSE		2400	36.1
20	46	8	SESE		2300	39.7
20	46	9	NENE		2500	38.0
20	46	9	NWNE		2500	38.6
20	46	9	SWNE		2500	37.8
20	46	9	SENE		2500	37.4
20	46	9	NENW		2600	35.3
20	46	9	NWNW		1900	14.8
20	46	9	NWNW		2600	22.4
20	46	9	SWNW		1900	12.0
20	46	9	SWNW		2600	23.6

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	9	SENW		2600	38.2
20	46	9	NESW		2600	37.9
20	46	9	NWSW		1900	0.6
20	46	9	NWSW		2600	22.4
20	46	9	SWSW		2600	17.4
20	46	9	SESW		2600	37.8
20	46	9	NESE		2800	37.9
20	46	9	NWSE		2700	37.6
20	46	9	SWSE		2700	36.6
20	46	9	SESE		2800	37.1
20	46	10	NENE		2002	37.9
20	46	10	NWNE		2002	36.9
20	46	10	SWNE		2001	37.3
20	46	10	SENE		2001	35.4
20	46	10	NENW		2000	37.6
20	46	10	NWNW		2100	37.2
20	46	10	SWNW		2100	36.5
20	46	10	SENW		2001	37.6
20	46	10	NESW		2200	39.6
20	46	10	NWSW		2200	38.7
20	46	10	SWSW		2200	37.2
20	46	10	SESW		2200	35.7
20	46	10	NESE		2300	37.1
20	46	10	NWSE		2300	36.2
20	46	10	SWSE		2300	36.4
20	46	10	SESE		2300	35.9
20	46	11	NENE		2400	28.8
20	46	11	NWNE		2400	36.2
20	46	11	SWNE		2500	36.3
20	46	11	SENE		2500	34.3
20	46	11	SENE		2501	1.0
20	46	11	NENW		2600	26.2
20	46	11	NWNW		2700	37.5
20	46	11	SWNW		2700	36.9
20	46	11	SENW		2600	35.8
20	46	11	NESW		2800	37.5
20	46	11	NWSW		2800	37.4
20	46	11	SWSW		2900	38.4
20	46	11	SESW		2900	36.3
20	46	11	NESE		3000	30.9
20	46	11	NESE		3100	1.0
20	46	11	NESE		3200	4.0
20	46	11	NWSE		3001	38.1
20	46	11	SWSE		2900	15.4
20	46	11	SWSE		3001	17.1
20	46	11	SESE		3300	34.6
20	46	12	NWNE		3500	22.7

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	12	SWNE		3300	24.8
20	46	12	NENW		3500	38.8
20	46	12	NENW		3700	0.1
20	46	12	NWNW		3500	15.7
20	46	12	NWNW		3700	17.9
20	46	12	NWNW		3800	0.4
20	46	12	SWNW		3700	3.9
20	46	12	SWNW		3800	0.4
20	46	12	SWNW		3801	29.7
20	46	12	SENW		3500	10.0
20	46	12	SENW		3700	2.7
20	46	12	SENW		3801	24.9
20	46	12	NESW		3300	39.7
20	46	12	NWSW		3300	36.9
20	46	12	SWSW		3300	34.5
20	46	12	SESW		3300	37.5
20	46	12	NESE		3300	8.0
20	46	12	NWSE		3300	35.2
20	46	12	SWSE		3300	36.9
20	46	12	SESE		3300	23.1
20	46	13	NENE		3900	24.7
20	46	13	NWNE		3900	38.8
20	46	13	SWNE		2900	39.9
20	46	13	SENE		2900	30.6
20	46	13	NENW		3900	38.6
20	46	13	NWNW		3900	37.3
20	46	13	SWNW		2900	37.9
20	46	13	SENW		2900	40.0
20	46	13	NESW		4000	12.8
20	46	13	NESW		4200	26.9
20	46	13	NWSW		4000	36.5
20	46	13	NWSW		4100	1.5
20	46	13	SWSW		4000	37.9
20	46	13	SESW		4000	26.4
20	46	13	SESW		4200	12.8
20	46	13	NESE		4200	8.2
20	46	13	NWSE		4200	39.7
20	46	13	SWSE		4200	36.6
20	46	13	SESE		4200	7.8
20	46	14	NENE		4600	29.6
20	46	14	NENE		4700	1.5
20	46	14	NWNE		4700	33.3
20	46	14	SWNE		4700	39.3
20	46	14	SENE		4600	23.8
20	46	14	SENE		4700	7.4
20	46	14	NENW		4800	38.0
20	46	14	NWNW		4900	34.9

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	14	SWNW		4900	37.9
20	46	14	SENW		4800	39.6
20	46	14	NESW		5000	32.2
20	46	14	NWSW		5000	5.3
20	46	14	NWSW		5200	30.9
20	46	14	SWSW		5300	38.5
20	46	14	SESW		5400	24.9
20	46	14	NESE		4600	31.5
20	46	14	NWSE		4600	6.8
20	46	14	NWSE		5001	29.5
20	46	14	SWSE		5400	34.9
20	46	14	SESE		4600	21.3
20	46	14	SESE		5400	9.5
20	46	15	NENE		5500	35.3
20	46	15	NWNE		5600	34.4
20	46	15	SWNE		5600	34.8
20	46	15	SWNE		5700	2.6
20	46	15	SENE		5500	34.2
20	46	15	SENE		5600	2.8
20	46	15	NENW		5700	39.0
20	46	15	NWNW		5700	33.4
20	46	15	SWNW		5700	36.8
20	46	15	SENW		2700	39.8
20	46	15	NESW		5800	24.5
20	46	15	NESW		5900	15.7
20	46	15	NWSW		5800	33.7
20	46	15	SWSW		5800	26.6
20	46	15	SESW		5900	36.2
20	46	15	NESE		6000	27.1
20	46	15	NESE		6100	10.6
20	46	15	NWSE		6000	38.7
20	46	15	SWSE		6200	34.4
20	46	15	SESE		6000	26.6
20	46	15	SESE		6200	0.6
20	46	16	NENE		2900	39.4
20	46	16	NWNE		3000	2.8
20	46	16	NWNE		3001	32.6
20	46	16	SWNE		3001	37.7
20	46	16	SENE		2900	29.8
20	46	16	SENE		2901	7.9
20	46	16	NENW		3100	37.8
20	46	16	NWNW		3100	14.7
20	46	16	NWNW		3200	17.5
20	46	16	SWNW		3100	15.8
20	46	16	SWNW		3200	5.0
20	46	16	SWNW		3300	7.1
20	46	16	SENW		3100	38.2

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	16	NESW		3400	37.8
20	46	16	NWSW		3100	0.3
20	46	16	NWSW		3400	17.5
20	46	16	SWSW		3400	30.2
20	46	16	SESW		3400	29.4
20	46	16	NESE		3500	15.5
20	46	16	NESE		3600	20.2
20	46	16	NWSE		3600	35.1
20	46	16	SWSE		3600	4.8
20	46	16	SWSE		3700	29.2
20	46	16	SESE		3500	1.8
20	46	16	SESE		3600	31.9
20	46	17	NENE		3200	33.8
20	46	17	NENE		3300	0.6
20	46	17	NWNE		3200	29.3
20	46	17	NWNE		3300	6.2
20	46	17	SWNE		3300	40.1
20	46	17	SENE		3200	0.8
20	46	17	SENE		3300	33.8
20	46	17	NENW		3200	0.9
20	46	17	NENW		3300	7.7
20	46	17	NENW		3800	4.4
20	46	17	NWNW		3800	34.3
20	46	17	SWNW		3800	31.4
20	46	17	SENW		3300	5.5
20	46	17	SENW		3800	27.1
20	46	17	NESW		3800	37.5
20	46	17	NWSW		3800	30.9
20	46	17	NWSW		4600	0.1
20	46	17	SWSW		3800	4.8
20	46	17	SWSW		4600	0.1
20	46	17	SESW		3800	21.5
20	46	17	NESE		3900	37.4
20	46	17	NWSE		3300	1.5
20	46	17	NWSE		3900	30.7
20	46	17	SWSE		3900	30.2
20	46	17	SESE		3900	33.9
20	46	17	SESE		3901	2.0
20	46	18	NENE		4000	21.8
20	46	18	NENE		4100	9.6
20	46	18	NWNE		1700	11.2
20	46	18	NWNE		4000	2.2
20	46	18	SWNE		1700	8.0
20	46	18	SWNE		4200	2.1
20	46	18	SENE		4100	28.0
20	46	18	NENW		4200	4.0
20	46	18	NWNW	1	4200	23.2

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	18	SWNW	2	4200	0.8
20	46	18	SWNW	2	4300	21.3
20	46	18	SENW		4200	24.3
20	46	18	NESW		4400	34.3
20	46	18	NWSW	3	4300	31.2
20	46	18	NWSW	3	4400	0.7
20	46	18	SWSW	4	4400	4.4
20	46	18	SWSW	4	4500	1.0
20	46	18	SESW		4400	4.2
20	46	18	NESE		4100	12.7
20	46	18	NESE		4600	11.9
20	46	18	NWSE		4600	19.7
20	46	18	SWSE		4601	11.1
20	46	18	SESE		4600	25.6
20	46	19	NENE		800	37.1
20	46	19	NWNE		800	38.9
20	46	19	SWNE		300	38.7
20	46	19	SENE		300	37.4
20	46	19	NENW		200	38.8
20	46	19	NWNW	1	100	35.3
20	46	19	SWNW	2	100	37.0
20	46	19	SENW		300	38.2
20	46	19	NESW		300	30.1
20	46	19	NESW		301	6.0
20	46	19	NWSW	3	400	37.3
20	46	19	SWSW	4	400	35.8
20	46	19	SESW		500	33.2
20	46	19	NESE		300	38.8
20	46	19	NWSE		300	38.9
20	46	19	SWSE		600	36.6
20	46	19	SESE		700	36.2
20	46	20	NENE		2200	37.6
20	46	20	NWNE		1000	28.6
20	46	20	SWNE		1000	11.3
20	46	20	SENE		2200	25.6
20	46	20	NENW		1000	21.2
20	46	20	NWNW		900	37.3
20	46	20	SWNW		900	37.1
20	46	20	SENW		1000	33.9
20	46	20	NESW		1300	39.1
20	46	20	NWSW		1101	37.9
20	46	20	SWSW		1200	36.7
20	46	20	SESW		1300	34.7
20	46	20	NESE		1700	0.8
20	46	20	NESE		1900	30.4
20	46	20	NESE		1901	1.6
20	46	20	NWSE		1700	36.6

Recorded in State Record of water right Certificates numbered 75691 .

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	20	NWSE		1900	0.3
20	46	20	SWSE		1700	33.7
20	46	20	SWSE		1800	3.0
20	46	20	SESE		1700	2.0
20	46	20	SESE		1800	35.0
20	46	21	NENE		3300	36.3
20	46	21	NWNE		3300	37.2
20	46	21	SWNE		3200	35.9
20	46	21	SENE		3200	32.1
20	46	21	NENW		2500	38.2
20	46	21	NWNW		2300	32.3
20	46	21	SWNW		2300	20.8
20	46	21	SWNW		2302	7.1
20	46	21	SENW		2500	36.7
20	46	21	NESW		2700	31.4
20	46	21	NESW		3000	4.7
20	46	21	NWSW		2700	28.8
20	46	21	SWSW		2900	35.2
20	46	21	SESW		3000	35.7
20	46	21	NESE		3500	37.1
20	46	21	NWSE		3100	37.0
20	46	21	SWSE		3600	36.1
20	46	21	SESE		3600	38.7
20	46	22	NENE		100	31.5
20	46	22	NWNE		200	33.3
20	46	22	SWNE		300	15.2
20	46	22	SWNE		700	9.4
20	46	22	SWNE		902	7.1
20	46	22	SENE		300	25.5
20	46	22	SENE		902	8.7
20	46	22	NENW		400	27.6
20	46	22	NWNW		500	28.8
20	46	22	SWNW		600	35.4
20	46	22	SENW		700	30.6
20	46	22	NESW		700	36.3
20	46	22	NWSW		600	34.9
20	46	22	SWSW		800	33.4
20	46	22	SESW		800	31.0
20	46	22	NESE		902	38.5
20	46	22	NWSE		700	19.3
20	46	22	NWSE		902	15.3
20	46	22	SWSE		700	13.7
20	46	22	SWSE		800	15.1
20	46	22	SWSE		902	3.7
20	46	22	SESE		800	0.4
20	46	22	SESE		902	29.3
20	46	23	NENE		1100	21.0

Recorded in State Reeord of water right Certificates numbered 75691 .

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	23	NWNE		1000	2.0
20	46	23	NWNE		1100	9.7
20	46	23	SWNE		1200	36.7
20	46	23	SENE		1100	37.4
20	46	23	NENW		1300	33.1
20	46	23	NWNW		1300	36.1
20	46	23	SWNW		1600	36.8
20	46	23	SENW		1501	37.1
20	46	23	NESW		1600	36.6
20	46	23	NWSW		1600	37.9
20	46	23	SWSW		1401	37.0
20	46	23	SESW		1800	29.2
20	46	23	NESE		1100	2.9
20	46	23	NESE		1600	5.1
20	46	23	NWSE		1600	15.2
20	46	23	NWSE		1900	17.2
20	46	23	SWSE		1600	0.7
20	46	23	SWSE		1900	5.9
20	46	24	NWNE		2300	26.1
20	46	24	NENW		2300	38.7
20	46	24	NWNW		2500	36.4
20	46	24	SWNW		2500	36.8
20	46	24	SWNW		2501	0.4
20	46	24	SENW		2300	37.0
20	46	24	NWSW		2500	1.3
20	46	26	NENW		4000	13.8
20	46	26	NENW		4100	8.1
20	46	26	NENW		4200	8.8
20	46	26	NWNW		4100	16.1
20	46	26	NWNW		4200	21.9
20	46	26	SWNW		4300	32.7
20	46	26	SWNW		4301	0.2
20	46	26	SENW		4300	11.3
20	46	26	NWSW		4300	15.9
20	46	26	NWSW		4600	10.6
20	46	27	NENE		4700	27.9
20	46	27	NWNE		4800	35.5
20	46	27	SWNE		4800	37.2
20	46	27	SENE		4700	35.3
20	46	27	NENW		4900	36.0
20	46	27	NWNW		4900	35.6
20	46	27	SWNW		5000	38.0
20	46	27	SENW		4900	39.4
20	46	27	NESW		5200	39.0
20	46	27	NWSW		5100	38.4
20	46	27	SWSW		5100	36.3
20	46	27	SESW		5200	34.2

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	27	NESE		4700	19.7
20	46	27	NESE		4701	0.4
20	46	27	NESE		5400	0.8
20	46	27	NESE		5500	2.0
20	46	27	NWSE		5500	38.0
20	46	27	SWSE		5600	33.3
20	46	27	SWSE		5700	3.0
20	46	27	SESE		5600	33.9
20	46	28	NENE		3700	37.1
20	46	28	NWNE		3700	37.3
20	46	28	SWNE		3800	39.0
20	46	28	SENE		3800	37.2
20	46	28	NENW		3700	14.3
20	46	28	NENW		4500	21.0
20	46	28	NWNW		4401	38.3
20	46	28	SWNW		4400	37.6
20	46	28	SWNW		4402	0.1
20	46	28	SENW		4500	37.9
20	46	28	NESW		4300	36.5
20	46	28	NWSW		4200	36.3
20	46	28	SESW		4000	29.3
20	46	28	NESE		3800	38.7
20	46	28	NWSE		3800	33.1
20	46	28	SWSE		3900	8.3
20	46	28	SWSE		4000	21.8
20	46	28	SESE		3900	37.8
20	46	29	NENE		4700	34.7
20	46	29	NWNE		4700	32.3
20	46	29	NWNE		5200	4.1
20	46	29	SWNE		4700	38.6
20	46	29	SENE		4700	39.1
20	46	29	NENW		5200	32.2
20	46	29	NWNW		5300	32.1
20	46	29	SWNW		5300	34.5
20	46	29	SENW		5200	38.5
20	46	29	NESW		4901	37.5
20	46	29	NWSW		5100	26.9
20	46	29	SWSW		5000	36.9
20	46	29	SESW		4901	15.2
20	46	29	SESW		5000	19.2
20	46	29	NESE		4900	32.7
20	46	29	NWSE		4901	12.0
20	46	29	SWSE		4901	21.7
20	46	29	SESE		4900	3.4
20	46	29	SESE		4901	1.4
20	46	30	NENE		5400	30.4
20	46	30	NENE		5500	2.6

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	30	NWNE		5400	4.9
20	46	30	NWNE		5500	31.2
20	46	30	SWNE		5600	36.6
20	46	30	SENE		5700	31.2
20	46	30	NENW		6000	34.9
20	46	30	NWNW	1	6000	38.4
20	46	30	SWNW	2	6100	38.5
20	46	30	SENW		6100	38.9
20	46	30	NESW		6200	38.5
20	46	30	NWSW	3	6200	36.7
20	46	30	SWSW	4	6300	38.2
20	46	30	SESW		5900	36.9
20	46	30	NESE		5600	0.9
20	46	30	NESE		5800	30.1
20	46	30	NWSE		5600	35.6
20	46	30	NWSE		5601	1.8
20	46	30	SWSE		5600	2.0
20	46	30	SWSE		5900	33.1
20	46	30	SESE		5900	36.9
20	46	31	NENE		7400	27.2
20	46	31	NWNE		7400	36.6
20	46	31	SWNE		7400	38.6
20	46	31	SENE		7400	37.2
20	46	31	NENW		6400	35.3
20	46	31	NWNW	1	6400	36.6
20	46	31	SWNW	2	6600	27.1
20	46	31	SENW		6500	33.2
20	46	31	NESW		7000	33.3
20	46	31	NWSW	3	6600	34.9
20	46	31	SWSW	4	6700	29.5
20	46	31	SESW		6900	23.2
20	46	31	NESE		7300	20.8
20	46	31	NWSE		7300	34.7
20	46	31	SWSE		7100	13.4
20	46	31	SESE		7200	14.9
20	46	32	NENW		7600	9.8
20	46	32	NWNW		7500	33.9
20	46	32	SWNW		7400	0.4
20	46	32	SWNW		7500	18.1
20	46	32	SWSW		7200	9.5
20	46	32	NESE		8400	12.7
20	46	32	SWSE		8100	34.0
20	46	32	SESE		8400	32.1
20	46	33	NENE		9501	37.1
20	46	33	NWNE		9501	31.9
20	46	33	SWNE		9501	13.6
20	46	33	SENE		9501	18.9

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
20	46	33	NENW		9000	22.0
20	46	33	SWSW		9201	5.2
20	46	34	NENE		6000	22.8
20	46	34	NWNE		6000	37.6
20	46	34	SWNE		6100	19.9
20	46	34	SENE		6100	3.7
20	46	34	NENW		6001	35.1
20	46	34	NWNW		6001	17.2
20	46	34	NWNW		6400	18.1
20	46	34	SWNW		6500	31.9
20	46	34	SENW		6500	37.6
20	47	18	NWNW	1	3900	3.1
20	47	18	SWNW	2	3900	9.6
20	47	18	NWSW	3	2400	1.0
21	45	1	NENE	1	100	31.5
21	45	1	NWNE	2	100	38.9
21	45	1	SWNE		100	7.3
21	45	1	SENE		100	20.7
21	45	1	NENW	3	100	23.0
21	45	1	NWNW	4	100	7.9
21	45	1	SENW		100	0.1
21	45	2	NENE		3200	2.1
21	45	11	SWNE		1100	6.7
21	45	11	SWNE		1200	0.7
21	45	11	SENE		1100	2.8
21	45	11	NENW		900	7.9
21	45	11	SENW		900	26.9
21	45	11	NESW		900	38.9
21	45	11	NWSW		900	16.0
21	45	11	SWSW		900	7.8
21	45	11	SESW		900	36.9
21	45	11	NESE		1100	24.5
21	45	11	NWSE		1200	33.6
21	45	11	SWSE		1200	35.6
21	45	11	SESE		1200	34.1
21	45	12	NWNE		1300	5.8
21	45	12	SWNE		1600	33.3
21	45	12	SENE		1500	20.2
21	45	12	SWNW		1300	14.5
21	45	12	SENW		1300	30.6
21	45	12	NESW		1400	36.9
21	45	12	NWSW		1100	35.4
21	45	12	SWSW		1400	22.6
21	45	12	SESW		1400	39.1
21	45	12	NESE		1800	29.0
21	45	12	NWSE		1700	37.9
21	45	12	SWSE		1900	38.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
21	45	12	SESE		1900	35.6
21	45	13	NENE		1900	37.4
21	45	13	NWNE		1900	38.3
21	45	13	SWNE		1900	2.3
21	45	13	SWNE		2501	25.9
21	45	13	SENE		1900	30.2
21	45	13	NENW		1400	31.7
21	45	13	NWNW		2200	34.8
21	45	13	SWNW		2300	32.0
21	45	13	SENW		2300	39.7
21	45	13	NESW		2501	36.5
21	45	13	NWSW		2400	22.0
21	45	13	NWSW		2501	1.1
21	45	13	SWSW		2400	4.0
21	45	13	SESW		2400	14.0
21	45	13	NESE		2100	27.1
21	45	13	NESE		2500	0.2
21	45	13	NWSE		2500	10.8
21	45	13	NWSE		2501	5.8
21	45	13	NWSE		2502	0.7
21	45	13	SWSE		300	4.5
21	45	13	SESE		200	0.4
21	45	13	SESE		300	0.1
21	45	14	NENE		2700	37.5
21	45	14	NWNE		2700	35.4
21	45	14	SWNE		2800	31.6
21	45	14	SENE		2800	30.4
21	45	14	NENW		2700	1.9
21	45	14	SENW		2700	4.4
21	46	1	SWNE		200	21.3
21	46	1	SENE		200	17.2
21	46	1	NWNW	4	1300	13.9
21	46	1	SWNW		300	4.9
21	46	1	SWNW		1300	3.4
21	46	1	SENW		300	28.5
21	46	1	NESW		300	38.1
21	46	1	NESW		1000	1.5
21	46	1	NWSW		600	35.3
21	46	1	SWSW		702	29.5
21	46	1	SESW		900	34.5
21	46	1	NESE		1000	4.8
21	46	1	NESE		1100	32.5
21	46	1	NWSE		1000	37.1
21	46	1	SWSE		1000	39.1
21	46	1	SESE		1200	38.7
21	46	2	NENE	1	1300	11.5
21	46	2	SWNE		1300	10.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
21	46	2	SWNE		1301	1.5
21	46	2	SWNE		1302	7.0
21	46	2	SENE		1300	38.7
21	46	2	SWNW		1700	13.4
21	46	2	SENW		1601	8.0
21	46	2	NESW		1900	34.9
21	46	2	NWSW		1700	4.9
21	46	2	NWSW		1800	18.4
21	46	2	NWSW		1801	4.4
21	46	2	SWSW		2000	39.0
21	46	2	SESW		1900	37.0
21	46	2	NESE		2200	19.2
21	46	2	NESE		2600	0.8
21	46	2	NWSE		2100	1.0
21	46	2	NWSE		2200	26.0
21	46	2	SWSE		2200	36.8
21	46	2	SESE		2500	19.6
21	46	2	SESE		2600	11.5
21	46	3	SWNE		1700	34.5
21	46	3	SENE		1700	24.1
21	46	3	SWNW		2900	15.8
21	46	3	SENW		1700	1.4
21	46	3	SENW		2900	3.5
21	46	3	NESW		2900	38.6
21	46	3	NWSW		3000	39.2
21	46	3	SWSW		3000	36.4
21	46	3	SESW		3100	35.4
21	46	3	NESE		1700	15.0
21	46	3	NESE		1800	13.2
21	46	3	NESE		1801	0.9
21	46	3	NWSE		1700	6.5
21	46	3	NWSE		2900	20.6
21	46	3	SWSE		3100	37.1
21	46	3	SESE		3200	37.4
21	46	4	NENE	1	400	15.6
21	46	4	NWNE	2	200	34.6
21	46	4	SWNE		500	36.2
21	46	4	SENE		400	37.9
21	46	4	NENW	3	200	34.9
21	46	4	NWNW	2	100	3.5
21	46	4	NWNW	4	100	29.7
21	46	4	SWNW		700	31.2
21	46	4	SENW		600	35.0
21	46	4	NESW		1000	30.0
21	46	4	NWSW		800	19.5
21	46	4	NWSW		900	18.4
21	46	4	SWSW		1400	15.7

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
21	46	4	SWSW		1500	21.3
21	46	4	SESW		1300	31.9
21	46	4	NESE		1100	38.1
21	46	4	NWSE		500	37.3
21	46	4	SWSE		1200	33.6
21	46	4	SWSE		1201	0.9
21	46	4	SESE		1100	37.5
21	46	5	NENE	1	1800	37.9
21	46	5	NWNE	2	1700	32.8
21	46	5	SWNE		1700	35.7
21	46	5	SENE		1700	37.4
21	46	5	NENW	3	1600	34.0
21	46	5	NWNW	4	2400	30.1
21	46	5	SWNW		1900	16.9
21	46	5	SENW		1900	21.8
21	46	5	NESW		2000	14.1
21	46	5	NWSW		2800	28.7
21	46	5	SWSW		2300	24.0
21	46	5	SESW		2200	11.2
21	46	5	SESW		2300	6.0
21	46	5	NESE		2100	33.5
21	46	5	NESE		2101	0.5
21	46	5	NWSE		2000	22.4
21	46	5	SWSE		2201	37.9
21	46	5	SESE		2201	36.8
21	46	6	NENE	1	2400	19.5
21	46	6	SWNE		2800	1.1
21	46	6	SENE		2400	0.3
21	46	6	SENE		2401	13.2
21	46	6	SENE		2800	0.1
21	46	6	NWNW	4	2500	4.0
21	46	6	NWNW	4	2600	14.6
21	46	6	SWNW	5	2600	4.9
21	46	6	NESW		2800	21.6
21	46	6	NWSW	6	2800	8.0
21	46	6	SWSW	7	2800	6.6
21	46	6	SESW		2800	17.0
21	46	6	NESE		2800	16.1
21	46	6	NWSE		2800	19.2
21	46	6	SWSE		3000	24.8
21	46	6	SESE		3000	20.6
21	46	7	NENE		3000	34.7
21	46	7	NWNE		3000	30.4
21	46	7	SWNE		3000	1.4
21	46	7	SENE		3000	14.6
21	46	7	NENW		3100	0.7
21	46	7	NWNW		3100	1.2

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
21	46	7	SWNW	2	3100	12.6
21	46	7	SENW		3100	21.7
21	46	7	NESW		3100	13.2
21	46	7	NESW		3300	1.9
21	46	7	NWSW	3	3100	2.5
21	46	7	NWSW	3	3300	2.9
21	46	7	SWSW		3300	28.3
21	46	7	SESW		3300	33.0
21	46	7	NWSE		3300	5.1
21	46	7	SWSE		3300	11.8
21	46	8	NENE		3500	37.9
21	46	8	NWNE		3600	36.6
21	46	8	SWNE		3600	34.3
21	46	8	SENE		3500	36.4
21	46	8	NENW		3600	13.2
21	46	8	NWNW		2300	8.0
21	46	8	SENW		3600	9.7
21	46	8	NESW		3700	2.6
21	46	8	SWSW		3800	1.7
21	46	8	SESW		3700	0.8
21	46	8	NESE		3900	37.1
21	46	8	NWSE		3700	35.1
21	46	8	NWSE		3900	0.2
21	46	8	SWSE		3700	13.8
21	46	8	SESE		4001	33.0
21	46	9	NENE		4102	39.1
21	46	9	NWNE		4200	37.1
21	46	9	SWNE		4200	37.7
21	46	9	SENE		4102	36.4
21	46	9	NENW		4200	37.4
21	46	9	NWNW		3500	39.7
21	46	9	SWNW		3500	38.6
21	46	9	SENW		4200	37.4
21	46	9	NESW		4100	38.9
21	46	9	NWSW		3900	39.5
21	46	9	SWSW		4001	36.2
21	46	9	SESW		4100	39.3
21	46	9	NESE		4101	37.4
21	46	9	NWSE		4103	38.6
21	46	9	SWSE		4103	36.1
21	46	9	SESE		4101	34.1
21	46	10	NENE		3200	38.9
21	46	10	NWNE		3400	37.8
21	46	10	SWNE		3500	37.9
21	46	10	SENE		3300	37.0
21	46	10	NENW		3400	35.8
21	46	10	NWNW		3600	35.8

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
21	46	10	SWNW		3600	25.1
21	46	10	SWNW		3700	11.9
21	46	10	SENW		3500	39.5
21	46	10	NESW		3900	39.3
21	46	10	NWSW		3701	37.3
21	46	10	SWSW		3701	34.7
21	46	10	SESW		4000	39.9
21	46	10	NESE		3300	36.1
21	46	10	NWSE		3900	39.3
21	46	10	SWSE		4000	38.9
21	46	10	SESE		4100	36.9
21	46	11	NENE		4200	34.6
21	46	11	NWNE		4200	30.9
21	46	11	SWNE		4500	34.1
21	46	11	SENE		4400	30.8
21	46	11	NENW		4600	31.4
21	46	11	NWNW		4700	33.6
21	46	11	SWNW		4500	35.2
21	46	11	SENW		4500	34.9
21	46	11	NESW		4900	27.2
21	46	11	NWSW		4500	39.8
21	46	11	SWSW		4800	31.4
21	46	11	SWSW		4802	1.8
21	46	11	SESW		5000	20.5
21	46	11	NESE		5200	35.5
21	46	11	NWSE		5200	16.5
21	46	11	NWSE		5201	21.0
21	46	11	SWSE		5300	36.9
21	46	11	SESE		5300	33.1
21	46	12	NENE		5401	40.0
21	46	12	NWNE		5401	18.1
21	46	12	NWNE		5500	19.7
21	46	12	SWNE		5600	27.1
21	46	12	SWNE		5700	9.0
21	46	12	SENE		5400	5.0
21	46	12	SENE		5401	31.4
21	46	12	NENW		5500	31.5
21	46	12	NWNW		5800	35.0
21	46	12	NWNW		5900	3.0
21	46	12	SWNW		6000	35.2
21	46	12	SENW		6000	38.4
21	46	12	NESW		6100	21.7
21	46	12	NWSW		6100	7.1
21	46	12	NWSW		6200	25.0
21	46	12	SWSW		6300	39.0
21	46	12	SESW		6300	38.4
21	46	12	NESE		6500	36.4

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
21	46	12	NWSE		6500	27.5
21	46	12	SWSE		6300	20.7
21	46	12	SWSE		6500	0.1
21	46	12	SESE	1	6300	2.1
21	46	12	SESE	1	6500	1.3
21	46	13	NWNE	1	6700	0.9
21	46	13	NENW		6700	26.8
21	46	13	NWNW		7200	35.2
21	46	13	SWNW	3	6700	22.3
21	46	13	SENW	2	6700	1.0
21	46	14	NENE		7200	36.8
21	46	14	NWNE		7200	2.4
21	46	14	NWNE		7500	33.1
21	46	14	SWNE		7500	39.7
21	46	14	SENE		7300	37.3
21	46	14	NENW		8000	25.2
21	46	14	NENW		8100	4.0
21	46	14	NWNW		4803	27.4
21	46	14	NWNW		8400	0.9
21	46	14	SWNW		4801	1.5
21	46	14	SWNW		4803	23.2
21	46	14	SWNW		8400	4.7
21	46	14	SENW		8000	39.0
21	46	14	NESW		400	13.4
21	46	14	NESW		500	2.3
21	46	14	NWSW		400	3.2
21	46	14	NWSW		9200	12.4
21	46	14	SWSW		8500	10.3
21	46	14	SWSW		8601	7.0
21	46	14	SWSW		8700	1.0
21	46	14	NESE	1	7300	3.2
21	46	14	NWSE	2	7500	13.9
21	46	15	NENE		8800	24.8
21	46	15	NENE		8802	5.8
21	46	15	NWNE		8900	34.3
21	46	15	SWNE		8900	38.7
21	46	15	SENE		8800	21.7
21	46	15	SENE		8802	14.9
21	46	15	NENW		9000	37.9
21	46	15	NWNW		9000	37.5
21	46	15	SWNW		9000	37.3
21	46	15	SENW		9100	39.7
21	46	15	NESW		9203	12.9
21	46	15	NWSW		9203	12.9
21	46	15	SWSW		9400	0.3
21	46	15	SESW		9400	32.5
21	46	15	NESE		9203	38.8

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
21	46	15	NWSE		2903	0.9
21	46	15	NWSE		9203	30.0
21	46	15	SWSE		9500	38.8
21	46	15	SESE		9500	38.6
21	46	16	NENE		4500	38.0
21	46	16	NWNE		4500	38.4
21	46	16	SWNE		4500	39.7
21	46	16	SENE		4500	35.1
21	46	16	NENW		4600	37.4
21	46	16	NWNW		4600	38.2
21	46	16	SWNW		4600	30.0
21	46	16	SWNW		4700	7.6
21	46	16	SWNW		4701	0.6
21	46	16	SENW		4600	38.4
21	46	16	NESW		4800	26.2
21	46	16	NWSW		4601	1.7
21	46	16	NWSW		4800	16.9
21	46	16	NESE		4800	25.2
21	46	16	NWSE		4800	34.0
21	46	17	NENE		4000	37.6
21	46	17	NWNE		4000	16.6
21	46	17	SWNE		3800	0.5
21	46	17	SWNE		4000	28.6
21	46	17	SENE		4000	37.8
21	46	17	NENW		3800	36.8
21	46	17	NWNW		3800	33.9
21	46	17	SWNW		3800	25.3
21	46	17	SENW		3800	33.2
21	46	17	NWSW		3800	0.3
21	46	17	NESE		3800	8.8
21	46	17	NESE		4000	0.6
21	46	17	NESE		5100	20.5
21	46	17	NWSE		5100	12.5
21	46	18	NENE		3800	37.8
21	46	18	NWNE		3300	11.0
21	46	18	SWNE		3300	2.0
21	46	18	SWNE		3800	0.5
21	46	18	SENE		3800	22.4
21	46	18	NENW		3300	36.1
21	46	18	NWNW	1	3300	34.8
21	46	18	SWNW	2	3300	13.2
21	46	18	SWNW	2	5400	6.8
21	46	18	SENW		3300	16.1
21	46	18	SENW		5400	0.7
21	46	18	NESW		5400	20.6
21	46	18	NWSW	3	5400	35.8
21	46	18	SWSW	4	5400	13.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
21	46	18	SESW		5400	7.4
21	46	19	NWNE		300	5.4
21	46	19	SWNE		200	2.5
21	46	19	NENW		300	10.3
21	46	19	NWNW		300	10.9
21	46	19	SENW		200	2.7
21	46	22	NENE		100	31.1
21	46	22	NENE		200	1.1
21	46	22	NWNE		100	36.8
21	46	22	SWNE		500	28.8
21	46	22	SENE	4	200	14.3
21	46	22	NENW		300	38.9
21	46	22	NWNW		300	1.6
21	46	22	SWNW		400	5.4
21	46	22	SWNW		402	0.9
21	46	22	SENW		400	37.1
21	46	22	NESW		403	7.5
21	46	22	NWSW		404	18.0
21	46	23	NENW	1	1200	13.7
21	46	23	NWNW		1200	20.0
21	46	23	NWNW		1600	9.6
21	46	23	SWNW	2	1200	5.3
21	46	23	SWNW	2	1400	1.0
21	47	6	NESW	4	400	3.5
21	47	6	NWSW	4	400	9.4
21	47	6	SWSW	5	400	32.7
21	47	6	SESW	5	400	18.9
21	47	7	NENW		500	14.3
21	47	7	NWNW	1	500	36.4
21	47	7	SWNW		500	34.8
21	47	7	SENW	2	500	10.6
21	47	7	NESW	3	500	0.2
21	47	7	NWSW	3	500	19.6

SUPPLEMENTAL IRRIGATION

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
15	46	25	NESW	3	2800	24.8
15	46	25	NWSW	4	2800	2.8
15	46	25	SWSW	4	2800	15.4
15	46	25	SESW		2800	24.0
15	46	25	NESE		3001	36.9
15	46	25	NWSE		2800	2.2
15	46	25	SWSE		2800	3.3
15	46	36	NENE		3600	34.1
15	46	36	NWNE		3700	25.1
15	46	36	SWNE		3700	6.6

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
15	46	36	SENE		3600	0.5
15	46	36	SENE		4000	31.9
15	46	36	NENW		3700	2.3
15	46	36	NESE		6101	8.6
15	47	31	NWNE		5800	29.6
15	47	31	SWNE		5800	23.9
15	47	31	SWNE		6400	8.0
15	47	31	NENW		5900	37.7
15	47	31	NWNW	1	6000	34.6
15	47	31	SWNW	3	6000	2.3
15	47	31	SENW		5900	9.9
15	47	31	SENW		6200	25.4
15	47	31	NESW		6200	35.6
15	47	31	SWSW	4	6300	15.3
15	47	31	SESW		6200	38.4
15	47	31	NWSE		6400	29.6
15	47	31	NWSE		6401	0.2
15	47	31	NWSE		6501	1.6
15	47	31	SWSE		6200	30.3
15	47	31	SWSE		6500	4.9
15	47	31	SESE		6200	2.7
15	47	31	SESE		6400	28.7
15	47	32	SWNE		7500	10.0
15	47	32	NENW		7500	1.0
15	47	32	NWNW		7500	4.5
15	47	32	SWNW		7500	37.3
15	47	32	SENW		7500	30.1
15	47	32	NESW		7600	26.8
15	47	32	NESW		7800	9.5
15	47	32	NWSW		7600	12.7
15	47	32	NWSW		7700	23.3
15	47	32	SWSW		7700	36.7
15	47	32	SESW		7800	37.0
15	47	32	NWSE		7500	24.1
15	47	32	SWSE		7800	5.5
15	47	32	SESE		7900	6.2
15	47	33	NWSW	4	8500	7.2
15	47	33	SWSW	5	8500	2.4
15	47	33	SWSW	5	9304	5.7
16	47	4	NWNW	1	300	35.0
16	47	4	SWNW		400	34.9
16	47	4	SENW	3	400	32.4
16	47	4	NESW		500	37.0
16	47	4	NWSW		500	34.7
16	47	4	SWSW		700	35.2
16	47	4	SESW		700	38.9
16	47	4	NWSE	4	500	0.9

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	4	SWSE	5	700	5.8
16	47	5	NENE	1	800	57.4
16	47	5	NWNE	2	900	51.5
16	47	5	NWNE	2	1000	13.3
16	47	5	SWNE		1000	38.0
16	47	5	SENE		1100	38.5
16	47	5	NENW	3	1200	36.8
16	47	5	NENW	3	1300	24.5
16	47	5	NWNW	4	1200	3.9
16	47	5	NWNW	4	1300	7.6
16	47	5	NWNW	4	1400	48.6
16	47	5	SWNW		1400	38.2
16	47	5	SENW	3	1400	35.1
16	47	5	NESW		1600	38.5
16	47	5	NWSW		1500	38.5
16	47	5	SWSW		2100	37.4
16	47	5	SESW		2000	32.0
16	47	5	NESE		1100	17.3
16	47	5	NESE		1701	19.4
16	47	5	NWSE		1701	37.6
16	47	5	SWSE		1700	37.6
16	47	5	SESE		1100	8.8
16	47	5	SESE		1700	17.9
16	47	5	SESE		1800	8.4
16	47	6	NENE	1	2200	63.7
16	47	6	NWNE	2	2300	60.2
16	47	6	SWNE		2500	25.8
16	47	6	SENE		2500	37.3
16	47	6	NENW	3	2300	32.6
16	47	6	NWNW	4	2400	8.2
16	47	6	NESE		2600	38.3
16	47	6	NWSE		2600	8.2
16	47	6	SESE		2700	26.0
16	47	7	NENE		2800	5.0
16	47	7	SENE		2900	4.6
16	47	8	NENE		3500	35.4
16	47	8	NWNE		3500	37.9
16	47	8	SWNE		3600	39.0
16	47	8	SENE		3600	36.4
16	47	8	NENW		3700	34.3
16	47	8	NWNW		3700	37.0
16	47	8	SWNW		3701	37.0
16	47	8	SENW		3702	36.8
16	47	8	NESW		3901	3.8
16	47	8	NESE		3901	36.6
16	47	8	NWSE		3901	37.7
16	47	8	SWSE		4200	23.9

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	8	SESE		3901	37.6
16	47	9	NWNE	1	4400	10.4
16	47	9	SWNE		4400	20.6
16	47	9	NENW		4400	38.1
16	47	9	NWNW		4400	27.2
16	47	9	SWNW		4400	38.0
16	47	9	SENW		4400	38.4
16	47	9	NESW		4600	39.1
16	47	9	NWSW		4600	37.2
16	47	9	SWSW		4700	37.5
16	47	9	SESW		4800	34.4
16	47	9	NESE		5200	11.7
16	47	9	NWSE		4900	22.9
16	47	9	NWSE		5000	14.1
16	47	9	SWSE		4900	13.3
16	47	9	SWSE		5000	22.9
16	47	9	SESE		5100	36.4
16	47	10	SWSW		200	17.1
16	47	16	NENE		5300	32.7
16	47	16	NENE		5500	2.1
16	47	16	NWNE		5400	10.7
16	47	16	NWNE		5500	2.9
16	47	16	NWNE		5600	18.5
16	47	16	SWNE		5500	8.6
16	47	16	SWNE		5600	29.5
16	47	16	SENE		5300	2.9
16	47	16	SENE		5500	34.8
16	47	16	NENW		5700	33.4
16	47	16	NWNW		5700	35.2
16	47	16	SWNW		5700	33.5
16	47	16	SENW		5700	39.1
16	47	16	NESW		5700	20.9
16	47	16	NWSW		5700	1.0
16	47	16	NESE		6100	38.4
16	47	16	NWSE		6000	37.0
16	47	16	SWSE		6000	32.7
16	47	16	SESE		6100	35.0
16	47	17	NENE		6200	0.5
16	47	21	NENE		700	32.5
16	47	21	NWNE		800	1.8
16	47	21	SWNE		800	1.4
16	47	21	SENE		700	30.3
16	47	22	NENW		400	1.2
16	47	22	NWNW		500	36.3
16	47	22	SWNW		500	29.7
16	47	22	SENW		400	12.0
16	47	22	NESW		700	22.3

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	22	SESW		700	34.7
16	47	22	SWSE		1000	22.2
16	47	22	SWSE		1100	10.3
16	47	22	SESE		1100	27.2
16	47	26	NWNW		4800	12.6
16	47	26	SWNW		4800	3.4
16	47	26	SWNW		5000	15.6
16	47	26	NESW		4000	4.7
16	47	26	NWSW		5200	30.3
16	47	26	NWSW		5300	5.6
16	47	26	SWSW		5300	35.1
16	47	26	SESW		4000	27.8
16	47	26	SESW		4001	0.7
16	47	27	NENE		5400	26.2
16	47	27	NENE		5500	8.9
16	47	27	NWNE		5500	36.5
16	47	27	SWNE		5600	38.2
16	47	27	SENE		5400	5.9
16	47	27	SENE		5600	30.3
16	47	27	NENW		5701	23.2
16	47	27	SENW		5701	6.8
16	47	27	NESE		6100	27.1
16	47	27	NESE		6200	9.9
16	47	27	NWSE		6100	17.7
16	47	27	NWSE		6200	4.2
16	47	27	SWSE		6200	37.4
16	47	27	SESE		6200	35.7
16	47	34	NENE		6300	28.0
16	47	34	NWNE		6400	8.0
16	47	34	NWNE		6500	26.0
16	47	34	SWNE		6500	34.8
16	47	34	SENE		6300	31.5
16	47	34	NENW		6600	8.5
16	47	34	SENW		6600	19.9
16	47	34	NESE		6300	33.8
16	47	34	NWSE		6300	19.4
16	47	34	SWSE		6300	2.9
16	47	34	SESE		6300	24.1
16	47	35	NENW		7400	32.5
16	47	35	NWNW		7700	18.8
16	47	35	NWNW		7800	19.3
16	47	35	SWNW		7900	38.8
16	47	35	SENW		7500	31.4
16	47	35	SENW		7501	1.0
16	47	35	SENW		7600	0.6
16	47	35	NESW		8500	0.7
16	47	35	NESW		8600	0.7

TOWNSHIP	RANGE	SECTION	¼, ¼	GOV LOT	TAX LOT	ACRES
16	47	35	NESW		8601	0.8
16	47	35	NESW		8602	0.6
16	47	35	NESW		8603	0.9
16	47	35	NESW		8605	0.8
16	47	35	NESW		8700	0.5
16	47	35	NESW		8800	17.4
16	47	35	NWSW		8000	34.8
16	47	35	NWSW		8101	3.6
16	47	35	SWSW		8000	2.2
16	47	35	SWSW		8100	3.5
16	47	35	SWSW		8101	20.0
16	47	35	SWSW		8200	1.6
16	47	35	SESW		8400	16.1
17	47	2	NWNW	4	100	16.3

This Certificate describes the new location and type of use of the water right confirmed by Certificate 24707 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329. This Certificate together with Certificates 75692 and 75884 supercedes Certificate 24707.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel, Director

COUNTY OF MALHEUR

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE IRRIGATION DISTRICT
17 SOUTH 1ST STREET
NYSSA, OREGON 97913

confirms the right to use the waters of **SNAKE RIVER**, tributary of COLUMBIA RIVER for the purpose of **SUPPLEMENTAL IRRIGATION of 262.5 ACRES.**

This right was perfected under Permit 1786. The date of priority is **JULY 8, 1913.** This right is limited to **3.28 CUBIC FOOT PER SECOND** or its equivalent in case of rotation, measured at the point of diversion from the source.

The point of diversion is located as follows:
(Dunaway Pumping Plant) LOT 3 NE1/4SW1/4, SECTION 18, T. 20 S., R. 47 E., W.M.
(River Mile 394.2)

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, is limited to **ONE-EIGHTIETH** of one cubic foot per second per acre, or its equivalent for each acre irrigated each year.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:
All Townships are South, all Ranges are East, location in reference to Willamette Meridian

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	TAX LOT	ACRES
18	47	4	4	NWNW	1600	2.6
18	47	4	4	NWNW	1601	1.0
18	47	4	4	NWNW	1602	1.7
18	47	4		SENW	300	1.8
18	47	5	1	NENE	700	0.4
18	47	5	1	NENE	800	0.6
18	47	5	1	NENE	1002	0.5
18	47	5	1	NENE	1005	0.1
18	47	5	1	NENE	1100	1.0
18	47	5	1	NENE	1200	0.4
18	47	5	1	NENE	1300	0.5
18	47	5	1	NENE	2200	0.3
18	47	5	1	NENE	2502	0.1
18	47	5	1	NENE	3100	1.0
18	47	5	1	NENE	3200	0.4
18	47	5	2	NWNE	1201	0.4
18	47	5	2	NWNE	1292	2.0
18	47	5	2	NWNE	1300	0.6

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	TAX LOT	ACRES
18	47	5		SWNE	100	0.8
18	47	5		SWNE	200	1.5
18	47	5		SWNE	300	3.7
18	47	5		SWNE	900	0.5
18	47	5		SENE	100	4.2
18	47	5		SENE	200	8.2
18	47	5		SENE	300	4.1
18	47	5		SENE	700	0.4
18	47	5		SENE	800	0.4
18	47	5		SENE	1000	0.2
18	47	5		SENE	1100	0.1
18	47	5		SENW	3000	0.6
18	47	5		SENW	3001	0.4
18	47	5		SENW	3002	0.4
18	47	5		SENW	3003	0.5
18	47	5		SENW	3004	0.4
18	47	5		SENW	3006	0.2
18	47	5		SENW	3007	0.6
18	47	5		SENW	3008	0.5
18	47	5		SENW	3009	0.4
18	47	5		SENW	3010	0.4
18	47	5		SENW	3011	0.4
18	47	5		SENW	3012	0.4
18	47	5		SENW	3013	0.5
18	47	5		SENW	3014	0.5
18	47	5		SENW	3015	0.5
18	47	5		SENW	3100	6.0
18	47	5		SENW	3400	2.0
18	47	5		SENW	3500	3.7
18	47	5		NESE	700	0.8
18	47	5		NWSE	2000	0.5
18	47	5		NWSE	2100	0.8
18	47	5		NWSE	2102	0.5
18	47	5		NWSE	2400	2.3
18	47	5		NWSE	2500	1.0
18	47	5		NWSE	6300	0.3
18	47	5		NWSE	7800	0.3
18	47	5		NWSE	7900	0.4
18	47	5		SWSE	800	0.5
18	47	5		SWSE	1100	0.3
18	47	5		SWSE	1200	0.6
18	47	5		SWSE	1300	1.0
18	47	5		SESE	1400	0.4
18	47	5		SESE	1600	0.7
18	47	8		NENE	800	0.6
18	47	8		NENE	1500	2.7
18	47	8		SWNE	1100	1.4

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	TAX LOT	ACRES
18	47	8		SENE	900	9.0
18	47	8		SENE	1000	9.4
18	47	8		SENE	1100	4.6
18	47	8		SENE	1200	3.2
18	47	8		SENE	1300	4.4
18	47	8		NESE	1000	15.7
18	47	8		NESE	3800	1.9
18	47	8		NESE	3900	0.7
18	47	8		NESE	3902	4.7
18	47	8		NESE	4900	0.9
18	47	8		NESE	4901	1.1
18	47	8		NWSE	3600	5.5
18	47	8		NWSE	3700	1.2
18	47	8		NWSE	3800	1.4
18	47	8		SWSE	3600	15.2
18	47	8		SWSE	3601	0.3
18	47	8		SWSE	3602	0.6
18	47	8		SESE	4100	8.7
18	47	8		SESE	4200	7.5
18	47	8		SESE	4201	1.3
18	47	8		SESE	4300	6.4
18	47	8		SESE	4301	0.2
18	47	8		SESE	4400	0.2
18	47	8		SESE	4401	1.9
18	47	8		SESE	4500	1.1
18	47	8		SESE	4700	1.0
18	47	8		SESE	4800	4.7
18	47	9		SWNW	1100	1.0
18	47	9		SWNW	1400	0.4
18	47	9		NWSW	2700	8.5
18	47	9		NWSW	2800	4.3
18	47	9		NWSW	4101	2.4
18	47	9		NWSW	4102	0.4
18	47	9		NWSW	4104	0.2
18	47	9		NWSW	4106	0.1
18	47	9		NWSW	4107	0.3
18	47	9		NWSW	4400	2.0
18	47	9		NWSW	4500	2.1
18	47	9		NWSW	4600	4.1
18	47	9		SWSW	3701	2.2
18	47	9		SWSW	3702	0.4
18	47	9		SWSW	4600	0.5
18	47	9		SWSW	4900	0.4
18	47	9		SWSW	5000	4.4
18	47	9		SWSW	5100	4.4
18	47	17		NENE	3500	7.8
18	47	17		NENE	3600	0.2

TOWNSHIP	RANGE	SECTION	GOV LOT	¼, ¼	TAX LOT	ACRES
18	47	17		NENE	3700	1.4
18	47	17		NENE	3800	8.3
18	47	17		NENE	3900	0.1
18	47	17		NENE	3901	1.5
18	47	17		NENE	4003	0.2
18	47	17		NWNE	400	0.4
18	47	17		NWNE	701	0.5
18	47	17		NWNE	900	0.7
18	47	17		NWNE	1000	0.6
18	47	17		NWNE	1200	0.4
18	47	17		NWNE	1300	0.5
18	47	17		NWNE	1400	0.8
18	47	17		NWNE	1500	0.3
18	47	17		NWNE	1600	0.4
18	47	17		NWNE	1800	0.1
18	47	17		NWNE	1900	0.4
18	47	17		SWNE	2500	0.5
18	47	17		SWNE	2600	0.6
18	47	17		SWNE	3200	0.7
18	47	17		SENE	3801	4.1
18	47	17		SENE	4300	0.1
18	47	17		SENE	4301	0.3
18	47	17		SENE	4302	0.6
18	47	17		SENE	4303	0.2
18	47	17		SENE	4400	3.9
18	47	17		SENE	4900	0.9
18	47	17		SENE	5100	0.7
18	47	17		SENE	5300	0.7
18	47	17		SENE	5500	0.7

This Certificate describes the new location and type of use of the water right confirmed by Certificate 51346 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329. This Certificate together with Certificate 75709 supersedes Certificate 51346.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel

Martha O. Pagel, Director

COUNTY OF MALHEUR

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE IRRIGATION DISTRICT
17 SOUTH 1ST STREET
NYSSA, OREGON 97913

confirms the right to use the waters of **SNAKE RIVER**, tributary of COLUMBIA RIVER for the purpose of **SUPPLEMENTAL IRRIGATION of 71.0 ACRES.**

This right was perfected under Permit 1786. The date of priority is **JULY 8, 1913.** This right is limited to **0.89 CUBIC FOOT PER SECOND** or its equivalent in case of rotation, measured at the point of diversion from the source.

The point of diversion is located as follows:
(Dunaway Pumping Plant) LOT 3 NE1/4SW1/4, SECTION 18, T. 20 S., R. 47 E., W.M.
(River Mile 394.2)

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, is limited to ONE-EIGHTIETH of one cubic foot per second per acre, or its equivalent for each acre irrigated each year.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:

NE¼ SW¼	10.0	ACRES	NW¼ NE¼	20.0	ACRES
SE¼ SW¼	20.0	ACRES	NE¼ NW¼	1.0	ACRES
SW¼ SE¼	20.0	ACRES	SECTION 16		
SECTION 9					

TOWNSHIP 18 SOUTH, RANGE 47 EAST, W.M.

This Certificate describes the water right confirmed by Certificate 51346 State Record of Water Right Certificates, NOT modified by the provisions of the following orders of the State Engineer and the Water Resources Director:

entered on January 13, 1984 and recorded in Special Order Volume 38, page 99, approving Transfer Application 5418;

entered on February 2, 1984 and recorded in Special Order Volume 38, page 131, approving Transfer Application 5424;

entered on February 15, 1984 and recorded in Special Order Volume 38, page 149, approving Transfer Application 5427;

entered on March 2, 1984 and recorded in Special Order Volume 38, page 169, approving Transfer Application 5425;

entered on September 12, 1984 and recorded in Special Order Volume 38, page 431, approving Transfer Application 5506;

entered on October 18, 1984 and recorded in Special Order Volume 38, page 466, approving Transfer Application 5522;

entered on November 2, 1984 and recorded in Special Order Volume 38, page 509, approving Transfer Application 5530;

entered on November 2, 1984 and recorded in Special Order Volume 38, page 511, approving Transfer Application 5529;

entered on July 7, 1986 and recorded in Special Order Volume 40, page 216, approving Transfer Application 5530;

entered on January 21, 1987 and recorded in Special Order Volume 41, page 16, approving Transfer Application 5872;

entered on March 19, 1987 and recorded in Special Order Volume 41, page 125, approving Transfer Application 5459;

entered on March 19, 1987 and recorded in Special Order Volume 41, page 128, approving Transfer Application 5460;

entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329. This Certificate together with Certificate 75708 supersedes Certificate 51346.

The issuance of this superseding certificate does not confirm the status of the water right in regard to the provisions of ORS 540.610 pertaining to forfeiture or abandonment.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel

Martha O. Pagel, Director

COUNTY OF MALHEUR

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE IRRIGATION DISTRICT
17 SOUTH 1ST STREET
NYSSA, OREGON 97913

confirms the right to use the waters of **SNAKE RIVER**, tributary of COLUMBIA RIVER for the purpose of **SUPPLEMENTAL IRRIGATION** of **1300.8 acres.**

This right was perfected under Permit 1150. The date of priority is **FEBRUARY 17, 1912.** This right is limited to an amount actually needed for beneficial use and shall not exceed **15.42 CUBIC FEET PER SECOND** or its equivalent in case of rotation.

The point of diversion is located as follows:
(Dunaway Pumping Plant) LOT 3 (NE¼ SW¼), SECTION 18, T. 20 S., R. 47 E., W.M.; (River Mile 394.2)

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, shall be limited to **ONE-EIGHTIETH** of one cubic foot per second per acre, or its equivalent for each acre irrigated.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:
All Townships are South, all Ranges are East, location in reference to Willamette Meridian

TOWNSHIP	RANGE	SECTION	LOT	¼, ¼	TAX LOT	ACRES
18	46	22		NENE	100	26.0
18	46	22		NWNE	100	24.9
18	46	22		SWNE	500	38.0
18	46	22		SENE	500	37.0
18	46	22		NENW	100	13.8
18	46	22		NWNW	100	1.0
18	46	22		SWNW	100	33.7
18	46	22		SENW	100	37.5
18	46	22		NESW	900	28.9
18	46	22		NESE	1300	37.7
18	46	22		NWSE	1100	38.1
18	46	22		SWSE	1200	19.9
18	46	22		SESE	1200	23.0
18	46	23		NENE	2500	31.4
18	46	23		NWNE	2400	28.1
18	46	23		SWNE	1400	36.1
18	46	23		SWNE	1401	0.7
18	46	23		SENE	2300	37.0

TOWNSHIP	RANGE	SECTION	LOT	¼, ¼	TAX LOT	ACRES
18	46	23		NENW	1400	26.5
18	46	23		NENW	1500	6.3
18	46	23		NWNW	1400	9.1
18	46	23		NWNW	1500	18.9
18	46	23		NWNW	1600	1.8
18	46	23		SWNW	1500	17.1
18	46	23		SWNW	1600	17.5
18	46	23		SENW	1400	11.0
18	46	23		SENW	1500	24.1
18	46	23		NESW	1800	38.0
18	46	23		NWSW	1600	33.7
18	46	23		NWSW	1800	2.2
18	46	23		SWSW	1600	15.0
18	46	23		SESW	1800	9.3
18	46	23		SESW	1901	19.5
18	46	23		NESE	2100	32.0
18	46	23		NESE	2200	4.9
18	46	23		NWSE	1800	9.5
18	46	23		NWSE	2100	29.1
18	46	23		SWSE	1802	8.0
18	46	23		SWSE	1901	8.2
18	46	23		SWSE	2000	12.7
18	46	23		SESE	2000	23.8
18	46	24		NENE	4600	30.0
18	46	24		NWNE	2600	14.7
18	46	24		NWNE	4100	17.4
18	46	24		SWNE	3900	7.3
18	46	24		SWNE	4000	11.1
18	46	24		SWNE	4101	11.7
18	46	24		SWNE	4200	2.0
18	46	24		SWNE	4300	4.9
18	46	24		SENE	4400	18.3
18	46	24		SENE	4500	16.2
18	46	24		NENW	2600	33.6
18	46	24		NWNW	2500	13.6
18	46	24		NWNW	2600	14.8
18	46	24		SWNW	2700	19.3
18	46	24		SWNW	2800	18.8
18	46	24		SENW	2900	38.2
18	46	24		NESW	3001	38.0
18	46	24		NWSW	3100	36.8
18	46	24		SWSW	3200	23.2
18	46	24		SESW	3200	23.3
18	46	24		NESE	3800	36.6

Certificate 57532 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329. This Certificate together with Certificate 75711 and Transfer 7021 supercedes Certificate 57532.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel

Martha O. Pagel, Director

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE IRRIGATION DISTRICT
17 SOUTH 1ST STREET
NYSSA, OREGON 97913

confirms the right to use the waters of **SNAKE RIVER**, tributary of COLUMBIA RIVER for the purpose of **IRRIGATION of 6,715.6 ACRES.**

This right was perfected under Permit 1243. The date of priority is **FEBRUARY 10, 1912.** This right is limited an amount actually needed for beneficial use and shall not exceed **25.9 CUBIC FEET PER SECOND** or its equivalent in case of rotation, measured at the point of diversion from the source.

The point of diversion is located as follows:

(Dead Ox Pumps) LOT 6, SE¼ NE¼, SECTION 2, T. 17 S., R. 47 E., W.M.; 2630 FEET SOUTH & 2050 FEET EAST FROM N¼ CORNER SECTION 2. (River Mile 363.08)

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
15	46	25	NESW	3	2800	24.8
15	46	25	NWSW	4	2800	2.8
15	46	25	SWSW	4	2800	15.4
15	46	25	SESW		2800	24.0
15	46	25	NESE		3001	36.9
15	46	25	NWSE		2800	2.2
15	46	25	SWSE		2800	3.3
15	46	25	SESE		3200	22.4
15	46	36	NENE		3600	34.1
15	46	36	NWNE		3700	25.1
15	46	36	SWNE		3700	6.6
15	46	36	SENE		3600	0.5
15	46	36	SENE		4000	31.9
15	46	36	NENW		3700	2.3
15	46	36	NESE		6101	8.6
15	47	31	NWNE		5800	29.6
15	47	31	SWNE		5800	23.9
15	47	31	SWNE		6400	8.0
15	47	31	NENW		5900	37.7
15	47	31	NWNW	1	6000	34.6
15	47	31	SWNW	3	6000	2.3

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
15	47	31	SENW		5900	9.9
15	47	31	SENW		6200	25.4
15	47	31	NESW		6200	35.6
15	47	31	SWSW	4	6300	15.3
15	47	31	SESW		6200	38.4
15	47	31	NWSE		6400	29.6
15	47	31	NWSE		6401	0.2
15	47	31	NWSE		6501	1.6
15	47	31	SWSE		6200	10.7
15	47	32	SWNE		7500	10.0
15	47	32	NENW		7500	1.0
15	47	32	NWNW		7500	4.5
15	47	32	SWNW		7500	37.3
15	47	32	SENW		7500	30.1
15	47	32	NESW		7600	26.8
15	47	32	NESW		7800	9.5
15	47	32	NWSW		7600	12.7
15	47	32	NWSW		7700	23.3
15	47	32	SWSW		7700	36.7
15	47	32	SESW		7800	37.0
15	47	32	NWSE		7500	24.1
15	47	32	SWSE		7800	5.5
15	47	32	SESE		7900	6.2
15	47	33	NWSW	4	8500	7.2
15	47	33	SWSW	5	8500	2.4
15	47	33	SWSW	5	9304	5.7
16	47	4	NENW	2	300	0.2
16	47	4	NWNW	1	300	35.0
16	47	8	NESW		3901	3.8
16	47	8	NESE		3901	36.6
16	47	8	NWSE		3901	37.7
16	47	8	SWSE		4200	23.9
16	47	8	SESE		3901	37.6
16	47	9	NWNE	1	4400	10.4
16	47	10	SWSW		200	17.1
16	47	13	SWNW		1500	35.0
16	47	13	NESW		1500	33.5
16	47	13	NWSW		1500	38.0
16	47	13	SWSW		1700	4.8
16	47	13	SWSW		1701	10.4
16	47	13	SWSW		1800	3.0
16	47	13	SWSW		1900	19.6
16	47	13	SESW		1600	36.3
16	47	13	SWSE		1400	29.3
16	47	13	SESE		1400	39.7
16	47	14	NESW		2200	21.3
16	47	14	NWSW		2600	0.3

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
16	47	14	SWSW		2500	30.3
16	47	14	SESW		2400	38.0
16	47	14	NESE		2100	32.6
16	47	14	NWSE		2100	34.1
16	47	14	SWSE		2300	38.7
16	47	14	SESE		2100	33.8
16	47	15	NENE		2800	26.3
16	47	15	NWNE		2800	23.4
16	47	15	SWNE		2700	33.8
16	47	15	SWNE		3501	0.4
16	47	15	SENE		2600	0.6
16	47	15	SENE		2700	5.0
16	47	15	NENW		2900	32.0
16	47	15	NWNW		200	36.1
16	47	15	SWNW		3000	34.9
16	47	15	SENW		3000	36.2
16	47	15	NESW		3100	26.1
16	47	15	NESW		3401	0.7
16	47	15	NWSW		3300	32.4
16	47	15	NWSW		3400	1.1
16	47	15	SWSW		3300	11.4
16	47	15	SWSW		3400	0.6
16	47	15	SWSW		3401	15.8
16	47	15	SESW		3401	34.8
16	47	15	NESE		2600	24.2
16	47	15	NWSE		3501	35.0
16	47	15	SWSE		3501	35.9
16	47	15	SESE		2500	32.9
16	47	16	NENE		5300	32.7
16	47	16	NENE		5500	2.1
16	47	16	NWNE		5400	10.7
16	47	16	NWNE		5500	2.9
16	47	16	NWNE		5600	18.5
16	47	16	SWNE		5500	8.6
16	47	16	SWNE		5600	29.5
16	47	16	SENE		5300	2.9
16	47	16	SENE		5500	34.8
16	47	16	NENW		5700	33.4
16	47	16	NWNW		5700	35.2
16	47	16	SWNW		5700	33.5
16	47	16	SENW		5700	39.1
16	47	16	NESW		5700	20.9
16	47	16	NWSW		5700	1.0
16	47	16	NESE		6100	38.4
16	47	16	NWSE		6000	37.0
16	47	16	SWSE		6000	32.7
16	47	16	SESE		6100	35.0

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
16	47	21	NENE		700	32.5
16	47	21	NWNE		800	1.8
16	47	21	SWNE		800	1.4
16	47	21	SENE		700	30.3
16	47	22	NENE		100	33.8
16	47	22	NENE		400	0.2
16	47	22	NWNE		100	38.0
16	47	22	SWNE		200	34.2
16	47	22	SENE		200	18.7
16	47	22	SENE		300	17.5
16	47	22	NENW		400	33.4
16	47	22	NWNW		500	36.3
16	47	22	SWNW		500	29.7
16	47	22	SENW		400	31.8
16	47	22	NESW		700	30.8
16	47	22	SESW		700	34.8
16	47	22	NESE		800	33.3
16	47	22	NWSE		900	36.6
16	47	22	SWSE		1000	22.2
16	47	22	SWSE		1100	10.3
16	47	22	SESE		1100	34.1
16	47	23	NENE		1200	35.9
16	47	23	NWNE		1200	38.9
16	47	23	SWNE		1200	39.1
16	47	23	SENE		1200	34.4
16	47	23	NENW		1400	37.6
16	47	23	NWNW		1400	37.0
16	47	23	SWNW		1400	37.0
16	47	23	SENW		1400	37.0
16	47	23	NESW		1500	38.4
16	47	23	NWSW		1500	37.4
16	47	23	SWSW		1500	37.2
16	47	23	SESW		1500	10.0
16	47	23	SESW		1700	27.6
16	47	23	NESE		2000	36.7
16	47	23	NWSE		1900	36.0
16	47	23	SWSE		1800	36.6
16	47	23	SESE		2000	36.8
16	47	24	NENE		2200	19.2
16	47	24	NENE		2400	17.5
16	47	24	NWNE		2400	38.6
16	47	24	SWNE		2401	39.7
16	47	24	SENE		2300	36.7
16	47	24	NENW		2500	35.8
16	47	24	NWNW		2600	34.3
16	47	24	SWNW		2700	37.7
16	47	24	SENW		2500	37.0

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
16	47	24	NESW		2700	7.7
16	47	24	NESW		2800	27.8
16	47	24	NWSW		2700	37.2
16	47	24	SWSW		2700	36.5
16	47	24	SESW		2700	1.9
16	47	24	SESW		2800	34.7
16	47	24	SESW		2801	0.5
16	47	24	NESE		2401	38.8
16	47	24	NWSE		2401	39.7
16	47	24	SWSE		2401	37.0
16	47	24	SESE		2401	37.3
16	47	25	NWNE		3000	35.4
16	47	25	NENW		3200	35.9
16	47	25	NWNW		3300	36.2
16	47	25	SWNW		3300	38.2
16	47	25	SENW		3200	34.6
16	47	25	NESW		3100	19.5
16	47	25	NESW		3200	14.5
16	47	25	NWSW		3300	36.6
16	47	25	SWSW		3400	13.6
16	47	25	SWSW		3401	21.6
16	47	25	SESW		3100	37.1
16	47	26	NENE		3500	37.5
16	47	26	NWNE		1800	34.9
16	47	26	SWNE		1800	15.6
16	47	26	SENE		3600	37.1
16	47	26	SWNE		3600	15.0
16	47	26	NENW		4500	36.5
16	47	26	NWNW		4500	9.4
16	47	26	NWNW		4700	1.8
16	47	26	NWNW		4800	12.6
16	47	26	NWNW		4901	0.6
16	47	26	SWNW		4300	1.3
16	47	26	SWNW		4800	3.4
16	47	26	SWNW		4901	13.9
16	47	26	SWNW		5000	15.6
16	47	26	SENW		4200	1.5
16	47	26	SENW		4300	17.1
16	47	26	SENW		4400	18.3
16	47	26	NESW		3800	21.5
16	47	26	NESW		4000	4.7
16	47	26	NESW		4100	3.0
16	47	26	NWSW		4901	0.1
16	47	26	NWSW		5200	30.3
16	47	26	NWSW		5300	5.6
16	47	26	SWSW		5300	35.1
16	47	26	SESW		3800	3.7

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
16	47	26	SESW		4000	27.8
16	47	26	SESW		4001	2.0
16	47	26	NESE		3700	37.7
16	47	26	NWSE		3800	37.1
16	47	26	SWSE		3900	36.3
16	47	26	SESE		3700	37.7
16	47	27	NENE		5400	26.2
16	47	27	NENE		5500	8.9
16	47	27	NWNE		5500	36.5
16	47	27	SWNE		5600	38.2
16	47	27	SENE		5400	5.9
16	47	27	SENE		5600	30.3
16	47	27	NESE		6100	27.1
16	47	27	NESE		6200	9.9
16	47	27	NWSE		6100	17.7
16	47	27	NWSE		6200	4.2
16	47	27	SWSE		6200	37.4
16	47	27	SESE		6200	35.7
16	47	34	NENE		6300	28.0
16	47	34	NWNE		6400	8.0
16	47	34	NWNE		6500	26.0
16	47	34	SWNE		6500	34.8
16	47	34	SENE		6300	31.5
16	47	34	NENW		6600	8.5
16	47	34	SENW		6600	19.9
16	47	34	NESE		6300	33.8
16	47	34	NWSE		6300	19.4
16	47	34	SWSE		6300	5.8
16	47	34	SESE		6300	34.1
16	47	35	NENE		7490	38.0
16	47	35	NWNE		7490	33.5
16	47	35	SWNE		7490	36.2
16	47	35	SENE		7490	38.3
16	47	35	NENW		7400	32.5
16	47	35	NWNW		7700	18.8
16	47	35	NWNW		7800	19.3
16	47	35	SWNW		7900	38.8
16	47	35	SENW		7500	31.4
16	47	35	SENW		7501	1.0
16	47	35	SENW		7600	0.6
16	47	35	NESW		8500	0.7
16	47	35	NESW		8600	0.7
16	47	35	NESW		8601	0.8
16	47	35	NESW		8602	0.6
16	47	35	NESW		8603	0.9
16	47	35	NESW		8604	0.6
16	47	35	NESW		8605	0.8

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
16	47	35	NESW		8700	0.5
16	47	35	NESW		8702	0.8
16	47	35	NESW		8800	26.8
16	47	35	NWSW		8000	34.8
16	47	35	NWSW		8101	3.6
16	47	35	SWSW		8000	2.2
16	47	35	SWSW		8100	3.5
16	47	35	SWSW		8101	20.0
16	47	35	SWSW		8200	1.6
16	47	35	SESW		8400	30.2
16	47	35	NESE		8901	8.0
16	47	35	NESE		8903	9.0
16	47	35	NESE		9000	13.0
16	47	35	NWSE		8800	37.7
16	47	35	SWSE		8400	27.8
16	47	36	NENW	1	9400	10.2
16	47	36	NWNW		9300	33.3
16	47	36	SWNW		8900	1.9
16	47	36	SWNW		9300	0.5
16	47	36	SWNW		9600	1.8
16	47	36	SWNW		9700	9.8
16	47	36	NWSW		8900	1.8
16	48	19	NWSW		300	36.1
16	48	19	SWSW		400	39.3
16	48	19	SESW	4	400	15.9
17	47	2	NWNE	2	500	3.8
17	47	2	NENW	3	200	18.3
17	47	2	SWNW		1100	14.7
17	47	2	SENW		400	2.0
17	47	2	SENW		1100	26.3
17	47	2	NESW		2000	30.9
17	47	2	NWSW		1600	31.0
17	47	2	SWSW		2500	37.1
17	47	3	SESW		3908	6.0
17	47	3	NESE		700	7.3
17	47	3	NESE		1100	3.0
17	47	3	NESE		1200	1.4
17	47	3	NWSE		700	9.7
17	47	3	SWSE		700	4.0
17	47	3	SWSE		2100	8.6
17	47	3	SWSE		2200	3.0
17	47	3	SESE		1200	18.4
17	47	10	NENE		4800	37.0
17	47	10	NWNE		4900	9.8
17	47	10	NWNE		5000	7.9
17	47	10	SWNE		5502	24.9
17	47	10	SENE		5300	18.0

TOWNSHIP	RANGE	SECTION	¼ ,¼	GOV LOT	TAX LOT	ACRES
17	47	10	SENE		5400	18.0
17	47	10	NENW		3900	24.0
17	47	10	NWNW		5800	5.9
17	47	10	SWNW		5800	13.1
17	47	10	SENW		5600	11.8
17	47	10	SENW		5601	3.3
17	47	10	NESE		6600	17.0
17	47	10	NESE		6700	4.0
17	47	10	NESE		6704	3.0
17	47	10	NESE		6705	3.0
17	47	10	NWSE		6500	38.0
17	47	11	SWNW		7400	18.0

This Certificate describes the new location and type of use of the water right confirmed by Certificate 57572 State Record of Water Right Certificates, modified by the provisions of an order of the Water Resources Director entered on JAN 25 1999 approving a petition by the Owyhee Irrigation District under ORS 541.329.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use herein described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream water rights.

Witness the signature of the Water Resources Director, affixed 1/25/99

Martha O. Pagel

Martha O. Pagel, Director

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

THE OWYHEE, THE ONTARIO-NYSSA, THE ADVANCEMENT, THE PAYETTE-OREGON SLOPE, THE BENCH AND THE SLIDE IRRIGATION DISTRICTS, TOGETHER COMPRISE THE NORTH BOARD OF CONTROL OF THE OWYHEE PROJECT:

NORTH BOARD OF CONTROL
PO BOX 1565
NYSSA, OR 97913

confirms the right to use the waters of OWYHEE RESERVOIR AND THE OWHYEE RIVER, a tributary of SNAKE RIVER, for DEVELOPMENT OF 2,825 THEORETICAL HORSEPOWER at the MITCHELL BUTTE LATERAL HYDROELECTRIC PROJECT.

This right was perfected under Permit 50143. The date of priority is OCTOBER 7, 1981 AND OCTOBER 15, 1983 - FOR 95.0 CUBIC FEET PER SECOND (CFS) FROM STORED WATER, AND SEPTEMBER 9, 1987 - FOR 15.0 CFS DIRECT FLOW FROM OWYHEE RIVER. The amount of water to which this right is entitled to is limited to an amount actually beneficially used and shall not exceed 110.0 CUBIC FEET PER SECOND, or its equivalent in case of rotation, measured at the point of diversion from the source.

The point of diversion is located as follows:

SW 1/4 NE 1/4, NW 1/4 SE 1/4, SECTION 20, T 22 S, R 45 E, W.M.; 2000 FEET WEST FROM THE EAST 1/4 CORNER OF SECTION 20.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:

NE 1/4 SE 1/4
SECTION 1
TOWNSHIP 21 SOUTH, RANGE 45 EAST W.M.

NW 1/4 SW 1/4
SECTION 6
TOWNSHIP 21 SOUTH, RANGE 46 EAST, W.M.

The right granted herein is expressly made inferior in right and subsequent in time to any appropriation of water from this source which may hereafter be made for domestic, municipal, irrigation or any other beneficial consumptive use, or for storage for such purposes.

The Water User shall comply with the provisions of the Order of the Water Resources Commission dated November 18, 1987, Special Order Record, Volume 41, pages 595-602 and by reference herein made a part of this certificate.

SEE NEXT PAGE

The Water User shall, during the operational lifetime of the project, perform or allow the Water Resources Department to perform any tests or studies required by the department to evaluate the effectiveness of measures for the protection of fish.

The water right may not be assigned to any non-municipal entity so as to result in a loss of ownership of the certificate by the municipal corporation or district.

The Water User must remain qualified as a municipal applicant under ORS 537.285 and 537.287. If the Water User proposes to generate hydroelectric power jointly with a non-municipal entity, any agreement between the Water User and the non-municipal entity or proposed changes to such agreement, must be reviewed by the Water Resources Director to determine whether or not the Water User remains qualified as a municipal applicant.

The right to the use of the water for the above purpose is restricted to beneficial use on the lands or place of use described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.

WITNESS the signature of the Water Resources Director, affixed SEPTEMBER 28, 1998.

Martha O. Pagel

Recorded in State Record of Water Right Certificates numbered 75819.

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE PROJECT IRRIGATION DISTRICTS
PO BOX 1565
NYSSA, OR 97913

confirms the right to use the waters of OWYHEE RIVER, a tributary of SNAKE RIVER for DEVELOPMENT OF 7.926 THEORETICAL HORSEPOWER AT OWYHEE DAM.

This right was perfected under Permit 48428. The date of priority is OCTOBER 13, 1981. The amount of water to which this right is entitled to is limited to an amount actually beneficially used and shall not exceed 225.0 CUBIC FEET PER SECOND, or its equivalent in case of rotation, measured at the point of diversion from the source.

The point of diversion is located as follows:

SW 1/4 NE 1/4, NW 1/4 SE 1/4, SECTION 20, T 22 S, R 45 E, W.M.; 2000 FEET WEST FROM THE EAST 1/4 CORNER OF SECTION 20.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:

SW 1/4 NE 1/4
NW 1/4 SE 1/4
SECTION 20
TOWNSHIP 22 SOUTH, RANGE 45 EAST, W.M.

The right granted herein is expressly made inferior in right and subsequent in time to any appropriation of water from this source which may hereafter be made for domestic, municipal, irrigation or any other beneficial consumptive use, or for storage for such purposes.

The Water User shall comply with the provisions of the Order of the Water Resources Commission dated October 14, 1983, and by reference herein made a part of this certificate.

The water right may not be assigned to any non-municipal entity so as to result in a loss of ownership of the certificate by the municipal corporation or district.

The Water User must remain qualified as a municipal applicant under ORS 537.285 and 537.287. If the Water User proposes to generate hydroelectric power jointly with a non-municipal entity, any agreement between the Water User and the non-municipal entity or proposed changes to such agreement, must be reviewed by the Water Resources Director to determine whether or not the Water User remains qualified as a municipal applicant.

SEE NEXT PAGE

The right to the use of the water for the above purpose is restricted to beneficial use on the lands or place of use described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.

WITNESS the signature of the Water Resources Director, affixed SEPTEMBER 28, 1998.

Martha O. Pagel

Recorded in State Record of Water Right Certificates numbered 75820.

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OWYHEE PROJECT IRRIGATION DISTRICTS
PO BOX 1565
NYSSA, OR 97913

confirms the right to use the waters of OWYHEE RESERVOIR, CONSTRUCTED UNDER PERMIT R-599, AND OWYHEE RIVER, a tributary of SNAKE RIVER for DEVELOPMENT OF 13,419 THEORETICAL HORSEPOWER AT THE OWYHEE TUNNEL NO. 1.

This right was perfected under Permit 50639. The date of priority is JULY 21, 1986 - FOR STORED WATER AND SEPTEMBER 9, 1987 - FROM OWYHEE RIVER . The amount of water to which this right is entitled to is limited to an amount actually beneficially used and shall not exceed 1,640.0 CUBIC FEET PER SECOND, or its equivalent in case of rotation, measured at the point of diversion from the source.

The point of diversion is located as follows:

SW 1/4 NE 1/4, NW 1/4 SE 1/4, SECTION 20, T 22 S, R 45 E, W.M.; 2000 FEET WEST FROM THE EAST 1/4 CORNER OF SECTION 20.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use to which this right is appurtenant is as follows:

NW 1/4 SW 1/4
SECTION 21
TOWNSHIP 22 SOUTH, RANGE 45 EAST, W.M.

The right granted herein is expressly made inferior in right and subsequent in time to any appropriation of water from this source which may hereafter be made for domestic, municipal, irrigation or any other beneficial consumptive use, or for storage for such purposes.

The Water User shall comply with the provisions of the Order of the Water Resources Commission dated November 18, 1987, Special Order Record, Volume 41, pages 586-594 and by reference herein made a part of this certificate.

The Water User shall, during the operational lifetime of the project, perform or allow the Water Resources Department to perform any tests or studies required by the department to evaluate the effectiveness of measures for the protection of fish.

The water right may not be assigned to any non-municipal entity so as to result in a loss of ownership of the certificate by the municipal corporation or district.

The Water User must remain qualified as a municipal applicant under ORS 537.285 and 537.287. If the Water User proposes to generate hydroelectric power jointly with a non-municipal entity, any agreement between the Water User and the non-municipal entity or

SEE NEXT PAGE

proposed changes to such agreement must be reviewed by the Water Resources Director to determine whether or not the Water User remains qualified as a municipal applicant.

The right to the use of the water for the above purpose is restricted to beneficial use on the lands or place of use described. The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.

WITNESS the signature of the Water Resources Director, affixed SEPTEMBER 28, 1998.

Martha O. Pagel

Recorded in State Record of Water Right Certificates numbered 75821.

STATE OF OREGON

COUNTY OF MALHEUR

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO

BUREAU OF RECLAMATION
1150 CURTIS ROAD, SUITE 100
BOISE, ID 83706-1234

The specific limits and conditions of the use are listed below.

APPLICATION FILE NUMBER: S-71431

SOURCE OF WATER: OWYHEE RESERVOIR, CONSTRUCTED UNDER PERMIT R-599, ON THE OWYHEE RIVER

PURPOSE OR USE: IRRIGATION OF 1679.5 ACRES AND SUPPLEMENTAL IRRIGATION OF 74.4 ACRES

MAXIMUM RATE/VOLUME ALLOWED: 7015.6 ACRE-FEET PER YEAR

PERIOD OF USE: APRIL 1 TO OCTOBER 15

DATE OF PRIORITY: MARCH 25, 1991

POINT OF DIVERSION LOCATION: NW 1/4 SW 1/4, SECTION 21, T22S, R45E, W.M.; 264 FEET SOUTH AND 495 FEET EAST FROM WEST 1/4 CORNER, SECTION 21

The amount of water used for irrigation under this right, together with the amount secured under any other right existing for the same lands, is limited to a diversion 4.0 acre-feet for each acre irrigated during the irrigation season of each year.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

	PRIMARY	SUPPLEMENTAL
NW 1/4 SW 1/4	3.9 ACRES	
SW 1/4 SW 1/4	2.0 ACRES	
SECTION 25		
TOWNSHIP 15 SOUTH, RANGE 46 EAST, W.M.		
NE 1/4 NE 1/4		14.8 ACRES
SECTION 31		
TOWNSHIP 15 SOUTH, RANGE 47 EAST, W.M.		
NE 1/4 SE 1/4	4.2 ACRES	
SE 1/4 SE 1/4	4.0 ACRES	
SECTION 13		
TOWNSHIP 16 SOUTH, RANGE 46 EAST, W.M.		

	PRIMARY	SUPPLEMENTAL
NW 1/4 SE 1/4	4.2 ACRES	
	SECTION 7	
NW 1/4 NW 1/4	18.3 ACRES	
SW 1/4 NW 1/4	36.3 ACRES	
NW 1/4 SW 1/4	11.1 ACRES	
	SECTION 14	
SE 1/4 NE 1/4	30.4 ACRES	
NE 1/4 SE 1/4	2.4 ACRES	
	SECTION 15	
NE 1/4 SE 1/4	15.5 ACRES	
SE 1/4 SE 1/4	11.7 ACRES	
	SECTION 17	
SW 1/4 NE 1/4	0.7 ACRE	
SW 1/4 NW 1/4	5.4 ACRES	
SE 1/4 NW 1/4	1.2 ACRES	
NE 1/4 SW 1/4	0.6 ACRE	
NW 1/4 SW 1/4	28.0 ACRES	
SW 1/4 SW 1/4	0.9 ACRE	
	SECTION 18	
NE 1/4 NE 1/4	0.1 ACRE	
NW 1/4 NE 1/4	6.0 ACRES	
SW 1/4 NE 1/4	24.1 ACRES	
SE 1/4 NE 1/4	14.9 ACRES	
NE 1/4 NW 1/4	9.5 ACRES	
NW 1/4 NW 1/4	0.5 ACRE	
SE 1/4 NW 1/4	5.7 ACRES	
NE 1/4 SW 1/4	2.5 ACRES	
NW 1/4 SW 1/4	6.7 ACRES	
	SECTION 20	
NE 1/4 NW 1/4	5.6 ACRES	
NW 1/4 NW 1/4	5.3 ACRES	
SW 1/4 NW 1/4	3.3 ACRES	
SE 1/4 NW 1/4	1.7 ACRES	
NE 1/4 SW 1/4	1.0 ACRE	
SW 1/4 SW 1/4	2.3 ACRES	
SE 1/4 SW 1/4	2.5 ACRES	
NE 1/4 SE 1/4	5.4 ACRES	
SW 1/4 SE 1/4	8.4 ACRES	
SE 1/4 SE 1/4	0.9 ACRE	
	SECTION 21	
SW 1/4 NW 1/4	3.5 ACRES	
NE 1/4 SW 1/4	2.7 ACRES	
SE 1/4 SW 1/4	0.6 ACRE	
SW 1/4 SE 1/4	2.8 ACRES	
	SECTION 22	
NW 1/4 NE 1/4	1.7 ACRES	
	SECTION 27	

	PRIMARY	SUPPLEMENTAL
NW 1/4 NE 1/4	1.6 ACRES	
SW 1/4 SW 1/4	1.6 ACRES	
	SECTION 28	
NE 1/4 NE 1/4	2.1 ACRES	
SE 1/4 NE 1/4	0.5 ACRE	
	SECTION 29	
NE 1/4 NW 1/4	27.8 ACRES	
NW 1/4 NW 1/4	38.0 ACRES	
SW 1/4 NW 1/4	39.3 ACRES	
SE 1/4 NW 1/4	21.9 ACRES	
NE 1/4 SW 1/4	9.5 ACRES	
SE 1/4 SE 1/4	11.5 ACRES	
	SECTION 32	
SE 1/4 NW 1/4	2.0 ACRES	
SW 1/4 SW 1/4	19.0 ACRES	
NE 1/4 SE 1/4	6.2 ACRES	
NW 1/4 SE 1/4	5.4 ACRES	
	SECTION 33	
SE 1/4 NE 1/4	5.1 ACRES	
NE 1/4 NW 1/4	9.3 ACRES	
NW 1/4 NW 1/4	0.6 ACRE	
SW 1/4 NW 1/4	2.1 ACRES	
SE 1/4 NW 1/4	2.7 ACRES	
SE 1/4 SW 1/4	6.8 ACRES	
NE 1/4 SE 1/4	4.6 ACRES	
	SECTION 34	
TOWNSHIP 16 SOUTH, RANGE 47 EAST, W.M.		
NE 1/4 SE 1/4	18.5 ACRES	
	SECTION 12	
NE 1/4 SW 1/4	9.5 ACRES	
NW 1/4 SW 1/4	0.5 ACRE	
SW 1/4 SW 1/4	14.0 ACRES	
SW 1/4 SE 1/4	12.6 ACRES	
	SECTION 13	
SE 1/4 SE 1/4	8.0 ACRES	
	SECTION 14	
SW 1/4 NE 1/4	3.7 ACRES	
NW 1/4 SE 1/4	2.3 ACRES	
	SECTION 23	
NW 1/4 NE 1/4	1.5 ACRES	
SW 1/4 NE 1/4	5.0 ACRES	
SW 1/4 NW 1/4	5.2 ACRES	
NE 1/4 SW 1/4	3.0 ACRES	
SE 1/4 SW 1/4	0.8 ACRE	
NE 1/4 SE 1/4	14.2 ACRES	
NW 1/4 SE 1/4	14.8 ACRES	
	SECTION 24	

	PRIMARY	SUPPLEMENTAL
SW 1/4 NE 1/4	1.3 ACRES	
NE 1/4 NW 1/4	1.9 ACRES	
NW 1/4 NW 1/4	1.0 ACRE	
NW 1/4 SW 1/4	0.8 ACRE	
SW 1/4 SW 1/4	1.3 ACRES	
	SECTION 25	
SE 1/4 SE 1/4	1.7 ACRES	
	SECTION 26	
NE 1/4 NE 1/4	5.0 ACRES	
NE 1/4 SW 1/4	3.5 ACRES	
SW 1/4 SE 1/4	3.2 ACRES	
	SECTION 35	
TOWNSHIP 17 SOUTH, RANGE 46 EAST, W.M.		
NW 1/4 NE 1/4	2.5 ACRES	
NE 1/4 NW 1/4	20.5 ACRES	
SW 1/4 SW 1/4	3.0 ACRES	
SE 1/4 SW 1/4	12.3 ACRES	
	SECTION 3	
NE 1/4 NW 1/4	2.6 ACRES	
	SECTION 4	
NE 1/4 NE 1/4	0.8 ACRE	
SE 1/4 NE 1/4	7.5 ACRES	
SW 1/4 SW 1/4	3.7 ACRES	
	SECTION 5	
NE 1/4 NE 1/4	15.9 ACRES	
NE 1/4 SW 1/4	3.4 ACRES	
NW 1/4 SW 1/4	18.1 ACRES	
NE 1/4 SE 1/4	0.8 ACRE	
NW 1/4 SE 1/4	3.1 ACRES	
SE 1/4 SE 1/4	1.3 ACRES	
	SECTION 7	
NE 1/4 SW 1/4	1.3 ACRES	
NW 1/4 SW 1/4	5.4 ACRES	
SW 1/4 SW 1/4	0.8 ACRE	
	SECTION 8	
SE 1/4 NE 1/4	1.7 ACRES	
	SECTION 9	
NW 1/4 NW 1/4	0.9 ACRE	
	SECTION 17	
NW 1/4 NW 1/4	10.1 ACRES	
SW 1/4 NW 1/4	1.5 ACRES	
	SECTION 18	
SE 1/4 NW 1/4	3.0 ACRES	
NE 1/4 SW 1/4	1.0 ACRE	
	SECTION 19	
SW 1/4 NW 1/4	10.6 ACRES	
NW 1/4 SW 1/4	0.6 ACRE	
	SECTION 20	

	PRIMARY	SUPPLEMENTAL
NW 1/4 NW 1/4	2.0 ACRES	
	SECTION 21	
NE 1/4 NE 1/4	17.5 ACRES	
SE 1/4 NE 1/4	2.5 ACRES	
SW 1/4 SW 1/4	5.0 ACRES	
	SECTION 30	
NW 1/4 NW 1/4	23.4 ACRES	
SW 1/4 NW 1/4		28.6 ACRES
	SECTION 32	
TOWNSHIP 17 SOUTH, RANGE 47 EAST, W.M.		
NE 1/4 NE 1/4	0.8 ACRE	
	SECTION 7	
NE 1/4 NE 1/4	2.4 ACRES	
SW 1/4 NE 1/4	0.7 ACRE	
NE 1/4 SE 1/4	4.8 ACRES	
	SECTION 8	
NE 1/4 SW 1/4	2.6 ACRES	
	SECTION 9	
SW 1/4 SE 1/4	20.8 ACRES	
	SECTION 10	
SW 1/4 SW 1/4	12.0 ACRES	
	SECTION 11	
NW 1/4 SW 1/4	12.4 ACRES	
	SECTION 12	
NW 1/4 NW 1/4	5.6 ACRES	
	SECTION 14	
SE 1/4 NW 1/4	5.0 ACRES	
	SECTION 15	
NE 1/4 NW 1/4	1.0 ACRE	
	SECTION 16	
TOWNSHIP 18 SOUTH, RANGE 45 EAST, W.M.		
SE 1/4 NW 1/4	4.4 ACRES	
	SECTION 2	
NE 1/4 SW 1/4	1.8 ACRES	
NW 1/4 SW 1/4	0.1 ACRE	
	SECTION 6	
NW 1/4 NE 1/4	36.7 ACRES	
	SECTION 10	
SW 1/4 SW 1/4	7.0 ACRES	
SE 1/4 SW 1/4	10.0 ACRES	
	SECTION 24	
NE 1/4 SW 1/4		10.9 ACRES
NW 1/4 SW 1/4		3.4 ACRES
	SECTION 26	
NW 1/4 NW 1/4	6.0 ACRES	
SE 1/4 NW 1/4	1.9 ACRES	
	SECTION 27	

	PRIMARY	SUPPLEMENTAL
NW 1/4 NE 1/4	0.7 ACRE	
NE 1/4 NW 1/4	5.1 ACRES	
NW 1/4 NW 1/4	1.5 ACRES	
	SECTION 28	
NE 1/4 NE 1/4	5.7 ACRES	
SW 1/4 NE 1/4	14.5 ACRES	
SE 1/4 NE 1/4	3.2 ACRES	
NW 1/4 SW 1/4	2.7 ACRES	
NE 1/4 SE 1/4	3.4 ACRES	
	SECTION 29	
SW 1/4 NE 1/4	8.7 ACRES	
SE 1/4 NE 1/4	8.5 ACRES	
NW 1/4 SE 1/4	1.3 ACRES	
	SECTION 30	
NE 1/4 NE 1/4	14.0 ACRES	
NW 1/4 NE 1/4	1.8 ACRES	
SE 1/4 NE 1/4	4.1 ACRES	
NW 1/4 SE 1/4	2.4 ACRES	
	SECTION 32	
NW 1/4 SW 1/4	12.9 ACRES	
	SECTION 33	
NW 1/4 NE 1/4	3.4 ACRES	
NW 1/4 NW 1/4	3.9 ACRES	
	SECTION 34	
NW 1/4 NW 1/4	8.3 ACRES	
SW 1/4 NW 1/4	22.3 ACRES	
SE 1/4 NW 1/4	11.5 ACRES	
NE 1/4 SW 1/4	4.6 ACRES	
	SECTION 35	
TOWNSHIP 18 SOUTH, RANGE 46 EAST, W.M.		
SE 1/4 SW 1/4	4.7 ACRES	
SW 1/4 SE 1/4	1.7 ACRES	
	SECTION 13	
NE 1/4 SW 1/4	3.0 ACRES	
SE 1/4 SW 1/4	5.1 ACRES	
NE 1/4 SE 1/4	1.5 ACRES	
NW 1/4 SE 1/4	1.8 ACRES	
SW 1/4 SE 1/4	9.2 ACRES	
SE 1/4 SE 1/4	6.4 ACRES	
	SECTION 14	
SE 1/4 SW 1/4	16.1 ACRES	
NW 1/4 SE 1/4	4.8 ACRES	
SW 1/4 SE 1/4	32.3 ACRES	
SE 1/4 SE 1/4	4.6 ACRES	
	SECTION 15	

	PRIMARY	SUPPLEMENTAL
NE 1/4 NW 1/4	4.0 ACRES	
NW 1/4 NW 1/4	6.5 ACRES	
SE 1/4 SE 1/4	6.1 ACRES	
	SECTION 23	
NE 1/4 NE 1/4	0.7 ACRE	
NW 1/4 NE 1/4	1.2 ACRE	
SW 1/4 NE 1/4	3.1 ACRES	
NE 1/4 SW 1/4	3.0 ACRES	
	SECTION 24	
SW 1/4 NW 1/4	5.4 ACRES	
SW 1/4 SW 1/4	1.3 ACRES	
	SECTION 25	
SE 1/4 NE 1/4	9.8 ACRES	
NW 1/4 SE 1/4	2.3 ACRES	
SW 1/4 SE 1/4	2.0 ACRES	
	SECTION 26	
SE 1/4 SE 1/4	3.5 ACRES	
	SECTION 27	
NE 1/4 SW 1/4	6.1 ACRES	
SW 1/4 SW 1/4	2.7 ACRES	
	SECTION 34	
SE 1/4 NE 1/4	8.9 ACRES	
NE 1/4 SE 1/4	6.0 ACRES	
	SECTION 35	
NE 1/4 NW 1/4	5.7 ACRES	
NE 1/4 SW 1/4	3.8 ACRES	
	SECTION 36	
TOWNSHIP 19 SOUTH, RANGE 46 EAST, W.M.		
SE 1/4 NE 1/4	0.3 ACRE	
NE 1/4 SE 1/4	12.4 ACRES	
NW 1/4 SE 1/4	0.6 ACRE	
	SECTION 9	
NW 1/4 SW 1/4	1.7 ACRES	
	SECTION 10	
NW 1/4 SE 1/4	2.3 ACRES	
SW 1/4 SE 1/4	6.8 ACRES	
	SECTION 11	
NE 1/4 SW 1/4	13.4 ACRES	
NW 1/4 SW 1/4	4.6 ACRES	
SW 1/4 SW 1/4	1.1 ACRES	
SE 1/4 SW 1/4	13.9 ACRES	
SW 1/4 SE 1/4	22.4 ACRES	
	SECTION 12	
NE 1/4 NE 1/4	1.0 ACRE	
SW 1/4 SW 1/4	1.1 ACRES	
NE 1/4 SE 1/4	2.5 ACRES	
SE 1/4 SE 1/4	17.1 ACRES	
	SECTION 13	

	PRIMARY	SUPPLEMENTAL
SW 1/4 NE 1/4	0.2 ACRE	
NE 1/4 SW 1/4	0.8 ACRE	
NW 1/4 SE 1/4	2.5 ACRES	
	SECTION 23	
NE 1/4 NW 1/4	1.4 ACRES	
NW 1/4 SW 1/4	0.2 ACRE	
SW 1/4 SW 1/4	1.8 ACRES	
	SECTION 36	
TOWNSHIP 20 SOUTH, RANGE 45 EAST, W.M.		
NW 1/4 NE 1/4	4.0 ACRES	
	SECTION 3	
SE 1/4 NE 1/4	1.6 ACRES	
NE 1/4 SE 1/4	6.0 ACRES	
	SECTION 5	
SW 1/4 NE 1/4	1.6 ACRES	
NW 1/4 SE 1/4	1.9 ACRES	
	SECTION 7	
NW 1/4 SW 1/4	7.9 ACRES	
SW 1/4 SW 1/4	11.7 ACRES	
	SECTION 9	
SE 1/4 SE 1/4	0.6 ACRE	
	SECTION 15	
NE 1/4 NW 1/4	6.1 ACRES	
NW 1/4 NW 1/4	4.2 ACRES	
NE 1/4 SW 1/4	2.6 ACRES	
SW 1/4 SE 1/4	5.9 ACRES	
	SECTION 18	
NE 1/4 NE 1/4	1.0 ACRE	
	SECTION 22	
NW 1/4 NE 1/4	5.4 ACRES	
	SECTION 24	
NW 1/4 SE 1/4	3.2 ACRES	
	SECTION 29	
SE 1/4 SW 1/4	26.0 ACRES	
	SECTION 32	
TOWNSHIP 20 SOUTH, RANGE 46 EAST, W.M.		
NW 1/4 SW 1/4	19.7 ACRES	
SW 1/4 SW 1/4	11.8 ACRES	
	SECTION 2	
NE 1/4 NW 1/4	7.6 ACRES	
NW 1/4 NW 1/4	9.3 ACRES	
SW 1/4 NW 1/4	13.4 ACRES	
NW 1/4 SW 1/4	5.0 ACRES	
	SECTION 11	
NE 1/4 NE 1/4	2.1 ACRES	
SE 1/4 NE 1/4	2.0 ACRES	
SW 1/4 SW 1/4	8.3 ACRES	
	SECTION 12	

	PRIMARY	SUPPLEMENTAL
NW 1/4 NE 1/4	3.5 ACRES	
NE 1/4 NW 1/4	11.5 ACRES	
SE 1/4 NW 1/4	2.7 ACRES	
	SECTION 14	
TOWNSHIP 21 SOUTH, RANGE 45 EAST, W.M.		
NE 1/4 SE 1/4	8.0 ACRES	
	SECTION 2	
SW 1/4 SW 1/4	5.3 ACRES	
SE 1/4 SW 1/4	1.2 ACRES	
	SECTION 6	
NW 1/4 NW 1/4	1.2 ACRES	
NW 1/4 SE 1/4		4.2 ACRES
SW 1/4 SE 2/4		12.3 ACRES
SE 1/4 SE 1/4	5.8 ACRES	
	SECTION 7	
SE 1/4 NE 1/4	2.2 ACRES	
NE 1/4 NW 1/4	0.6 ACRES	
	SECTION 11	
NE 1/4 SW 1/4	11.3 ACRES	
NW 1/4 SW 1/4	1.2 ACRES	
NE 1/4 SE 1/4	1.5 ACRES	
NW 1/4 SE 1/4	7.4 ACRES	
SW 1/4 SE 1/4	1.5 ACRES	
SE 1/4 SE 1/4	4.0 ACRES	
	SECTION 12	
NW 1/4 SE 1/4	8.4 ACRES	
	SECTION 14	
NW 1/4 NE 1/4		0.2 ACRE
SW 1/4 SW 1/4	6.7 ACRES	
SE 1/4 SW 1/4	3.7 ACRES	
	SECTION 18	
NE 1/4 SW 1/4	23.8 ACRES	
NW 1/4 SW 1/4	5.0 ACRES	
	SECTION 22	
TOWNSHIP 21 SOUTH, RANGE 46 EAST, W.M.		

Measurement, recording and reporting conditions:

A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order, shall keep a complete record of the amount of water used each month and shall submit a report which includes the recorded water use measurements to the Department annually or more frequently as may be required by the Director. Further, the Director may require the permittee to report general water use

information, including the place and nature of use of water under the permit.

B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.

This right is limited to any deficiency in the available supply of any prior right existing for the same land.

The permittee shall install, maintain, and operate fish screening and by-pass devices as required by the Oregon Department of Fish and Wildlife to prevent fish from entering the proposed diversion. The required screens and by-pass devices are to be in place, functional and approved by an ODFW representative prior to diversion of any water.

STANDARD CONDITIONS

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including prior rights for maintaining instream flows.

Actual construction work shall begin within one year from permit issuance. Complete application of the water to the use shall be made on or before October 1, 2011. Within one year after complete application of water to the proposed use, the permittee shall submit a claim of beneficial use, which includes a map and report, prepared by a Certified Water Rights Examiner (CWRE).

Issued May 24, 2007

E. Timothy Wall for

Phillip C. Ward, Director

Attachment B

Joint Committee of the Owyhee Project & Old Owyhee Ditch Improvement District Memorandum of Agreement (MOU)

MEMORANDUM OF UNDERSTANDING
FOR 2014 IRRIGATION SEASON

DATED: May 27, 2014.

PARTIES: JOINT COMMITTEE OF THE OWYHEE PROJECT

And

OLD OWYHEE DITCH IMPROVEMENT DISTRICT

This Memorandum of Understanding made this 27 day of May, 2014, between the Joint Committee of the Owyhee Project, hereinafter referred to as ("the Joint Committee"), which is the successor of the United States of America in the control of the Owyhee Project and Old Owyhee Ditch Improvement District, hereinafter referred to as ("Old Owyhee"), which is a successor in interest to Owyhee Ditch Company.

WITNESSETH, THAT:

Explanatory Recitals

1. WHEREAS, the parties have a longstanding contractual relationship based upon the following three contracts (collectively, "the Contracts"):

a. 1928 Contract. The United States of America, Owyhee Ditch Company, and the Owyhee Irrigation District entered into a contract dated August 3, 1928, Number Ilr-356 ("the 1928 Contract"), relating to providing a supply of water to the Owyhee Ditch Company from the Owyhee Dam and Reservoir concerning which a dispute among the parties as to the proper entitlement to water arose which resulted in a judicial determination in the United States District Court for the District of Oregon, Civil Number 6119, concerning the entitlements for certain years; and

b. 1967 Contract. To address the judicial determination, the United States of America, Owyhee Ditch Company, and the Owyhee Irrigation District entered into an amendatory contract dated November 28, 1967, Number 14-06-100-6091 ("the 1967 Contract") amending Article 9 of the contract of August 3, 1928, relating to Old Owyhee Ditch Company's contracted storage rights in the Owyhee Reservoir and relating to calculations of the amount of stored water to which Owyhee Ditch Company is entitled in the event of drought; and

c. 1935 Contract. The United States of America and Owyhee Ditch Company entered into a contract dated August 28, 1935 ("the 1935 Contract"), relating to the construction of the Dunaway Pumping Plant and the substitution of Snake River water in place of the stored water which Owyhee Ditch Company is entitled to receive from the Owyhee Reservoir under the terms of the August 3, 1928 contract recited above; and

2. WHEREAS, the parties recognize that there are ambiguities and omissions in the Contracts, including but not limited to the 1967 Contract's failure to reference the 1935 Contract as well as its failure to address Owyhee Ditch Company's rights to natural flows of the Owyhee River, which make it difficult to arrive at a definitive interpretation of the Contracts; and

3. WHEREAS, in previous years there has generally been sufficient water in the Owyhee River and/or in the Owyhee Reservoir to avoid placing limits on the quantity of stored water distributed to Old Owyhee during the irrigation season, and the parties have never before made a joint effort to calculate Old Owyhee's stored water use; and

4. WHEREAS, the Owyhee River watershed is entering its third year of drought, and in anticipation of a continuing drought, representatives of the parties have met frequently since August, 2013, to discuss the application of the Contracts to Old Owyhee's stored water rights; and

5. WHEREAS, representatives of the parties have identified various limitations in existing water measurement devices relied on by the parties, which prevent the parties from precisely calculating Old Owyhee's entitlement to stored water; and

6. WHEREAS, currently there is no single measuring device in the Owyhee River which may be used to determine the quantity of water in the river for the purpose of accurately determining natural river flow at Old Owyhee's diversion point, or for accurately calculating the quantity of water released from storage for use by Old Owyhee; and

7. WHEREAS, for a number of years employees of the Joint Committee have generated dam storage reports ("the Dam Storage Reports") which use a formula based on the daily elevation of water levels in the Owyhee Reservoir to determine inflows into the Owyhee Reservoir, which the parties are willing to use, in a modified form as discussed below, as a basis for determining Old Owyhee's daily natural flow entitlement for the 2014 irrigation season; and

8. WHEREAS, the Dam Storage Reports use a separate formula to calculate storage releases which the parties are willing to use as a basis for determining the quantity of stored water released to Old Owyhee for the 2014 irrigation season; and

9. WHEREAS, the parties have negotiated in good faith to arrive at a set of formulas intended to reasonably quantify Old Owyhee's entitlement to stored water from the Owyhee Reservoir during the 2014 irrigation season, recognizing that those formulas may require revision for future irrigation seasons.

NOW THEREFORE, It is hereby agreed that:

<u>2013 Storage Carryover</u>

10. Using the formulas and calculations set out below, Old Owyhee carried over

8,666.78 acre feet of stored water from the 2013 irrigation season. A copy of the spread sheet used in making this calculation is attached as Exhibit "1".

Calculation of Natural River Flows

11. Natural river flows of the Owyhee River shall be calculated based upon changes in elevation of water levels in the Owyhee Reservoir. The Joint Committee will take daily elevation readings of the water level in the Owyhee Reservoir, together with releases from the Reservoir and prepare a Dam Storage Report. The Joint Committee will provide such Dam Storage Reports to the manager of Old Owyhee on a weekly basis.

12. For the purposes of interpreting and applying Article 9 of the 1928 Contract as amended by the 1967 Contract, the natural flow of the Owyhee River to which Old Owyhee is entitled shall be added as a credit to Old Owyhee in the formula set out in Section 13. The Joint Committee will prepare a calculation of natural river flows to which Old Owyhee is entitled using the Dam Storage Reports based upon a 10-day average of daily changes in reservoir elevation levels.

Formula for Calculation of Stored Water Used, Natural Flow Water Used, and Pump Water Used by Old Owyhee

13. Because the 1935 Contract allows the substitution of Snake River water for stored water in the Owyhee Reservoir, the following formula will be used to determine the amount of stored water used by Old Owyhee during the 2014 irrigation season: The amount of the natural inflow into the Owyhee Reservoir based upon a 10-day average as calculated above, will be used and a calculation will be done on a daily basis subtracting from such inflow number the amount of water released through the Owyhee Dam for the benefit of Old Owyhee as requested by the manager of Old Owyhee. The resulting number will then be reduced by the amount of water pumped that day at the Dunaway Pumping Station for the benefit of Old Owyhee (the formula for the calculation of pumped water attributable for the benefit of Old Owyhee is set out in Section 15 below). If the water releases from the Owyhee Dam and the amount of water pumped at the Dunaway Pumping Plant for the benefit of Old Owyhee exceed the natural river inflow for that day, such amount will be deducted from Old Owyhee's stored water allocation. For the purposes of interpreting this agreement, the term "irrigation season" shall mean such period of time when Old Owyhee's state water rights entitle it to provide water for irrigation.

Impact of Old Owyhee Stored Water Allocation Going to Zero

14. On any day when Old Owyhee's stored water allocation is zero, Old Owyhee's right to water releases from the Owyhee Dam will be limited to the amount of the natural Owyhee River inflow for that day. Old Owyhee will continue to be entitled to receive pumped water from the Dunaway Pumping Station, provided that Old Owyhee will be responsible for the pumping and maintenance costs associated with Old Owyhee's share of such pumped water as calculated below in Section 15.

Formula for Calculation of Pumped Water

15. The individual capacity of each of the three pumps at the Dunaway Pumping Station is listed on the name plate of each pump. Each of the three pumps has a capacity of 72 cfs, for a total capacity of 216 cfs if all three pumps are operating. The parties anticipate running one or at most two pumps during the irrigation season. The name plate capacity of each pump will be used in calculating the amount of pumped water, reduced by 10% in order to account for fluctuations in Snake River levels and the amount of head pressure on the pumps. From this reduced sum, 72% will be allocated towards substituted water which will first be deducted from natural river flow and then from stored water. On those days when the stored water allocation is at zero or below, and all natural flows of the Owyhee River, as calculated in Sections 11 and 12 above, are being diverted by Old Owyhee, 90% of the costs associated with the operation of the Dunaway Pumping Plant will be charged to Old Owyhee.

Billing for Pumped Water

16. At the end of the 2014 irrigation season, the Joint Committee will prepare a calculation of the costs associated with pumping Old Owyhee's share of the water from the Dunaway Pumping Station and submit a billing to Old Owyhee. The submission and payment of the billing will be on the same terms and conditions as the billing for Old Owyhee's share of the pumping costs at Dunaway Pumping Station associated with the water pumped for Old Owyhee's benefit on such days when Old Owyhee's storage allocation in the Owyhee Reservoir is above zero.

1935 10/14^{ths} Contract Language

17. The 1935 Contract contains language granting the United States the power to substitute water from the Snake River in place of "10/14ths" of the stored water and natural flow of the Owyhee River. The Joint Committee interprets this "10/14ths" language to serve as an identifier and not as a restriction on water amounts. The Old Owyhee has chosen not to interpret such language in this agreement. For the purposes of this agreement, such "10/14ths" language has been treated as an identifier and not as a restriction on water amounts and a 10/14ths limitation has not been used in the formulas set out in this agreement. The parties anticipate that interpretation of this language will be addressed in a long-term agreement between the parties, however, for the purposes of this agreement, the "10/14ths" language will not be factored into the calculations for the 2014 irrigation season. The interpretation given this "10/14ths" language in this agreement shall not set precedent for the interpretation given such language in the anticipated future agreement.

Ongoing Cooperation

18. The parties will use their best efforts in cooperating with each other in the operation of the Dunaway Pumping Plant and making releases from the Owyhee Dam. Old

Owyhee has installed a measuring device on Old Owyhee's inlet structure from the Owyhee River and will analyze the effectiveness of the inlet structure during the 2014 irrigation season.

19. The formulas used in this agreement and the data obtained will be analyzed by the parties at the end of the 2014 irrigation season to determine whether they should be used, in whole or in part, in a long-term agreement as to the matters contained in this Memorandum of Understanding. It is anticipated that such long-term agreement will be entered into among Old Owyhee, the Joint Committee, the irrigation districts represented by the Joint Committee, and the United States of America prior to the 2015 irrigation season.

IN WITNESS WHEREOF, the parties hereto have signed as of the day and year first above written.

JOINT COMMITTEE OF THE
OWYHEE PROJECT

By: _____
Frank Ausman, Chairman

ATTEST:

_____
Michael W. Horton, Secretary

OLD OWYHEE DITCH IMPROVEMENT
DISTRICT

By: _____
Andy Peutz, President

ATTEST:

_____
Michael Blackaby, Secretary

STATE OF OREGON)
) ss.
County of Malheur)

On the 28th day of May, 2014, Frank Ausman and Michael W. Horton, Chairman and Secretary, respectively, of the Joint Committee of the Owyhee Project, known to me to be the persons described in the forgoing instrument, personally appeared before me and acknowledged that they executed the same in the capacity therein stated and for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

OFFICIAL SEAL
MARALEE A WARD
NOTARY PUBLIC-OREGON
COMMISSION NO. 461905
MY COMMISSION EXPIRES SEPTEMBER 23, 2015

Maralee A Ward
Notary Public of Oregon
My commission expires: 9/23/2015

STATE OF OREGON)
) ss.
County of Malheur)

On the 17th day of June, 2014, Andy Peutz and Michael Blackaby, Chairman and Secretary, respectively, of the Old Owyhee Ditch Improvement District, known to me to be the persons described in the forgoing instrument, personally appeared before me and acknowledged that they executed the same in the capacity therein stated and for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Mary E Clark
Notary Public of Oregon
My commission expires: 1-31-2016

OFFICIAL SEAL
MARY E CLARK
NOTARY PUBLIC-OREGON
COMMISSION NO. 465436
MY COMMISSION EXPIRES JANUARY 31, 2016

Ten-day Average

Old Owyhee Storage Calculation (Revised) Date: 3/31/2014

Year	2011	2012	2013
Previous Year Carryover Allotment	21,000.00	19,960.48	12,344.34
Date	*6/1/2011*	*4/12/2012*	*4/10/2013*
Max Pool	721,534	643,760	380,587
Date	*10/24/2010*	*10/21/2011*	*10/5/2012*
Ending Storage	95,911	449,331	223,384
Net Difference	625,623	194,429	157,203
.02937 of Net Difference	18,374.55	5,710.38	4,617.05
Date	*4/7/2011*	*4/4/2012*	*4/2/2013*
NC/SC Tunnel Total, cfs	4,577	3,360	3,053
NC/SC Tunnel Total, AF	9,078.34	6,664.46	6,055.53
Half Credit Owyhee Ditch, AF	4,539.17	3,332.23	3,027.77
.02937 of Half Credit Owyhee Ditch	133.32	97.87	88.93
Total Starting Allotment, AF	21,000.00	21,000.00	17,050.31
Allotment Usage, AF	1,039.52	8,655.66	8,383.53
Total Carryover Allotment	19,960.48	12,344.34	8,666.78

Prepared for Old Owyhee Ditch Improvement District

EXHIBIT 4/11

PAGE 1 OF 2

Report date(s)	Correction made to OID calculations (or discrepancy)	Correction credit (debit) in OODID favor	Allocation AF difference, OID - OODID
		Initial balance	(451.38)
8/27/2013-9/3/2013	Discrepancy in second pump cutoff date	(658.63)	(110.01)
7/15/2012-7/21/2012	OODID average inflow = 258.57; OID average inflow = 223.00	517.90	(592.11)
8/8/2012-8/13/2012	OODID average inflow = 243.71; OID average inflow = 221.00	315.35	(276.76)
9/8/2011-9/14/2011	OODID average inflow = 280.86; OID average inflow = 234.00	125.02	(151.74)
9/3/2011-9/4/2012	OID calculations consider OODID Dunaway off date to be an active pumping date	111.71	(40.03)
10/5/2012	OID calculations consider OODID off date to be an active irrigation date	87.28	47.25
8/22/2011, 7/15/2013-8/8/2013-8/10/2013	OID calculation error in Credit column	(79.20)	(31.95)
8/23/2011-8/31/2011	OODID average inflow = 295.3; OID average inflow = 293.00	41.09	9.13
7/8/2013	OID calculation error in Allotment used column	(5.94)	3.19
All	Assumed to be rounding differences in average inflow (OID rounded to nearest whole cfs)	(3.19)	(0.00)
		Reconciled balance	(0.00)

Report year	OODID annual total of allotment usage, AF	OID annual total of allotment usage, AF
2011	1,254.91	7,811.24
2012	9,110.99	8,131.95
2013	8,404.04	7,004.86

EXHIBIT 4 1 1

PAGE 2 OF 2

United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
Snake River Area Office
230 Collins Road
Boise, ID 83702-4520

IN REPLY REFER TO:
PN-3323/MSF-3103
WTR-4.03

JUN 10 2014

Mr. Frank Ausman
Chairman
Joint Committee of the Owyhee Project
872 Enterprise Avenue
Nyssa, OR 97913

Subject: Distribution and Billing of Power and Energy Charges, Owyhee Project, Oregon Idaho

Dear Mr. ~~Chairman~~ Frank:

Questions have been raised in recent discussions between Bureau of Reclamation staff and representatives of the Owyhee Project Irrigation Districts regarding the interpretation and implementation of provisions of Contract No. Ilr-876 between the United States of America and the Gem, Ridgeview, Owyhee, Ontario-Nyssa, Advancement, Payette-Oregon Slope, Crystal, Bench, and Slide Irrigation Districts, dated August 29, 1951, hereafter referred to as the 1951 contract, that pertain to the distribution and billing of power and energy charges. Article 22 is the article in the 1951 contract that sets forth details on the apportionment of the costs of power and energy between the North Operating Division (now Owyhee Irrigation District) and the South Operating Division (the South Board of Control) and among the Districts.

In reviewing the Project History of the Owyhee Project (Project) and finance records, the method used by Reclamation, the Owyhee Irrigation District, and the South Board of Control has remained essentially the same since the operation and maintenance of the Project was turned over to the Districts and Boards of Control in the 1950's (See Enclosure #1). The method used consists of Reclamation sending two letters and billings each year (one letter and a billing based on estimated power and energy costs and the other letter and billing based on actual costs) to the Owyhee Irrigation District and to the South Board of Control; and the Owyhee Irrigation District and South Board of Control sending a joint report to Reclamation on the distribution of power and energy charges and gravity water supply for each year. The method used has apportioned the power and energy cosst over the Project as a whole on the percentage that the irrigable area (irrigable acres for service) of each operating division then entitled to receive Project water from the Project is of the total such irrigable area of the Project, with one exception. The exception being Article 22 (c) (2) provides for and how an excess cost is to be paid for the pumping areas specified in the contract if the average per-acre delivery of water for any of the pumping areas exceeds the Project-wide average per-acre delivery of water, if not covered by excess water payments under Article 26. Please see Enclosure #2 which provides a condensed diagram of how Article 22 should be implemented.

Reclamation believes the method that has been consistently used since the 1950's accords with the 1951 contract, along with the following three refinements that should be implemented:

(1) For the Dead Ox Pumping Area and the Ontario-Nyssa Pumping Area, the cost per acre foot pumped has been incorrectly calculated by taking the pumping cost for each area and dividing it by the sum of water pumped plus gravity for each area. To calculate the pumping cost per acre foot for each area, the pumping cost for each area should only be divided by the water pumped for each area.

(2) The acreages do not total to the current authorized irrigable areas for the Owyhee, Gem, and Ridgeview Irrigation Districts. The report for the year 2012 lists Owyhee Irrigation District with 67,161 acres; and the South Board of Control with 39,752 acres. Currently, Owyhee Irrigation District's irrigable area is 67,266.8 acres; Gem Irrigation District's area is 38,043 acres; and Ridgeview Irrigation District's area is 6,785 acres. Therefore Owyhee Irrigation District's reported acreage is under its current total by 105.8 acres and the South Board of Control's reported acreage is under its current total by 5,076 acres. Reclamation has arrived at these numbers by the following calculations:

a. In a letter dated March 1, 2004, Reclamation approved an increase in irrigable area for Owyhee Irrigation District. Owyhee Irrigation District's irrigable area increased to 67,266.8 acres in 2004 (it increased by 1,660.8 acres, from 65,606 acres to 67,266.8 acres). Owyhee Irrigation District's irrigable area for service increased to 65,606 acres in 1997 (it increased by 109 acres, from 65,497 acres to 65,606 acres).

b. In a letter dated March 9, 2005, Reclamation approved an increase in irrigable areas for Gem and Ridgeview Irrigation Districts. Ridgeview Irrigation District's irrigable area increased to 6,785 acres in 2005 (it increased by 611 acres, from 6,174 acres to 6,785 acres). Gem Irrigation District's irrigable area for service increased to 38,058 acres in 2005 (it increased by 4,480 acres, from 33,578 acres to 38,058 acres). In a letter dated August 1, 2013, Reclamation approved an adjustment in the irrigable area for Gem Irrigation District, which included 63 acres and excluded 78 acres. Gem Irrigation District's irrigable area decreased to 38,043 acres in 2013 (it decreased by 15 acres, from 38,058 to 38,043).

Therefore, our records identify a total of 112,094.8 irrigable Project acres with 67,266.8 (60.01%) in the Owyhee Irrigation District and 44,828.0 (39.99%) in the South Board of Control; to be in conformance with the 1951 contract, the current authorized irrigable areas should be used in the joint report sent to Reclamation. The acreages listed for the three pumping areas in the joint report should also be reviewed and may need to be changed.

(3) The current method of calculating wheeling charges for transmitting southern Idaho generated power and energy over non-Federal facilities does not appear to be consistent with language in the repayment contracts and will be addressed in future correspondence.

(4) In addition, Reclamation requests that the Districts review whether they have submitted accountings to Reclamation each year of the releases made in fulfillment of the environmental commitment agreed to in our letter dated March 1, 2004, with Owyhee Irrigation District and in our letter dated March 9, 2005, with Gem and Ridgeview Irrigation Districts.

I hope this letter will answer the questions raised. Reclamation staff and I are willing to meet with you and Project representatives to discuss this matter if so desired. Please feel free to call me at 208-383-2246 if you have any questions or concerns.

Sincerely,

Jerrold D. Gregg
Area Manager

Enclosures - 2

cc: Mr. Jay Chamberlin
Manager
Owyhee Irrigation District
17 South First Street
Nyssa, OR 97913-3894

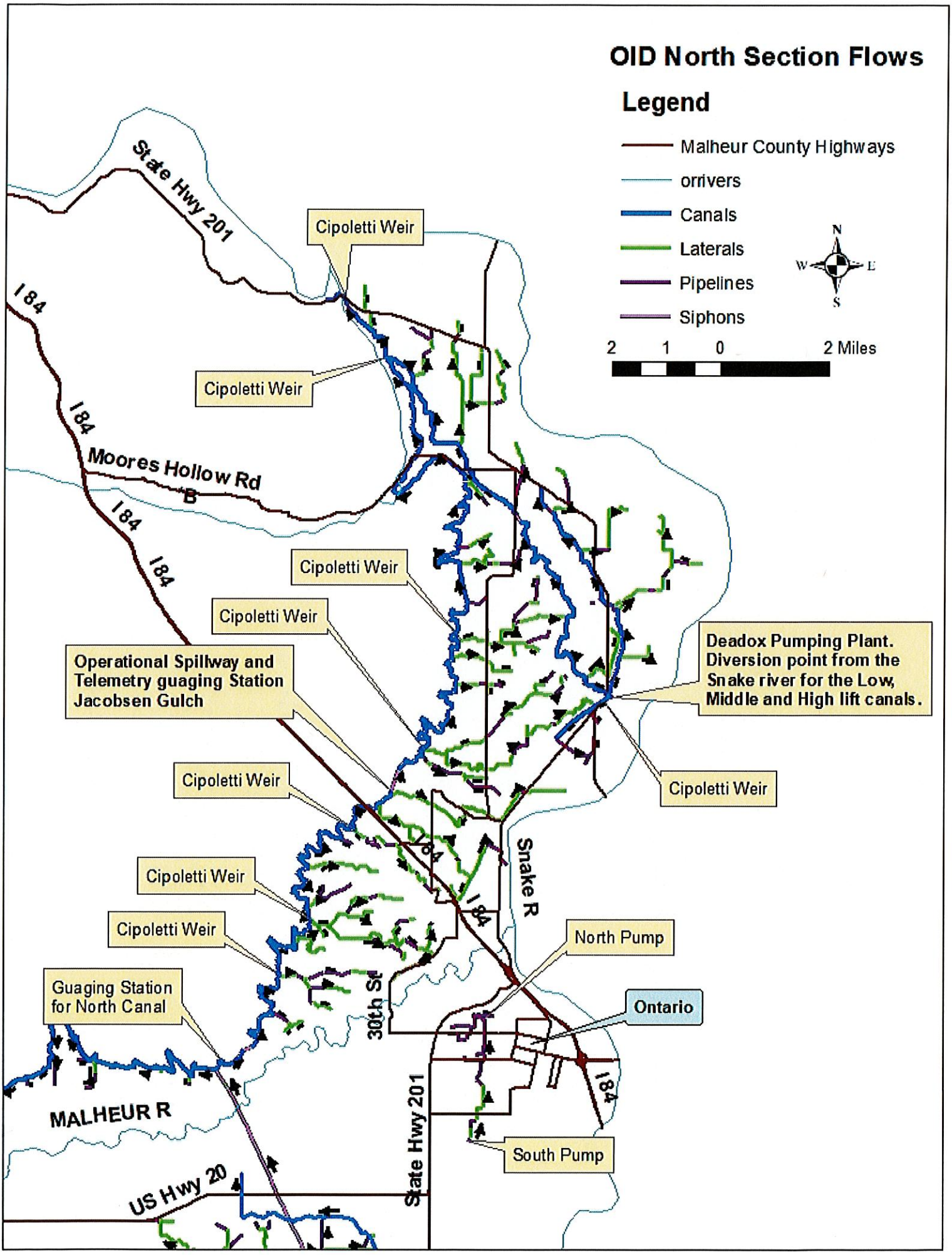
Mr. Ron Kiester
Manager
Gem and Ridgeview Irrigation Districts
South Board of Control
P.O. Box 67
Homedale, ID 83628

Mr. Michael Horton
Attorney at Law
Stunz, Fonda, Kiyuna & Horton, LLP
P.O. Box 1565
Nyssa, OR 97913
(w/encls to each above)

Mr. Albert Barker
Attorney at Law
Barker Rosholt & Simpson LLP
P.O. Box 2139
Boise, ID 83701-2139

Attachment C

Flow Direction Schematics


OID North Section Flows
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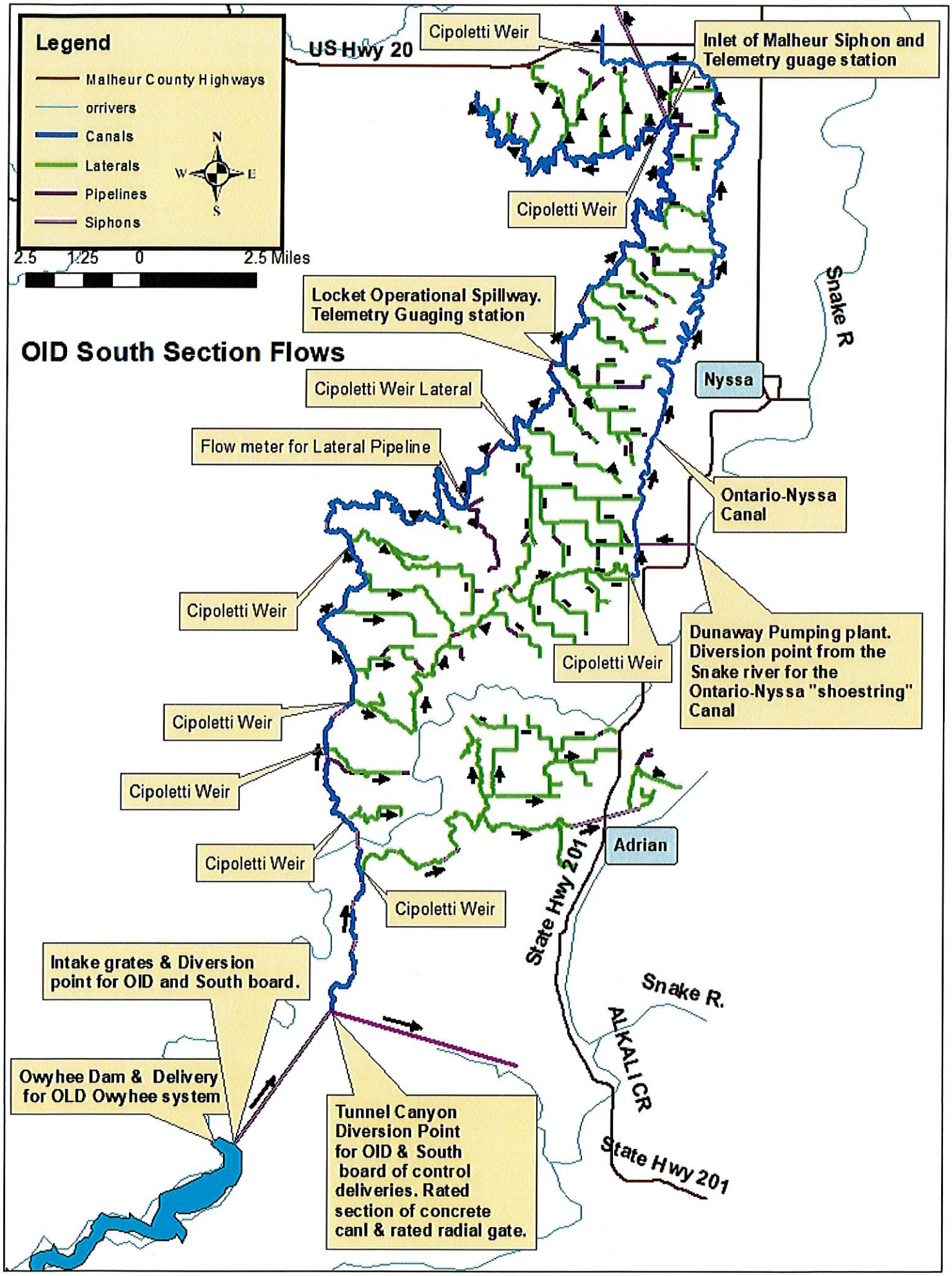
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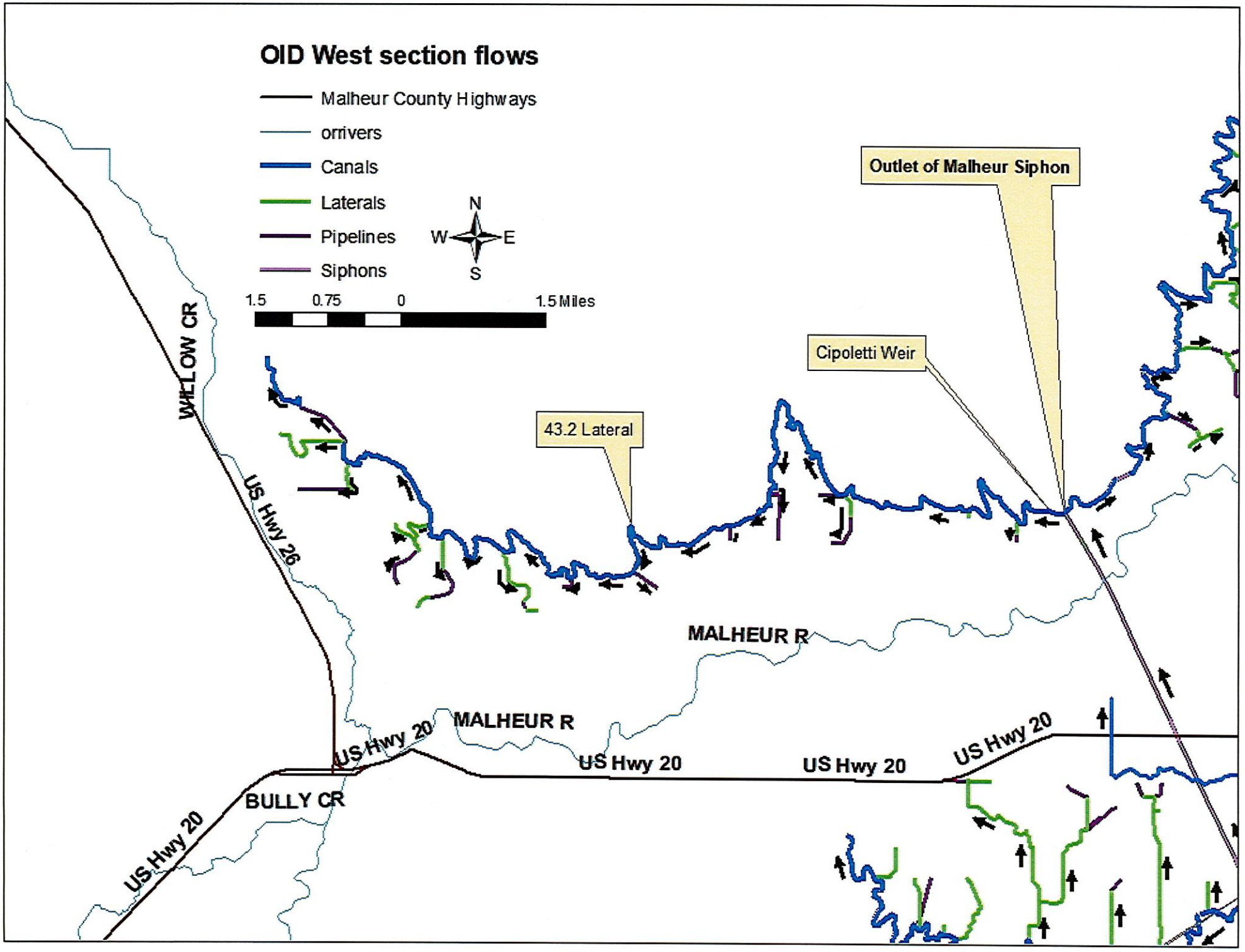
Inlet of Malheur Siphon and Telemetry guage station
Cipoletti Weir
Locket Operational Spillway. Telemetry Guaging station
Snake R
Nyssa
Cipoletti Weir Lateral
Flow meter for Lateral Pipeline
Ontario-Nyssa Canal
Cipoletti Weir
Dunaway Pumping plant. Diversion point from the Snake river for the Ontario-Nyssa "shoestring" Canal
Cipoletti Weir
Cipoletti Weir
Cipoletti Weir
Adrian
Cipoletti Weir
Cipoletti Weir
State Hwy 201
Intake grates & Diversion point for OID and South board.
Snake R.
ALKALI CR
Owyhee Dam & Delivery for OLD Owyhee system
Tunnel Canyon Diversion Point for OID & South board of control deliveries. Rated section of concrete canl & rated radial gate.
State Hwy 201


OID West section flows
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MALHEUR R
US Hwy 20
US Hwy 20
US Hwy 20
US Hwy 20
US Hwy 20
BULLY CR

Attachment D
OID Management Position Descriptions

1. OID Manager

The OID manager is an employee who is responsible for planning, directing and overseeing the operations within an organization. The manager is responsible for overseeing and leading the work of a group of people. The manager is also responsible for planning and maintaining work systems, procedures, and policies that enable and encourage the optimum performance of its people and other resources within a business.

1.1. Primary Objectives of the OID Manager:

- Health and safety of the workforce.
- Carrying out and attaining the mission and the goals of the business unit managed.
- Development of the workforce.
- Development of a company culture that emphasizes quality, continuous improvement, development, and high performance.

1.2. Primary Responsibilities of a Manager:

- Plan staffing levels.
- Recruit, interview, select, hire, and employ an appropriate number of employees.
- Provide oversight to the employees in accordance with the organization's policies and procedures.
- Delegate responsibility and expect accountability from employees to take responsibility for their jobs.
- Consciously create a workplace culture that is consistent with the overall organizations and that emphasizes the identified mission, vision, guiding principles, and values of the organization.
- Lead employees to meet the organization's expectations for productivity, quality, and goal accomplishment.
- Provide effective performance feedback through employee recognition, rewards, and disciplinary action, when necessary.
- Maintain employee work schedules including assignments, job rotation, training, vacations and paid time off, telecommuting, cover for absenteeism, and overtime scheduling.
- Manage the overall operational, budgetary, and financial responsibilities and activities of the department.
- Plan and implement systems that perform the work and fulfill the mission and the goals of the department efficiently and effectively.
- Plan and allocate resources to effectively staff and accomplish the work to meet departmental productivity and quality goals.
- Plan, evaluate, and improve the efficiency of business processes and procedures to enhance speed, quality, efficiency, and output.

- Review performance data that includes financial, sales, and activity reports and spreadsheets, to monitor and measure departmental productivity, goal achievement, and overall effectiveness.
- Perform other duties and responsibilities, as assigned.

To perform the manager job successfully, an employee must perform each essential responsibility satisfactorily. These requirements are representative, but not all-inclusive, of the knowledge, skills, and abilities required to lead in the role of manager. Reasonable accommodations may be made to enable individuals with disabilities to perform these essential functions.

1.3. OID Manager Job Requirements:

- Knowledge and experience in business, supervision, and management.
- Knowledge of the functions, operation and mission of the specific department.
- Better than average written and spoken communication skills.
- Outstanding interpersonal relationship building and employee coaching and development skills.
- Management experience in a team-oriented workplace, preferred.
- Demonstrated ability to lead and develop a department and department staff members.
- Demonstrated knowledge of basic economic, budgeting, and accounting principles and practices.
- Demonstrated ability to serve as a knowledgeable resource to the organization's management team that provides leadership and direction.
- Excellent computer skills in a Microsoft Windows environment. Must include knowledge of Excel and skills in Access.
- General knowledge of various employment laws and practices and employee relations.
- Evidence of the ability to practice a high level of confidentiality.
- Excellent organizational management skills.
- Education and Experience Required of the Manager
- Minimum of a Bachelor's degree or equivalent in business or a departmentally related field.
- A minimum of three years of responsible leadership experiences in management or supervisory positions.
- Specialized training in managing human resources, preferred.

1.4. Physical Demands of a Manager:

These physical demands are representative of the physical requirements necessary for an employee to successfully perform the essential functions of the manager's job. Reasonable accommodation can be made to enable people with disabilities to perform the described essential functions of the manager's job.

While performing the responsibilities of the manager's job, the employee is required to talk and hear. The employee is often required to sit and use his or her hands and fingers, to handle or feel.

The employee is occasionally required to stand, walk, reach with arms and hands, climb or balance, and to stoop, kneel, crouch or crawl. Vision abilities required by this job include close vision.

1.5. Work Environment of the Manager:

While performing the responsibilities of the manager's job, these work environment characteristics are representative of the environment the manager will encounter. Reasonable accommodations may be made to enable people with disabilities to perform the essential functions of the manager's job.

While performing the duties of this job, the employee is occasionally exposed to moving mechanical parts and vehicles. The noise level in the work environment is usually quiet to moderate.

2. Assistant Manager

2.1. Assistant Manager Job Responsibilities:

Assists manager by performing related duties.

3. Watermaster

This position requires the incumbent to work cooperatively with others; maintain regular, consistent, and predictable attendance; communicate effectively and provide updates on work assignments management and exercise good judgment.

3.1. Duties and Responsibilities:

Watermaster represent the agency in a field location with limited supervision from the main office. From the field, the Watermaster responds to water disputes, informational inquiries and complaints. A timely response is critical to prevent potential loss of crops, life, or property. The Watermaster actively enforces water laws and administrative rules from the agency.

3.2. Specific duties include:

- Contact ditch riders and determine the amount of water needed for each system on a daily basis.
- Measure sometimes deep, swift, cold stream flows.
- Use mathematical computations to calculate and record flows or determine flows by remote queries or manual downloads of stream gaging stations.
- Determine flows to be distributed by analyzing documents and proportion diversion amounts according to actual stream flows.
- Distribute flows through structures, ditches, and gates to water users.

- Record daily activities, phone calls, stream and diversion flows in dated field books.
- Prepare annual Watermaster reports using standard software (currently Microsoft Word and Excel), in coordination with the administration.
- Design and construct water diversion and measuring structures with use of tools, concrete, and wood. Purchase supplies at local stores and process all purchasing paperwork according to State requirements.
- Design, install, maintain, and service, annually or as needed, surface water measurement stations. Download and process data from these stations to determine stream and diversion flow hydrographs and quantities.
- Regulate water use.
- Respond to complaints associated with water distribution. This involves working in the field and requires knowledge of individual water rights, water laws, administrative rules and agency policies. If violations are observed, documentation is prepared to begin action. The Watermaster shall file complaints with district management staff and must testify accurately to the facts.
- Conduct safety inspections looking for leaks, slumps, bulges and cracks which are signs that a structure may be unsafe. If repairs are determined necessary, the correct person is contacted to make repairs, and a report describing the problem is sent to the office. In complex cases, the Watermaster requests assistance from management.
- Collect and compile hydrologic data. This includes making flow measurements of canals, streams, and rivers with complex instruments; servicing and maintaining stream gage stations to ensure that the record is complete and accurate; monitoring water levels in areas. Submit compiled data to the office annually after each water season. Work with water users and install measuring devices consistent with District goals.
- Develop and promote water management programs within assigned area. Assist in the restoration and protection of streamflows and watersheds in order to ensure the long-term sustainability of Oregon's ecosystems, economy, and quality of life whenever possible. Requires interaction with other State agencies, Federal agencies, local governments, groups, and other divisions within the department.
- Other duties as assigned by regional manager may include, but are not limited to: research and compilation of data, preparation of staff reports on issues that need to be addressed, and offer assistance to other sections/divisions of the District.

3.3. Working Conditions:

Work with minimal supervision; walking over rough terrain, through fields, along stream banks around fast and deep flowing water; must be able to swim or stay afloat in case of capsizing; perform heavy manual work; move heavy objects occasional lifting up to 75 lbs.; have full range of movement to bend, stoop, and twist; must have a valid driver's license and a good driving record; experience operating motorized boats and four wheel drive vehicle; travel in varied

weather and road conditions in motor vehicles or ATV's; may deal with individuals who are angry or hostile; and promote a work climate which reflects care, concern and respect for every individual. Regular attendance is an essential function.

3.4. Qualifications, Required and Requested Skills:

The Watermaster must have the following qualifications and skills:

- Three years of civil engineering experience including water flow measurement; collecting and reporting hydrologic data; and knowledge of water storage, irrigation system and water transportation facility design and construction. This experience must show responsibility for: 1) researching and analyzing natural resource data or statistics to solve technical problems; and 2) applying pertinent laws and regulations to specific agency operations or programs;
  AND
- Bachelor's degree in Civil Engineering, Geology, Hydrology or equivalent. Three additional years of experience may substitute for the degree.
  OR
- Any combination of training and experience as listed above equivalent to six years.

3.5. Desired Attributes:

- Excellent customer service skills.
- Excellent communication skills.
- Dispute resolution skills.
- Experience working with land owners to gain compliance.
- Experience developing and presenting collected data.
- In-depth knowledge of water law, water rights and policy related to water.
- Experience with computers and computer software.

4. Power Plant Supervisor

Employees in this job have overall responsibility for the operation and maintenance of multiple electric generating power plants. The employee serves as a first-line supervisor directing the work of shift operators, assistant operators, and trades people in power plants producing electricity. The employee must exercise considerable independent judgment to adapt and apply the guidelines to specific situations as needed. Monitor and control activities associated with hydropower generation. Operate plant equipment, such as turbines, pumps, valves, gates, fans, electric control boards, and battery banks. Monitor equipment operation and performance and make necessary adjustments to ensure optimal performance. Perform equipment maintenance and repair as necessary.

4.1. Job Duties:

- Identify or address malfunctions of hydroelectric plant operational equipment, such as generators, transformers, or turbines.
- Monitor hydroelectric power plant equipment operation and performance, adjusting to performance specifications, as necessary.
- Start, adjust, or stop generating units, operating valves, gates, or auxiliary equipment in hydroelectric power generating plants.
- Implement load or switching orders in hydroelectric plants, in accordance with specifications or instructions.
- Inspect water-powered electric generators or auxiliary equipment in hydroelectric plants to verify proper operation or to determine maintenance or repair needs.
- Install or calibrate electrical or mechanical equipment, such as motors, engines, switchboards, relays, switch gears, meters, pumps, hydraulics, or flood channels.
- Maintain or repair hydroelectric plant electrical, mechanical, or electronic equipment, such as motors, transformers, voltage regulators, generators, relays, battery systems, air compressors, sump pumps, gates, or valves.
- Maintain logs, reports, work requests, or other records of work performed in hydroelectric plants.
- Operate hydroelectric plant equipment, such as turbines, pumps, valves, gates, fans, electric control boards, or battery banks.
- Take readings and record data such as water levels, temperatures, or flow rates.
- Test and repair or replace electrical equipment, such as circuit breakers, station batteries, cable trays, conduits, or control devices.
- Change oil, hydraulic fluid, or other lubricants to maintain condition of hydroelectric plant equipment.
- Connect metal parts or components in hydroelectric plants by welding, soldering, riveting, tapping, bolting, bonding, or screwing.
- Cut, bend, or shape metal for applications in hydroelectric plants, using equipment such as hydraulic benders or pipe threaders.
- Erect scaffolds, platforms, or hoisting frames to access hydroelectric plant machinery or infrastructure for repair or replacement.
- Lift and move loads, using cranes, hoists, and rigging, to install or repair hydroelectric system equipment or infrastructure.
- Perform preventive or corrective containment or cleanup measures in hydroelectric plants to prevent environmental contamination.
- Perform tunnel or field inspections of hydroelectric plant facilities or resources.
- Splice or terminate cables or electrical wiring in hydroelectric plants.
- Coordinates activities by scheduling work assignments, setting priorities, and directing the work of subordinate employees.

- Communicate status of hydroelectric operating equipment to dispatchers or supervisors.
- Ensures proper labor relations and conditions of employment are maintained.
- Maintains records, prepares reports, and composes correspondence relative to the work.
- Checks daily logs to determine proper operation of equipment.
- Lays out and inspects completed work on repairs, plumbing, pipe fitting, generators, turbines, switch gears, and other electrical work.
- Instructs shift attendants in changes in electrical generating operations.
- Requisitions supplies, materials, and repair parts.
- Prepares reports of power plant operation, power usage, and costs.
- Makes estimates of labor and/or materials for repair or new construction.
- May occasionally perform any task assigned to subordinate staff, consistent with any licensing or certification requirements.
- Performs related work as assigned.

4.2. Job Qualifications:

- Considerable knowledge of the operation and maintenance of electrical generating equipment and other related mechanical equipment in an electric generating power plant.
- Considerable knowledge of relevant mechanical and electrical systems throughout the plant. Considerable knowledge of electrical and pneumatic controls.
- Considerable knowledge of electrical circuits.
- Considerable knowledge of the occupational hazards and safety precautions applicable to the work. Considerable knowledge of training and supervising techniques, and employee policies and procedures. Considerable knowledge of labor relations and applicable contracts.
- Ability to work with high voltage equipment.
- Ability to supervise power plant operators, tradespeople, and others in the operation and maintenance of the power plant and related systems.
- Ability to keep accurate records and prepare reports of power plant operation, power and water usage, and costs.
- Ability to detect operating defects and faults.
- Ability to monitor and evaluate program and organizational performance in order to assess efficiency and effectiveness.
- Ability to maintain work schedules and uphold work standards.
- Ability to communicate effectively with others, both verbally and in writing.
- Ability to maintain favorable public relations.

4.3. Working Conditions:

- Some jobs require an employee to work in an environment that involves exposure to unpleasant loud sounds and noxious fumes and odors.

- Some jobs require an employee to be exposed to hazardous work environments.
- Some jobs require an employee to work outdoors as well as in an office.

4.4. Physical Requirements:

- The job duties require an employee to bend, reach, stoop, stand and/or walk for extended periods.
- The job duties require an employee to lift and/or move heavy objects.

4.5. Education:

The minimum degree required is an associate's degree in engineering technology or an equivalent of seven years of experience in power plant operation.

4.6. Experience:

Hydroelectric plant technicians need a combination of education, on-the-job training, and experience. Candidates with strong computer and technical skills are preferred.

5. Foreman/Supervisor

5.1. Job Responsibilities:

Accomplishes department objectives by supervising staff; organizing and monitoring work process.

5.2. Job Duties:

- Maintains staff by orienting, and training employees; developing personal growth opportunities.
- Accomplishes staff job results by coaching, counseling, and disciplining employees; planning, monitoring, and appraising job results; enforcing policies and procedures.
- Maintains safe and healthy work environment by establishing and enforcing organization standards; adhering to legal regulations.
- Completes operations by developing schedules; assigning and monitoring work; gathering resources; implementing productivity standards; and resolving operations problems.
- Controls expenses by scheduling expenditures; monitoring variances; implementing corrective actions.
- Provides quality service by enforcing quality and customer service standards.
- Maintains professional and technical knowledge by attending educational workshops.
- Contributes to team effort by accomplishing related results as needed.
- Receive complaints and resolve problems
- Maintain timekeeping and personnel records
- Pass on information from upper management to employees and vice versa

5.3. Requirements:

- Proven experience as supervisor or relevant role.
- Familiarity with company policies and legal guidelines of the field.
- Ability to learn a variety of job descriptions.
- Excellent communication and interpersonal skills.
- Outstanding organizational and leadership skills.
- Diploma/Certificate in first line management or relevant field.
- High school diploma; BSc/BA in management or relevant discipline will be considered an advantage.

6. Maintenance Crew

6.1. Job Duties:

- Operation of large equipment: Backhoes, dump trucks, road graders, front-end loaders, tractor mounted weed mowers, dozers, and excavators.
- Job tasks require physical strength in both lower and upper body.
- Conditions are mostly rough gravely roads.
- Equipment job tasks require long hours of sitting while moving control levers with a lot of back and neck movement while looking backwards in tight spaces to load and move dirt and gravel.

6.2. Job Tasks:

Some physical demands are listed that an employee may engage in. However, this may not be a comprehensive list.

- Twisting of torso, hips, and neck are very common.
- Using a shovel to move dirt.
- Lifting and laying pipe of all sizes, setting slings, chokers, and chains.
- Removing trees from canal banks using chainsaws.
- Lifting and holding equipment on steep slopes.
- Removing debris from canals with weed hook; weed hooks are long-handled tools with a hooked head on the end for removing debris from canals and crossings. These poles can range from 8' to 16' in length and have a lot of extended weight. With added debris, such as water soaked weeds, this requires a lot of twisting at the waist and shoulders to remove debris from waterways and structures.
- Building forms for concrete work. This can be done in many different conditions.
- Lifting above one's head and heavy lifting up to 100lbs of material and equipment.
- Structure repairs: patching of concrete structures, using many hand tools, such as, hammers, hammer drills, jackhammers, and pry bars.

- Headgate replace and repair: Headgates are metal frames with a gate located in the middle of waterways. These require repairs and replacement over time. This job task requires heavy lifting both to remove and replace the structure.
- Painting: Many types of structures require constant maintenance this requires working on ladders, scaffolding, cleaning and prepping surfaces for coatings. Work is demanding, often occurring above one's head, for long lengths of time.
- Jobs will change from day to day. Tasks are based on workload and seasonal requirements. This outline may not mention all jobs an employee may be asked to perform.

7. Ditch Rider

7.1. Job Duties:

- The ditch rider shall measure and record the amount of water being delivered over every weir every day of the week.
- All gates shall be under the direct control of the ditch rider and, if necessary, should be locked to maintain that control.
- All water must be charged over the weir at which it is delivered. The ditch rider will not be allowed to charge or pro-rate water to any other farm. Ditch riders should deliver water within a timely fashion.
- Maintain a good, legible set of records. Entries should be made when water is delivered.
- The ditch rider is required to maintain his ride in such a manner as to a prompt, efficient delivery of water.
- The ditch riders job includes driving down the O&M roadways watching for any problems with both upstream and downstream embankments, such as seepage, leaks, gopher holes and report any problems to maintenance foreman or water master immediately.
- The ditch riders shall remove and burn, if possible, all weeds, and debris from trash racks and any debris that may blow into the canals, laterals and drains under his jurisdiction.
- The ditch rider shall always keep on the alert for signs of gophers and muskrats. He will backfill any holes which appear to be dangerous. He shall maintain a set of traps and/or poison to catch gophers burrowing in the ditch banks.
- The ditch rider shall remove the check boards when it is not necessary to check the water for delivery. Thereby, preventing silt from accumulating and causing excessive seepage.
- The ditch rider shall help with noxious weed control by spraying their ditches and lateral and by using other methods around weirs and head gates as needed.
- The ditch rider shall maintain weir pools and keep weirs free of weeds, excessive silt and trash which would prevent obtaining accurate water measurements. The ditch rider will make notes of noxious weed patches, aquatic weed growth and other maintenance work which needs to be performed by the crew and report them to the maintenance foreman.

- During the irrigation season the hours required may vary considerably during periods of high winds and/or heavy rains.
- On normal days a ditch rider should establish a schedule, which will permit the water users to know about the time you can be contacted at their delivery. It is advisable at times to ride your route in reverse order thus discouraging tampering with water deliveries.
- During the winter Ditch Riders are assigned to the maintenance crew.

Attachment E

Locations of Flow Measurement Devices

Flow Measurement Schematic Abbreviations

EM – Electric Meter

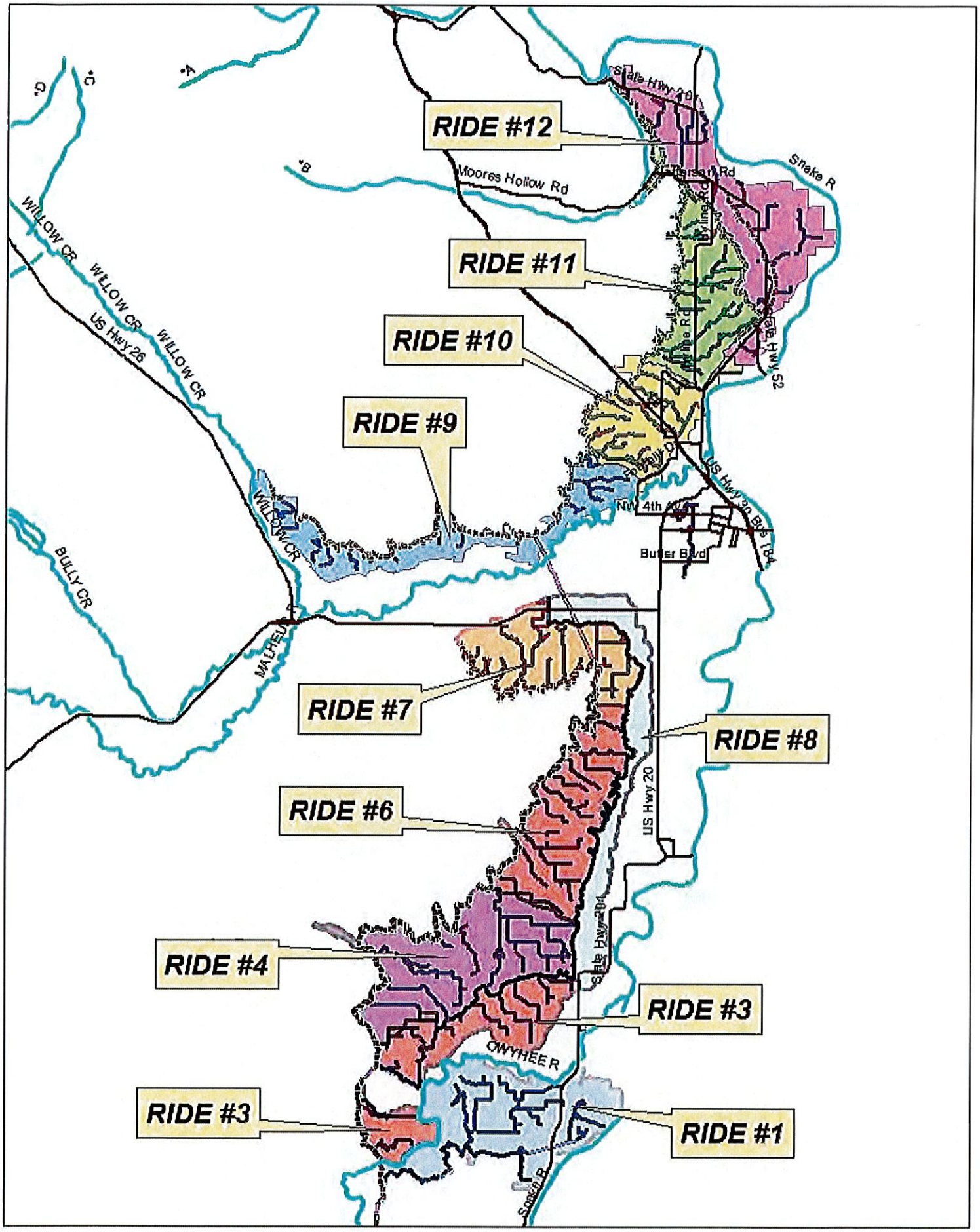
FM – Flowmeter

HG – Headgate

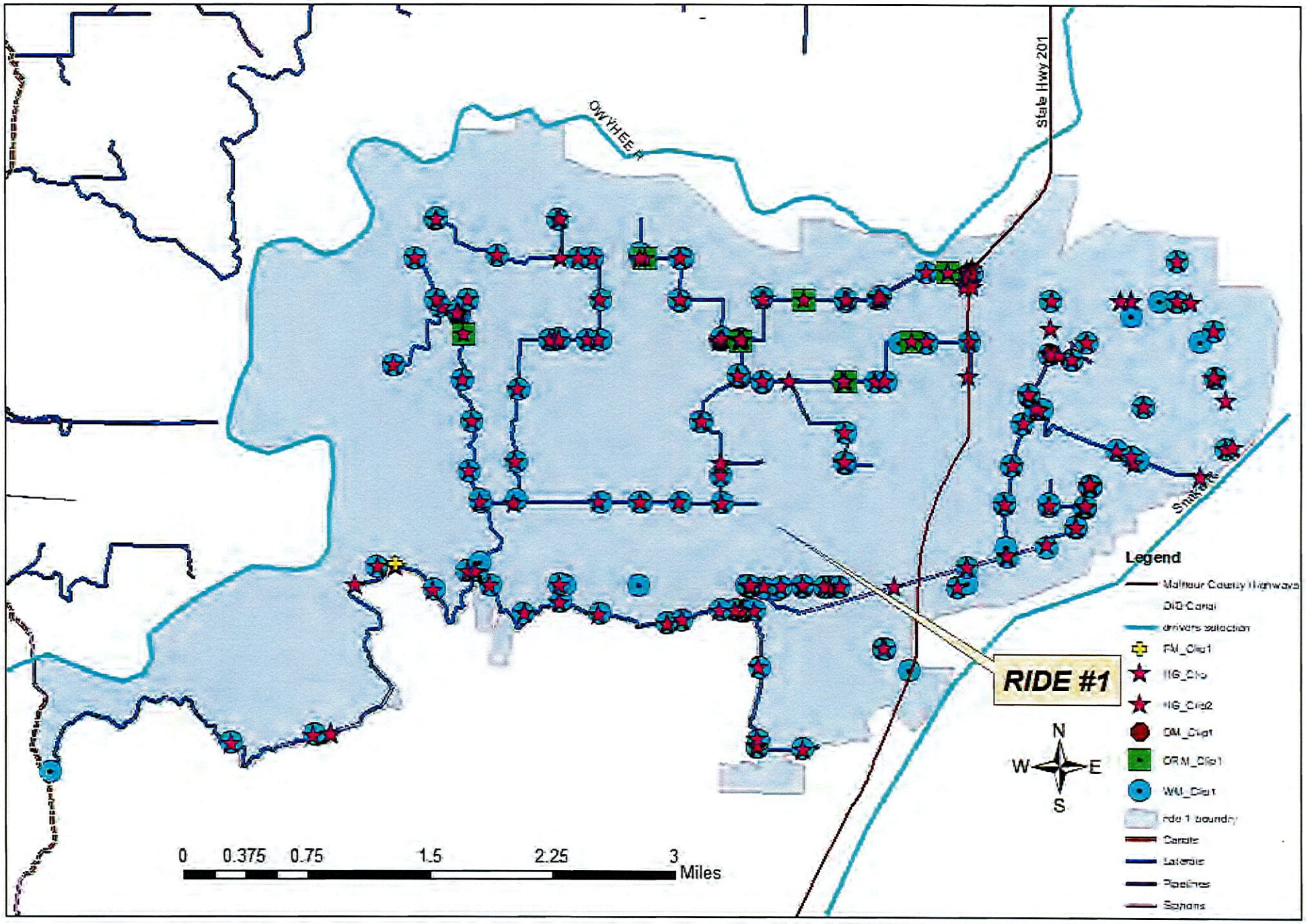
OM – Other Meter (Bubbler Fountain, Parshall Flume or Ramp Flume)

ORM – Orifice Meter

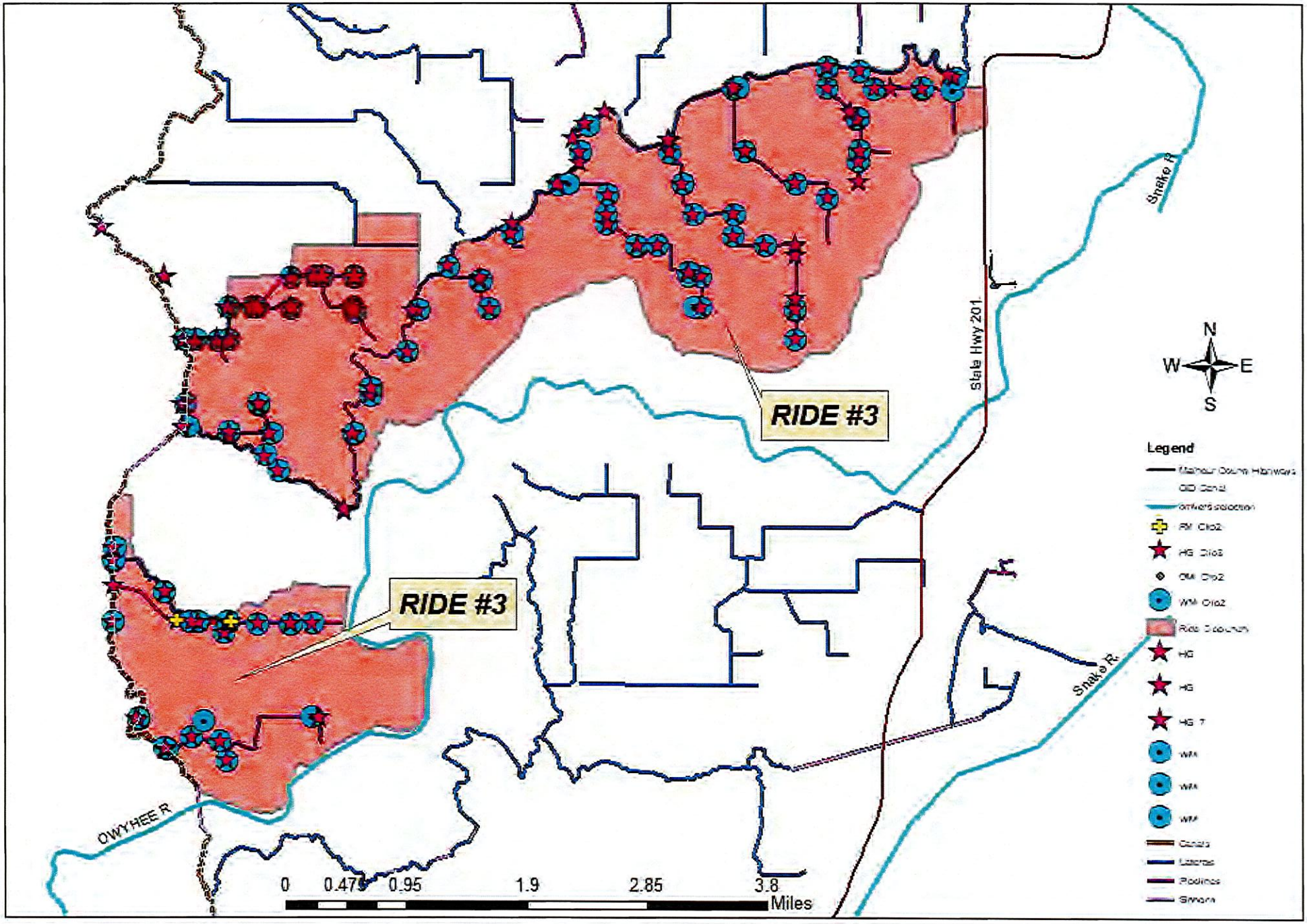
WM – Weir Meter



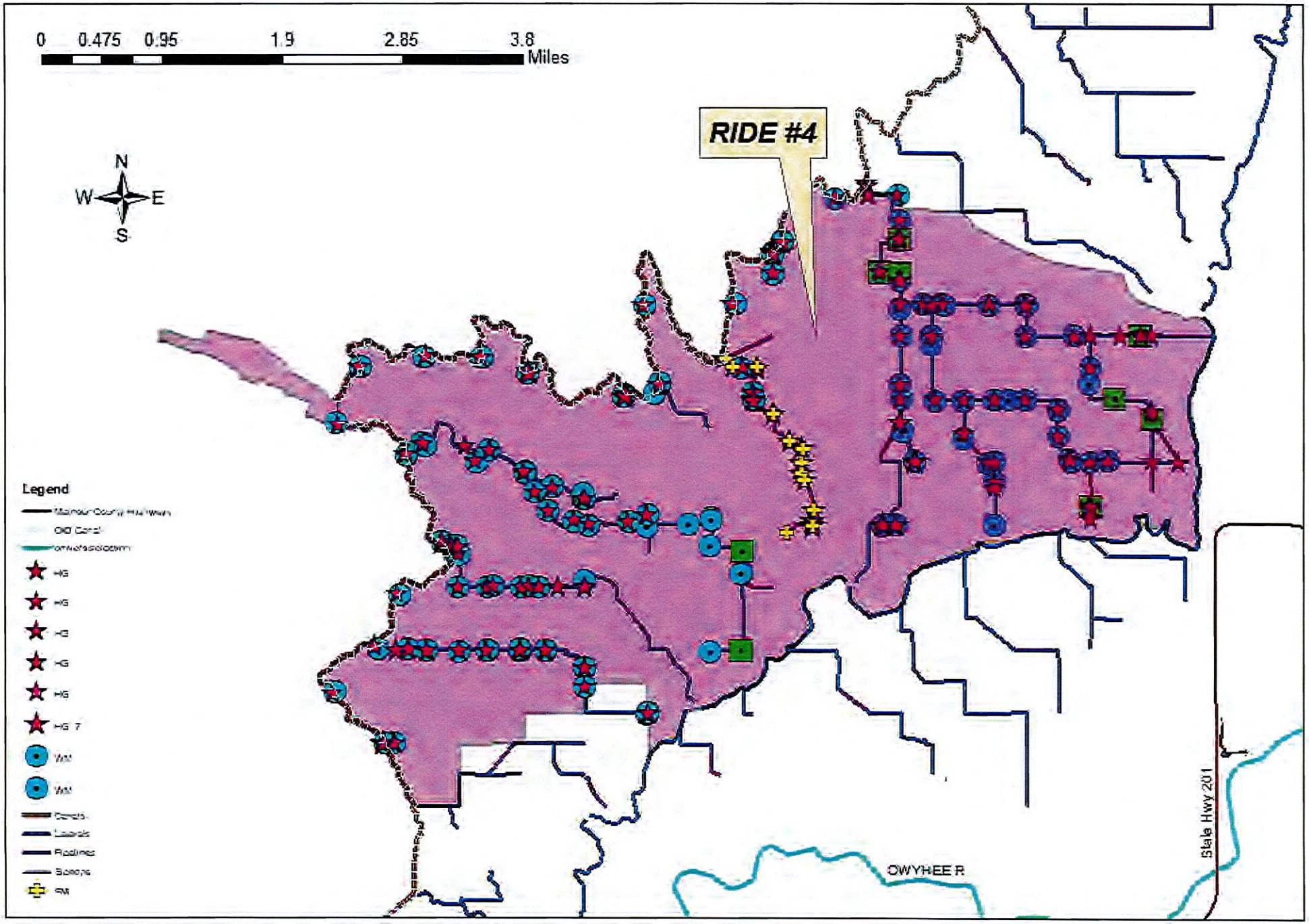
Owyhee Irrigation District Geographic "Ride" section



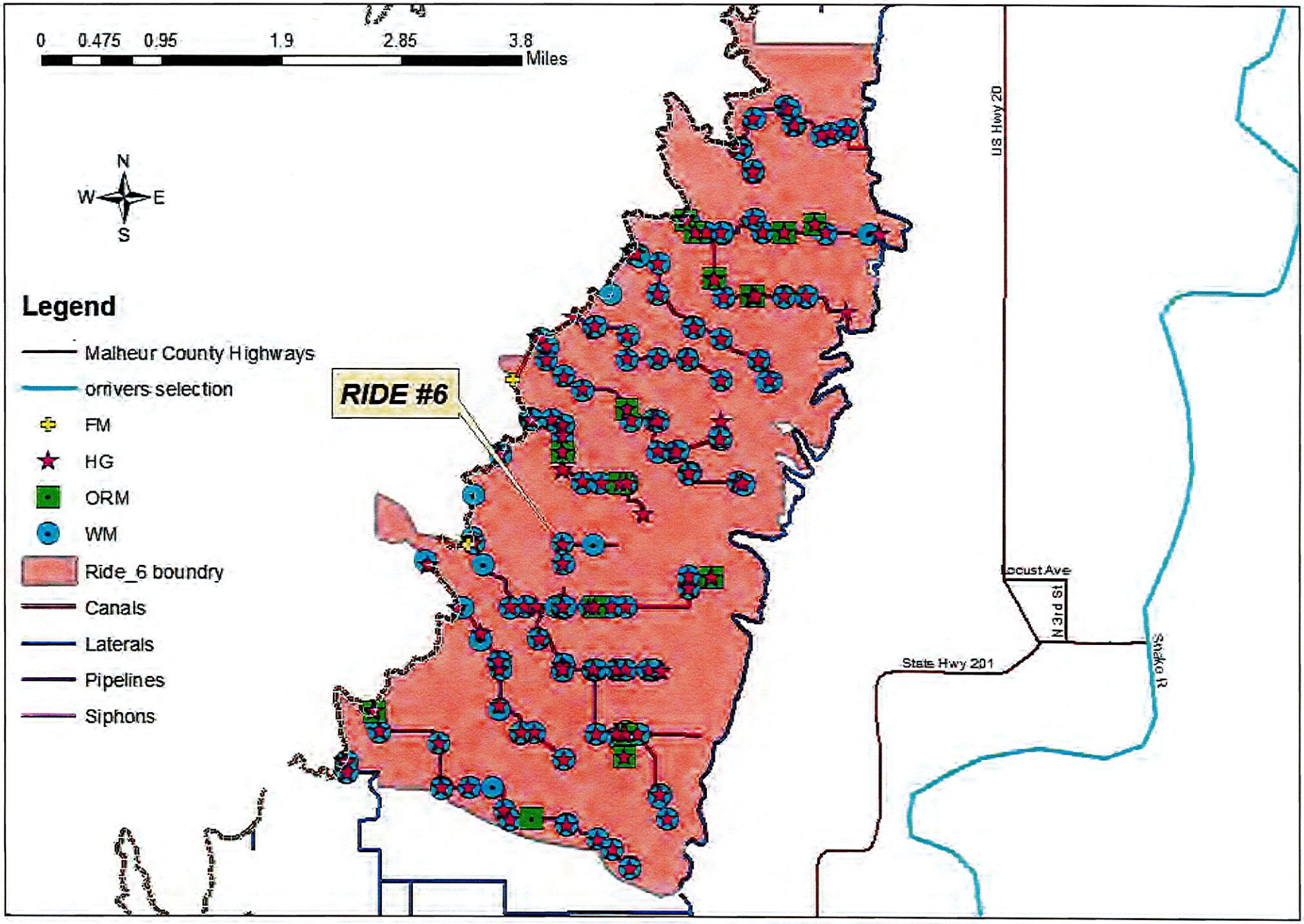
Ride #1 Headgates, flowmeters, orifice meters and weirs.



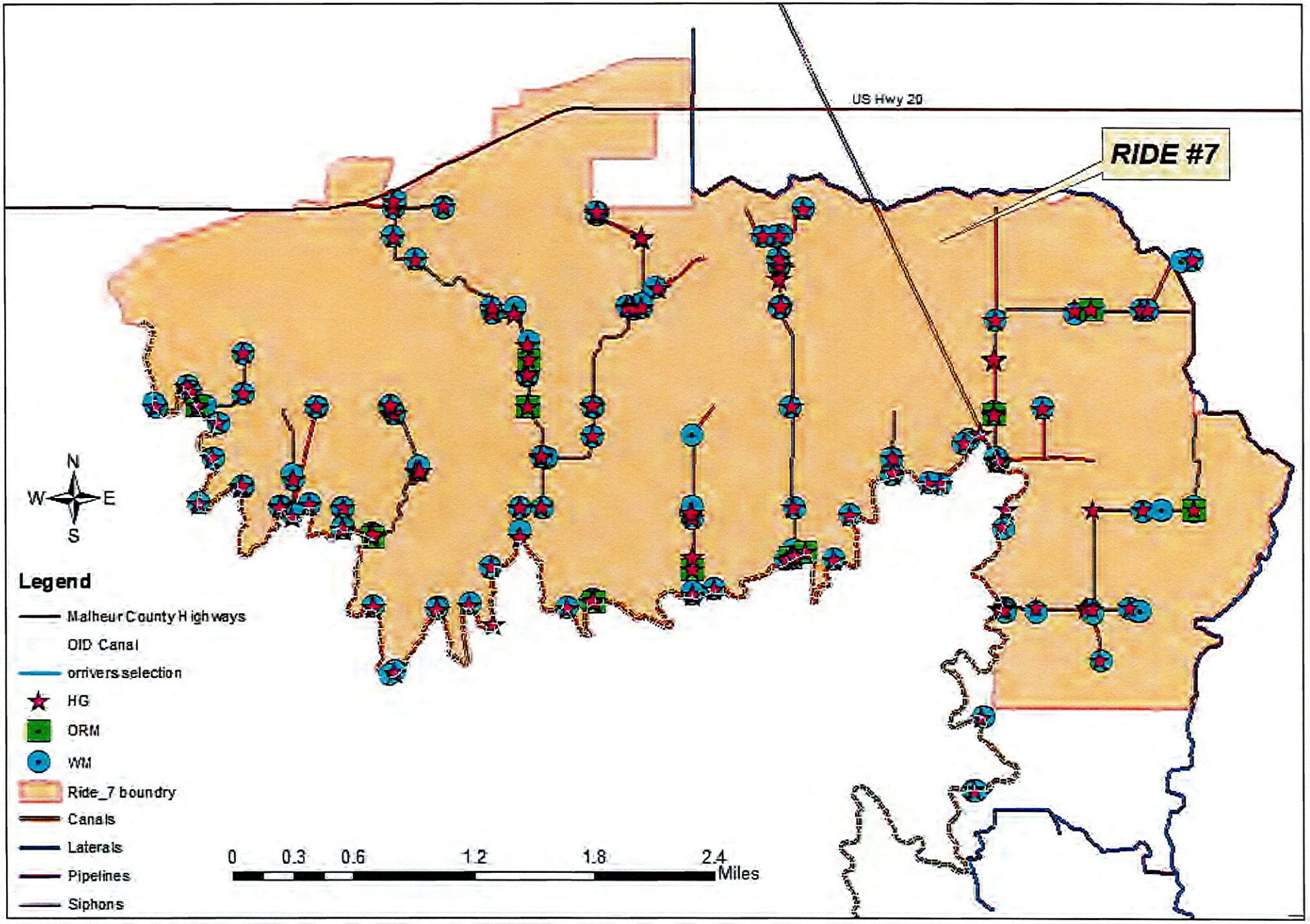
Ride #3 Headgates, flowmeters, orifice meters and weirs.



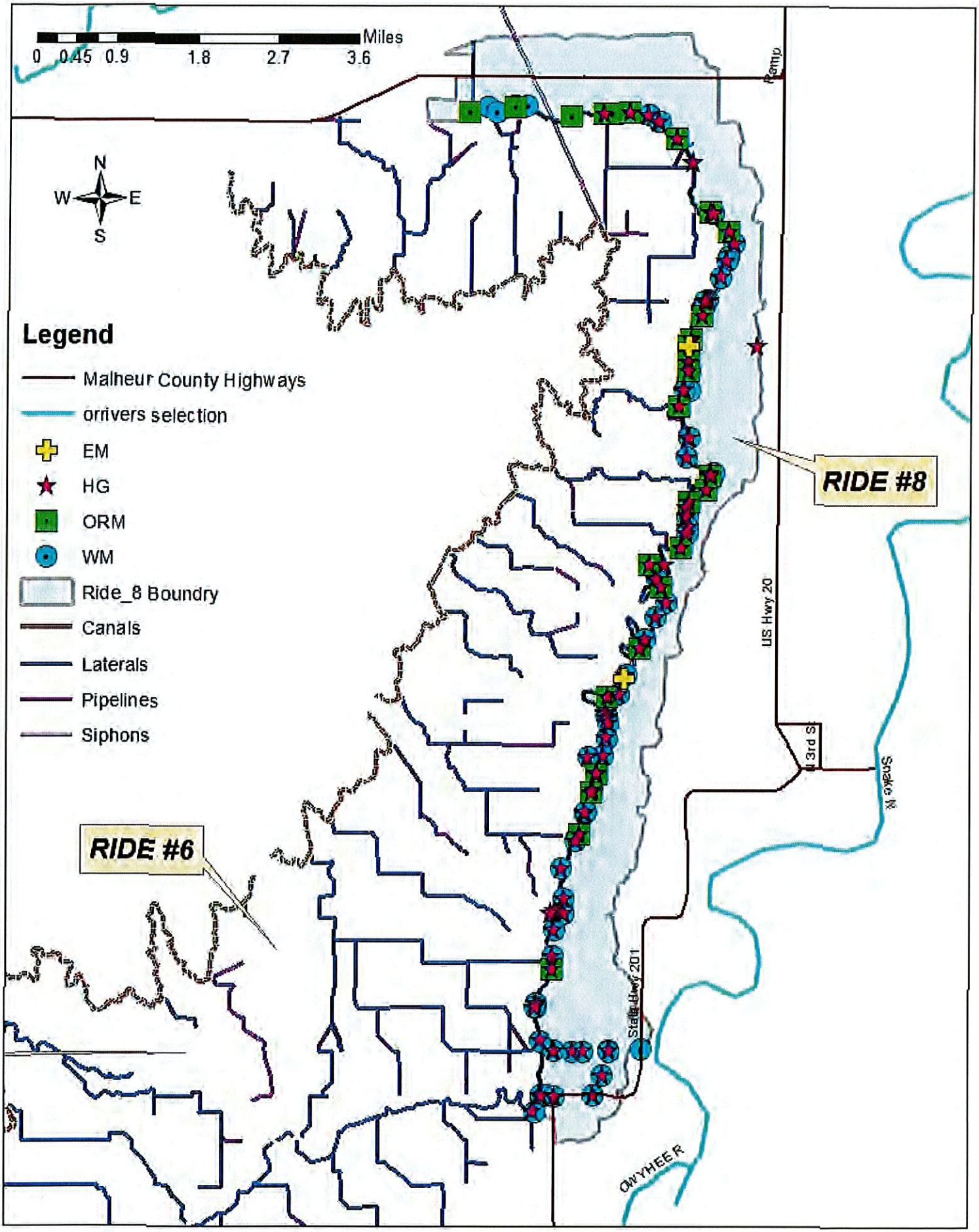
Ride #4 Headgates, flowmeters, orifice meters and weirs.



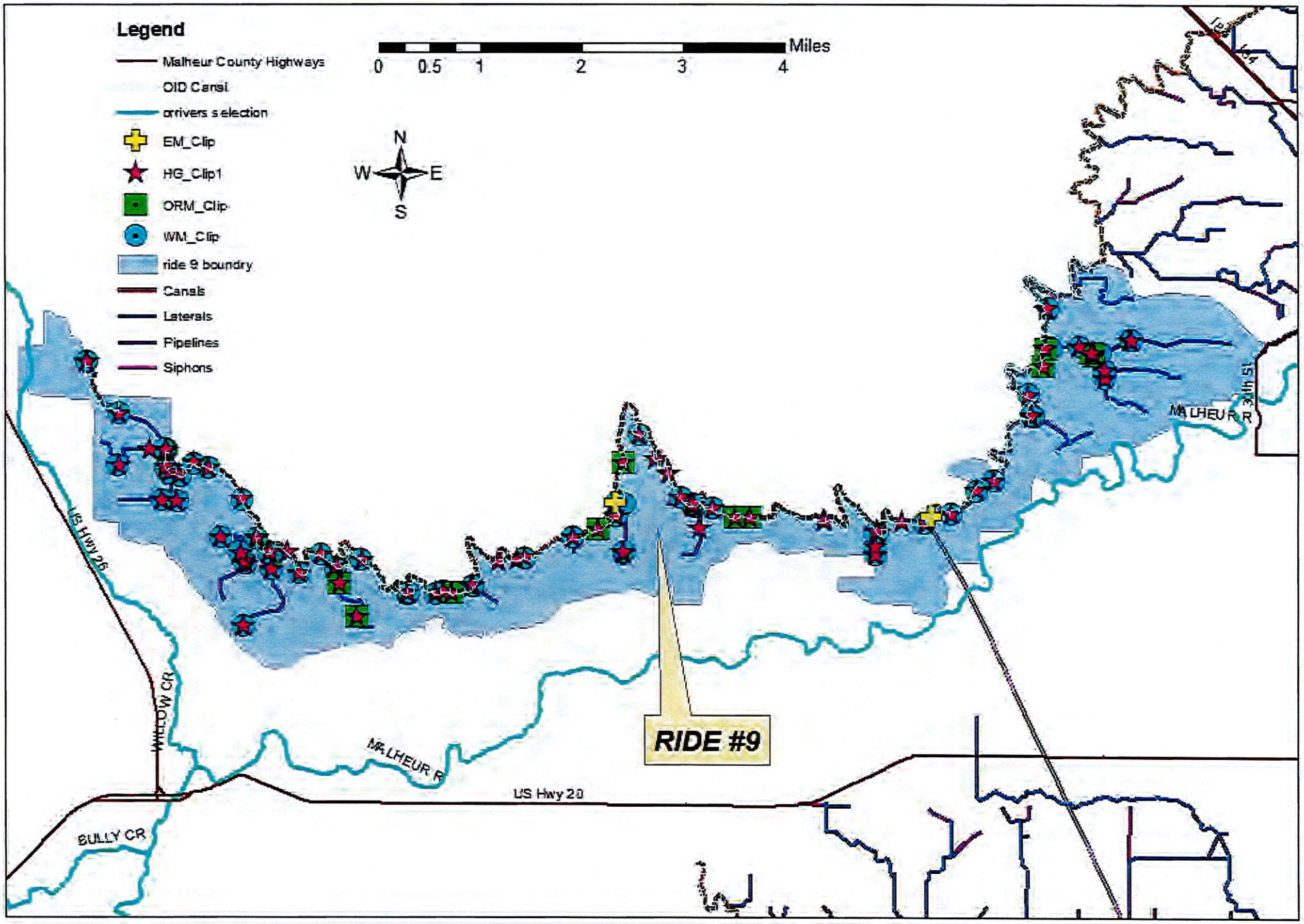
Ride #6 Headgates, flowmeters, orifice meters and weirs.



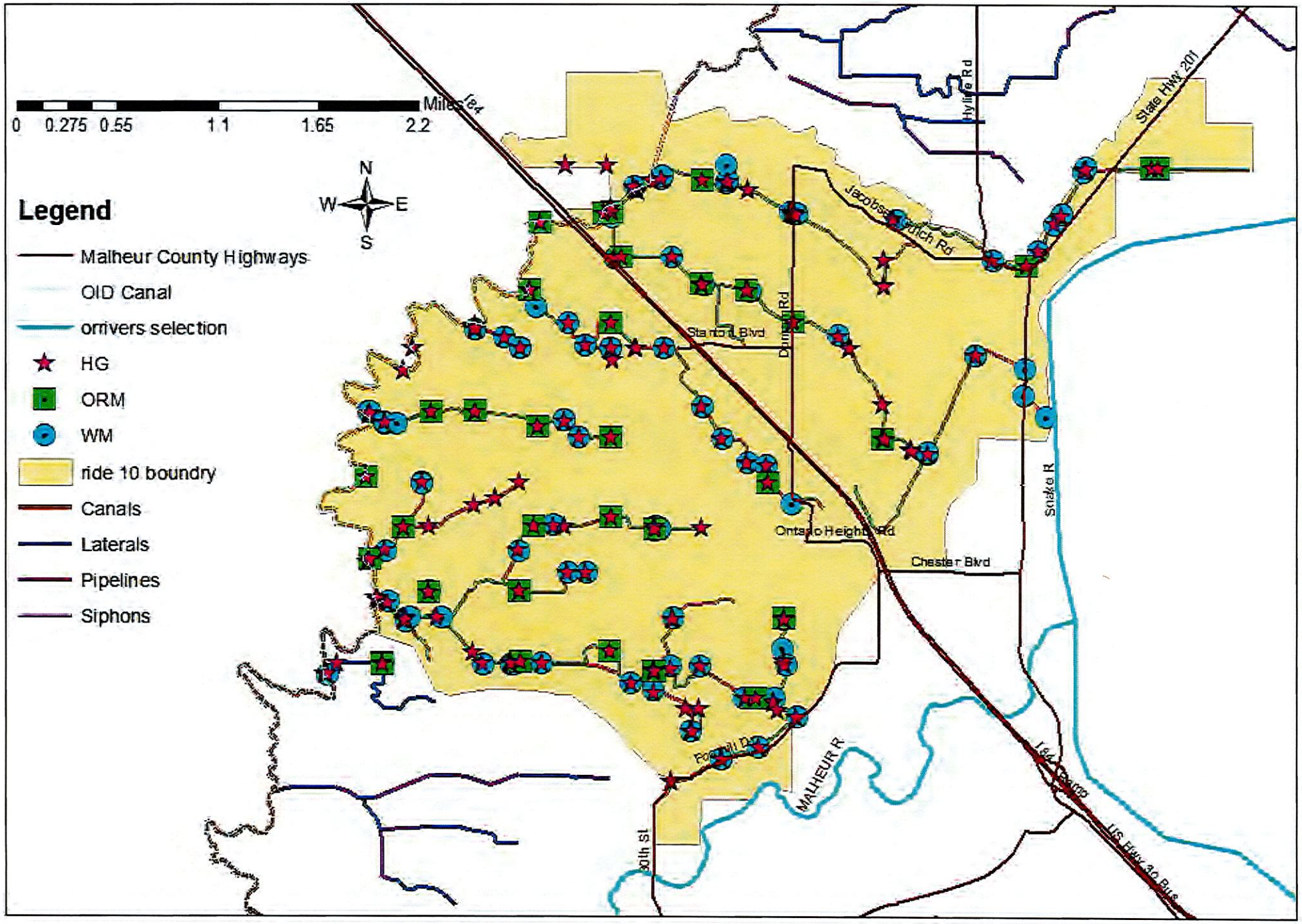
Ride #7 Headgates, flowmeters, orifice meters and weirs.



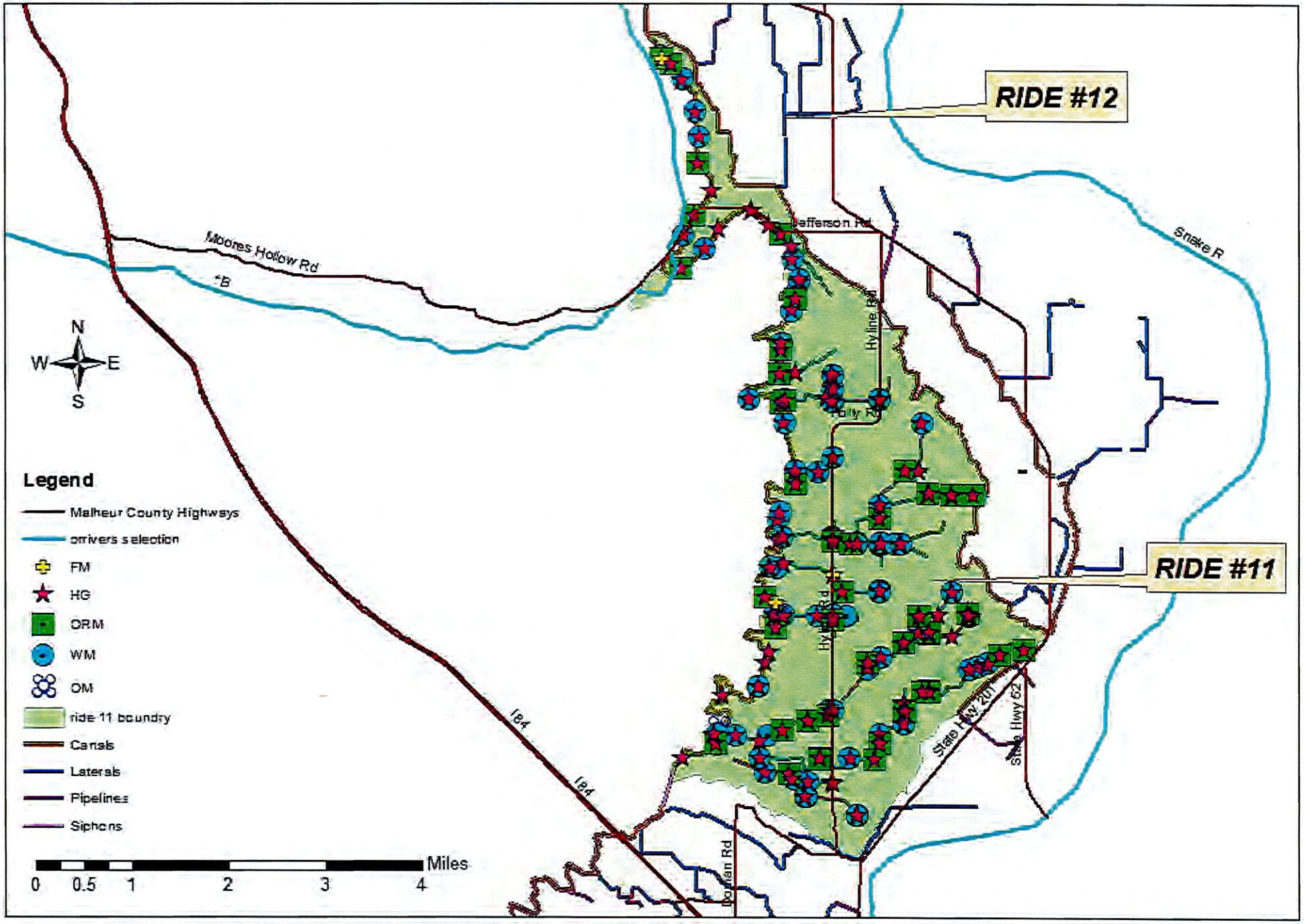
Ride #8 Turnouts



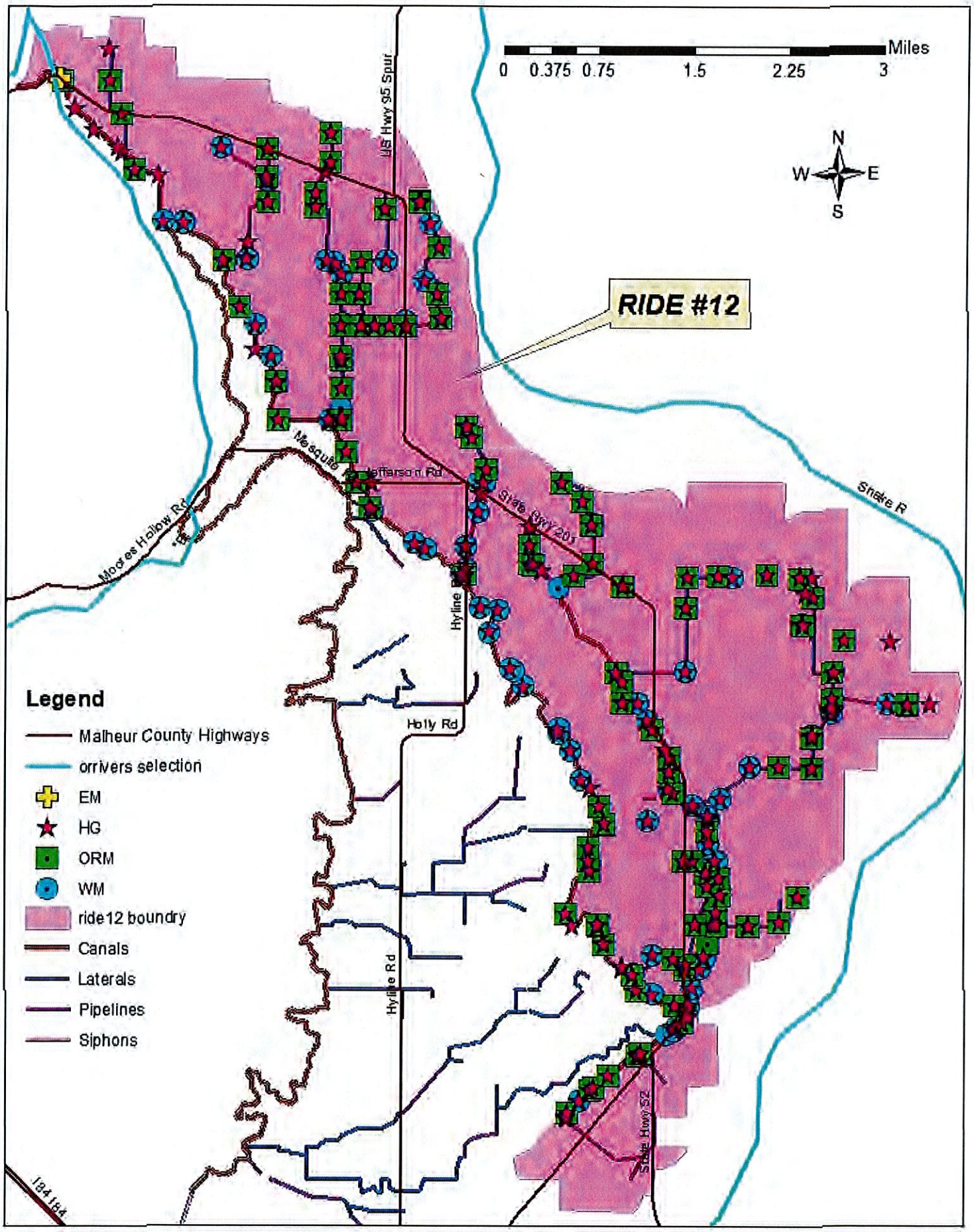
Ride #9 Headgates, Flowmeters, Orifice meters & Weirs



Ride #10 Headgates, Flowmeters, Orifice meters & Weirs



Ride #11 Headgates, Flowmeters, Orifice meters & Weirs



Ride #12 Headgates, Flowmeters, Orifice meters & Weirs

Attachment F
Request for 20-Year Extension for the Owyhee Reservations

Oregon
Kate Brown, Governor

Department of Agriculture
635 Capitol St NE
Salem, OR 97301-2532

May 31, 2016

Tom Byler, Director
Water Resources Department
725 Summer Street NE; Suite A
Salem, Oregon 97301

Dear Director Byler:

The Department of Agriculture (ODA), in accordance with OAR 690-079-0060, requests a 20-year extension of the terms for the following reservations of unappropriated water for future economic development in agriculture:

- **Owyhee Reservations (OAR 690-511-0110):**
  Sixty thousand (60,000) acre-feet of unappropriated water of the Owyhee River and tributaries are reserved.

Application information called for in the form, Request for Extension of Reservation, is provided for the Owyhee Reservations. Please contact Margaret Matter if additional information is needed for consideration of this request.

The original applications for reservations were approved in the 1990's and since that time, changes in Oregon have increased the likelihood of realizing water storage projects, for example:

- New public and private programs for planning, technical assistance and funding for water resources projects;
- Biological opinions and conservation plans for anadromous fish have been completed;
- Over a decade of prevailing dry conditions followed by extreme drought, and effects of climate change have underscored the need for additional storage to help mitigate effects of more intense droughts as well as manage floods;
- With additional staff, ODA has been actively engaged in informing and reminding agricultural communities about their reservations of unappropriated water and the potential opportunities the reservations offer.

The 20-year extensions of reservation terms would provide agricultural water users in the Owyhee Basin with certainty and time to advance and complete vital multipurpose water resources projects.

Sincerely,

Katy Coba
Director

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Request for Extension of Terms for
Reservations of Water for Economic Development
Owyhee Basin Reservations

DATE: May 31 2016

(1) Agency Name and Address

Oregon Department of Agriculture
635 Capitol Street NE
Salem, OR 97301

Contact: Margaret Matter, Water Resources Specialist
Phone: (503) 986-4561
Email: mmatter@oda.state.or.us

(2) Description of the existing reservation and applicable rule reference:

The Oregon Water Resources Department (OWRD) conducted a water availability analysis for the application to reserve unappropriated water in the Owyhee River Basin in 1997. OWRD determined the following quantity of water was available for the reservation, and the Water Resources Commission (WRC) approved the request:

- Owyhee Reservations (OAR 690-511-0110):
  Sixty thousand (60,000) acre-feet of unappropriated water of the Owyhee River and tributaries are reserved.

The original (1997) water availability analysis and a recent report from the OWRD Water Availability Reporting System for the Owyhee Basin are included in Appendix A. Sixty thousand (60,000) acre-feet of water are presumably available at 50% exceedance for storage during the months of February through May. However, the actual timing of availability for out of stream uses may be influenced by instream flow restrictions discussed in OAR 690-033-0120. A new, site-specific water availability analysis will be conducted at the time that an application is submitted for a permit to store water from a reservation.

(3) Discussion of the continued current and future need for the reservation:

Current water resources needs identified are anticipated to be ongoing or similar to future needs. The Owyhee River Basin reservation offers opportunities to meet some water supply needs including for:

- Irrigation [OAR 690-300-0010 (26)]
- Stockwater Use [OAR 690-300 (46)]
- Municipal Water Use [OAR 690-300-0010 (29)]
- Agricultural Water Use [OAR 690-300-0010 (2)]
- Commercial Water Use [OAR 690-300-0010 (25)]
- Domestic Water Use [OAR 690-300-0010 (14)]

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- Aquatic Life Water Use [OAR 690-300-0010 (3)]
- Recreation Water Use [OAR 690-300-0010 (43)]

The reservations of unappropriated water are intended for future economic development in agriculture, and in the Owyhee River Basin that may involve:

(a) Promoting economic sustainability and resilience in agriculture through
- Enhancing water supply reliability (e.g., supplemental);
- Adaptation to changing climate and hydrologic conditions;
- Contingency planning for mitigation and flexibility during prolonged dry and drought conditions.

(b) Supporting agricultural communities in the basin through
- Improved reliability of municipal water supplies that:
  - Promotes community health and well-being,
  - Fortifies property values,
  - Attracts and supports agriculturally related commercial businesses and industries; and
  - Provides recreational opportunities for local and regional communities and visitors, and encourages related business prospects.

Background

The Owyhee Basin in Oregon lies mainly within the borders of Malheur County. The area has rich, fertile soils and favorable climate conditions for agriculture, and good, although highly variable, water supplies that support diverse and productive agriculture and ranching in the region. Crops raised on irrigated farms include onions; sugar beets; a variety of grains; potatoes, beans, sweet corn, alfalfa seed; hay and pasture. Irrigation also supports dairy production, and raising beef cattle, buffalo, and other livestock.

Agricultural is foundational to the economy of Malheur County, with farm gate values exceeding $370 million, and generating over $1 billion dollars from related sales, processing, packing and services, according to Oregon State University (OSU Extension, OAIN, 2013; http://oain.oregonstate.edu/EconInfo/sr790-2013.pdf). But robust agriculture depends on ample, reliable water supplies, and annual flows of the Owyhee River are highly variable. Reservoir storage and irrigation are key factors in ample and more reliable water supplies for productive agriculture.

Owyhee, Warmsprings and Vale irrigation districts are the three major water projects in Malheur County. The irrigation districts provide most of the water to about 256,000 cultivated acres in the area, mainly on family farms. Other smaller irrigation districts also operate in the area, including Old Owyhee Ditch Improvement District and Ridgeview Irrigation District/South Board of Control. The irrigation districts depend on one another through agricultural use of water and infrastructure. For example:

(a) Irrigation water is delivered by one irrigation district to other districts;
(b) Some smaller districts are located within larger irrigation districts; and

(c) Irrigation return flows from one district may become part of the irrigation supply for the next district.

The water arrives primarily in the form of snow during the winter and early spring. The Owyhee River Basin receives 10 inches of precipitation annually on average. Runoff from snowmelt and spring rains is captured in the irrigation district reservoirs for release during the growing season. Some reservoirs, like the Owyhee Reservoir, were designed to store more than one year's supply of water. At the end of a growing season, water remaining in the reservoirs is carried over in storage for the next growing season. Owyhee Reservoir historically carries over 350,000 to 500,000 acre-feet. However more recently, climate and hydrology have changed significantly, and volumes of water carried over to the next season have been closer to 1.5% to 2% of typical volumes (5,250-10,000 ac-ft).

Prevailing climate conditions have been warmer and drier for more than 15 years, resulting in less runoff to fill reservoirs. In addition, warmer temperatures increase crop water demands; evaporative and seepage losses from canals and reservoirs. During the past six consecutive years or more, the Owyhee and Malheur basins have suffered severe to extreme drought. The reservoirs in the Owyhee Basin have failed to refill by significant margins, and any additional irrigation supplies, such as carry over storage, have been exhausted.

Irrigators have experienced previous droughts so they plan accordingly for water-short years. Yet water allotments have been reduced in recent years from 4 acre-feet per acre to about one-third, or 1.3 acre-feet per acre. Some farms even went without water in 2015. Irrigation allotments ended almost a month early in 2015, and irrigations storage in Owyhee Reservoir was nearly empty. Immediate strategies to cope with low water supplies include:

- Fallowing acreage to save water to use on other crops;
- Planting less water consumptive crops (e.g., wheat instead of onions); and
- Planting crops that mature earlier (e.g., corn).

Up to 30% or more of irrigated acreage was fallowed each year for the past six years in the Owyhee Basin. That equates roughly to annual farm incomes reduced by approximately 30% annually for the duration of the drought.

Cumulative effects of consecutive years of extremely dry conditions have taken a heavy toll in crop loss, reduced production, and non-production as a result of crops fallowed to save water. Subsequent economic impacts ripple local and regional economies. For some farmers with junior water rights, effects of prolonged drought were ruinous. Yet many farmers were able to stretch the meager water supplies because they had aggressively invested in water conservation.

Water Resources Conservation

The local irrigation districts and the farmers have partnered in many places to replace formerly open canals with pipes to carry irrigation water. Using pipes to convey water eliminated canal seepage, and allowed the irrigation districts to

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deliver pressurized water to farmers. In turn, approximately 70 percent of the irrigation districts' farmers have installed high efficiency drip irrigation and pivot irrigation systems on their farms, making it possible for the farmers to irrigate the same amount of land far more efficiently than by flood irrigation. Farmers have also begun installing recapture and recirculation systems to collect and contain field runoff, and reuse the water multiple times.

Aggressively implementing technology to better use and manage scarce water resources has allowed many farmers to stay in business despite severe drought conditions. In addition, these changes have improved water quality in the area, minimizing or eliminating nutrient-laden runoff into the Owyhee and Snake Rivers.

With the looming potential that changes in climate and hydrology will lead to more frequent, intense and prolonged periods of drought, it is increasingly important to make further investments in water conservation, reuse and supplemental water storage. This will require commitments to building and maintaining partnerships, such as those in the Owyhee River Basin, that have been built among private industry, government, and conservation groups to bring resources to the table and to invest them wisely.

Changes in Climate

Water requirements of crops, livestock and people increase as temperatures increase (EPA 2015; https://www3.epa.gov/climatechange/impacts/water.html). In order to meet increasing water demands as temperature trends continue to increase into the future, water conservation and storage will also need to increase. Stream temperatures will increase as a consequence warmer temperatures associated with climate change even without diversions from streams and rivers. It is then critically important to anticipate and understand future temperature and streamflow conditions in order to inform management, mitigation strategies and actions to prevent or mitigate effects of high temperatures and low flows on fish species and aquatic ecosystems.

The US Bureau of Reclamation evaluated potential climate change impacts on water supply reliability in the basins in Oregon. They applied results from Phase 3 of the Coupled Model Intercomparison Program (CMIP3, 2007) in their model study. Since 2007, results from the 5th Phase of CMIP (CMIP5) were used to write the 5th IPCC Assessment Report (AR5).

Oregon Climate Change Research Institute (OCCRI; Kathie Dello, personal communications, Sept 2015) provided climate model projections from Phase 5 of the Coupled Model Intercomparison Program (CMIP5) of average monthly temperature changes for summer months during the 2080s (see Table 1). Rising temperatures will increase crop water use, or evapotranspiration (ET), approximately 5% for each degree F increase in temperature, all other factors remaining equal (Wagoner and Revelle 1990; OCCRI 2010). Warming will be highest

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Table 1. Projected Summertime Temperature Increases by the 2080s	
Month	**Temperature Increase (deg F) in Mean Monthly Temperatures**
June	5-9
July	6-10
August	6-10
September	5-10

during summer months (part of the growing season), and summer precipitation is expected to decrease 14%, on average, and shift more into the winter (OCCRI 2010).

Based on the general relationship between increasing temperature and ET, 25%-50% more water may be required during the summer months by the 2080s to raise the same crops grown today on the same acreage. On a daily basis, the estimates may be conservative since maximum daily temperatures during the growing season will have greater immediate impact on crops than mean monthly temperatures.

Livestock water requirements also increase with temperature. The amount of water required varies with age, size and other factors. In general, under heat-stressing conditions, water needs increase 1.2 to 2 fold for each 10 deg F increase in temperature (Beede 1994; Tennessee Extension Service 2015; https://extension.tennessee.edu/WebPacket/Pages/WP-2015-03-CattleWatering.aspx).

Changes in climate will likely influence drought intensity and duration. The contribution of anthropogenic climate change on drought conditions (e.g., intensity, duration and location) in Oregon has not been fully investigated, but Williams and others (2015) found that effects of human-influenced climate change contributed 8-27% to the drought in California during 2012-2014, and 5-18% in 2014. Adaptation to warmer, drier summer conditions, more intense winter precipitation, and winter precipitation falling more often in the form of rain rather than snow in Oregon will require increased capacity to capture and store water, and manage runoff to meet increasing water demands for agriculture, municipalities, agriculturally-related commercial operations, recreation and fisheries.

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(4) Description of actions taken to advance development of the reservation:

Stakeholders in Malheur County, including the irrigation districts, landowners, Malheur County Soil and Water Conservation District, watershed councils; partners from federal, state and local governments and others, formed the Systems Analysis Team over a decade ago to collaboratively address water resources and related challenges as a community. Since water quantity, use and quality issues typically overlap to some extent, members of the Systems Analysis Team are also active members on the Water Quality Local Advisory Councils and related annual reviews of water quality and associated issues. The groups have pursued and secured grants to combine with matched funds and in-kind services for projects to improve water

conservation (e.g., irrigation efficiency improvements, water re-use); best management practices; watershed restoration; water quality and other concerns.

Water supplies in the Owyhee Basin are highly variable, complicating management of water and related resources. The original application to reserve unappropriated water in the Owyhee River Basin, approved in 1997, identified a potential storage site in the Jordan Creek Basin (Appendix A), and included a storage site analysis with a list of other potential water storage sites in the Owyhee and Malheur Basins (Appendix B). A water availability analysis accompanying the application showed limited additional surface water reserves in the Basin. Thus water conservation would be important in meeting water needs. While water conservation can be effective over the long term, recent prolonged dry and drought conditions have underscored the need for supplemental water supplies at times when existing water rights are insufficient to meet crop demands.

Water Resources Conservation

Local irrigation districts and the farmers have partnered to replace formerly open canals with pipes to carry irrigation water. Over the past 10 years, the USBR funded the Owyhee Irrigation District (OID) and South Board of Control with $1.8 million for piping and other improvement projects. OID received an additional $352,000 for pipeline installation. Using pipes to convey water eliminated canal seepage, and allowed the irrigation districts to deliver pressurized water to farmers. Approximately 70 percent farmers in the irrigation districts have upgraded to high efficiency drip and pivot irrigation systems on their farms, allowing farmers to irrigate the same amount of land far more efficiently than by flood irrigation. Farmers have also begun installing recapture and recirculation systems to collect and contain field runoff, and reuse the water multiple times.

Aggressively implementing technology to better use and manage scarce water resources has enabled many farmers to stay in business despite severe drought conditions. In addition, these changes have improved water quality in the area, minimizing or eliminating nutrient-laden runoff into the Owyhee and Snake rivers.

Lidar Mapping

The local irrigation districts were at the forefront of acquiring LIDAR (or lidar, i.e., light detection and ranging) imagery maps of the districts. Lidar maps are high resolution relief maps created by emitting light in the form of pulsed laser onto the earth surface. The distance between the laser light source and the earth surface is measured with high accuracy. Since lidar also filters vegetation, the images reveal tremendous land surface detail, such as natural as well as constructed flow paths, drainage areas, depressions, and other surface features. The information is used to inform decisions on improving conveyance, drainage, irrigation efficiency, water capture and re-use; potential storage sites, and other uses.

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Water Storage Options

To complement water conservation, available water could be stored in Owyhee Reservoir. During drier or drought conditions, water allotments may be reduced, so

the stored reservation water could be used to supplement short water allotments. Potential alternatives for storing available water from the Owyhee Reservations include:

- Raising the height of Owyhee Dam;
- Building a new storage facility; and
- Using accessible subsurface storage.

USBR and OWRD studies evaluated the feasibility of creating additional storage space in Lake Owyhee by increasing the height of Owyhee Dam. The viable option would permit storage of available reserved water in existing Owyhee Reservoir.

Pumped Back Storage and Power Generation
The Owyhee River is also one of several locations recognized for potential pumped storage and power generation that would function as a system of batteries and shock absorbers to balance the volatile, irregular output of the Northwest's burgeoning fleet of wind farms. Available reservation water would be stored and cycled in pumped storage reservoirs in the Owyhee River system for power generation, supplemental irrigation and other beneficial purposes.

Water Quality Uses
A uranium mining operation, the Aurora Mine, is proposed in the Basin upstream of Owyhee Reservoir. After the uranium is leached with sulfuric acid from crushed rock ore, chemical reactions between the acid and crushed rock continue for decades, potentially releasing acid and other harmful substances into the environment. Mercury is naturally occurring in the native substrate of the Owyhee Basin, and natural erosion from snowmelt and rainfall transports uranium downstream in the Owyhee River system. Owyhee Dam and reservoir slow streamflow transport, and mercury associated with sediments accumulate in Owyhee reservoir. Water from the Owyhee reservation may be used to supplement storage in Owyhee Reservoir and maintain low mercury levels.

Aquifer Storage Potential
Other potential options include aquifer storage. The 2009 *Oregon Water Supply and Conservation Initiative: Inventory of Potential Below Ground Storage Sites* showed that the Owyhee Basin Late Tertiary Basalt Aquifers, though not the strongest candidates for storage, had an estimated storage capacity of 33,000 acre-feet.

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Committed Partnerships
Impending effects of climate variability and change will increase drought frequency, intensity and duration of drought, thus it will be increasingly important to continue to make investments in water conservation, reuse and supplemental water storage. This will require commitments, as demonstrated by those in the Owyhee River Basin, to building and maintaining partnerships among stakeholders, private industry, government, and conservation groups to bring resources and ideas to the table and use wisely.

(5) Discussion of challenges to developing the reservation:

Key challenges to developing the reservation of unappropriated water have been:

- Cost of projects and lack of adequate funding for water projects;
- Regulatory requirements;
- Opposition by some non-profit organizations (e.g., some environmental groups);
- National monument designation;
- Sage Grouse conservation issues; and
- Aging water management infrastructure.

The challenging factors can hamper realization of innovative and timely alternatives at scales necessary to achieve reliable water supplies, food security and public health. They also affect ecosystem adaptation to changes in climate and hydrology, and limit sustainable ecosystem services. Addressing environmental requirements and obtaining necessary permits are anticipated to require substantive expenditures of time and money.

Securing sufficient funding for water projects requires considerable time and assurance that water is available for proposed projects. Before proposed projects even begin to proceed, costly mitigation may be required. It is not uncommon that required mitigation is often based on archaic scientific methods and obsolescent data. Although such resource management practices may have been state-of-the-science 20 years ago or more, they may now be out of synch with evolving science, unsuited to local conditions, and may be counter-productive to target species. Often, resource management regulations are also in need of updating.

Even though irrigation districts, landowners and other community stakeholders are interested in innovative solutions, litigation is still a tool used by some organizations to prevent water supply development. Such practices damage stakeholder trust and good will, thereby prolonging efforts and unnecessarily increasing expenditures to achieve resolutions to vital water resources issues.

Finally, most of the water supply and management infrastructure in the Owyhee Basin was built in the early 20th Century, and has lasted beyond its design life. To achieve optimal efficiency in water management, conservation and use, it is necessary to first repair, upgrade and potentially replace of some structures.

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(6) Description of actions that will need to be undertaken in the future in order to develop the reservation:

Necessary actions to undertake in order to develop the reservations of unappropriated water include:

- Establish working partnerships with federal, state and local agencies (e.g., pursue Place Based Planning support and approach);
- Conduct studies and collect other relevant data and information that are necessary to: (a) plan and design projects; (b) negotiate with federal, state and local agencies; and (c) secure project funding.

(7) Information on how the proposal is compatible with overall basin program goals and policies:

The WRC determined in 1997 that the application for the reservation of unappropriated water was compatible with the Owyhee Basin program goals and policies, and subsequently approved the reservation. The reservations were subsequently adopted into the Owyhee Basin Program [OAR 690-511-0110]. The proposal to extend the term of the Owyhee Reservations remains consistent with the Owyhee Basin Program goals and policies. Landowners in the Owyhee Basin have beneficially used water for over a century for multiple purposes including irrigation, livestock, domestic and commercial purposes; hydropower generation, fish and wildlife; and recreation. These beneficial uses are part of integrated operations, and are consistent with goals of the broader agricultural and cultural communities. As agriculture continues to incorporate technology into operations through modernizing facilities; upgrading aging infrastructure and increasing water and energy use efficiencies, they attain the highest and best use of water by 21st Century standards.

(8) Identification of affected local governments:

Oregon Department of Agriculture (ODA), with assistance from irrigation districts, soil and water conservation districts, and watershed councils in the Owyhee Basin developed a list of affected local governments in the Basin (see Appendix C). ODA notified affected local governments by mail (May 31, 2016), and copies of the notification letter will be retained on file at ODA and OWRD, and are included in Appendix C.

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(9) Copies of letters notifying each local government of the intent to file an extension request that includes a description of the reservation and statement that an opportunity to provide comment will be provided at a future date:

The letter notifying each local government of the intent to file an application to extend the term of the Owyhee Reservation included a description of the reservation, and a statement that an opportunity to provide comment will be announced at a future date. In this case, a date, time and location of a hearing where the public would have an opportunity to comment on the Owyhee Reservations

extension application was included. A copy of the letter was mailed on May 31, 2016 to affected local governments in the Owyhee Basin, and is included in Appendix C, and will be retained on file at ODA and OWRD.

(10) Description of expected economic benefits:

Economic benefits from developing water from the Owyhee Reservations are expected to accrue from:

- Increased production in years that are not water short, as well as
- Reduced losses in drier conditions;
- Hydropower generation;
- Flood control; and
- Recreation.

In 2016 dollars, original estimates of overall annual economic value of the reservation request are:

- $6.5 million in increased agricultural crop production;
- $17.7 dollars in increased processing, marketing and transportation of products; and
- $14.3 dollar increase in land values due to the many improvements.

The analysis does not evaluate other important benefits such as flood control, tourism and flatwater recreation. For comparison purposes, the Owyhee project provided an accumulated $33,010,000 in flood control benefits from 1950 to 1998. Recreational opportunities provide benefits that may be derived from:

- An excellent warm-water fishery;
- Boating (recreational and fishing);
- Excellent waterfowl hunting;
- Surrounding hills and canyons are home to upland game birds;
- Hiking, camping and backpacking;
- Wildlife and water foul viewing (e.g. wild horses, bighorn sheep, golden eagles, pelicans, and cormorants); and
- Bird watching.

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Many of the recreational activities have associated economic benefits to the local community as well as the region including sales of food, beverages; gear, equipment, gasoline; groceries; souvenirs and gift; boat and other recreational vehicle rentals; lodging; and other services.

Similar to area agriculture, municipalities and businesses also depend on a sustainable water supply, and may benefit from access to the Owyhee Reservations. An uncertain municipal water supply deters prospective residents from relocating to the area, thereby suppressing the housing market and impeding economic vitality in the community. Improving reliability of water supply would help attract new residents and business to the area, which in turn would support local economic activity. Maintaining a reliable water supply therefore contributes to job growth and

retention, and increases economic activity through processing and packaging; transportation and handling; marketing, management of agricultural products, and through local tax revenues.

Economic Impact of Loss Prevention

Irrigation districts in the Owyhee Basin have been increasing efficiencies of water management, control, conveyance, and irrigation application for decades. They have also been partners in restoration and other conservation projects in the Basin. The restoration projects have been effective in reconnecting the hydrologic system, which in turn has improved streamflow reliability and mitigated impacts of drought in the system.

Restoration
Owyhee Watershed Council (OWC) has partnered with the Oregon Watershed Enhancement Board (OWEB) for more than 15 years to secure $7,873,764 for Owyhee Basin restoration work. Two hundred and six (206) large and small restoration grants have been implemented throughout the Owyhee watershed during that time.

In addition to OWEB, cost-share partners on projects were private landowners, irrigation districts, the Natural Resources Conservation Service (NRCS), and Malheur County Soil and Water Conservation District (SWCD). They collaboratively worked to improve watershed process and function. Most of the OWC focus has been on irrigation system improvements within the Lower Owyhee Basin area to improve water quality and irrigation distribution efficiency. OWC also worked in the watershed to improve wildlife habitat, rangeland and riparian areas in the upper reaches of the watershed. Another important function of the OWC has been to provide outreach to watershed residents on many different topics and natural resource restoration priorities.

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Irrigation Efficiency and Best Management Practices
Most recently and specifically related to irrigation, the OWC partnered with landowners, irrigation districts, the Natural Resources Conservation Service (NRCS) and Malheur County Soil and Water Conservation District (SWCD) to focus on irrigation improvements and implementing on-farm best management practices (BMP) related to water quality and water use efficiency in five priority geographical areas. Projects include:

(a) *Cow Hollow*: 1 Pressurized lateral system, and converted approximately 400 acres from flood to sprinkler or drip systems;
(b) *Black Jack Butte*: 2 Pressurized lateral pipeline systems, and converted approximately 826 acres from flood to sprinkler or drip systems;
(c) *Newell*: 1 Pressurized lateral pipeline system; and converted approximately 319 acres from flood to sprinkler or drip systems;
(d) *Fletcher*: 1 Pressurized lateral pipeline system; and converted approximately 744 acres from flood to sprinkler or drip systems;

(e) *Twilight.* Currently under implementation; 1 Pressurized lateral pipeline system; affecting 850 acres in a priority area.

It is important to note that the acreages listed above are only those converted from flood to sprinkler through OWC cost-share program. There have been many landowners within and outside of the priority areas who have made on-farm irrigation system management changes with their own funding, or have worked with another entity to implement projects. It is also important to note that the acreages and projects listed above are examples of cost-share projects with OWEB support, and thus represent only portion of all the work that has been completed in the region.

Economic Effects of the 2015 Drought—Mitigative Effects of Efficiency & Management

The University of Idaho Owyhee County Extension Service estimated impacts of the drought on irrigated lands of the Owyhee and Vale Projects (i.e., Owyhee Irrigation District, Vale Oregon Irrigation District, and Warmsprings Irrigation District) for 2014-2015. Total Owyhee and Vale project area affected by the drought was 149,384 acres. The majority of the crops grown in Malheur County during that time were feed crop, since less they require less irrigation water than high value crops. Nonetheless, high value crops, such as mint, onions, sugar beets beans, and seed crops were also grown in drought affected areas. Growers moved the locations in which they planted high value crops to areas where the crops would receive the most water. Economic losses due to acres left fallowed and reductions in yield, ranging between 20% and 40% for the Owyhee Project and the Vale Project:

- Owyhee Project: $50,275,650
- Vale Project: $43,102,780
- Total: $93,378,430.

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Although the total loss to agriculture in 2015 was high, the irrigation districts believe the losses would have been much higher had the districts not made high investments in water conservation, system and management improvements, as well changes in types of crops planted (e.g., lower water demands or earlier maturing crop types), and patterns in cropping.

When water from the Owyhee Reservations is available, the water supply may serve as a supplemental supply option in a comprehensive water management and use strategy to mitigate impacts of prolonged dry and drought periods, and effects of changing climate and hydrology.

(11) Information on whether the reservation exists above or within a Scenic Waterway:

In 1984, Congress designated 120 miles of the Owyhee River system in Oregon as a wild river component of the National Wild and Scenic River System.

The designated "wild" reach is:

- From Three Forks downstream to China Gulch.
- Crooked Creek to the Owyhee Reservoir.
- The South Fork from the Idaho-Oregon border downstream to Three Forks.

(12) Statement that explains how the reservation and proposed water use(s) will promote the beneficial use of the water without waste:

Land owners, irrigation districts, Malheur County SWCD, watershed councils and other stakeholders propose that available water from the Owyhee Reservations be used for multiple beneficial uses as described in question (2) and discussed in question (3). Since water resources in the Owyhee Basin are limited, landowners in the Owyhee Basin have been aggressively implementing water conservation measures (e.g., improved conveyance and on-farm efficiencies and re-use), and investigating options for new reserves of water to:

(a) Prevent or mitigate effects of prolonged dry and drought conditions;
(b) Help re-establish balance between irrigation water distribution and on-farm water needs that develop as a consequence of increased efficiencies in irrigation water conveyance and on-farm application that reduce irrigation return flows that historically contributed to irrigation supplies to downstream farmers or other irrigation districts;
(c) Increase recreational opportunities;
(d) Encourage agricultural and related business and industry.

Additional sources of available water, such as from the Owyhee Reservations, would supplement irrigation supplies during dry and drought conditions, and may help re-establish balance between irrigation water distribution and on-farm water needs. As agriculture continues to modernize facilities; upgrade aging infrastructure; increase water and energy use efficiencies and develop the Owyhee Reservations to increase water supply reliability and promote economic sustainability in the Basin, they attain the highest and best use of water by 21st Century standards.

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Appendix A

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Detailed Reports for Watershed ID #31111001

OWYHEE R > SNAKE R - AT MOUTH
OWYHEE BASIN

Water Availability as of 5/15/2016

Watershed ID #: 31111001 (Map)
Date: 5/15/2016

Exceedance Level: --
Time: 6:35 PM

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	463.00	714.00	-251.00	0.00	0.00	-251.00
FEB	1,220.00	1,090.00	131.00	79.40	0.00	51.70
MAR	2,130.00	1,440.00	687.00	380.00	0.00	307.00
APR	2,560.00	1,750.00	830.00	459.00	0.00	371.00
MAY	2,320.00	2,210.00	111.00	78.20	0.00	32.30
JUN	1,100.00	1,890.00	-785.00	0.00	0.00	-785.00
JUL	321.00	1,500.00	-1,180.00	0.00	0.00	-1,180.00
AUG	240.00	1,310.00	-1,070.00	0.00	0.00	-1,070.00
SEP	180.00	875.00	-695.00	0.00	0.00	-695.00
OCT	210.00	460.00	-250.00	0.00	0.00	-250.00
NOV	337.00	396.00	-58.90	0.00	0.00	-58.90
DEC	425.00	568.00	-143.00	0.00	0.00	-143.00
ANN	894,000.00	857,000.00	106,000.00	60,600.00	0.00	45,300.00

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DATE: March 8, 1994

TO: Harlan Pugh, Director
Oregon Water Resources Department
1850 Commercial Road NE
SALEM, OR 97310

FROM: Bruce Andrews, Director

SUBJECT: REQUEST FOR RESERVATION of the unappropriated water of the OWYHEE RIVER and its tributaries for future agricultural economic development.

The OREGON DEPARTMENT OF AGRICULTURE, 635 CAPITOL STREET NE, SALEM, OREGON, 97310, hereby requests the reservation of 60,000 acre feet of water from the Owyhee River Basin. We request a reservation be established for the following sources and quantities. Potential storage sites are also listed. Other potential but less feasible sites are identified by attached schedule A.

SOURCE	QUANTITY	STORAGE SITE
Jordan Creek (Idaho)	60,000 acre feet	Jordan Creek

Total 60,000 acre feet

The water is to be put to beneficial use for the following purposes and amounts during the time periods indicated, to support existing and expanding agricultural enterprises and associated industries:

	PURPOSE	QUANTITY OF WATER - AF	SEASON OF USE
1.	IRRIGATION	50,000	MARCH 1 TO OCTOBER 31
2.	LIVESTOCK	1,000	YEAR ROUND
3.	INDUSTRIAL	3,000	"
4.	AGRICULTURE	3,000	"
5.	MUNICIPAL	3,000	"

TOTAL AF REQUESTED 60,000

EXPLANATION OF HOW THE PROPOSED USE RELATED TO THE FUTURE NEEDS OF AGRICULTURE:

1. Irrigation . . . Water applied to cultivated crops, native pastures and improved pastures to benefit plant growth. Water may also be applied to cultivated lands to build the soil moisture profile for subsequently planted crops and to prohibit or minimize erosion and blowing dust.

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2. Livestock . . . Water stored for or delivered to domesticated animals for the animals' consumption.

3. Industrial . . . Water used for, but not limited to, food processing, heating, cooling, dust control, humidity control and washing.

4. Agriculture . . . Water used for any related purpose other than for plant growth; such as, but not limited to: frost control, heat control, nursery operations, dust control, erosion control and chemical application.

5. Municipal . . . Water delivered through a municipal or quasi-municipal water system and used primarily for, but not limited to, agri-industries.

WATER AVAILABILITY

Water is available for the proposed reservation at the potential storage site listed herein. In summary, The Owyhee River discharges an average of 741,000 acre feet into Owyhee Reservoir annually. This inflow is less than the 1,120,000 capacity of Owyhee Reservoir by 379,000 acre feet. However, the average annual use from the reservoir is about 457,000 acre feet. Owyhee reservoir capacity is about 2.5 years of irrigation supply.

Owyhee River above the lake was gaged during the period 1931 to 1951. The average annual yield recorded was 616,000 acre feet. Records of flow gaged at Rome, several miles above the lake, during the period 1951 to 1987 show an average annual yield of 339,700 acre feet. When this flow is adjusted for downstream diversion and inflow, the present inflow into Lake Owyhee is about 741,000 acre feet. This represents an increase of about 124,000 acre feet. Interestingly, during this same time, over 100,000 acre feet of storage was developed at Antelope and Wildhorse Reservoirs both upstream of the gaged flows.

It appears that the water stored and used upstream of Lake Owyhee does not significantly deplete the resource. This was also the conclusion of the State Engineer in 1954 as reported by the Bureau of Reclamation in their Reconnaissance Report of 1965 on the Upper Owyhee Project. The potential of this project clearly requires an opportunity for further study.

CLASSIFICATION

OAR Chapter 690, Division 510, last amended January 17, 1986, governs the storage and appropriation of water in the Owyhee River Basin. These rules specifically allow the storage and use of the water as requested herein. A copy of the applicable rules is attached a Schedule C.

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Appendix B

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Table 39.--Potential streamwater sites within Malheur and Owyhee Drainages Section, Oregon

Watershed Map Index Project Name	Location Township	Range	Section	Stream	Drainage Area Acres	Estimated Annual Yield Acre Feet	Storage Capacity 1/ Acre Feet	Maximum Water Depth Feet	Maximum Surface Area Acres	Estimated Embankment Volume Cubic Yards	Fill Needed By Drainage 2/ Cu Yd Per Ac	Use 3/	Investigating Agency 4/
14-8 VALLEY JUNCTION													
39 Steen Creek	15S	44E	14	Steen Creek	47,400	1,500	14,000	60	450	171,500	14	I	SR
14a-1 NORTH FORK MALHEUR													
36 Summit Prairie	16S	34E	1	Summit Creek	9,500	8,000	22,000	40	500	791,000	16	R	SR
37 Crane Prairie 3/	16S	35E	6	Crane Creek	1,150	1,600	----	--	---		-	I,R	SR
14a-3 UPPER MALHEUR													
5 Bridge Site	18S	34E	35	Malheur River	147,400	60,000	22,000	65	360	784,000	41	I,R	CT,FS
30 Calamity Creek	18S	35E	26	Calamity Creek	8,000	7,000	1,300	40	45	34,100	13	I,R,F	FS
41 Bogus Bay	17S	34E,36	1,7,18	Malheur River	38,000	40,000	1,800	35	56	45,100	41	I,R,F	FS
34 Logan Valley	17S	37E	2	Malheur River	45,500	37,000	16,000	60	1,184	140,100	9	I,R,F	FS
35 Summit Creek	16S	36E	11	Summit Creek	15,400	11,000	4,400	40	130	179,200	34	I,R	FS
39 Bennetsberg 3/	16S	33E,34E	17,7	Bennetsberg Creek	1,300	1,000	260	18	18	43,800	183	R	FS
40 Vale	19S	37E	5	Wolf Creek	31,300	24,000	4,500	40	140	34,900	8	I,F,F	SCS
41 Crawfords	20S	33E	25	Calamity Creek	44,000	17,500	2,700	35	196	13,400	10	I,F,R	SCS,FS
42 Mountain Road	17S	33E,34E	11	Malheur River	18,000	28,000	700	45	40	33,500	32	I,F,R	SCS,FS
43 Cliffs	17S	34E	18	Malheur River	15,000	31,000	900	55	45	11,900	36	I,F,R	SCS,FS
14a-4 PINE-BUCK CREEK													
6 Orange Site	20S	44E	5	Malheur River	167,500	150,000	48,000	60	2,430	581,000	10	I	CT,FS
14 Pine Creek	20S	36E	11	Pine Creek	41,600	15,000	3,500	35	120	630,000	40	I,F	CT,FS
31 Jewell	20S	33E	3	Pine Creek	13,900	5,000	4,500	40	195	185,400	41	I,F,R	FS
32 Upper Pine Creek	20S	32E	22	Pine Creek	21,900	10,000	3,500	37	185	79,400	13	I,F,R	FS
34 Tot Gap	20S	32	25	Pine Creek	15,900	11,000	5,500	35	150	16,800	20	I,F,R	SCS,FS
14a-5 MAIN STREAM													
1 Drinkingwater Creek	20S	35E	21	Drinkingwater Creek	112,000	22,000	41,000	75	1,130	795,000	14	I,F	CT
14a-6 UPPER MALHEUR													
3 Nelson Ranch	24S	37E	9	S.F. Malheur River	332,900	34,500	37,000	91	1,400	492,400	14	I,F	CT
8 South Fork 3/	24S	37E	21	S.F. Malheur River	95,000	41,000	---		—	---		I,F	CT,FS
13 Riverside	23S	37E	22	Malheur River	1,400,000	191,000	190,000	14.1	1,000	1,400,000	18	I	CT,FS
16 Juniper 3/	21S	36E	9	Malheur River	116,000	160,000	---					I,F	CT,FS
14a-8 BAKER HOLLOW													
17 Little Valley 3/	19S	42E	27	Malheur River	472,200	164,000	----					I,F	SR
18 Harper 3/	19S	43E	17	Malheur River	481,800	133,000	30,000	--	---	----		I	SR
44 Hanging Rock 3/	24S	42E	5	Bigger Rock Creek	N/A	N/A	45,000	115	500	2,074,500	46	I	SCS,FWS
45 Yellow Springs 3/	21S	45E	16,17	Bigger Rock Creek	N/A	N/A	179,600	195	7,363	4,438,100	24	I	SR
14a-9 COTTONWOOD CREEK													
4 Pine Mountain 3/	21S	41E	3	Cottonwood Creek	54,700	5,400	----	--	---	----	--	I	CT
10 Upper Cottonwood	21S	41E	7	Cottonwood Creek	78,400	3,650	2,500	41	170	121,000	34	I	CT,FS
11 Middle Cottonwood 3/	21S	41E	14	Cottonwood Creek	71,900	6,000	----	--	---	----	-	I	CT,FS
12 Lower Cottonwood	21S	42E	6	Cottonwood Creek	30,500	4,700	4,000	51	100	440,000	110	I	CT,FS
14a-10 CRANE-COLEMAN CREEK													
10 Coleman Creek	24S	36E	28	Coleman Creek	17,300	1,000	1,000	44	115	990,000	133	I	CT
14a1-1 UPPER BULLY CREEK													
19 Jenkins	23S	39E	28	Bully Creek	33,400	1,000	4,700	51	80	184,000	49	I,F	SR
20 Upper John Day	22S	40E	1	Bully Creek	57,300	1,000	1,400	54	101	48,100	14	I,F	SCS
21 Lower John Day	22S	40E	11	Bully Creek	77,900	11,000	2,400	44	140	117,600	71	I,F	SCS

1/ Reservoir sites with storage capacity less than 100 acre feet not included
2/ A composite figure derived from dividing the estimated earth fill in cubic yards by the estimated water storage capacity in acre feet
3/ I - Irrigation, F - flood protection, R - recreation (fishing, boating, and hunting)
4/ Source: SCS - Soil Conservation Service, BR - Bureau of Reclamation, CT - Corps of Engineers, FS - Forest Service, TWRB - State Water Resources Board
5/ Data not available for engineering evaluation
6/ Pump storage
7/ Off-channel storage
8/ Rehabilitation of existing structure

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SCHEDULE A

METHODOLOGY, STORAGE SITE ANALYSIS

Since the early days of settling the arid portions of Oregon, man has attempted to identify places to store water and ways to reduce flooding and to provide water during times of shortage. This endeavor has resulted in the construction of numerous reservoirs and also a seemingly un-ending list of potential storage sites.

This study could not include all potential sites ever considered due to the large number and also due to the lack of a central repository for the site data. The major sources used are; OWRD Basin Reports, Bureau of Reclamation Reports, Soil Conservation Service Reports, Corps of Engineers Reports, OWRD Water-shed Planning Reports, Soil and Water Conservation District Reports and Inventories provided by Irrigation Districts or consultants.

For the purpose of this reservation request we selected from a list of available sites, those sites that best matched a set criteria that identified sites as most feasible and desirable. The criteria used as guidance in our selection is listed below:

1. Water must be available to be stored.
2. Sites are located in the upper stream reaches, off channel, or
3. Sites are located on streams having little known anadromous fish.
4. Sites are located on predominantly public land or have minimal impact upon private land use.
5. Sites have a high storage to cost ratio.
6. Sites do not adversely affect infra-structure such as roads, power lines and pipelines.
7. Sites have multi-purpose storage ability.
8. Sites provide for instream flow improvement as well as flat water recreation opportunities.
9. Sites provide some flood control benefit.

The attached map identifies the location of the storage sites deemed most feasible at the time of this request. Our request is not intended to limit the reservation of water to storage only at those sites however. Other sites may be determined more feasible during the term of this reservation.

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PROPOSED LOCATION OF USE:

The uses proposed will occur in Malheur County.

Irrigation will most likely occur as a supplemental supply to existing projects such as those of irrigation districts and private users. The water may also be used for development of some new lands as an expansion of existing projects and districts.

The other uses within this reservation request will likely occur as a result of the expansion of existing public and private water delivery systems. As agricultural land development occurs along Jordan Creek and the Owyhee River, so will the water needs for many related purposes and services, principally, food processing.

DURATION OF RESERVATION

We expect the development and subsequent appropriation of the reserved water to begin soon after the reservation request is approved. We do not expect the reserved water to be fully developed or appropriated for 40 or more years.

WATER SOURCE ALTERNATIVES

Our analysis has found very little surface water available. Our first consideration, as an alternative, is by conserving existing resources. This appears to be feasible only in the long term. There is an immediate need for a supplemental supply for existing districts.

Ground water appears to be a limited resource and is not considered an alternative to meet future economic needs of the area.

LAND USE COMPATABILITY

All present and future land use zoning will be compatible with the uses of water described for economic development. The use of irrigation water applied to croplands and other lands presently dry farmed, and supplemental water applied to lands presently irrigated, will allow the full development potential of the exclusive farm use lands.

This reservation request and its later development will be coordinated with districts, cities and the county.

SCENIC WATERWAYS

The established scenic waterway on the Owyhee River is upstream of all proposed potential storage sites. The scenic waterway does not affect this request.

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Appendix C

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Oregon
Kate Brown, Governor

Department of Agriculture
635 Capitol St NE
Salem, OR 97301-2532

Public Notice of Application for Extension of Term of Reservations of Unappropriated Water for Future Economic Development

Date: May 31, 2016

Subject: In accordance with OAR 690-079-0060 (10), this notice is to inform affected local governments that Oregon Department of Agriculture (ODA) will apply to extend the term of reservations of unappropriated water from expiring on January 7, 2017 to expire on January 7, 2037. The application for extension of term applies to the Owyhee Reservations (OAR 690-511-0110):

- Sixty thousand (60,000) acre-feet of unappropriated water of the Owyhee River and tributaries.

Action: No action is required and no comments are requested at this time. Information regarding opportunities for public comment, including further information about a public hearing to be held on July 28, 2016 at 6:00 PM in Adrian, OR, will be forthcoming.

Background: Reservations of unappropriated water were granted in 1996 and recorded in the Owyhee Basin Program (OAR 690-511-0110). The unappropriated water was reserved for 20 years with option for extending the term up to an additional 20 years. Demand has increased to use the reserved water for irrigation, groundwater recharge, augment streamflow and municipal supply.

Extending the reservations for an additional 20 years would provide agricultural water users with greater certainty and time to plan, advance and complete vital multipurpose water resources projects to enhance economic opportunity in agriculture.

Contact For Information: Margaret Matter, Oregon Department of Agriculture
a) Office Phone: 503-986-4561
b) Email: mmatter@oda.state.or.us

Copies of the applications for extension of terms of the reservations in the Owyhee Basin are available upon request.

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Affected Local Governments
Extending Terms of the Owyhee Basin Reservations of Unappropriated Water

1. Malheur County
Address:
Alvin Scott, Planning Director
251 B St West, #12
Vale, OR 97918

Phone: (541) 473-5183 (General)

2. Malheur County Soil and Water Conservation District
Address:
Linda Rowe, District Manager
2925 SW Sixth Ave., Suite 2
Ontario, OR 97914

Email: lrowe@malcoswcd.org
Phone: (541) 889-2588, extension 110

3. Oregon Water Resources Congress
Address:
April Snell, Executive Director
795 Winter St NE
Salem, OR 97301

Email: Aprils@owrc.org
Phone: (503) 363-0121

4. Owyhee Watershed Council
Address:
Nicole Sullivan, Director
PO Box 275
Adrian OR 97901

Email: nsullivanowc@nwestoffice.net
Phone: (541) 372-5782

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5. Malheur Watershed Council

Address:
Kelly Weideman, Director
710 SW 5th Ave
Ontario OR 97914

Email malheurwc@hotmail.com
Phone: (541) 881-1417 x 105

6. Irrigation Districts

(a) Owyhee Irrigation District
Address:
Jay Chamberlin, Manager
17 S 1st St
Nyssa, OR 97913

Phone: (541) 372-3540 Ext: 102; (208) 740-0143
Email: oidh20@fmtc.com; jay@owyheeirrigation.org

(b) Vale Oregon Irrigation District
Address:
Dan Fulwyler, Manager
521 A St West
Vale, OR 97918

Phone: (541) 473-3243
Email: void@valeid.com

(c) Warmsprings Irrigation District
Address:
Randy Kinny, Manager
344 Main St N
Vale, OR 97918

Phone (541) 473-3951
Email: wid4water@qwestoffice.net

(d) Ridgeview Irrigation District/South Board of Control
Address:
P.O. Box 67
Homedale, Idaho 83628

Email: office@southboardofcontrol.com

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(c) Nyssa
Address:
Roberta Vanderwall, City Manager
301 Main St.
Nyssa, OR 97913

Phone: (541) 372-2264 ext. 6
Email: nyssamanager@nyssacity.org

(d) Ontario
Address:
Tori Barnett, MMC, City Recorder (Interim City Manager)
444 SW 4th St.
Ontario, OR 97914

Phone: (541) 881-3232
Email: tori.barnett@ontariooregon.org

(e) Vale
Address
Mike (Mac) McLaughlin, Mayor
252 B St. West
Vale, OR 97918

Phone: (541) 473-3133
Email: mayor@cityofvale.com

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1. Beede, D.K., 1994. Water: The most important nutrient for dairy cattle. Proceedings of the 31st Florida Dairy Production Conference, Gainesville, Florida. Pp 83-98.

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3. Oregon State University Extension Service, 2013, Oregon County and State Agricultural Estimates (2012). Oregon Agricultural Information Network (OAIN), Extension Economic Information Office, Department of Agricultural Resource Economics, Oregon State University (http://oain.oregonstate.edu/EconInfo/sr790-2013.pdf).

4. Oregon Water Resources Department, 2009. *Oregon Water Supply and Conservation Initiative: Inventory of Potential Below Ground Storage Sites.*

5. Tennessee Extension Service, 2015. Cattle need more water during warmer months. University of Tennessee Extension, Institute of Agriculture newsletter; https://extension.tennessee.edu/WebPacket/Pages/WP-2015-03-CattleWatering.aspx).

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7. Williams, A.P., Seager, R., Abatzoglou, J.T., Cook, B.I., Smerdon, J.E., and Cook, E.R., 2015. Geophysical Research Letters, 42, 6919-6928, doi: 10.1002/2015GL0649224.

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