

This form is subject to revision. Begin each new claim by checking for a new version of this form and downloading a new one if necessary.

If you have questions regarding the completion of this form, contact:

Gerry Clark by e-mail at Gerald.E.CLARK@wrд.state.or.us or by phone at 503-986-0811,

Or Jerry Gainey by e-mail at Jerry.W.GAINEY@wrд.state.or.us or by phone at 503-986-0812.

The Department has a new program that allows a permit holder to pay the cost to have a private contractor review of the claim and, if appropriate, prepare a certificate. This new program means a certificate can be issued in about a month. The Department has a list of trained contractors that are selected on a rotating basis. For more information on this program see: <http://www.wrд.state.or.us/programs/index.shtml>.

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Oregon Water Resources Department
725 Summer St. NE, Suite A
Salem, OR 97301-1266
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WATER RESOURCES DEPT
SALEM, OREGON

CLAIM OF BENEFICIAL USE

The completion of this form is required by OAR 690-014-0100(1) and 690-014-0110(4).

Please type or print in dark ink. If this form is found to contain errors or omissions, it may be returned to you. Every numbered item must have a response. If any requested information does not apply to the Claim, insert "n/a." Do not delete any section of this form unless directed by the form. The Department may require the submittal of additional information from any water user or authorized agent. **A separate form shall be completed for each permit or transfer final order.**

I. General Information

1. File Information

Application Number (G, R, S or T)	Permit Number (if applicable)
T-9731	Certificate No. 76358

2. Property owner (current owner information)

a. Individuals

Name		
Mailing Address		
City/State/Zip		
Phone #		
Fax #		
e-mail address		

b. Businesses/Organizations

Name	St. Charles Medical Center
Contact Person and Title	Mr. Ray Millar – Plant Operations/Facility Services
Mailing Address	2500 NE Neff Road
City/State/Zip	Bend, Oregon 97701-6015
Phone	(541) 318-4993
Fax	(541) 385-6333
e-mail	rmillar@scmc.org

If the current property owner is not the permittee or transfer holder of record, it is recommended that an assignment be filed with the Department. The COBU must be signed by the permit/transfer holder of record.

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3. Permittee / Transferee of record (this may, or may not, be the current property owner)

c. Individuals

	Individual 1	Individual 2
Name		
Mailing Address		
City/State/Zip		

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d. Businesses/Organizations

Name	St. Charles Medical Center
Contact Person and Title	Mr. Ray Millar – Plant Operations/Facility Services
Mailing Address	2500 NE Neff Road
City/State/Zip	Bend, Oregon 97701-6015

4. Date of Site Inspection: August 30, 2007

5. Person(s) interviewed and description of their association with the project:

Name	Date	Association with the project
Ray Millar	8/30/07	Oversees new hospital utility construction and maintenance of existing utility infrastructure.

6. County:

7. Tax Lot Information: See attachment for tax lot information.

Tax map number	Tax lot number

8. If any property described in the place of use of the permit or transfer final order is excluded from this report, identify the owner of record for that property (ORS 537.230(3)):

**Mark "NA" if there are no owners of property not included in this claim

Name	NA
Contact Person and Title	
Mailing Address	
City/State/Zip	
Phone #	

Name	NA
Contact Person and Title	
Mailing Address	
City/State/Zip	
Phone #	

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II. Points of Diversion/Appropriation and Place of Use

For each point of diversion or appropriation, provide the following information. If the claim is for more than one point of diversion/appropriation, copy and complete this section for each point of diversion or appropriation.

1. Provide a general narrative description of the distribution works. This description must trace the water system from the point of diversion or appropriation to and include the place of use:

The Central Oregon Canal diverts water from the Deschutes River. This canal is both piped and open between the point of diversion/appropriation and the St. Charles Medical Center. Water is diverted from the canal into gravity piping at the Medical Center campus. These gravity pipes convey water to a pond, where two submersible pumps are then used to distribute the water through various sized irrigation pressure lines to landscaped areas throughout the campus.

2. Point of diversion/appropriation name or number (correspond to map):

Point of diversion/appropriation name or number (correspond to map)	Well log ID # for all work performed on the well (if applicable)	Well tag # (if applicable)
Central Oregon Canal		

Attach each well log available for the well (include the log for the original well and any subsequent alterations, reconstructions, and deepenings)

3. Point of diversion/appropriation source and, if from surface water, the tributary:

Source	Tributary to
Deschutes River	Columbia River

4. Point of diversion/appropriation location:

(DLC, Government Lot, 1/4 1/4, Section, Township, Range)	Reference to a recognized public land survey corner by distance and bearing or by coordinates
SW1/4, NE1/4, Section 13, Township 18S, Range 11 East	1520 feet South & 1535 feet West from the NE Corner of Section 13.

5. Actual use(s), period of use, and rate for each use:

Uses	If irrigation, list crop type	When water is used	Rate for use
Quasi-Municipal	N/A	April 1 to May 1 & October 1 to November 1	0.09 cfs
Quasi-Municipal	N/A	May 1 to May 15 & September 15 to October 1	0.12 cfs
Quasi-Municipal	N/A	May 15 to September 15	0.22 cfs

Total Quantity of Water Not to exceed 0.22 cfs.

6. Place of use for the point of diversion or appropriation:

DLC	Gov lot	1/4 1/4	Section	Township	Range	Use	# of primary acres	# of supplemental acres
		NE SE	27	17S	12E	Quasi-Municipal	NA	

		SW SE	27	17S	12E	Quasi-Municipal	NA	
		SE SE	27	17S	12E	Quasi-Municipal	NA	

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Total Acres Irrigated NA

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Reservoir Data

**If this claim is not for a reservoir, or the system does not involve a reservoir as part of the distribution system, this section, items 1-7, can be deleted.

1. If the reservoir required the submittal of as-built plans and specifications, complete the table below:

Have the documents been submitted? yes or no	When were the documents submitted	Have they been approved by the Department?
NA		

2. If the reservoir stores less than 9.2 acre-feet of water or if the dam is less than 10 feet in height, and as-built plans and specifications are not required, complete the table below.

Maximum depth	Average depth	Surface area (in acres)	Volume in acre feet
14 feet	8 feet	0.20	1.60

3. Provide reservoir volume calculations in the box below:

It is not known how the depth of the pond varies with location. For this reason, the average depth of 8 feet was used to calculate the approximate volume of the pond.

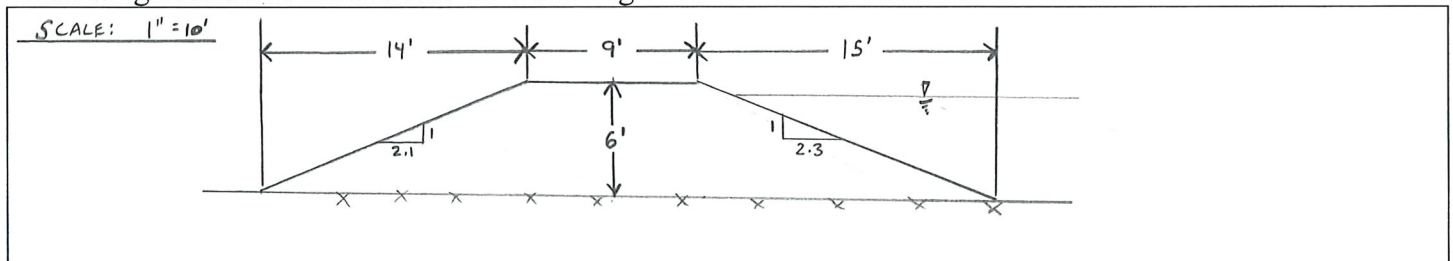
$$V = (8 \text{ feet}) \times (0.20 \text{ acres}) = \underline{1.60 \text{ acre-feet}}$$

4. Provide the following information concerning the physical characteristics of the dam:

Crest width (W)	Dam height at centerline (H)	Distance from downstream top of dam to downstream toe (L)	Distance from upstream top of dam to upstream toe (U)	Water level at inspection	Downstream slope	Upstream slope
9 feet	+/- 6 feet	+/- 14 feet	+/- 15 feet	8 feet to 12 feet	+/- 2.1:1	+/- 2.3:1

I was unable to measure the distance from upstream top of dam to upstream toe, (U), due to water in the pond. I visually estimated where the upstream toe of the dam occurred under the water.

5. In the box below, provide a drawing showing the cross section of the dam at the maximum section indicating details and dimensions. The drawing should be drawn at a standard even scale.



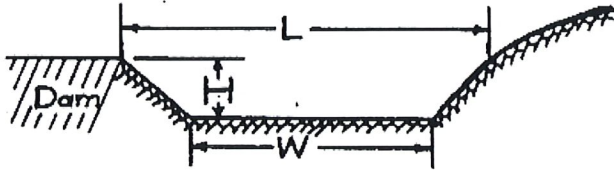
6. Describe the outlet works (size and type of the outlet conduit and location) in the box below:

An 8" PVC pipe is located near the southwest corner of the pond. The invert of this pipe has been set at an elevation to prevent water from overflowing the pond banks. The pipe transports overflow water to a grassy swale, where it can flow away from the pond area. Two submersible pumps operate at the pond, and can also be used to discharge pond water.

7. Describe the emergency spillway (dimensions and location) in the box below: There is no emergency spillway located at the pond.

Spillway location	Bottom width (W)	Top width (L)	Spillway depth (H)

Spillway cross section at the spillway crest



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Gravity flow pipe (The Department typically uses the Hazen-William's formula for a gravity flow pipe system)

**If this claim does not rely on a gravity flow pipe to convey the water as part of the distribution system, this section, items 1-3, can be deleted.

1. If the system involves a gravity flow pipe, complete the table below.

Pipe size	Pipe type	"C" factor	Amount of fall	Length of pipe	Slope	Computed rate of water flow
6"	PVC	130	+/- 3.5 feet	+/- 885 feet	+/- 0.004	+/- 0.46 cfs
8"	PVC	130	+/- 1.75 feet	+/- 320 feet	+/- 0.005	+/- 1.07 cfs

These pipes convey water from the canal to the irrigation pond. Please see the attached Claim of Beneficial Use Map for the approximate locations of the pipes. The slope and amount of fall were approximated from topographic information provided on City of Bend aerial mapping.

2. Provide calculations in the box below:

For 6" Pipe: $v = 1.31 \times (130) \times [(0.25^2)^{0.63}] \times (0.004^{0.54}) = 2.33 \text{ ft/sec}$, $Q = vA$, $Q = (2.33 \text{ ft/sec.}) \times (\pi \times 0.25^2) = \underline{0.46 \text{ cfs}}$

For 8" Pipe: $v = 1.31 \times (130) \times [(0.33/2)^{0.63}] \times (0.005^{0.54}) = 3.13 \text{ ft/sec}$, $Q = vA$, $Q = (3.13 \text{ ft/sec.}) \times (\pi \times 0.33^2) = \underline{1.07 \text{ cfs}}$

3. If an actual measurement was taken, provide the following:

Date of Measurement	Who made the measurement	Measurement method	Measured quantity of water

Attach measurements notes

I did not collect any actual measurements at the site. However, in a report entitled: "Evaluation of Irrigation Pond Alternatives, St. Charles Medical Center Campus, Bend, Oregon," dated August 20, 2007 by Newton Consultants, Inc., actual flow measurements at both the canal diversion and pond inlet were collected. On July 24, 2007 Newton personnel measured an approximate flow rate of 120 gpm at both these locations. This converts to a flow rate of approximately 0.27 cfs. This report was supplied by the St. Charles Medical Center during my field visit. In addition, Findings of Fact from transfer application T-9731 Final Order concluded that existing facilities were sufficient to use the full amount of water allowed.

System Information:

Provide the following information concerning the diversion and delivery system. Trace the flow of water from the point of diversion/appropriation to the place of use.

1. Pump information

Brand	Model	Serial Number	Type (centrifugal, turbine or submersible)	Intake size	Discharge size
Berkley	T Series	2366119020	Submersible	6"	6"

Two identical 7.5 Hp submersible pumps are installed at the pond.

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2. Motor information

Brand	Model	Horsepower	Max RPM	Voltage
Franklin		7.5 HP		

3. Meter information (if required in permit or transfer final order)

Make	Serial #	Condition (working or not)	Current meter reading	Notes

No meter is present at the site. Item No. 7 under the subsection entitled: "Now, therefore, it is ORDERED," within the Final Order document for the Transfer Application T-9731 states: "When required by the Department, the water user shall install and maintain an in-line flow meter or other suitable device for measuring and recording the quantity of water appropriated. The type and plans of the measuring device must be approved by the Department prior to beginning construction and shall be installed under the general supervision of the Department." The applicant has not been required to install a meter.

4. Measurement device description

Device description	Condition (working or not)	Notes

5. Measured pump capacity (using meter if meter was present and system was operating)

Initial meter reading	Ending meter reading	Duration of time observed	Total pump output

6. Theoretical pump capacity

Horsepower	Operating psi	Lift from source to pump *If a well, the water level during pumping (see pump test results)	Lift from pump to place of use	Total pump output
7.5 HP	40	0	7 feet	0.49 cfs

7. Provide pump calculations in the box below:

$[(40 \text{ psi}/0.433) \times (1.1)] = 101.60 \text{ feet}$
 Note: An operating pressure was not measured in the field. 40 psi was chosen as a typical operating pressure for sprinklers at the site.

 $Q_{\text{pump}} = [(7.5 \text{ Hp}) \times (550 \text{ ft lb/sec/Hp}) \times (0.80)] / [(62.4 \text{ lb/CF}) \times (7 \text{ ft.} + 101.60 \text{ ft.})] = 0.49 \text{ cfs}$

 There are two identical 7.5 HP submersible pumps located side by side at the pond. If both pumps were operating at the same time, the total theoretical pump capacity would be: $(0.49 \text{ cfs}) * 2 = 0.98 \text{ cfs}$.

Rainbird	R50 Series					
Rainbird	5000 Series					

Refer to the chart of sprinkler output at various pressures for most nozzle sizes attached to this document.

$$Q_{\text{sprinklers}} = \frac{(\text{max \# heads})(\text{gpm/head})}{448.8 \text{ gpm/cfs}} = \text{cfs}$$

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11. Additional notes or comments related to the system:

Please reference the attached cover letter for this Claim of Beneficial Use.

III. CONDITIONS

Please pay special attention to this section. All conditions contained in the permit or transfer final order shall be addressed. Reports that do not address all performance related conditions will be returned.

1. Time Limits:

a. Permits or transfer Final Orders contain any or all of the following dates; the date when the actual construction work was to begin, the date when the construction was to be completed, and the date when the complete application of water to the proposed use is to be completed by. These dates may be referred to as ABC dates. Describe how the water user has complied with each of the development timelines established in the permit or transfer final order:

	Dates from permit or transfer final order	Date accomplished	Description of actions taken by water user to comply with the time limits
Begin construction	Not given.		
Complete construction	Not given.		
Complete application of water	October 1, 2007	August 30, 2007	Installed underground piping, constructed pond, installed two submersible pumps, installed landscape system, restored vegetation, established landscaping, etc.

4. Measurement, recording, and reporting conditions:

a. Does the permit or transfer final order require the installation of a meter or approved measuring device? NO, reference item No. 7 under the subsection entitled "Now, therefore, it is ORDERED," in the Final Order in the Matter of Transfer Application T-9731, which states:

“When required by the Department, the water user shall install and maintain an in-line flow meter or other suitable device for measuring and recording the quantity of water appropriated. The type and plans of the measuring device must be approved by the Department prior to beginning construction and shall be installed under the general supervision of the Department.” To the best of my knowledge, the applicant has not been required to install a meter.

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IV. Variations, Attachments, Conclusions, Map and Signatures

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Variations

Include a description of variations from the permit or transfer final order

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Attachments

If you are attaching any documents to this report, provide a list below:

Attachment name	Description
Cover Letter	The W&H Pacific correspondence summarizes and describes water rights and water distribution system for the St. Charles Medical Center.
Final Order	Final Order and Department cover letter for Transfer T-9731.
Claim of Beneficial Use Application Map	Shows Proposed Area of Use, water distribution system, some existing buildings, and existing surrounding streets.
Tax Lot Information	Contains a list of tax lots within the area of use of the quasi-municipal water right.

Permit and Transfer Final Order Rates and System Rates Comparisons:

POD or POA name or #	Maximum rate allowed by permit or transfer final order	Calculated theoretical rate of water based on system	Actual amount of water measured (if measured)	Developed use	# of acres allowed by permit or transfer final order	# of acres developed
St. Charles Medical Center	0.22 cfs	0.46 cfs	Not measured	Quasi-Municipal	NA	NA

Claim of Beneficial Use Map

The Claim of Beneficial Use Map must be submitted with this Claim. Claims submitted without the Claim of Beneficial Use map will be returned. The map shall be submitted on poly film at a scale of 1" = 1320', 1" = 400', or the original full-size scale of the county assessor map for the location.

In the following box, provide a general description of the survey method used to prepare the map. Examples of possible methods include, but are not limited to, a traverse survey, GPS, or the use of aerial photos. If the basis of the survey is an aerial photo, provide the source, date, series and the aerial photo identification number.

City of Bend aerial mapping and infrastructure mapping provided by the St. Charles Medical Center were used to prepare the map.

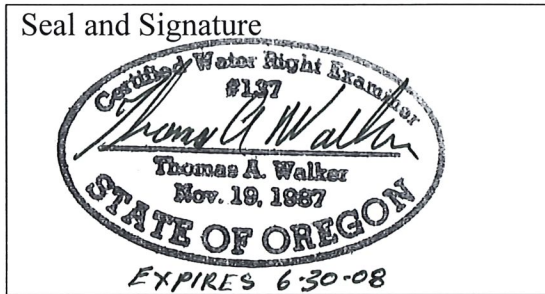
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CWRE Statement, Seal and Signature

The facts contained in this Claim of Beneficial Use are true and correct to the best of my knowledge.



Permit or Transfer Holders Signature or Acknowledgement

The facts contained in this Claim of Beneficial Use are true and correct to the best of my knowledge. I request that the Department issue a water right certificate.

<i>Ray Miller</i>	Ray Miller	11-6-07
Signature	Print or type name	Date

Signature	Print or type name	Date
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SPRINKLER CAPACITIES BY NOZZLE SIZE IN GALLONS PER MINUTE

This chart is comprised of information gathered from a number of sources and may differ slightly from the manufacturer's specifications.

("**") designates computed capacity)

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		P.S.I.																	
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
3/32		1.1	1.3	1.4	1.5	1.6	1.7	1.8											
7/64		1.5	1.7	1.9	2	2.2													
1/8		1.9	2.2	2.4	2.7	2.9	3	3.2											
9/64		2.3	2.6	2.9	3.1	3.4	3.7	4											
5/32		3	3.4	3.8	4.1	4.4	4.7	5											
11/64	1.9	2.7	3.3	4.2	4.6	5	5.4	6	6.3	6.6									
3/16	2.2	3.2	3.9	4.3	5	5.5	6	6.4	7.2	7.5	7.8								
13/64	2.9	3.6	4.5	5.1	5.9	6.5	7.1	7.6	8.1	8.5	8.9	9.2							
7/32		4.1	5.1	5.8	6.8	7.6	8.3	8.9	9.4	9.9	10.3	10.6							
15/64							8.8	10	10	11.2	12.4								
1/4		5.2	6.4	7.4	8.9	9.8	10.6	11.4	12.1	12.8	13.4	13.9	14.8*	15.3*	15.9*	16.4*	16.9*	17.4*	
17/64								12.5		14	15.6			17.1					
9/32					11.2	12.3	13.3	14.3	15.2	16	16.8	17.5	18.1	18.9	19.7	20.7*	21.4*	22*	
19/64									16.6		18.3		19.9		21.4				
5/16					13.1	15.2	16.5	17.7	18.9	20	21	22	23	23.9	24.8	25.7	26.4*	27.1*	
21/64										20.8		22.7		24.6		26.4			
11/32					16.5	18	19.7	21.1	22.5	23.8	25	26.2	27.4	28.5	29.6	30.6	31.9*	32.8*	
23/64										24.5		26.8		29.1		31.4			
3/8					19	21	22.8	24.4	26	27.5	29.1	30.6	32	33.2	34.5	35.7	38*	39*	
13/32								29*	30.9*	32.7*	34.5*	36.2*	37.4*	38.9*	40.4*	41.9*	43.3*	44.7*	
7/16								33.5*	35.6*	37.7*	39.7*	41.7*	43.6*	45.3*	46.9*	48.4*	50.1*	51.6*	
1/2								42.5*	45.2*	47.7*	50.2*	52.5*	54.7*	56.8*	58.6*	60.6*	63.6*	66.7*	

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