



Oregon Water Resources Department 725
 Summer Street NE, Suite A
 Salem Oregon 97301-1271
 (503) 986-0900
 www.wrd.state.or.us

Application for a Permit to Use Ground Water

Please type or print in dark ink. If your application is found to be incomplete or inaccurate, we will return it to you. If any requested information does not apply to your application, insert "n/a." Please read and refer to the instructions when completing your application. A summary of review criteria and procedures that are generally applicable to these applications is available at www.wrd.state.or.us/OWRD/PUBS/forms.shtml.

1. APPLICANT INFORMATION

A. Individuals

Applicant: _____
First Last

Mailing Address: _____

City State Zip

Phone: _____
Home Work Other

*Fax: _____ *Email Address: _____

B. Organizations

(Corporations, associations, firms, partnerships, joint stock companies, cooperatives, public and municipal corporations)

Name of Organization: Bandon Dunes Limited Partnership

Name and Title of Person Applying: c/o Donald J. Stastny, Owner's Rep.

Mailing Address or Organization: 2130 Lincoln Park North

Chicago _____ IL _____ 60614 _____
City State Zip

Phone : 503-222-5533 _____
Day Evening

*Fax: 503-227-5019 _____ *Email Address: dstastny@stastybrun.com

**Optional*



Last Updated: 10/01/2008

Ground Water/1

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2. PROPERTY OWNERSHIP

Yes (Please check appropriate box below then skip to section 3 'Ground Water Development')

There are no encumbrances

This land is encumbered by easements, rights of way, roads or other encumbrances
(please provide a copy of the recorded deed(s))

No (Please check the appropriate box below)

I have a recorded easement or written authorization permitting access.

I do not currently have written authorization or easement permitting access.

Written authorization or an easement is not necessary, because the only affected lands I do not own are state-owned submersible lands, and this application is for irrigated and/or domestic use only (ORS 274.040).

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You must provide the legal description of: (1) the property from which the water is to be diverted, (2) any property crossed by the proposed ditch, canal or other work, and (3) any property on which the water is to be used as depicted on the map.

List the names and mailing addresses of all affected landowners.

3. GROUND WATER DEVELOPMENT

A. Well Information

Number of well(s): 5

Name of nearest surface water body: Whiskey Run Cr. / Fahy's Lake for Well 5

Distance from well(s) to nearest stream or lake:

1) 1,400 feet 2) 1,860 ft. 3) 2,150 ft. 4) 2,300 ft. 5) 1,500 ft.

If distance from surface water is less than one mile, indicate elevation difference between nearest surface water and well head:

1) 40 ft. 2) 80 ft. 3) 45 ft. 4) 35 ft. 5) 15 ft.

B. Well Characteristics

Wells must be constructed according to standards set by the Department for the construction and maintenance of water wells. If the well is already constructed, please enclose a copy of the well constructor's log and the well ID number, if available, for each well with this application. Identify each well with a number corresponding to the wells designated on the map and proceed to section 4 of the form. If the well has not been constructed, or if you do not have a well log, please complete the following:

Well(s) will be constructed by:

Bandon Well & Pump

Mailing Address: 47530 Hwy 101

Bandon
City

OR
State

97411
Zip

Completion Date: _____

Please provide a description of your well development. *(Attach additional sheets if needed.)*

Well No.	Diameter	Type and size of casing	No. of feet of casing	Intervals casing is perforated (in feet)	Seal depth	Est. depth to water	Est. depth to water bearing stratum	Type of access port or measuring device	Total well depth
OM-1		See Attached Table 1 for Well Construction Details							
OM-2									
OM-3									
OM-4									
OM-5									

Note: Well numbers in this listing must correspond to well locations(s) shown on accompanying map.

If well log is not available, or well is not yet constructed, you must provide: proposed total depth, depth of casing and seal, and the anticipated perforation and open intervals.

C. Artesian Flows

If your water well is flowing artesian, describe your water control and conservation works:

Not Applicable

4. WATER USE

Please read the instruction booklet for more details on "type of use" definitions, how to express how much water you need and how to identify the water source you propose to use. You must fill out a supplemental form for some uses as they require specific information for that type of use.

A. Type(s) of Use(s)

See list of beneficial uses provided in the instructions.

- If your proposed use is **domestic**, indicate the number of households to be supplied with water: _____
- If your proposed use is **irrigation**, please attach **Form I** (Form I Attached)
- If your proposed use is **mining**, attach **Form R**
- If your proposed use is **municipal or quasi-municipal**, attach **Form M**
- If your proposed use is **commercial/industrial**, attach **Form Q**

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B. Amount of Water

Provide the production rate in gallons per minute (gpm) and the total annual amount of water you need from each well, from each source or aquifer, for each use. You do not need to provide source information if you are submitting a well log with your application.

Well No.	Source or aquifer	Type of use	Total rate of water requested (in gpm)	Total annual quantity (in gallons)	Production rate of well (in gpm)
		See Attached Table 2			

C. Maximum Rate of Use Requested

What is the maximum, instantaneous rate of water that will be used? 575 gpm
 (The fees for your application will be based on this amount.)

D. Period of Use

Indicate the time of year you propose to use the water: March 1 - October 31
 (For seasonal uses like irrigation give dates when water use would begin and end, e.g. March 1-October 31.)

E. Acreage

If you will be applying water to land, indicate the total number of acres where water will be applied or used: 206.65 Acres
 (This number should be consistent with your application map.)

5. WATER MANAGEMENT

A. Diversion

What method will you use to divert water from the source?

- Pump (give horsepower and pump type): Pumps will be sized for proposed production rate.
- other means (describe): _____

B. Transport

How will you transport water to your place of use?

- Ditch or canal (give average width and depth):

Width _____ Depth _____

Is the ditch or canal to be lined? Yes No

- Pipe (give diameter and total length):

Diameter _____ Length _____

- other, describe: See attached description of water delivery system.

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C. Application/Distribution Method

What equipment will you use to apply water to your place of use?

A description of the Bandon Dunes Resort irrigation water appropriation and distribution system, as it pertains to this application, is included in the attached memorandum "Proposed Operations and Monitoring - Old McDonald Course Irrigation Wells."

Irrigation or land application method (check all that apply):

- Flood
- High pressure sprinkler
- Low pressure sprinkler
- Drip
- Water Cannons
- Center pivot system
- Hand Lines
- Wheel Lines
- Siphon tubes or gated pipe with furrows
- other, describe: _____

Distribution method

- Direct pipe from source
- In-line storage (tank or pond)
- Open Canal

E. Conservation

What methods will you use to conserve water? Why did you choose this distribution or application method? Have you considered other methods to transport, apply, distribute or use water? For example, if you are using sprinkler irrigation rather than drip irrigation, explain. If you need additional space, attach a separate sheet.

Water discharge will be metered at each wellhead and within the distribution piping to ensure balanced flow and compliance with permit requirements. The sprinkler system will be sized and installed in a manner that distributes the water in the most efficient manner possible. Most irrigation will take place at night to minimize evaporation effects.

6. PROJECT SCHEDULE

Indicate the anticipated dates that the following construction tasks should begin. If construction has already begun, or is completed, please indicate that date.

Proposed date construction will begin: December 1, 2008

Proposed date construction will be completed: December 1, 2013

Proposed date beneficial water use will begin: March 1, 2009

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7. REMARKS

If you would like to clarify any information you have provided in the application, please do so here and reference the specific application question you are addressing.

Please refer to the attached memoranda and application map for additional details.

1. Stream Depletion Calculations, Bandon Dunes Well L91182, Old McDonald Course
2. Proposed Operations and Monitoring - Old McDonald Course Irrigation Wells.
3. The attached property legal description is for the entire Bandon Dunes Resort area, which includes the portions of the property affected by this application. The lands described are owned by Bandon Dunes Limited Partnership.

8. MAP REQUIREMENTS

The Department cannot process your application without accurate information showing the source of water and location of water use. You must include a map with this application form that clearly indicates the township, range, section, and quarter/quarter section of the proposed well location and place of use. The map must provide tax lot numbers. See the map guidelines sheet for detailed map specifications.

9. SIGNATURE

By my signature below I confirm that I understand:

- I am asking to use water specifically as described in this application.
- Evaluation of this application will be based on information provided in the application packet.
- I cannot legally use water until the Water Resources Department issues a permit to me.
- If I get a permit, I must not waste water.
- If development of the water use is not according to the terms of the permit, the permit can be canceled.
- The water use must be compatible with local comprehensive land use plans.
- Even if the Department issues a permit, I may have to stop using water to allow senior water right holders to get water to which they are entitled.

I swear that all information provided in this application is true and correct to the best of my knowledge:



Signature of Applicant (If more than one applicant, all must sign.)

21-05-08

Date

Before you submit your application be sure you have:

- Answered each question completely.
- Attached a legible map which includes township, range, section, quarter/quarter and tax lot number.
- Included a Land Use Information Form or receipt stub signed by a local official.
- Included the legal description of all the property involved with this application. You may supply a copy of the deed, land sales contract, or title insurance policy, to meet this requirement.
- Included a check payable to the Oregon Water Resources Department for the appropriate amount. The Department's fee schedule can be found at www.wrd.state.or.us or call (503) 986-0900.

WRD on the web:
www.wrd.state.or.us

Ground Water/6

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Golder Associates Inc.
 1430 West Broadway Road, Suite 108
 Tempe, AZ 85282
 Telephone (480) 966-0153
 Fax (480) 966-0193
 www.golder.com



TRANSMITTAL LETTER

TO: Oregon Water Resources Department
 Department 725
 725 Summer Street NE, Suite A
 Salem, OR 97301

DATE: February 6, 2009

PROJECT NO.: 033-1642-002.001

Attention: Mr. Doug Woodcock

SENT VIA:

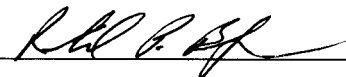
- Federal Express (Airbill 7963 2339 2129)
- U.S. Mail
- Courier
- Hand Delivery
- Other: _____

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1	Document	Letter describing requested changes to November 10, 2008 water right permit application submitted by the Bandon Dunes Limited Partnership.
<p>REMARKS: Hi Doug, Enclosed please find our letter describing requested changes to the new water right application submitted by the Bandon Dunes Limited Partnership on November 10, 2008. Per your suggestion, we are requesting that the three wells on the northern end of the property (OM-1 through OM-3) be withdrawn from the application. We are also adding another deeper well (yet to be constructed) located near the south end of the property. We trust this will provide you with the information required to continue with the processing of the application. If you, or your staff, have any questions, please do not hesitate to contact me.</p> <p>Thanks for the help on this project.</p> <p>Ron Blegen</p>		

Per 

Golder Associates Inc.

18300 NE Union Hill Road, Suite 200
Redmond, WA 98052
Telephone: (425) 883-0777
Fax: (425) 882-5498



February 6, 2008

Our Ref.: 033-1642-002.001

Oregon Water Resources Department
Department 725
725 Summer Street NE, Suite A
Salem, Oregon 97301

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WATER RESOURCES DEPT
SALEM, OREGON

Attention: Mr. Douglas Woodcock

**RE: REQUESTED CHANGES TO WATER RIGHT PERMIT APPLICATION
BANDON DUNES LIMITED PARTNERSHIP, BANDON, OREGON**

Dear Mr. Woodcock:

On November 10, 2008 Golder Associates Inc. (Golder), on behalf of the Bandon Dunes Limited Partnership (Bandon Dunes), submitted an Application for a Permit to Use Ground Water to the Oregon Water Resources Department (OWRD) to secure additional groundwater rights for their golf course resort property. The application requested up to 575 gallons per minute (gpm) to be pumped from five wells (designated OM-1 through OM-5) and applied to 206.65 acres located near the northern end of the Bandon Dunes property. The requested points of appropriation included three new shallow wells (OM-1, OM-2, and OM-3) located within the footprint of the planned Old McDonald golf course, one existing well (OM-4) located southeast of the Old McDonald course, and one well (OM-5) located near the southern end of the Bandon Dunes property. Well OM-4 is also known as the "Shuman Well." The well construction details for these existing or proposed wells are summarized in Table 1 of the application.

As part of the application package, Golder submitted a technical memorandum that describes the potential impact of groundwater pumping on surface water flow in nearby Whiskey Run Creek. Golder has been monitoring streamflow in this creek on behalf of the adjacent Bally Bandon Sheep Ranch as part of the requirements of water right permit G-15437. The ongoing monitoring has indicated that for much of the year, there is significantly greater streamflow in the creek than has been estimated by OWRD and secured for instream flow rights. Golder's analysis of the effects of pumping at the three nearby Old McDonald wells suggests there may be some impact on the stream, but not enough to threaten the minimum instream flow right granted by OWRD. However, as you stated during our December 16, 2008 conference call, OWRD has not completed their analysis of the five years of streamflow data required to be collected by Bally Bandon Sheep Ranch and will not be able to assess the impact of groundwater pumping and the new Bandon Dunes wells until that study is complete. You estimated that this could result in an application processing delay of at least 11 months. With this letter, and by your suggestion, Bandon Dunes is requesting that the three Old McDonald course wells (Well numbers OM-1, OM-2, and OM-3) be withdrawn from the permit application. Likewise, we request the withdrawal of the memorandum describing stream depletion calculations¹ from the November 10, 2008 application package. This document will be resubmitted to OWRD at a later date.

¹ Golder Associates Inc., 2008, Stream Depletion Calculations, Bandon Dunes Well L91182 – Old McDonald Course, Memorandum prepared for Bandon Dunes by Golder Associates Inc., October 15, 2008.

Bandon Dunes is also requesting that one other well be included in the permit. This well, identified on the attached tables and updated application map as well OM-6, will be located near the southern end of the Bandon Dunes property and approximately 2,500 feet north of well OM-5 (OWRD Well No. L91210). The nearest surface water body to this location is Fahys Lake, which is 1,600 feet to the east and at a surface elevation approximately 10 feet above the OM-6 location. Well OM-6 will be constructed with a design similar to that of several other deep alluvial wells in this part of the property. The results of pumping tests at these other deep alluvial wells (Well Label ID Numbers L69436, L74686, and L91210)^{2,3,4} have indicated that a sustainable yield of 300 gpm to 400 gpm can be expected from well OM-6. Water pumped from this well will be delivered to the authorized place of use using the same system of irrigation supply pipelines and reservoirs that will be used to pump OM-5 groundwater to the requested authorized place of use (the Old McDonald course). This system is described within the November 10, 2008 application package.

The construction and testing of well OM-5 (L91210) was completed in December 2008. Preliminary data analysis indicates that this well is capable of producing a sustainable yield of groundwater in excess of 400 gallons per minute⁴. Therefore, we are further requesting that the total rate of water requested from this well be increased from 250 gpm to 400 gpm (see Table 2 [amended]). The OWRD Water Supply Well Report for L91210 is attached as part of this submittal.

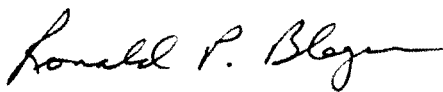
Attached to this letter are amended versions of Tables 1 and 2, to be substituted for the two tables submitted with the November 10, 2008 application package. Also attached is an updated application map that displays the three requested points of appropriation (OM-4, OM-5, and OM-6).

No further changes to the authorized place of use are requested with this letter. The permit application was submitted concurrently with the application to amend groundwater right G-13498 with the intent that the two applications be processed and approved concurrently.

We hope this letter provides you with all the additional information you will require to process the requested changes to the Bandon Dunes application. If you need any further information, please contact Ron Blegen at 480-966-0153.

Sincerely,

GOLDER ASSOCIATES INC.



Ronald P. Blegen, R.G.
Senior Project Hydrogeologist



David Banton, R.G.
Principal, Senior Hydrogeologist.

RB/DB/rb

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² Golder Associates Inc., 2005, Bandon Dunes-New Irrigation Well L74686-Pumping Test Analysis and Recommendations for Well Capacity, Prepared for Bandon Dunes Resort, September 26, 2005.

³ Golder Associates Inc., 2005, Bandon Dunes Resort Groundwater Supply Development, Drilling, Well Construction, and Aquifer Testing, 2003-2004, prepared for Bandon Dunes Resort, April 20, 2005.

⁴ Golder Associates Inc., 2009, Bandon Dunes Resort Irrigation Well L91210 Construction, Pumping Test Analysis, and Recommendations, February 2, 2009.

AMMENDED APPLICATION TABLES

Table 1 (Amended)

Old McDonald Course Water Rights Permit, Well Construction Details

Table 2 (Amended)

Amount of Water

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**Table 1 (AMENDED)
Old McDonald Course Water Rights Permit
Well Construction Details**

Well No.	Diameter	Type and Size of Casing	Number of Feet of Casing	Intervals Casing is Perforated (feet bgs)	Seal Depth (feet bgs)	Est. Depth To Water (feet bgs)	Est. Depth to Water-Bearing Stratum (feet bgs)	Type of Access Port or Measuring Device	Total Depth of Well
OM-4 (L91192) ("Shuman Well")	15 in boring 10 in. casing/screen	10-in. PVC casing 10-in. SS Screen	62	51.33 to 66.33	30	20	33	0.5-inch port	78
OM-5 (L91210)	17.5 in boring 10 in. casing/screen	10-in. steel casing 10-in. SS Screen	239	187 to 199 206 to 216 256 to 268	178	53	95	0.5-inch port	274
OM-6 *	15 in boring 10 in. casing/screen	10-in. PVC casing 10-in. SS Screen	200	200 to 250	190	60	100	0.5-inch port	250

COOS 54387

COOS 54362

Not Drilled

* Well has not been constructed. Construction details are estimates only.

Well Location Property Descriptions

Well No.	County	Township	Range	Section	Qtr. - Qtr.	Tax Lot
OM-4 (L91192)	COOS	27 S	14 W	29	NW - SE	1200
OM-5 (L91210)	COOS	28 S	14 W	5	SW - SW	400
OM-6	COOS	28 S	14 W	5	SW - NW	400

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Table 2 (AMENDED)
Amount of Water

Well No.	Source or Aquifer	Type of Use	Total Rate of Water Requested (in gpm)	Total Annual Quantity† (in gallons)	Production Rate (in gpm)	Notes
OM-4 (L91192)	Aquifer	Irrigation	125	1.68E+08	125	Log Attached to original application
OM-5 (L91210)			400		400	Log Attached
OM-6*			300		300	Well has not been drilled/constructed

Note:

- * Well OM-6 has not been drilled or constructed.
- † The total annual quantity of water requested is calculated based on the total number of acres to be irrigated under this permit (206.65), a duty of 2.5 acre-feet per season, and a 245 day season (March 1 - October 31).

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UPDATED APPLICATION MAP

Figure 1

Water Right Application Map, Old McDonald Course – Bandon Dunes

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**OWRD Water Supply Well Report
Well I.D. L91210**

STATE OF OREGON

WATER SUPPLY WELL REPORT

(as required by ORS 537.765 & OAR 690-205-0210)

12-19-2008

WELL LABEL # L 91210

START CARD # 1003392

(1) LAND OWNER

Owner Well I.D. 1264 (OM4)
First Name Michael Last Name Keiser
Company Bandon Dunes/Old McDonald
Address 55744 Round Lake Drive
City Bandon State OR Zip 97411

(2) TYPE OF WORK

(3) DRILL METHOD

Rotary Air [X] Rotary Mud [] Cable [] Auger [] Cable Mud []
Reverse Rotary [] Other []

(4) PROPOSED USE

(5) BORE HOLE CONSTRUCTION

Table with columns: Dia, From, To, Material, SEAL, Amt, lbs. Includes data for cement seals at various depths.

How was seal placed: Method [] A [] B [X] C [] D [] E
Backfill placed from 178 ft. to 273 ft. Material Gravel Size pea gravel
Explosives used: [] Yes Type Amount

(6) CASING/LINER

Table with columns: Casing Liner, Dia, From, To, Gauge, Std, Plstc, Wld, Thrd. Includes data for various casing and liner sections.

Shoe [] Inside [] Outside [] Other Location of shoe(s)
Temp casing [] Yes Dia From To

(7) PERFORATIONS/SCREENS

Table with columns: Perf/S, Casing/Screen, Dia, From, To, Scrn/slot width, Slot length, # of slots, Tele/pipe size. Includes data for three different screen sections.

(8) WELL TESTS: Minimum testing time is 1 hour

Table with columns: Yield gal/min, Drawdown, Drill stem/Pump depth, Duration (hr). Includes data for three test runs.

Temperature 55 F Lab analysis [X] Yes By Bandon Well & Pump Co.

Table with columns: From, To, Description, Amount, Units. Includes data for water quality concerns.

(9) LOCATION OF WELL (legal description)

County Coos Twp 28.00 S N/S Range 14.00 W E/W WM
Sec 5 SE 1/4 of the NW 1/4 Tax Lot 400
Tax Map Number Lot
Lat Long
Street address of well [X] Nearest address []

55744 Round Lake Drive, Bandon

(10) STATIC WATER LEVEL

Table with columns: Date, SWL(psi), SWL(ft). Includes data for existing and completed wells.

WATER BEARING ZONES

Table with columns: SWL Date, From, To, Est Flow, SWL(psi), SWL(ft). Includes data for various water bearing zones.

(11) WELL LOG

Table with columns: Material, From, To. Includes detailed log of well materials and depths.

Date Started 05-05-2008 Completed 12-05-2008

(unbonded) Water Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards.

License Number 1759 Date 12-19-2008

Electronically Filed
Signed CHRISTOPHER L KERSEY (E-filed)

(bonded) Water Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above.

License Number 1493 Date 12-19-2008

Electronically Filed
Signed JAMES A MACK SR (E-filed)
Contact Info (optional) BANDON WELL & PUMP COMPANY (541) 347-7867

(5) BORE HOLE CONSTRUCTION

BORE HOLE			SEAL				sacks/
Dia	From	To	Material	From	To	Amt	lbs

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/S creen	Casing/ Liner	Screen Dia	From	To	Scrm/slot width	Slot length	# of slots	Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
398.7	35.4	231	1
400.2	48	231	72

Water Quality Concerns

From	To	Description	Amount	Units

(10) STATIC WATER LEVEL
Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
10-24-2008	189	200	200		56.8
11-04-2008	207	214.5	150		56.8
11-05-2008	225	228	50		56.8
11-05-2008	242	243	20		56.8
11-05-2008	248	250	50		56.8
11-07-2008	255	267	250		56.8

(11) WELL LOG

Material	From	To
Gravel fine-medium w/sand coarse-fine gray	95	100
Gravel coarse-fine w/sand coarse-fine green gray	100	105
Gravel m-f-c w/sand coarse-fine green gray	105	120
Sandy clay green gray	120	147
Gravel coarse-fine w/sand coarse-fine green gray	147	151
Sandy clay green gray	151	166
Gravel medium-fine w/sand coarse-fine green gray	166	168
Silty clay green gray	168	175
Silty clay gray	175	182
Gravel coarse-fine green gray	182	184
Sandy clay gray	184	188
Gravel coarse-fine w/sand coarse-fine green black *	188	199
Gravel coarse-fine w clay gray	199	207
Gravel coarse-fine w/sand coarse-fine green black *	207	214.5
Silty clay gray	214.5	220
Sandy clay gray w/wood	220	222
Sandy clay gray	222	225
Shell w/gravel coarse-fine	225	228
Sandy clay gray	228	238
Sandy clay gray w/gravel fine & wood	238	242
Gravel medium-fine gray black w/sand & shell	242	243
Sandy clay gray	243	248
Gravel medium-fine gray black w/shell	248	250
Sandy clay gray	250	253
Silty clay green	253	255
Gravel coarse-fine w/sand c-f gray green black *	255	262
Gravel coarse-fine w/clay gray *	262	264
Gravel coarse-fine w/clay gray & wood *	264	265
Continued in comment section	265	274

Comments/Remarks

Gravel coarse-fine w/sandy clay gray brown * 265 -- 268
 Silty clay gray 268 -- 269
 Sandstone gray 269 -- 274

 Cement seal between 17.5" & 10" casing is set at 70'. 1 1/4 gravel tube set @ 180' to surface between 17.5" & 10" casing
 8.33 gal/ft of dd

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COOS 54170

STATE OF OREGON WATER SUPPLY WELL REPORT

WATER RESOURCES DEPT SANDWELL REPORT # 91182

(as required by ORS 537.765 & OAR 690-205-0210)

02-04-2008

START CARD # 1000015

(1) LAND OWNER Owner Well I.D. 1246 RD# First Name Last Name Company BANDON DUNES/OLD McDonald Address 57744 Round Lake Drive City Bandon State OR Zip 97411

(2) TYPE OF WORK [X] New Well [] Deepening [] Conversion [] Alteration (repair/recondition) [] Abandonment

(3) DRILL METHOD [] Rotary Air [X] Rotary Mud [] Cable [] Auger [] Cable Mud [] Reverse Rotary [] Other

(4) PROPOSED USE [] Domestic [X] Irrigation [] Community [] Industrial/ Commercial [] Livestock [] Dewatering [] Thermal [] Injection [] Other

(5) BORE HOLE CONSTRUCTION Special Standard [] (Attach copy) Depth of Completed Well 77.25 ft.

Table with columns: Dia, From, To, Material, SEAL From, To, Amt, sacks/lbs. Rows include Bentonite seals at various depths.

How was seal placed: Method [] A [] B [] C [] D [] E [X] Other Pour from surface Backfill placed from 38 ft. to 78 ft. Material Gravel Size 3/8-3/16 Explosives used: [] Yes Type Amount

(6) CASING/LINER Casing Liner Dia + From To Gauge Std Plstc Wid Thrd. Diagrams show casing and liner profiles.

Shoe [] Inside [] Outside [] Other Location of shoe(s) Temp casing [] Yes Dia From To

(7) PERFORATIONS/SCREENS Perforations Method Screens Type Johnson V-Wire Material StainlessSteel

Table with columns: Perf/S, Casing/Screen, Dia, From, To, Scm/slot width, Slot length, # of slots, Tele/pipe size. Shows screen data at 10, 57.25, 72.25, and 101 ft.

(8) WELL TESTS: Minimum testing time is 1 hour

Table for well tests with columns: Pump/Bailer/Air/Flowing Artesian, Yield gal/min, Drawdown, Drill stem/Pump depth, Duration (hr). Shows test results at 90, 58.6, and 119.9 gpm.

Temperature 52 °F Lab analysis [X] Yes By Bandon Well & Pump Co.

Table for water quality concerns with columns: From, To, Description, Amount, Units.

(9) LOCATION OF WELL (legal description) County Coos Twp 27.00 S N/S Range 14.00 W E/W WM Sec 29 SE 1/4 of the NW 1/4 Tax Lot 600 Tax Map Number Lot Lat 43° 12' 481" or 43.33361111 DMS or DD Long -124° 23' 325" or -124.47361111 DMS or DD [X] Street address of well [] Nearest address

57744 Round Lake Drive, Bandon

(10) STATIC WATER LEVEL Date SWL(psi) + SWL(ft). Existing Well / Predeepening Completed Well 01-24-2008 20. Flowing Artesian? [] Dry Hole? []

WATER BEARING ZONES Depth water was first found 22. Table with columns: SWL Date, From, To, Est Flow, SWL(psi), + SWL(ft). Shows zone from 22 to 72 ft.

(11) WELL LOG Ground Elevation 200. Table with columns: Material, From, To. Lists soil layers from Sand fine tan to Gravel coarse-fine w/sand c-f gray green.

Date Started 11-26-2007 Completed 01-24-2008

(unbonded) Water Well Constructor Certification I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards.

License Number 1759 Date 02-04-2008 Electronically Filed Signed CHRISTOPHER L KERSEY (E-filed)

(bonded) Water Well Constructor Certification I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above.

License Number 1493 Date 02-04-2008 Electronically Filed Signed JAMES A MACK SR (E-filed) Contact Info (optional) Bandon Well & Pump Company (541) 347-7867

STATE OF OREGON
WATER SUPPLY WELL REPORT

(as required by ORS 537.765 & OAR 690-205-0210)

07-18-2008

WELL LABEL # L 91192

START CARD # 123873

(1) LAND OWNER Owner Well I.D. 1265 (Shuman)

First Name Michael Last Name Keiser
Company Bandon Dunes
Address 57744 Round Lake Drive
City Bandon State OR Zip 97411

(2) TYPE OF WORK New Well Deepening Conversion
 Alteration (repair/recondition) Abandonment

(3) DRILL METHOD Rotary Air Rotary Mud Cable Auger Cable Mud
 Reverse Rotary Other

(4) PROPOSED USE Domestic Irrigation Community
 Industrial/ Commercial Livestock Dewatering
 Thermal Injection Other

(5) BORE HOLE CONSTRUCTION Special Standard (Attach copy)
Depth of Completed Well 70.33 ft.

BORE HOLE SEAL table with columns: Dia, From, To, Material, From, To, Amt, sacks/lbs

How was seal placed: Method A B C D E
 Other Pour from surface
Backfill placed from 30 ft. to 71 ft. Material Sand Size 6/9 8/12
Explosives used: Yes Type Amount

(6) CASING/LINER table with columns: Casing, Liner, Dia, From, To, Gauge, Std, Plstc, Wld, Thrd

Shoe Inside Outside Other Location of shoe(s)
Temp casing Yes Dia From To

(7) PERFORATIONS/SCREENS
Perforations Method
Screens Type Johnson V-Wire Material S S

Table with columns: Perf/S creen, Casing/ Liner, Dia, From, To, Scrn/slot width, Slot length, # of slots, Tele/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Table with columns: Pump/Bailer/Air/Flowing Artesian, Yield gal/min, Drawdown, Drill stem/Pump depth, Duration (hr)

Temperature 54 °F Lab analysis Yes By
Water quality concerns? Yes (describe below)

Table with columns: From, To, Description, Amount, Units

(9) LOCATION OF WELL (legal description)

County Coos Twp 27.00 S N/S Range 14.00 W E/W WM
Sec 29 NW 1/4 of the SE 1/4 Tax Lot 1300
Tax Map Number Lot
Lat or DMS or DD
Long or DMS or DD
 Street address of well Nearest address

57744 Round Lake Drive

(10) STATIC WATER LEVEL

Table with columns: Existing Well / Predeepening, Date, SWL(psi), SWL(ft)

Flowing Artesian? Dry Hole? Depth water was first found 33.58

WATER BEARING ZONES

Table with columns: SWL Date, From, To, Est Flow, SWL(psi), SWL(ft)

(11) WELL LOG Ground Elevation 100

Table with columns: Material, From, To

Date Started 05-01-2008 Completed 07-09-2008

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 1759 Date 07-18-2008
Electronically Filed
Signed CHRISTOPHER L KERSEY (E-filed)

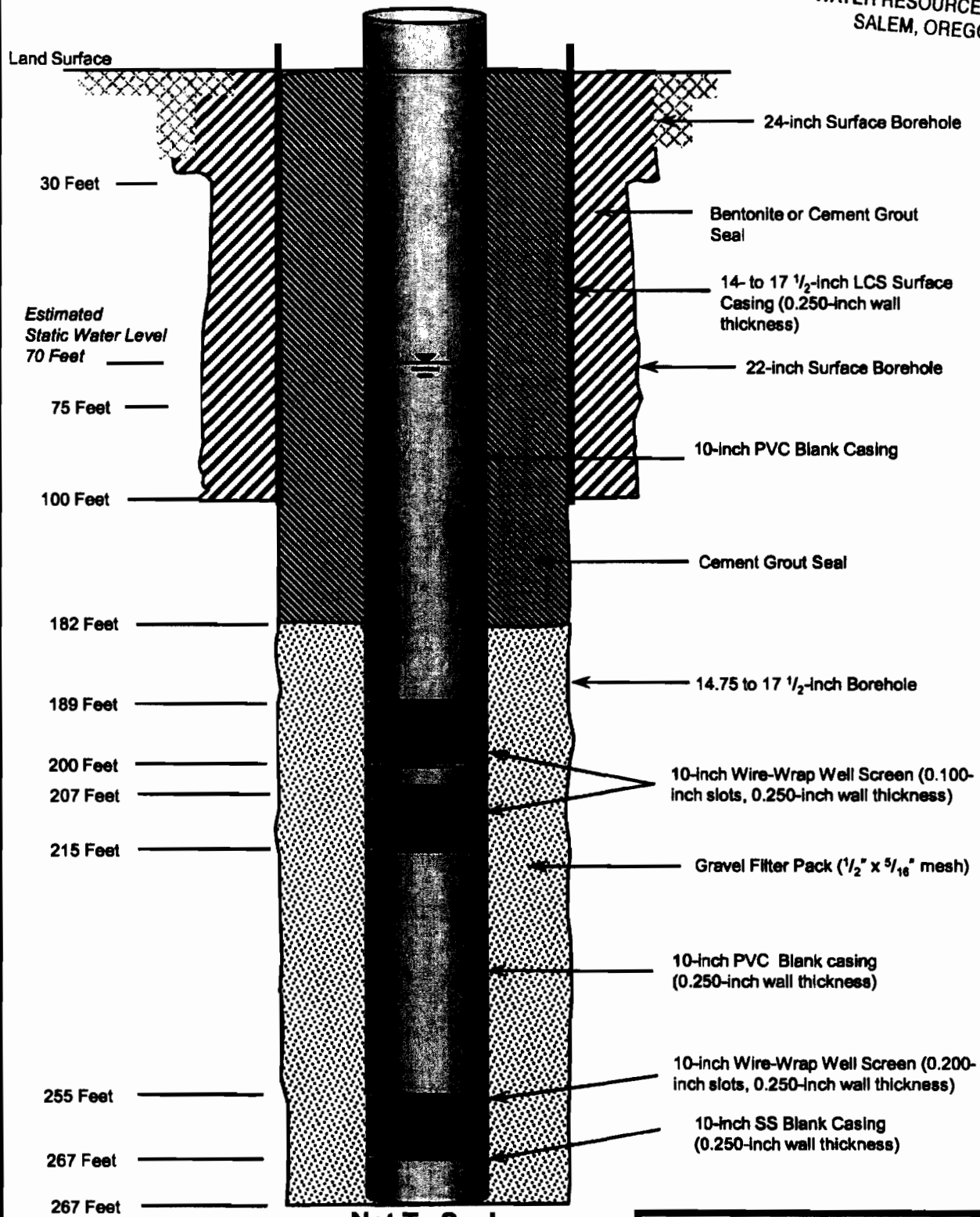
(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1491 Date 07-18-2008
Electronically Filed
Signed JAMES A MACK SR (E-filed)
Contact Info (optional) BANDON WELL & PUMP COMPANY (541) 347-7867

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- Notes:
1. LCS = low carbon steel
 2. SS = stainless steel



Figure 1
Proposed Well Design
OM-5
Bandon Dunes, Oregon



Oregon Water Resources Department
Land Use Information Form

THIS FORM IS NOT REQUIRED IF: 1) water is to be diverted, conveyed, and/or used only on federal lands; or 2) the application is for a water-right transfer, allocation of conserved water, exchange, permit amendment, or ground water registration modification, and all of the following apply: a) only the place of use is proposed for change, b) there are no structural changes, c) the use of water is for irrigation, and d) the use is located in an irrigation district or exclusive farm-use zone.

Applicant Name: Bandon Dunes Limited Partnership c/o Donald J. Stastny, Owner's Representative
Mailing Address: 2130 Lincoln Park North
City: Chicago State: IL Zip: 60614 Day Phone: 503-222-5533

This application is related to a Measure 37 claim. [] Yes [x] No

A. Land and Location

Please include the following information for all tax lots where water will be diverted (taken from its source), conveyed (transported), or used. Applicants for municipal use, or irrigation uses within irrigation districts may substitute existing and proposed service-area boundaries for the tax-lot information requested below.

Table with 8 columns: Township, Range, Section, 1/4 1/4, Tax Lot #, Plan Designation (e.g. Rural Residential/RR-5), Water to be: (Diverted, Conveyed, Used), Proposed Land Use. Includes a 'See Attached Table' entry.

List all counties and cities where water is proposed to be diverted, conveyed, or used. Coos County

B. Description of Proposed Use

Type of application to be filed with the Water Resources Department:

- Permit to Use or Store Water, Water-Right Transfer, Exchange of Water, Allocation of Conserved Water, Limited Water Use License, Permit Amendment or Ground Water Registration Modification

Source of water: [] Reservoir/Pond [x] Ground Water [] Surface Water (name)

Estimated quantity of water needed: 575 [] cubic feet per second [x] gallons per minute [] acre-feet

Intended use of water: [x] Irrigation [] Commercial [] Industrial [] Domestic for household(s), [] Municipal [] Quasi-municipal [] Instream [] Other

Briefly describe: Water will be pumped from five wells and applied to the authorized place of use via underground pipelines and sprinkler systems. The water will be used to promote the growth and maintenance of golf course turf and landscaping.

Note to applicant: If the Land Use Information Form cannot be completed while you wait, please have a local government representative sign the receipt below and include it with the application filed with the Water Resources Department.

Receipt for Request for Land Use Information

State of Oregon
Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301-1266

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For Local Government Use Only

The following section must be completed by a planning official from each county and city listed unless the project will be located entirely within the city limits. In that case, only the city planning agency must complete this form.

This deals only with the local land-use plan. Do not include approval for activities such as building or grading permits.

Please check the appropriate box below and provide the requested information

- Land uses to be served by proposed water uses (including proposed construction) are allowed outright or are not regulated by your comprehensive plan. Cite applicable ordinance section(s): Section 4.10
- Land uses to be served by proposed water uses (including proposed construction) involve discretionary land-use approvals as listed in the table below. (Please attach documentation of applicable land-use approvals which have already been obtained. Record of Action/land-use decision and accompanying findings are sufficient.)
If approvals have been obtained but all appeal periods have not ended, check "Being pursued".

Type of Land-Use Approval Needed (e.g. plan amendments, rezones, conditional-use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Land-Use Approval:	
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being pursued <input type="checkbox"/> Not being pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being pursued <input type="checkbox"/> Not being pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being pursued <input type="checkbox"/> Not being pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being pursued <input type="checkbox"/> Not being pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being pursued <input type="checkbox"/> Not being pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being pursued <input type="checkbox"/> Not being pursued

Local governments are invited to express special land-use concerns or make recommendations to the Water Resources Department regarding this proposed use of water below, or on a separate sheet.

Name: Debby Darling Title: Planner
 Signature: Debby Darling Phone: 541 346 3121 Date: 10/16/08
 Government Entity: Cook County Planning Dept. 4210

Note to local government representative: Please complete this form or sign the receipt below and return it to the applicant. If you sign the receipt, you will have 30 days from the Water Resources Department's notice date to return the completed Land Use Information Form or WRD may presume the land use associated with the proposed use of water is compatible with local comprehensive plans.

Receipt for Request for Land Use Information

Applicant name: _____

City or County: _____ Staff contact: _____

Signature: _____ Phone: _____ Date: _____

A. LAND AND LOCATION

Township	Range	Section	1/4 1/4	Tax Lot #	Plan Designation	Water to be:			Proposed Land Use
						Diverted	Conveyed	Used	
27S	14W	29	NE NW	1200	BDR	X		X	Golf Course
27S	14W	29	SW NW	1200		X		X	
27S	14W	29	SE NW	1200		X		X	
27S	14W	29	NW SE	1200		X			
28S	14W	5	SW SW	400		X	X		
27S	14W	20	SE SW	600				X	
27S	14W	20	SW SE	900				X	
27S	14W	29	NW NW	1200				X	
27S	14W	29	NW NE	1200				X	
27S	14W	29	SW NE	1200				X	
27S	14W	29	NW SW	1200				X	
27S	14W	29	NE SW	1200				X	
27S	14W	32	SW 1/4	400			X		
27S	14W	32	NW 1/4	400			X		

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**Table 1
Old McDonald Course Water Rights Permit
Well Construction Details**

Well No.	Diameter	Type and Size of Casing	Number of Feet of Casing	Intervals Casing is Perforated (feet bgs)	Seal Depth (feet bgs)	Est Depth to Water (feet bgs)	Est. Depth to Water-Bearing Stratum (feet bgs)	Type of Access Port or Measuring Device	Total Depth of Well (feet bgs)
L91182 (OM-1)	14.75 in. boring 10-in. casing/screen	10-in. PVC casing 10-in. SS Screen	77.25	57.25 to 72.25	38	20	22	0.5-inch port	78
OM-2 *	14.75 in. boring 10-in. casing/screen	10-in. PVC casing 10-in. SS Screen	75	55 to 75	45	20	40	0.5-inch port	75
OM-3 *	14.75 in. boring 10-in. casing/screen	10-in. PVC casing 10-in. SS Screen	75	55 to 75	45	20	40	0.5-inch port	75
L91192 (OM-4)	15 in boring 10 in. casing/screen	10-in. PVC casing 10-in. SS Screen	70.33	51.33 to 66.33	30	20	33	0.5-inch port	78
OM-5 **	15 in boring 10 in. casing/screen	10-in. PVC casing 10-in. SS Screen	267	189 to 200 207 to 215 255 to 267	182	70	189	0.5-inch port	267

* Well has not been constructed. Construction details are estimates only.

** Well has been design but not yet constructed.

Well Location Property Descriptions

Well No.	County	Township	Range	Section	Qtr. - Qtr.	Tax Lot	Location relative to Section Corner
L91182 (OM-1)	COOS	27 S	14 W	29	NE - NW	1200	1,644 feet east and 4,390 feet north of the SW corner of Section 29
OM-2 *	COOS	27 S	14 W	29	SW - NW	1200	381 feet east and 3,723 feet north of the SW corner of Section 30
OM-3 *	COOS	27 S	14 W	29	SE - NW	1200	1,647 feet east and 2,656 feet north of the SW corner of Section 30
L91192 (OM-4)	COOS	27 S	14 W	29	NW - SE	1200	1,742 feet east and 2,390 feet north of the SW corner of Section 31
OM-5 **	COOS	28 S	14 W	5	SW - SW	400	562 feet east and 162 feet north of the SW corner of Section 5

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LIMITED POWER OF ATTORNEY

Bandon Dunes, L. P., a Delaware
Limited Partnership
Michael Keiser, Managing Partner
57774 Round Lake Road
Bandon, Oregon 97411-6360

to

Donald J. Stastny
StastnyBrun Architects, Inc.
1630 SW Morrison, Suite 210
Portland, OR 97205

After recording return to
Michael Keiser at above address

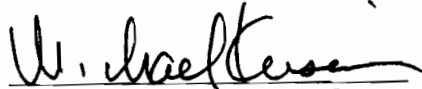
KNOW ALL BY THESE PRESENTS that I, Michael Keiser, in my capacity as managing partner for Bandon Dunes L. P., a Delaware Limited Partnership registered to do business in the State of Oregon, do hereby make, constitute, and appoint Donald J. Stastny, FAIA, AICP, chief architect and owner's representative for Bandon Dunes L.P., the true and lawful attorney and agent for Bandon Dunes L.P. to sign, seal, and execute on behalf of Bandon Dunes L.P. any and all applications, consents, concurrences, waivers, and other documents that he reasonably deems necessary to complete, submit, supplement, modify, withdraw, and otherwise process applications for governmental permits, certifications, approvals, grants, access rights, and consents related to the development and operation of the Bandon Dunes Resort Site in Coos County Oregon in accordance with the Bandon Dunes Resort Master Plan element of the Coos County Comprehensive Plan.

Limitations: This power of attorney limited to the powers stated above and does not include the authority to assign, lease, sell, rent, mortgage, pledge, donate, or otherwise transfer interests in real or personal property.

Effective dates: This power of attorney is effective from this date and continues in effect until December 31, 2009, or until otherwise extended, modified, or cancelled in writing by the principal or agent or by operation of law.

Signed and dated this 5th day of November, 2008.

Bandon Dunes, L.P.

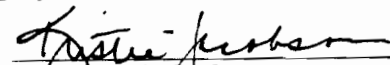


by Michael Keiser, Managing Partner

State of Oregon, County of Coos) ss.

This instrument was acknowledged before me this 5th day of November, 2008.




Notary Public for Oregon
My commission expires: 4/30/10

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**Table 2
Amount of Water**

Well No.	Source or Aquifer	Type of Use	Total Rate of Water Requested (in gpm)	Total Annual Quantity (in gallons)	Production Rate (in gpm)	Notes
OM-1	Aquifer	Irrigation	150	1.68E+10	150	Log Attached
OM-2			50		50	Not yet constructed
OM-3			50		50	Not yet constructed
OM-4			125		125	Log Attached
OM-5*			250		250	Well design attached.

Note:

* A borehole has been drilled at the site of OM-5 and preliminary logs indicate the subsurface conditions are similar to those that were encountered at wells L74686 and L96436. These wells are deeper and more productive than most of the wells on the Bandon Dunes property and are screened in water-bearing gravels at depths between 180 and 260 feet below grade. The recommended pumping rate at L74686 is 350 gpm. The OM-5 design will screen the same deposits. The gravels are thinner at this location than at L74686 and the estimated production rate has been adjusted downward accordingly.

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Oregon Water Resources Department

FORM I

FOR IRRIGATION WATER USE

1. Please indicate whether you are requesting a primary or supplemental irrigation water right.

Primary **Supplemental**

If supplemental, please indicate the number of acres that will be irrigated for each type of use.

Primary: 206.65 Acres

Secondary: _____ Acres

List the permit or certificate number of the primary water right: No. _____

2. Please list the anticipated crops you will grow and whether you will be irrigating them for a full or partial season:

1. Grass, turf, landscape vegetation Full season Partial season (from: _____ to _____)

2. _____ Full season Partial season (from: _____ to _____)

3. _____ Full season Partial season (from: _____ to _____)

4. _____ Full season Partial season (from: _____ to _____)

3. Indicate the maximum total number of acre-feet you expect to use in an irrigation season:

516 _____ acre-feet

(1 acre-foot equals 12 inches of water spread over 1 acre, or 43,560 cubic feet, or 325,851 gallons.)

4. How will you schedule your applications of water? Will you be applying water in the evenings, twice a week, daily?

Daily during daytime hours Daily during nighttime hours

Two or three times weekly during daytime Two or three times weekly during nighttime

Weekly, during daytime hours Weekly, during nighttime hours

Other, explain: _____

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Golder Associates Inc.
1430 West Broadway Road, Suite 108
Tempe, Arizona 85282
Telephone: (480) 966-0153
Fax: (480) 966-0193
www.golder.com



November 10, 2008

Our Ref.: 033-1642-002.002

Oregon Department of Water Resources
Department 725
725 Summer St NE, Suite A
Salem, OR 97301

Attn: Mr Douglas E. Woodcock

**RE: APPLICATION FOR A PERMIT TO USE GROUNDWATER
OLD MCDONALD COURSE, BANDON DUNES RESORT
BANDON DUNES LIMITED PARTNERSHIP, BANDON, OREGON**

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Dear Mr. Woodcock:

Enclosed please find the completed Application for a Permit to Use Groundwater, completed by Golder Associates Inc. (Golder) on behalf of the Bandon Dunes Limited Partnership. A check in the amount of \$1,600.00 is also enclosed.

The Bandon Dunes Limited Partnership is continuing to develop their property and water use. This application is for a new permit that makes use of a new source of groundwater, and unutilized wells on the Bandon Dunes property. Through this application, the Bandon Dunes Limited Partnership is requesting the authority to appropriate groundwater to promote new grass growth, to maintain the integrity of new turf, and to irrigate surrounding landscape vegetation. The application requests the ability to pump groundwater from five wells to irrigate a total of 206.65 acres. At present, only two of the wells have been constructed. The application package includes the application, application map, and supporting data and memoranda. Please note the proposed operations and monitoring guidelines. This application is part of a long-term goal for Bandon Dunes of establishing a quasi-municipal water right that will provide coverage for water uses on their entire property.

This application has been submitted concurrently with a separate application for permit amendment to the Bandon Dunes water right permit G-13498. For the purposes of proper management of water resources, it is important these applications be processed concurrently to avoid extensive periods of time when water cannot be applied to the requested Place of Use.

There were several entities involved with the preparation of this application package. Golder Associates has prepared and submitted the application. Mr. Donald J. Stastny FAIA FAICP is the Chief Architect and Owners Representative for the Bandon Dunes Golf Resort. Mr. Stastny has been granted temporary signature authority by the Managing Partner of the Bandon Dunes Limited Partnership, Mr. Michael Keiser. An original signed and notarized copy of the document granting limited power of attorney to Mr. Stastny has also been included with this package. The check for

application processing fees was prepared by the general contractor for Bandon Dunes who is responsible for dispersal of funds for current capital projects at the resort.

If you have any questions regarding the application content or the request, please do not hesitate to contact the following Golder Associates staff at any time:

- Ron Blegen (480-966-0153, rblegen@golder.com)
- David Banton (425-883-0777, dbanton@golder.com)

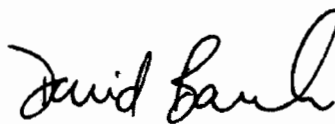
We appreciate your consideration of this request.

Sincerely,

GOLDER ASSOCIATES INC.



Ron Blegen, R.G.
Senior Project Hydrogeologist



David Banton, R.G.
Principal Hydrogeologist

Attachments: Application for Permit to Use Groundwater

cc: Don Stastny (Stastny Brun Architects, Inc.)
Warren Felton (Bandon Dunes, LLP)

rpb/rpb

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MEMORANDUM

Golder Associates Inc.

1430 West Broadway Road, Suite 108
Tempe, Arizona, USA 85282

Telephone: 480-966-0153
Fax Access: 480-966-0193

TO: Don Stastny and Bruce Johnson,
Bandon Dunes **DATE:** October 15, 2008

FROM: Ron Blegen, R.G. and David Banton, R.G. **OUR REF.:** 033-1642-002.002

**RE: STREAM DEPLETION
CALCULATIONS, BANDON DUNES
WELL L91182 – OLD MCDONALD
COURSE**



This technical memorandum presents an assessment of the potential depletion of stream flow in Whiskey Run Creek due to pumping from new irrigation wells on the Old McDonald golf course, which is part of the Bandon Dunes Golf Resort (Bandon Dunes). Well L91182 is located on the Old McDonald golf course and about 1,400 feet from the nearest segment of the creek (Figure 1). This well is one of three wells that are proposed as irrigation supply wells for the course, but L91182 is the closest of the three locations. The other two wells may be installed at the locations labeled Proposed OM-2 and Proposed OM-3. For the purposes of this memo, production rates at these locations are assumed to be 75 gallons per minute (gpm).

An analytical stream depletion model (Hunt 1999) was used to estimate the effect of pumping from the irrigation wells on flow in the creek. The analytical model assumes that the water table is flat and estimates the amount of surface water captured or intercepted by a pumping well located in an unconfined aquifer in proximity to a stream. The model is a simplification of the site hydrogeologic conditions since several of the underlying assumptions used in the model are not met. In particular, the fact that the irrigation well locations are located such that they intercept groundwater that may naturally discharge to the Pacific Ocean means that the analytical model likely over-predicts impacts to the stream. In addition, the model was run as if the output of all three wells were being pumped from a single well that is closest to the creek. This also contributes to an over-prediction of the

impact of pumping from these wells on the creek because the other wells are located a greater distance from the creek. Therefore, given the limitations of the model, the results are presented to give an indication of potential worst-case impacts rather than actual impacts.

Data input to the model includes estimates of near-well aquifer transmissivity and storage coefficient. These values were determined through analysis of pumping tests completed at well L91182 in January 2008. The estimated aquifer transmissivity is 16,751 gallons per day per foot (gpd/ft) [2,245 feet squared per day (ft²/d)]. The aquifer storage coefficient is estimated at between 0.1 and 0.06, based upon professional judgment and a review of representative storage coefficients from nearby wells completed at similar depths and in similar aquifer materials.

Figure 2 presents the theoretical rate of stream depletion, assuming a storage coefficient value of 0.1 and the well pumping continuously for 210 days (April 1 to October 30) at a rate of 300 gpm (150 gpm from L91182, and 75 gallons from each of locations OM-2 and OM-3). In addition, it was assumed that:

- A streambed leakage value was set at 10 feet/day which is representative of a silty sand to clean sand (Freeze and Cherry 1979); and
- 90% of the water pumped was consumed on site; (10% returned to the aquifer from irrigation).

The figure shows that the rate of depletion increases as pumping duration increases with the maximum impact occurring at the end of the pumping period. At this time (210 days of pumping), it is estimated that pumping 300 gpm (0.67 cfs) would eventually result in the loss of 166 gpm (0.37 cfs) of streamflow. Assuming an aquifer storage coefficient of 0.06, the estimated streamflow losses would be approximately 218 gpm (0.48 cfs) (Figure 3).

Golder has been continuously monitoring streamflow in Whiskey Run Creek since 2004 in accordance with the requirements of water right permit G-15437. A gauging station was established on the creek which records flow data on a continuous basis throughout the year. Periodically, a Swoffer flow meter is used to measure stream velocity (and thus flow) at the station to provide backup and correlation data for the station. A hydrograph displaying the measured flow during this period is presented in Figure 4. Figure 4 also displays the natural streamflow predicted for Whiskey Run Creek by the Oregon Water Resources Department (OWRD) and the instream flow right established by OWRD through water right certificate number 72875.

During the 2004 to 2007 period, the streamflow in the creek has remained relatively steady, generally ranging from about 2 to 3 cfs, with periodic spikes during large storm events. This is well above the predicted flow rate and the rate required for instream flow during large

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portions of the irrigation season. Assuming that streamflow in October in future years is similar to that measured between 2004 and 2007 (typically 2.2 to 2.8 cfs), then a decrease in streamflow of up to 0.40 cfs (as predicted by the stream depletion model) would not result in flows dropping below the instream reserved water right established by OWRD of 0.14 cfs for that month.

Earlier in the year the effects of pumping will be less than in the late summer and fall because of the shorter duration of pumping. Natural streamflow has been higher earlier in the year (May and June) because of higher groundwater levels and greater precipitation. Measured flow during these months is typically in the 3.0 to 3.2 cfs range. Under these conditions, pumping at 300 gpm (0.67 cfs) would not significantly affect streamflow and would not result in flows dropping below the instream reserved water rights established by OWRD of 1.28 for the month of May or 0.75 for the month of June.

As was noted above, this model does not take into account the capture of diffuse groundwater flow that naturally discharges to the ocean. Although not quantified here, the capture of this groundwater will have the effect of decreasing the impact to Whiskey Run Creek due to pumping from wells on the Old McDonald course.

FIGURES

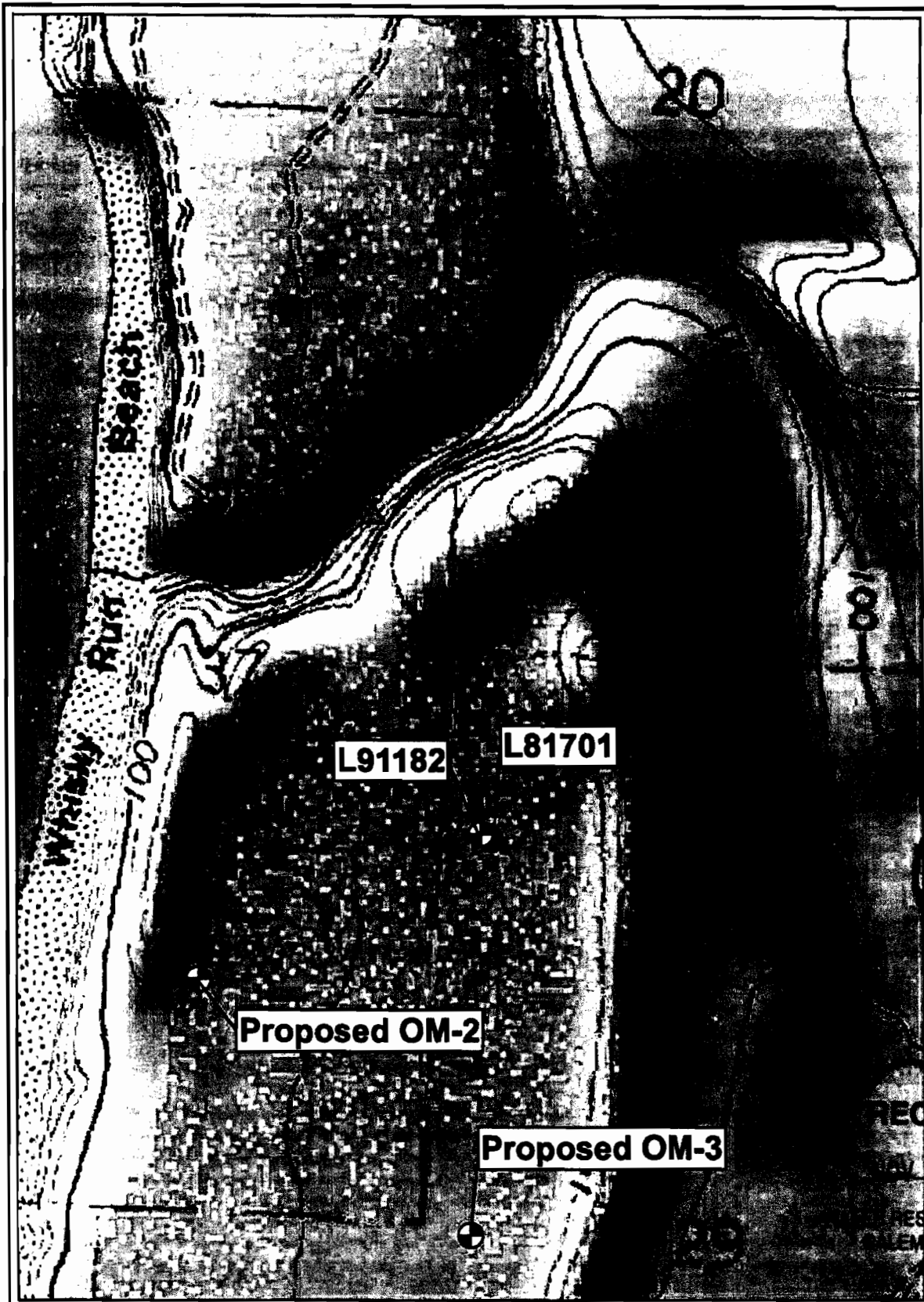
Number

1. Old McDonald Course, Piezometer and Irrigation Well Locations
2. Whiskey Run Creek Streamflow Impacts Due to Pumping at L91182 [S = 0.1]
3. Whiskey Run Creek Streamflow Impacts Due to Pumping at L91182 [S = 0.06]
4. Whiskey Run Creek Flow Data – Water Years 2004 - 2007

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LEGEND

-  Piezometer
-  Irrigation Well
-  Stream Gaging Station

0 400

Scale 1" = 400 Feet

Map Projection:
Oregon State Plane
South Zone, NAD 83, Feet

Source: USGS, Stinner & Assoc
Bentley Engineering

This figure was originally produced in color. Reproduction in black and white may result in a loss of information.

**Old McDonald Course
Piezometer and Irrigation Well Locations
Bandon Dunes/Old McDonald Course Groundwater/OR**

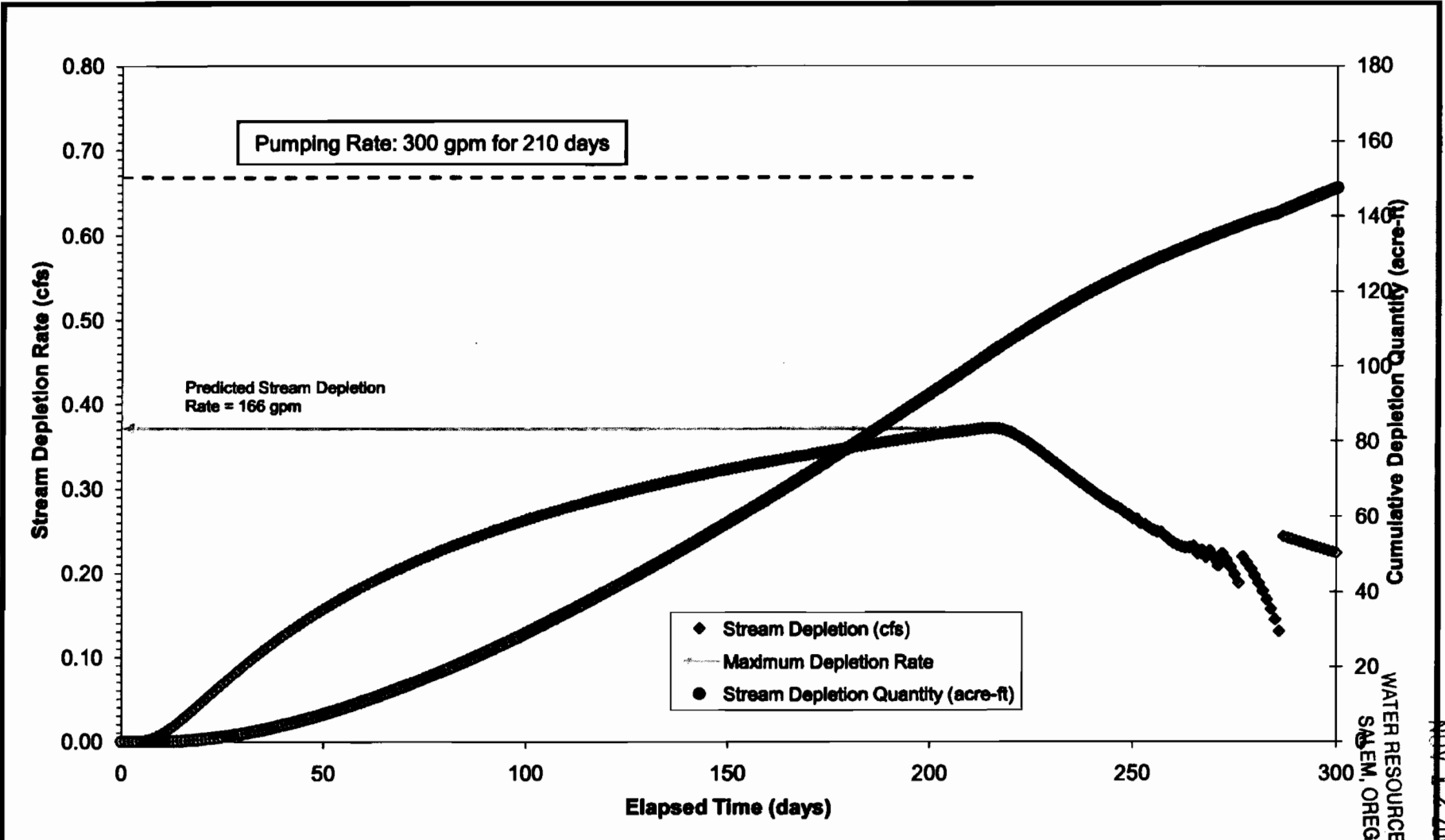
Drawn: BNJ	Revised: 3	Date: Oct. 6, 2008	Page: 1
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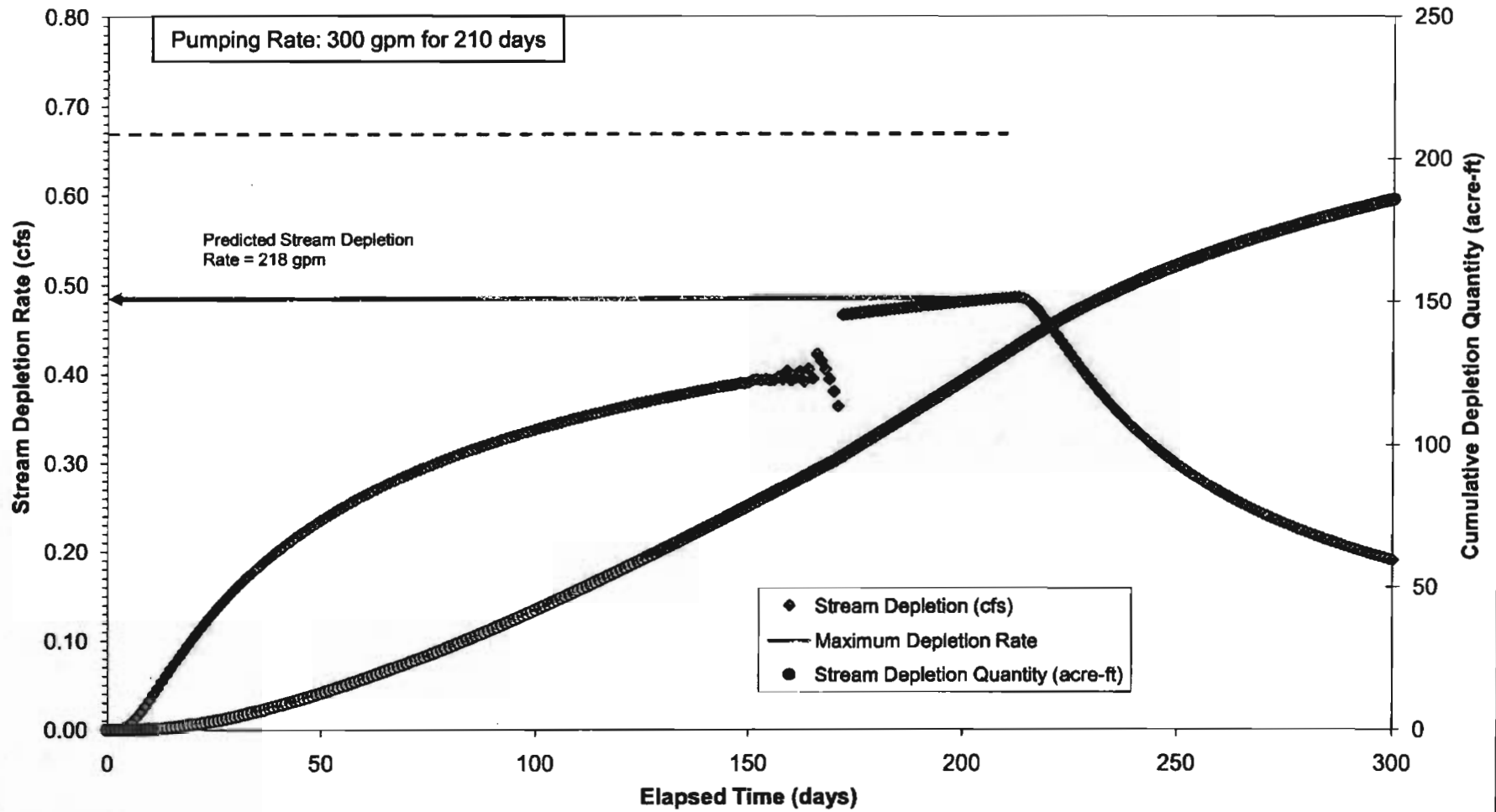
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Bally Bandon Sheep Ranch
Groundwater Services

TITLE Whiskey Creek Streamflow Impacts Due to Pumping at L91182 [S = 0.1]			
DRAWN	RB	DATE	10/5/2008
CHECKED	DB	SCALE	ns
REVIEWED	DB	FILE NO.	
		JOB NO.	033-1642-002.002
		DWG. NO.	na
		FIGURE NO.	2

Figures 2_3_300 gpm / Figure 2



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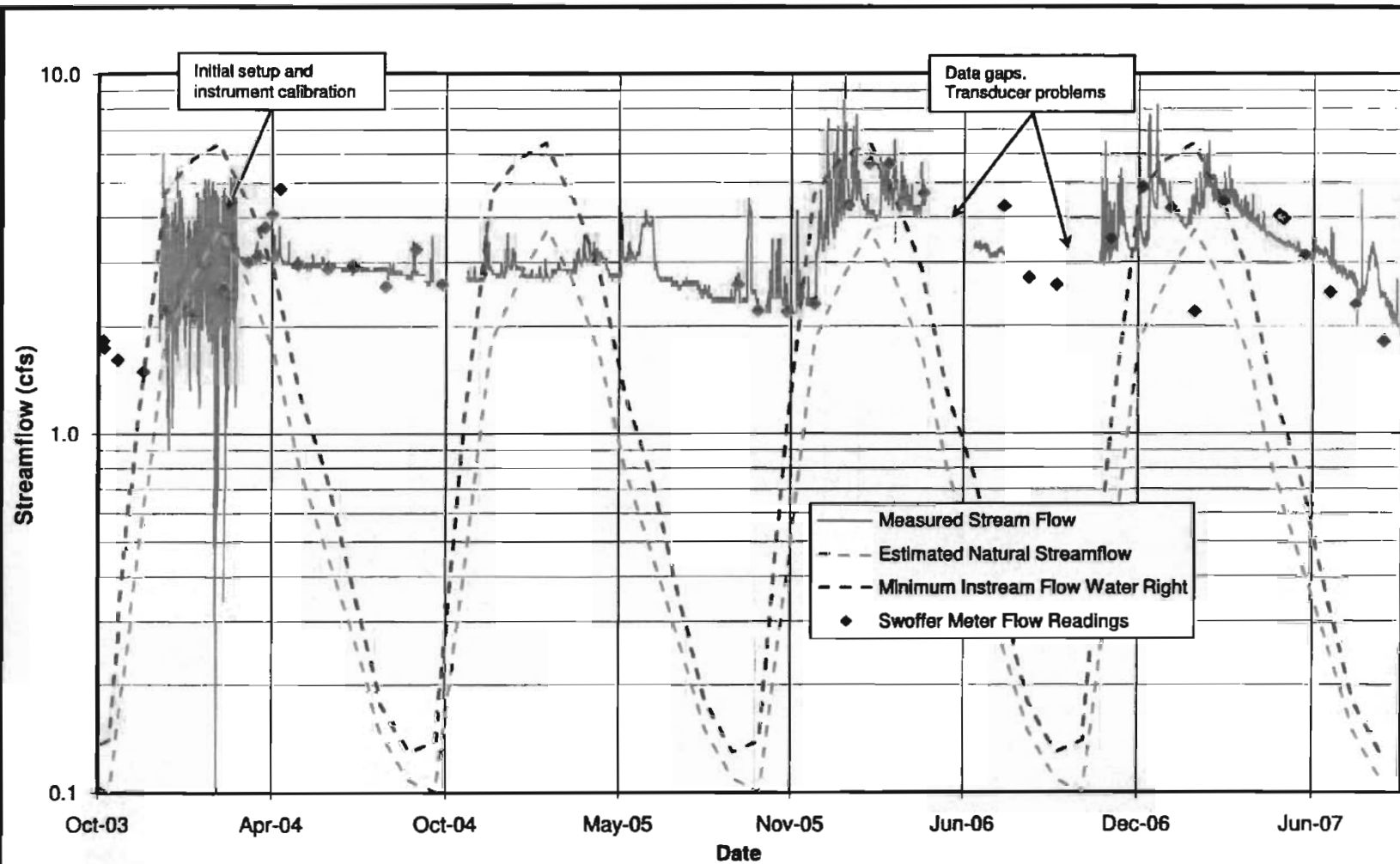
**Bally Bandon Sheep Ranch
Groundwater Services**

TITLE

Whiskey Creek Streamflow Impacts Due to Pumping at L91182 [S = 0.06]

DRAWN	RB	DATE	10/5/2008	JOB NO.	033-1642-002.002
CHECKED	DB	SCALE	na	DWG. NO.	na
REVIEWED	DB	FILE NO.		FIGURE NO.	3

Figures 2_3_300 gpm / Figure 3



Golder Associates Tempe, Arizona

TITLE

Whiskey Run Creek Flow Data - Water Years 2004 - 2007

CLIENT/PROJECT

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**Bandon Dunes Golf Resort
Old McDonald Course**

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CHECKED DB
REVIEWED DB

DATE October 14, 2008

SCALE

FILE NO. Whiskey Run Creek Flow_Figure 4

JOB NO. 033-1642-002.002

DWG. NO.

FIGURE NO. 4

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MEMORANDUM



Golder Associates Inc.

1430 West Broadway Road, Suite 108
Tempe, Arizona, USA 85282

Telephone: 480-966-0153
Fax Access: 480-966-0193

TO: Don Stastny and Bruce Johnson
Bandon Dunes

DATE: October 14, 2008

FROM: Ron Blegen and David Banton

OUR REF.: 033-1642-002.002

**RE: PROPOSED OPERATIONS AND MONITORING - OLD MCDONALD
COURSE IRRIGATION WELLS**

This memorandum presents a description of the Bandon Dunes Golf Resort (Bandon Dunes) irrigation water delivery system as it relates to the attached water right application. Golder Associates Inc. (Golder) has developed this document as a supplement to the application to provide additional system detail beyond what is requested in the application.

1.0 DESCRIPTION OF CURRENT AND PROPOSED BANDON DUNES WATER DELIVERY SYSTEM

The Bandon Dunes irrigation water supply system, as it has been developed under water right permit G-13498, consists of a series of wells, in-line storage ponds, and water distribution piping systems that are independent to each course. Water flow pumped from each of the 12 operating Points of Appropriation (P.O.A.) is monitored with inline flow meters mounted at the wellheads. Water is stored in the ponds before being pumped to the individual courses, also through an in-line flow meter. Although the courses adjoin each other, and there are some interties to aid with delivery of water to the ponds, the individual irrigation water delivery systems for each course are independent of each other. Therefore Bandon Dunes personnel know how much water is being produced at the P.O.A.'s and how much is being delivered to the authorized P.O.U. All of the ponds are connected via a 10-inch diameter pipeline, which allows Bandon Dunes to move water from wells on the south end of the property to storage ponds further north, as needed.

The system that is being proposed under the new water right application will operate in a similar manner. Four of the proposed P.O.A. wells in this application are located at the north end of the Bandon Dunes property and will deliver water to a pond that supplies both the Pacific Dunes course and the developing Old McDonald course. The fifth well (OM-5) is located at the south end of the property and discharge from this well will be delivered to the Trails course pond, then to the Old McDonald course pond via a 10-inch pipeline that connects all of the storage ponds. As is noted above, each wellhead will include an in-line flow meter which will allow for monitoring of flow from the P.O.A.'s to the pond. Delivery of the irrigation water from the pond to the proposed P.O.U. will be carefully monitored to match the volume produced at the P.O.A. wellheads.

2.0 STREAMFLOW DEPLETION AND PROPOSED MITIGATION OPERATIONS

The attached groundwater permit application and supporting documentation requests that groundwater be pumped from up to five new irrigation wells and applied to an area of 206.35 acres encompassing the Old McDonald course. Three of these wells (OM-1, OM-2, and OM-3) are shallow wells located near Whiskey Run Creek, which borders the Bandon Dunes Resort property on the north. Based on stream depletion calculations, pumping from these wells may have an impact on

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Old McDonald Water Right Application
Bandon Dunes

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stream flow as the irrigation season progresses. The proposed operations described below will help ensure that these impacts are minimized.

Golder has been continuously monitoring flow in Whiskey Run Creek since 2003 as a water right permit requirement for an adjoining property. The results of this monitoring have indicated that natural streamflow is significantly higher than the modeled estimates generated by the Oregon Water Resources Department (OWRD) for most of the year. In addition, the natural flow is also significantly higher than the minimum instream flow rights. Figure 1 presents the accumulated Whiskey Run Creek flow data, the OWRD monthly estimated flow for the creek drainage, and the minimum instream water right. A review of this figure indicates that streamflow in the creek has remained relatively steady, generally ranging from 2 to 3 cubic feet per second (cfs) with periodic spikes during large storm events. Early in the year (January through March), the OWRD-predicted flow, and the instream water right, typically exceed the measured flow rate. However, after about April 8th of each year, measured flow typically exceeds both the estimated flow and the amount designated for the instream water right. By June 1st, measured flow typically exceeds the minimum instream water right by over 1.0 cfs. This would imply that some streamflow depletion due to groundwater pumping would be acceptable during much of the irrigation season. The potential impacts of groundwater pumping from Old McDonald wells OM-1, OM-2, and OM-3 on stream flow in Whiskey Run Creek is evaluated in the memo entitled "Stream Depletion Calculations, Bandon Dunes Well L91182 – Old McDonald Course (Golder, 2008). These calculations indicate that pumping at a rate of up to 300 gallons per minute from these wells would not result in streamflow dropping below the minimum instream water right, particularly if pumping did not begin until after about June 1.

To further minimize impacts during the early months of the irrigation season (March 1 through May 31), Bandon Dunes will draw water for use on the Old McDonald course only from wells OM-4 and OM-5. OM-5 will be a deeper, more productive well located near the south end of the Bandon Dunes property. As the season progresses, a greater proportion of groundwater will be drawn from OM-1, OM-2 and OM-3 beginning on June 1 and continuing through the end of the irrigation season on October 31. It is believed that managing the pumping of groundwater in this manner will effectively minimize and mitigate impacts to the Whiskey Run Creek flow.

To further ensure that pumping from the three Old McDonald course wells does not adversely impact minimum instream flow requirements; Bandon Dunes will continue to monitor flow in the creek as a condition of pumping from the wells. Groundwater pumping rates will not exceed the rates allowed under the permit. Bandon Dunes will present a report to OWRD on an annual basis that documents groundwater use, flow rates, precipitation data and potential impacts to stream flow that have occurred during the previous water year (October 1 through September 31).

As noted above, the structure of the water delivery system at the Bandon Dunes Resort allows maintenance personnel to closely monitor flow from each well and from the outlets from storage ponds to ensure water is being applied in a beneficial manner and in compliance with permit requirements. This allows personnel to assure that a volume of water pumped from a specific set of wells is matched by a volume of water delivered to a particular course.

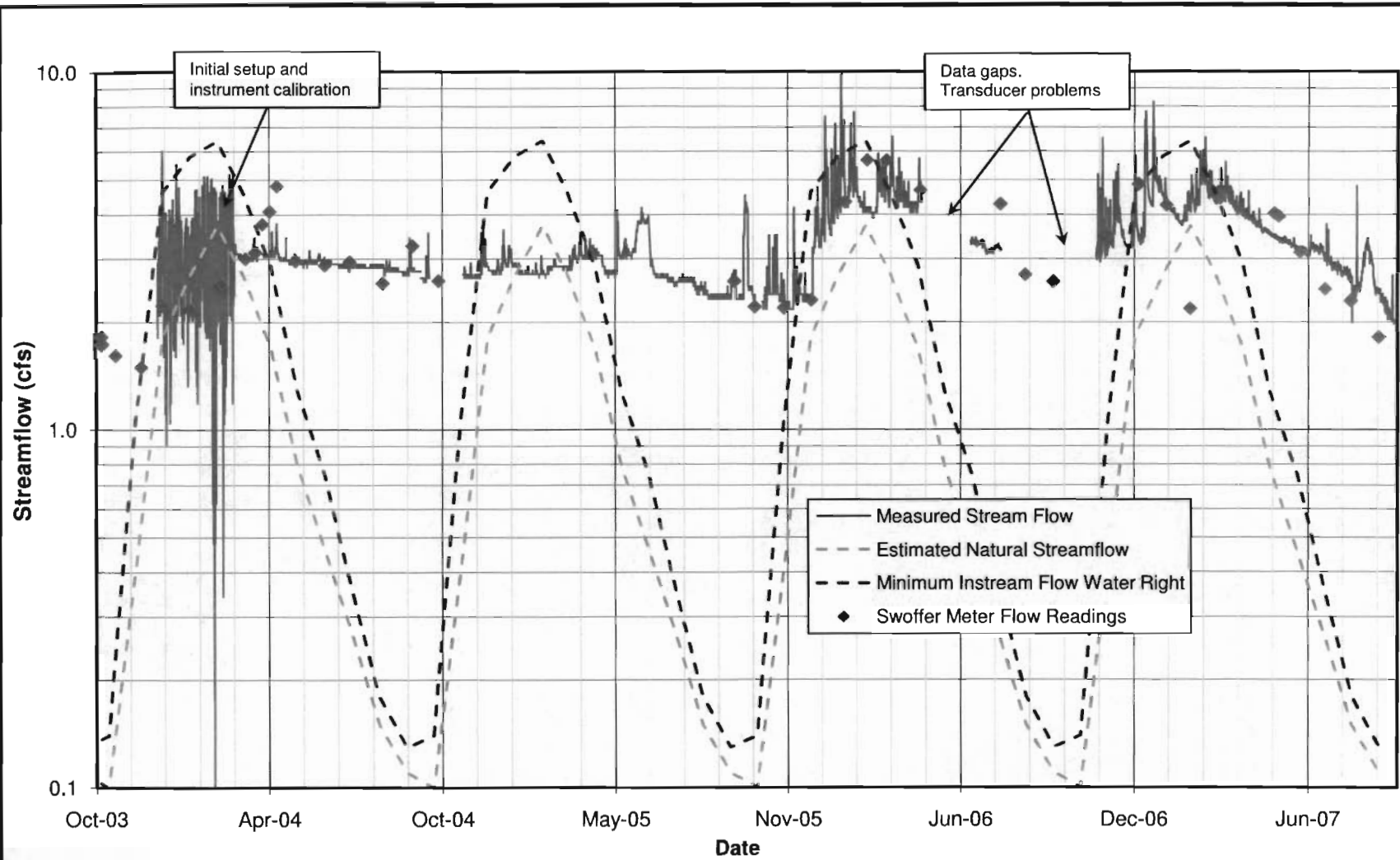
3.0 FUTURE OPERATIONS


Future development at the Bandon Dunes property will likely include additional residential housing and retail outlets that are typical of a resort development. The Bandon Dunes water use profile will become more "municipal" in nature over time. To that end, it is the intention of Bandon Dunes to eventually develop an application for a Quasi-Municipal water right that will encompass the entire property and allow more flexibility in water usage.

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 Golder Associates Tempe, Arizona	TITLE			Whiskey Run Creek Flow Data - Water Years 2004 - 2007		
	CLIENT/PROJECT	DRAWN			DATE	JOB NO.
	Bandon Dunes Golf Resort Old McDonald Course	RB	October 14, 2008		033-1642-002.002	
		CHECKED	DB	SCALE		DWG. NO.
	REVIEWED	DB	FILE NO.		FIGURE NO.	
			Whiskey Run Creek Flow		1	

A tract of land located in Sections 20, 29, 30, 31 and 32, Township 27 South, Range 14 West, and Sections 5 and 8, Township 28 South, Range 14 West, Willamette Meridian Coos County, Oregon more particularly described as follows:

Beginning at the corner of Sections 31 and 32 Township 27 South, Range 14 West and Sections 5 and 6, Township 28 South, Range 14 West which is the Southeast corner of that discrete parcel described as Parcel 3 of Deed Volume 308 Page's 126 and 127; thence South between said Sections 5 and 6 a distance of 4797.51 feet, more or less, to the corner of Sections 5, 6, 7 and 8, Township 28 South, Range 14 West; thence continuing South between Sections 7 and 8 a distance of 2592.95 feet, more or less, to the 1/4 corner between said Sections; thence East along the East - West centerline of Section 8 a distance of 1320 feet, more or less, to the CW1/16 corner of Section 8; thence continuing East along the East - West centerline a distance of 500 feet, more or less, to a point on the Westerly boundary of Seven Devils County Road (now Fahy Road); thence Northeasterly along said road boundary to a point on the East line of the SE1/4 of the SW1/4 of Section 8; thence West along the North line of the said SE1/4 of the SW1/4 a distance of 208.7 feet to a point; thence North parallel with the with the East line of the NE1/4 of the NW1/4 of Section 8 a distance of 417.4 feet; thence East parallel with the South line of the NW1/4 of the NE1/4 and the NE1/4 of the NW1/4 of Section 8; thence Northerly parallel with the quarter section line between the NE1/4 and the NW1/4 a distance of 902.6 feet, more or less, to a point on the line between Sections 5 and 8 from which the 1/4 corner between said Sections bears Easterly a distance of 209 feet; thence Easterly along the South line of the of the W1/2 of the SW1/4 of the SE1/4 a distance of 342.71 feet, more or less, to the Southeast corner of that parcel described in Volume 308 Page 125 as Parcel 1 (h); thence Northward parallel with the line through the center of the W1/2 of the SE1/4 of Section 5 a distance of 1320 feet, more or less, to a point on the North line of the W1/2 of the SW1/4 of the SE1/4 of Section 5; thence West along the North line a said parcel a distance of 551.71 feet, more or less, to the Northwest corner of said parcel; thence North along the North - South centerline of Section 5 a distance of 1320 feet, more or less, to the center of Section 5; thence East along the East - West centerline of Section 5 a distance of 2640 feet, more or less, to the 1/4 corner between Sections 4 and 5; thence North between said Sections a distance of 1320 feet, more or less, to the N1/16 between said Sections; thence West along the South line of the NE1/4 of the NE1/4 to the Southwest corner of the said NE1/4 of the NE1/4; thence North along the West line of the NE1/4 of the NE1/4 a distance of 540 feet, more or less, to a point 10 feet South of the maintained golf course; thence Easterly and 10 south of the maintained golf course a distance of 500 feet, more or less; thence East a distance of 800 feet to a point on the line between Sections 4 and 5 from which the N1/16 of said Sections bears South 480 feet; thence North between Sections 4 and 5 a distance of 458.34 feet, more or less, to the corner of Sections 32 and 33, Township 27 South, Range 14 West and Section 4 and 5, Township 28 South, Range 14 West; thence North between Sections 32 and 33 a

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distance of 1293.30 feet, more or less, to the S1/16 corner between said Sections; thence West along the North boundary of the SE1/4 of the SE1/4 of Section 32 to the Northwest corner of the said SE1/4 of the SE1/4; thence North along the East line of the NW1/4 of the SE1/4 a distance of 1300 feet, more or less, to the Northeast corner of the NW1/4 of the SE1/4; thence North along the East line of the W1/2 of the NE1/4 of Section 32 a distance of 2640 feet, more or less, to the Northeast corner of the said W1/2 of the NE1/4; thence North along the East line of the W1/2 of the SE1/4 of Section 29 a distance of 2640 feet, more or less, to the Northeast corner of the said W1/2 of the SE1/4; thence North along the East line of the W1/2 of the NE1/4 of Section 29 a distance of 2640 feet, more or less, to the E1/16 corner between Sections 20 and 29; thence West along the line between Sections 20 and 29 a distance of 330 feet, more or less, to the Southwest corner of that parcel described in Microfilm Reel No. 16121, recorded on March 2, 1967; thence North along the West boundary of said parcel a distance of 1320 feet, more or less, to the North line of the S1/2 of the SE1/4; thence West along the said North line a distance of 990 feet, more or less, to the Northwest corner of the E1/2 of the SW1/4 of the SE1/4 of Section 20; thence North along the East line of the W1/2 of the NW1/4 of the SE1/4 to the South boundary of Whiskey Run County Road; thence Westerly along said road boundary to the Meander line of the Pacific Ocean; thence Southerly along said Meander line to the intersection of the line between Section 31, Township 27 South, Range 14 West and Section 6, Township 28 South, Range 14 West; thence East along the said line to the point of beginning.

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