

FAX

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(208) 939-1194
May 2, 2007

Jeff Peppersack
Dept of Water Resources
2735 Airport Way
Boise, Idaho
Pages: Total 7
Fax # 287-6700

Ref: Aries Developer Applications

Jeff Peppersack,

Thank you for replying so quickly on my questions. Sorry, I am still confused. I was put on the mailing list from your department and received the attached copies. My question 1-3 in the e-mail referred to this application for permit. Please review these 6 pages and let me know if these are conditions that must be met as part of the well use and maximum evaporation and seepage calculations are binding for the ponds and especially for pond 5 that was revised. Please respond by email (jetjocky@[cablone.net](mailto:jetjocky@cablone.net)) as I have limited use of my fax.

Jim Johnson
Vice President
Brookwood HOA
jetjocky@cablone.net

*P.S. All these copies came
for your Dept.*



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190

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September 29, 2005

DIRK KEMPTHORNE

Governor

KARL J. DREHER

Director

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TWIN FALLS ID 83303-1906

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DOWNING DOWNS SUB
1125 STEEPLE VIEW DR
EAGLE ID 83616

JIM JOHNSON
BROOKWOOD HOME- OWNERS
ASSOC
105 E OLD BARN RD
EAGLE ID 83616

TAMMY ZOKAN
MOORE SMITH BUXTON &
TURCKE
225 N 9TH ST STE 420
BOISE ID 83702

MOLLY O'LEARY
RICHARDSON & O'LEARY
PO BOX 1849
EAGLE ID 83616

Re: Water Right Application for Permit No. 63-32169 in the Name of Aries
Development

Dear Interested Parties:

Attached is a copy of an application(s) that may be of interest to you. Please review the application(s) and submit any comments you may have.

This office normally completes the processing of an application within a six-week period and is required to take final action shortly thereafter. However, if you desire to file a formal protest against the approval of this application(s), your written protest along with the \$25.00 protest fee must be received in this office by October 24, 2005.

If you have any questions regarding the application(s), please contact this office.

Sincerely,

A handwritten signature in cursive script that reads "Sue Kreger".

Sue Kreger
Administrative Assistant

Encl. Copy of Application

Form 202
1/96**AMENDED**
STATE OF IDAHOIdent. No. 63-32169**DEPARTMENT OF WATER RESOURCES**
APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

1. Name of applicant Aries Development L.L.C Phone 208-336-2200
Post Office address P.O. Box 6887 Boise, ID 83707
2. Source of water supply Ground water which is a tributary of _____
3. Location of point of diversion is _____ 1/4 of NE 1/4 of SE 1/4, Govt. Lot _____
Sec. 4 Township 4N Range 1E B.M. Ada County; additional
points of diversion, if any: Includes diversion from and new well for makeup water
4. Water will be used for the following purposes:
Amount 60.7 for Aesthetic Storage purposes from 1-1 to 12-31 (both dates inclusive)
(cfs or acre-feet per annum)
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per annum)
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per annum)
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per annum)
5. Total quantity being appropriated is (a) _____ and/or (b) 60.7
cubic feet per second acre-feet per annum
6. Proposed diverting works:
 - a. Description of ditches, flumes, pumps, headgates, etc. Well and pipe/ditch distribution to ponds within Brookwood Subdivision Water bearing strata is from 80 to 100 ft.
See attached narrative
 - b. Height of storage dam 0 feet; active reservoir capacity 60 acre-feet; total reservoir capacity 60.7 acre-feet; period of year when water will be diverted to storage: 1-1 to 12-31 inclusive.
 - c. Proposed well diameter is _____ inches; proposed depth of well is _____ feet
 - d. Is groundwater with a temperature of greater than 85 degrees being sought? No
 - e. If well is already drilled, when? _____; Drilling firm _____;
Well was drilled for (well owner) _____
7. Time required for completion of works and application of water to proposed beneficial use is 5 years (minimum 1 year)
8. Description of proposed uses (if irrigation only, go to item 9):
 - a. Hydropower; show total feet of head and proposed capacity in KW. _____
 - b. Stockwatering; list number and kind of livestock. _____
 - c. Municipal; show name of municipality. _____
 - d. Domestic; show number of households _____;
 - e. Other; describe fully. Irrigation and recreation and aesthetic storage. Pond #1 is used as a pump pond for irrigation and for rec. and aesthetics in wintertime
See attached narrative

AUG. 23. 2005 9:25AM

RMH 2083362476

NO. 805

P. 2

9. Description of place of use:

- a. If water is for irrigation, indicate acreage in each subdivision in the tabulation below.
- b. If water is used for other purposes, place a symbol of the use (example: D for Domestic) in the corresponding place of use below. See instructions for standard symbols.

TWP	RANGE	SEC	NE 1/4				NW 1/4				SW 1/4				SE 1/4				TOTALS
			NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	
4N	1E	4									A		A	A	A	A	A	A	

Total number of acres to be irrigated

10. Describe any other water rights used for the same purposes as described above. Canal shares fromFarmers Union Canal and ground water as proposed in application for permit 63-1168911. a. Who owns the property at the point of diversion? Applicantb. Who owns the land to be irrigated or place of use? Applicant

c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing:

12. Remarks: See attached narrative

13. MAP OF PROPOSED PROJECT ATTACHED _____ show clearly the proposed point of diversion, place of use, section number, township and range number.

BE IT KNOWN that the undersigned hereby makes this application for permit to appropriate the public waters of the State of Idaho as herein set forth.

Natalie K. Kinnel
(Applicant)
Natalie Kinnel
Managing Member

R per receipt:

Received by MM Date 8/24/05 Time 12:39 Preliminary check by LG
 Fee \$ 250.00 Receipted by MM # C078946 Date 8-24-05
 Publication prepared by dk Date 10-6-13-05 Published in THE IDAHO STATESMAN
 Publication approved _____ Date _____

Narrative in Support of Application for Permit for Storage

Brookwood Subdivision Aries Development L.L.C.
by Brockway Engineering P.L.L.C.

August 22, 2005

Brookwood is a 382 unit subdivision located in Section 4, T 4N R 1E Boise Meridian north of Eagle, Idaho. This subdivision, located on bottom land and bench areas of Dry Creek, is being developed on irrigated farmland served by the Farmers Union Canal. The Farmer's Union Canal is the east boundary of the subdivision and the historical irrigation diversion from the canal will continue to serve the irrigation requirements for a pressure irrigation system serving all lots and common areas. Domestic water is provided by the municipal system of the City of Eagle.

The subdivision will include water amenities including six (6) multi-purpose ponds providing irrigation storage and aesthetic benefits, Figure 1. The ponds will be maintained by diversions from the canal system during the irrigation season and by ground water provided from an exchange well during the non-irrigation season.

The purpose of this Application is to obtain a permit for storage in the pond system. There are six (6) ponds in the system as shown on the attached Figure 1. Pond #1 is utilized for irrigation storage and the irrigation system pumping plant diverts from Pond #1. The other ponds are utilized for both summer time and winter time recreation and aesthetic purposes. Application for permit 63-31689 is for a well to provide water for non-irrigation season maintenance of the pond and ditch system. Water from the canal system, using shares owned by Brookwood in the Farmer's Union Canal is the irrigation source for the subdivision. .

Figure 1 shows the plat of the subdivision, canal diversion, distribution system and the six (6) ponds. Ponds 1,2,3, 4, and 5 are lined with bentonite and compacted earth and Pond 6 is lined with a membrane liner. Pond 5 was lined in 2004. During the non-irrigation season, the pond levels will be maintained with ground water pumped as necessary up to 40 af as applied for under application 63-31689.

Brookwood owns 11 shares in the Farmer's Union Canal. Each share represents 11 miner's inches of discharge so the canal discharge available to the project is 121 miner's inches or 2.42 cfs. Historically, 186.0 acres have been irrigated on the Brookwood property from the canal, see Figure 2.

The project plan includes 382 single family lots with approximately 50 acres of common area. Irrigation of landscaping and turf on each lot and the common area will be from a pressure distribution system with two booster pumps from the pipe/pond system. The upper booster is located near the canal diversion, and the lower booster diverts from Pond 1 near the west end of the subdivision. Based on the average lot size of 0.22 acres, a residence footprint and paved area of 4200 square feet, the irrigated area on each lot is estimated to be 0.12 acres. For the 382 residences the irrigated area is therefore 45.8 acres. The total irrigated area is therefore 50 + 45.8 or 95.8 acres.

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Ponds 1,2, and 3 are utilized as irrigation storage and are tied together hydraulically. The pumping plant for the irrigation system is located at the southwest corner of Pond 1. Ponds 4,5, and 6 are off-line ponds and are primarily for recreation and aesthetics. Pond 4 does provide storage for waste water which would normally flow off the property. The combined area of ponds 4,5, and 6 is approximately 3.69 acres. The six ponds are designed with an average surface area of 5.17 acres including ditches and a volume of 60.7 acre feet.

A model of the pipe, ditch and pond system was prepared to simulate the operation of the system during the irrigation season and evaluate the various components of the water balance.

Evapotranspiration for the project was determined using procedures outlined in Allen and Brockway, 1983, using the Boise WSO AP station meteorological and Et data. Free water surface evaporation was determined using procedures outlined in 'Monthly Shallow Pond Evaporation in Idaho by Molnau, Kpordze, and Craine, 1992. ASAE paper PNW 92-111.

The lined ponds and ditches were estimated to have operating loss rates of 0.005 ft/day (1/16 in).

The total seepage through all ponds is estimated to be 0.011 cfs. Evaporation from the pond system during the irrigation season is 16.2 acre feet.

The total consumptive use of the project including turf and landscape irrigation, pond evaporation, and residential in-house consumptive use (not provided by the irrigation system) is 258 af/year whereas the pre-project consumptive use from crop irrigation on 185.96 acres is 489 acre feet per year.

Ground water extraction from the exchange well required to maintain pond seepage and evaporation during the wintertime is estimated to be up to 40 acre feet.. The proposed exchange well would be located near the canal diversion so that discharge can be integrated into the entire distribution system.

The maximum discharge required from the exchange well is estimated at 80 gpm. Operation of the pumped well will not significantly affect aquifer water levels in the area.

The water balance and pond model indicates that pumping from an exchange well on the project of not-more-than 40 acre feet during the non-irrigation season at a rate of 0.178 cfs (80 gpm) will maintain pond levels. The exchange well will provide non-irrigation season pond maintenance water with no increase in depletion of the resource and with a positive impact on the underlying aquifer. Current and future consumptive use from the pond system will be mitigated. Evaporation from the ponds will be mitigated by transfer of 0.04 cfs and 14 acre feet of ground water under water right 63-5087. The 14 af/a is the calculated evaporation from open water surfaces associated with the non-irrigation ponds during the irrigation season and all ponds during the non-irrigation season.

During the non-irrigation season operation of the exchange well, a maximum of 80 gpm will be pumped from the well. The pond water levels will be maintained in all ponds and

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the seepage from all ponds will return to the aquifer so the impact on the regional aquifer system will not be significant.

Aries Development L.L.C. members are: Mike Hormachea, Amy Wray, Richard Hormachea, and the Hormachea Grandchildren's Trust.

BROOKWOOD SUBDIVISION WATER REQUIREMENTS
POND EVAPORATION MITIGATION* REVISED
 IRRIGATION SEASON NON IRRIGATION
 180 DAYS 185 DAYS

MAX EVAP RATE in/day	AREA	0.230323 x .07	0.081
	acres	POND EVAPORATION AF/DAY	
POND 1	0.48		0.003
POND 2	0.34		0.002
POND 3	0.53		0.004
POND 4	0.48	0.01	0.003
POND 5	2.07	0.04	0.014
POND 6	1.16	0.02	0.008
Total	5.04		
Ponds 4,5,6	3.69		
TOTAL AF/DAY		0.07	0.034
TOTAL CFS		0.04	0.017
TOTAL GPM		16.04	7.741
TOTAL MINERS IN.		1.79	0.862
SEASON EVAP IN.		33.60	8.820
TOTAL VOL AF		10.32	3.705
ANNUAL VOL AF			14.03

62
 POND 6 IS AUTO FILL
 BY CITY WATER

FOR EVAP MITIGATION	IN.	1.79	0.86
	AF	10.32	3.71

TOTAL EVAP MITIGATION

14.03

MITIGATION OF EVAPORATION FROM PONDS 1, 2, AND 3 IS REQUIRED ONLY IN THE WINTER TIME SINCE THESE PONDS ARE PART OF THE IRRIGATION SYSTEM. PONDS 4, 5, AND 6 ARE NOT PART OF THE IRRIGATION SYSTEM AND EVAPORATION FROM THESE SURFACES CONSTITUTES ADDITIONAL CONSUMPTIVE USE WHICH WOULD BE MITIGATED WITH THE TRANSFER OF A PORTION OF GROUND WATER RIGHT)

POND SEEPAGE* REVISED
 IRRIGATION SEASON NON IRRIGATION
 180.00 DAYS 185.00 DAYS

	Seepage Rate	POND SEEPAGE AF/DAY	
	cfs		
POND 1	0.001		0.002
POND 2	0.001		0.002
POND 3	0.002		0.003
POND 4	0.001	0.002	0.002
POND 5	0.006	0.011	0.011
POND 6	0.001	0.001	0.001
Total	0.011		
Ponds 4,5,6	0.007		
TOTAL AF/DAY		0.015	0.022
TOTAL CFS		0.007	0.011
TOTAL GPM		3.314	4.990
TOTAL MINERS IN.		0.389	0.556
TOTAL ANNUAL VOL AF		2.632	4.072
ANNUAL VOL AF			6.704

Brookwood Subdivision

C.E. Brockway 7/12/2004

Estimated Design Parameters-Pond 5 Lined

Max Summertime Evap loss	16.04 gpm for Ponds 4,5,6	required by water right for mitigation
Summertime Seepage Loss	33.21 gpm for Ponds 4,5,6	This could likely be made up from shares
Total	49.25	
Max Non-Irrig Evap Loss	7.74 gpm all ponds	Needed to keep ponds full
Max Non-Irrig seepage loss	4.69 gpm all ponds	Needed to keep ponds full
Total	12.43	
Est. discharge for evap	16.04 gpm	
Est discharge for seepage	33.21 gpm	
Est. design smaller well	49.25 gpm	
Safety Factor	1.65	
Recommended well discharge	81.26 gpm	Use 80 gpm for well-maximum diversion rate
Annual Volume Requirement		
Yearly Evap	14.03 af	
Yearly est seepage	6.70 af	Ponds 4,5,6 summer. All ponds winter
Total Est seepage	20.73 af/year	
Est Design Volume	34.21 af/year	Use 40 af/year