

RECEIVED

OCT 10 2012

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCESIdent. No. 37-22783

## APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

DEPT. OF WATER RESOURCES  
SOUTHERN REGION1. Name of applicant(s) Bradley S. and or Mary C. Wirth Phone 208-726-7550  
Name connector (check one): ☐ and ☐ or ☒ and/orMailing address: P.O. Box 718 City KetchumState ID Zip 83340 Email: \_\_\_\_\_2. Source of water supply Ground Water which is a tributary of N/A.

3. Location of point(s) of diversion:

| Twp | Rge | Sec | Govt Lot | ¼  | ¼  | ¼  | County | Source       | Local name or tag # |
|-----|-----|-----|----------|----|----|----|--------|--------------|---------------------|
| 02N | 18E | 35  |          | NE | NE | SE | Blaine | Ground Water | Production- New     |
| 02N | 18E | 35  |          | NE | NE | SE | Blaine | Ground Water | Injection- New      |
|     |     |     |          |    |    |    |        |              |                     |
|     |     |     |          |    |    |    |        |              |                     |

4. Water will be used for the following purposes:

Amount 0.10 cfs for Heating and Cooling purposes from 01/01 to 12/31 (both dates inclusive)  
(cfs or acre-feet per year)Amount 0.04 cfs for Domestic purposes from 01/01 to 12/31 (both dates inclusive)  
(cfs or acre-feet per year)Amount \_\_\_\_\_ for \_\_\_\_\_ purposes from \_\_\_\_\_ to \_\_\_\_\_ (both dates inclusive)  
(cfs or acre-feet per year)Amount \_\_\_\_\_ for \_\_\_\_\_ purposes from \_\_\_\_\_ to \_\_\_\_\_ (both dates inclusive)  
(cfs or acre-feet per year)5. Total quantity to be appropriated is (a) 0.14 cubic feet per second (cfs) and/or (b) \_\_\_\_\_ acre-feet per year (af).

6. Proposed diverting works:

a. Describe type and size of devices used to divert water from the source. New wells will be used to divert & inject water for uses listed above.b. Height of storage dam N/A feet; active reservoir capacity N/A acre-feet; total reservoir capacity N/A acre-feet. If the reservoir will be filled more than once each year, describe the refill plan in item 11.For dams 10 feet or more in height OR reservoirs with a total storage capacity of 50 acre-feet or more, submit a separate Application for Construction or Enlargement of a New or Existing Dam. Application required? ☐ Yes ☐ Noc. Proposed well diameter is both wells at 6" inches; proposed depth of well is Production-65 feet.d. Is ground water with a temperature of greater than 85°F being sought? ☐ Yes ☒ Noe. If well is already drilled, when? NA; drilling firm \_\_\_\_\_;  
Well was drilled for (well owner) \_\_\_\_\_; Drilling Permit No. \_\_\_\_\_

7. Description of proposed uses (if irrigation only, go to item 8):

a. Hydropower; show total feet of head and proposed capacity in kW. N/Ab. Stockwatering; list number and kind of livestock. N/Ac. Municipal; show name of municipality or the applicant's qualifications as a municipal provider. N/Ad. Domestic; show number of households One household.e. Other; describe fully. Heating/Cooling & domestic for residence, 45 gpm is required for the heat/cooling pump system.  
Water for heating/cooling will be injected back into an injection well. Heating/cooling use is non-consumptive.

8. 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 | RGE | SEC | NE |    |    |    | NW |    |    |    | SW |    |    |    | SE  |    |    |    | TOTALS |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|--------|
|     |     |     | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE  | NW | SW | SE |        |
| 02N | 18E | 35  |    |    |    |    |    |    |    |    |    |    |    |    | G,L |    |    |    | G,L    |
| 02N | 18E | 35  |    |    |    |    |    |    |    |    |    |    |    |    | D   |    |    |    | D      |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |        |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |        |
|     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |        |

Total number of acres to be irrigated: G,L,D

9. Describe any other water rights used for the same purposes as described above. Include water delivered by a municipality, canal company, or irrigation district. If this application is for domestic purposes, do you intend to use this water, water from another source, or both, to irrigate your lawn, garden, and/or landscaping? Domestic use will include irrigation of up to 0.5 acres and will be used in conjunction with existing water rights on the property.

10. a. Who owns the property at the point of diversion? Applicant.
- b. 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: N/A

11. Describe your proposal in narrative form, and provide additional explanation for any of the items above. Attach additional pages if necessary. Applicant seeks to use ground water as source for residence heating and cooling and domestic water. Heating/cooling system requires 45 gallons per minute, water used for heating and cooling will then be returned to aquifer through an injection well and will be non-consumptive.

12. Time required for completion of works and application of water to proposed beneficial use is 5 years (minimum 1 year).
13. **MAP OF PROPOSED PROJECT REQUIRED** - Attach an 8½" x 11" map clearly identifying the proposed point of diversion, place of use, section #, township & range. A photocopy of a USGS 7.5 minute topographic quadrangle map is preferred.

The information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval.

Brad Wirth  
Signature of Applicant

Brad Wirth  
Print Name (and title, if applicable)

Mary Wirth  
Signature of Applicant

Mary Wirth  
Print Name (and title, if applicable)

For Department Use:

Received by N. ERICKSON Date 10/11/12 Time 12:30 Preliminary check by N. ERICKSON  
Fee \$ 100.00 Received by N. ERICKSON Receipt No. S032842 Date 10/11/12



0 100 200 400 Feet

**BRADLEY AND MARY WIRTH  
PERMIT APPLICATION, HEATING & COOLING  
NAIP 2011 AERIAL**

BROCKWAY ENGINEERING, PLLC.  
ALR - SEPT 25, 2012

**37-22783**

- Legend**
- Proposed POD's
  - Proposed POU
  - Parcel
  - Adesc
  - Section\_Lines



**Erickson, Nathan**

37-22783

**From:** Zach Latham [zach.latham@brockwayeng.com]  
**Sent:** Monday, October 15, 2012 2:51 PM  
**To:** Erickson, Nathan  
**Subject:** Wirth D, G, L Permit

Nathan-

To clarify, the water right permit submitted by Brockway Engineering on October 8<sup>th</sup> 2012 was intended to have one (1) point of diversion, and one (1) point of injection. On the permit, please disregard the 2<sup>nd</sup> point of diversion, listed as a "new point of injection". The intention of the permit is to have only one (1) point of diversion (one production well). Thanks for your time, please email or call with further questions.

Zach Latham

Hydrologist  
Brockway Engineering, P.L.L.C.  
2016 Washington Street North, Suite 4  
Twin Falls, ID 83301  
t. 208-736-8543  
c.208-308-0739  
f. 208-736-8506

[zach.latham@brockwayeng.com](mailto:zach.latham@brockwayeng.com)

*All information, calculations, maps, drawings, or other documents transmitted via e-mail are preliminary unless explicitly stated in the e-mail text or in the documents themselves.*

**RECEIVED**

**OCT 15 2012**

**DEPT. OF WATER RESOURCES  
SOUTHERN REGION**



## State of Idaho

# DEPARTMENT OF WATER RESOURCES

Southern Region, 1341 Fillmore Street, Suite 200 • Twin Falls, Idaho 83301-3380

Phone: (208) 736-3033 • Fax: (208) 736-3037 • Web Site: [www.idwr.idaho.gov](http://www.idwr.idaho.gov)

October 12, 2012

C. L. "BUTCH" OTTER  
Governor

GARY SPACKMAN  
Director

BRADLEY S WIRTH  
MARY C WIRTH  
PO BOX 718  
KETCHUM, ID 83340

Re: Application For Permit No. 37-22783

Dear Applicant(s):

The Department of Water Resources has received your water right application. Please refer to the number referenced above in all future correspondence regarding this application.

A legal notice of the application has been prepared and is scheduled for publication in the **IDAHO MOUNTAIN EXPRESS** on **10/17/2012 and 10/24/2012**. Protests to this application may be submitted for a period ending ten (10) days after the second publication (**November 5, 2012**).

If the application is protested, you will be sent a copy of each protest. All protests must be resolved before the application can be considered for approval. If the protest(s) cannot be resolved voluntarily, the Department will conduct a conference and/or hearing on the matter.

If the application is not protested, the Department will process your application and notify you of any action taken on the application. If your application is approved, the Department will send you a copy of the permit.

Please contact this office if you have any questions regarding the application.

Sincerely,

Denise Maline  
Administrative Assistant

cc:

BROCKWAY ENGINEERING PLLC  
C/O ZACH LATHAM  
2016 N WASHINGTON ST STE 4  
TWIN FALLS, ID 83301

## Maline, Denise

---

**From:** Maline, Denise  
**Sent:** Friday, October 12, 2012 8:56 AM  
**To:** Idaho Mountain Express  
**Subject:** LEGAL NOTICE  
**Attachments:** Idaho Mountain Express Cover Letter.docx; Idaho Mountain Express Ad.docx

Attached please find (1) legal notice being submitted for publication on October 17<sup>th</sup> & 24<sup>th</sup>, 2012. Please contact me if you have any questions, or if you are not able to run the ad on the dates requested.

Thank you in advance,

Denise Maline  
Administrative Assistant  
Idaho Dept of Water Resources  
1341 Fillmore St, Ste 200  
Twin Falls, ID 83301  
(208) 736-3033  
[denise.maline@idwr.idaho.gov](mailto:denise.maline@idwr.idaho.gov)

October 12, 2012

**LEGAL NOTICE DEPARTMENT**  
IDAHO MOUNTAIN EXPRESS  
PO BOX 1013  
KETCHUM, ID 83340

RE: Application For Permit No.(s): 37-22783

RE: Transfer No. 78162  
Water Right No(s): 37-22051

RE: Transfer No. 78191  
Water Right No(s): 37-22764

RE: Transfer No. 78192  
Water Right No(s): 37-22765

RE: Transfer No. 78193  
Water Right No(s): 37-22766

Dear Legal Notice Department:

Please publish the enclosed legal notice on the dates indicated (once a week for two consecutive weekly issues). If you cannot publish the notice on the proposed dates, please contact us immediately.

An affidavit of publication must be submitted to the Department along with the publication bill. Please send the affidavit and bill to this office before November 5, 2012. Your cooperation is appreciated.

Sincerely,

Denise Maline  
Administrative Assistant

Enclosure(s)

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

**37-22783**

BRADLEY S WIRTH

MARY C WIRTH

PO BOX 718

KETCHUM, ID 83340

Point of Diversion NENESE S35 T02N R18E BLAINE County Source GROUND WATER Tributary

Use: COOLING 01/01 to 12/31 0.1 CFS

Use: DOMESTIC 01/01 to 12/31 0.04 CFS

Use: HEATING 01/01 to 12/31 0.1 CFS

Total Diversion: 0.14 CFS

Date Filed: 10/10/2012

Place Of Use: HEATING, COOLING, DOMESTIC

T02N R18E S35 NESE

Application for Permit 37-22783, filed in the name of Bradley S. and Mary C. Wirth, seeks to appropriate 0.14 cfs of ground water for heating, cooling, and domestic use. Heating and cooling uses will be returned to the aquifer through an injection well. The proposed place of use and point of diversion are located approximately 0.5 miles west of the City of Bellevue at 50 Lower Broadford Road.

**NOTICE OF PROPOSED CHANGE OF WATER RIGHT**

**TRANSFER NO. 78162**

HEART ROCK RANCH LLC, PO BOX 3724, HAILEY, ID 83333 has filed Application No. 78162 for changes to the following water rights within BLAINE County(s): Right No(s). 37-22051. The purpose of the transfer is to change a portion of the above rights as follows: Transfer application proposes changing the place of use for a 0.04 cfs stockwater and 2.75 cfs wildlife and aesthetic ground water right. This right has historically been diverted into Spring Creek through ditches and overland flow and this transfer is seeking to divert it into a pipe and deliver it into Crystal Creek. Proposed place of use is located approximately 12.0 to 13.5 miles south and 0.5 miles west to 1.4 miles east of the town center in Hailey.

**NOTICE OF PROPOSED CHANGE OF WATER RIGHT**

**TRANSFER NO. 78191**

PORTER FAMILY LIVING TRUST, PO BOX 2530, KETCHUM, ID 83340 has filed Application No. 78191 for changes to the following water rights within BLAINE County(s): Right No(s). 37-22764. The purpose of the transfer is to change a portion of the above rights as follows: Application proposes to change the point of diversion for a 0.02 cfs irrigation water right from the East Fork of the Wood River by moving the location approximately 0.5 mile downstream. The new proposed diversion will be located approximately 4.5 miles south and 3.0 miles east of Ketchum within lot 27, Hyndman Peak Subdivision. The right will be utilized to irrigate 0.5 acre within lot 27, Hyndman Peak Subdivision.

**NOTICE OF PROPOSED CHANGE OF WATER RIGHT**

**TRANSFER NO. 78192**

PORTER FAMILY LIVING TRUST, PO BOX 2530, KETCHUM, ID 83340 has filed Application No. 78192 for changes to the following water rights within BLAINE County(s): Right No(s). 37-22765. The purpose of the transfer is to change a portion of the above rights as follows: Application proposes to change the point of diversion for a 0.10 cfs irrigation water right from the East Fork of the Wood River by moving the location approximately 0.5 mile downstream. The new proposed diversion will be located approximately 4.5 miles south and 3.0 miles east of Ketchum within lot 27, Hyndman Peak Subdivision. The right will be utilized to irrigate 2.5 acre within lot 28, Hyndman Peak Subdivision.

**NOTICE OF PROPOSED CHANGE OF WATER RIGHT  
TRANSFER NO. 78193**

PORTER FAMILY LIVING TRUST, PO BOX 2530, KETCHUM, ID 83340 has filed Application No. 78193 for changes to the following water rights within BLAINE County(s): Right No(s). 37-22766. The purpose of the transfer is to change a portion of the above rights as follows: Application proposes to change the point of diversion for a 0.17 cfs irrigation water right from the East Fork of the Wood River by moving the location approximately 0.5 mile downstream. The new proposed diversion will be located approximately 4.5 miles south and 3.0 miles east of Ketchum within lot 27, Hyndman Peak Subdivision. The right will be utilized to irrigate 4.35 acre within lot 29, Hyndman Peak Subdivision.

Permits will be subject to all prior water rights. For additional information concerning the property location, contact Southern Region office at (208) 736-3033; or for a full description of the rights &/or proposed transfer, please see [www.idwr.idaho.gov/apps/ExtSearch/WRFiling.asp](http://www.idwr.idaho.gov/apps/ExtSearch/WRFiling.asp). Protests may be submitted based on the criteria of Sec 42-222 and 42-203A, Idaho Code. Any protest against the approval of this application(s) must be filed with the Director, Dept. of Water Resources, Southern Region, 1341 Fillmore St, Suite 200, Twin Falls, ID 83301 together with a protest fee of \$25.00 for each application on or before November 5, 2012. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Director  
Published on October 17<sup>th</sup> & 24<sup>th</sup>, 2012

**Zach Latham**

37-22783

**From:** Ted Higginbotham <ted.sawtoothplumbing@gmail.com>  
**Sent:** Thursday, September 27, 2012 3:29 PM  
**To:** Zach Latham  
**Subject:** Re: Wirth Residence Water Requirements

Zach,

This system has 1-10 ton water to water, 1- 5 ton water to water. The units should use no more than 3 gal. per minute per ton. 45 gallons max

On Thu, Sep 27, 2012 at 11:28 AM, Zach Latham <[zach.latham@brockwayeng.com](mailto:zach.latham@brockwayeng.com)> wrote:

Matt and Ted-

Our office has been asked to file for the non-consumptive heating, cooling and domestic water right for the Wirth Residence on Lower Broadford Rd. As was the case with the Hagey Residence, I need to know the maximum flow rate per ton for each of your systems. I believe the max flow rate per ton used in the Hagey application was 3.2 gpm per ton for each system.

I also need to know how many tons will be used for each of the heating and cooling systems. Preston forwarded me all of the system specs, so I don't think I need any additional info beyond the 1). tons per system and 2). max flow rate per ton in each system.

Thanks for your time, call with questions- 308-0739.

Zach Latham

Hydrologist  
Brockway Engineering, P.L.L.C.  
2016 Washington Street North, Suite 4  
Twin Falls, ID 83301  
t. 208-736-8543

c. 208-308-0739  
f. 208-736-8506  
[zach.latham@brockwayeng.com](mailto:zach.latham@brockwayeng.com)

*All information, calculations, maps, drawings, or other documents transmitted via e-mail are preliminary unless explicitly stated in the e-mail text or in the documents themselves.*

--

**Sawtooth Plumbing & Heating, Inc.**

1730 Lear Lane, Unit D

Hailey ID 83333

208-788-7920, f 208-788-4117

[ted.sawtoothplumbing@gmail.com](mailto:ted.sawtoothplumbing@gmail.com)



2506 South Elm Street  
Greenville, IL 62246  
www.enertechgeo.com  
info@enertechgeo.com

# WT Models Water-to-Water Heat Pumps & Hydronic Air Handlers / "A" Coils: Engineering Data and Installation Manual

Rev.: 22 May 2012D

P/N:  20D082-02NN

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## Revision Table:

| Date         | By | Page  | Note                                  |
|--------------|----|-------|---------------------------------------|
| 22 May 2012  | DS | All   | Added Voltage Code "3"                |
| 02 Mar 2012  | DS | All   | Added Voltage Code "2"                |
| 15 Feb 2012  | DS | All   | Discontinued WT144 Single Phase Model |
| 20 Dec 2011  | DS | All   | Discontinued WT026                    |
| 11 Nov 2011  | DS | 6 - 7 | Updated 092 - 144 AHRI                |
| 28 Sept 2011 | DS | All   | Discontinued Models 034A - 070A       |
| 28 Sept 2011 | DS | All   | Added Models 036B - 060B              |
| 22 Aug 2011  | DS | All   | First Published                       |



## ⚠ NOTICE ⚠

**VERY IMPORTANT WARRANTY  
REGISTRATION INFORMATION LOCATED  
ON THE BACK COVER.**

Enertech Global is continually working to improve its products. As a result, the design and specifications of each product may change without notice and may not be as described herein. For the most up-to-date information, please visit our website, or contact our Customer Service department at info@enertechgeo.com. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely Enertech Global's opinion or commendation of its products.

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## Section 5b: Flow Selection & Application Notes

### Source Water Flow Selection

Proper flow rate is crucial for reliable operation of geothermal heat pumps. The performance data shows three flow rates for each entering water temperature (EST column). The general "rule of thumb" when selecting flow rates is the following:

Top flow rate: Open loop systems (1.5 to 2.0 gpm per ton)

Middle flow rate: Minimum closed loop system flow rate (2.25 to 2.50 gpm/ton)

Bottom flow rate: Nominal (optimum) closed loop system flow rate (3.0 gpm/ton)

Although the "rule of thumb" is adequate in most areas of North America, it is important to consider the application type before applying this "rule of thumb." Antifreeze is generally required for all closed loop (geothermal) applications. Extreme Southern U.S. locations are the only exception. Open loop (well water) systems cannot use antifreeze, and must have enough flow rate in order to avoid freezing conditions at the Leaving Source Water Temperature (LWT) connection.

Calculations must be made for all systems without antifreeze to determine if the top flow rate is adequate to prevent LWT at or near freezing conditions. The following steps should be taken in making this calculation:

Determine minimum EST based upon your geographical area.

Go to the performance data table for the heat pump model selected and look up the Heat of Extraction (HE) at the "rule of thumb" water flow rate (GPM) and at the design Entering Load Temperature (ELT).

Calculate the temperature difference (TD) based upon the HE and GPM of the model.

$$TD = HE / (GPM \times 500).$$

Calculate the LWT.

$$LWT = EST - TD.$$

If the LWT is below 35-38°F, there is potential for freezing conditions if the flow rate or water temperature is less than ideal conditions, and the flow rate must be increased.

#### Example 1:

$$EST = 50^{\circ}F, ELT = 95^{\circ}F.$$

Model 036 Full Load, heating. Flow rate = 5 GPM. HE = 33,600 Btuh.

$$TD = 33,600 / (5 \times 500) = 13.4^{\circ}F$$

$$LWT = 50 - 13.4 = 36.6^{\circ}F$$

Water flow rate should be adequate under these conditions.

#### Example 2:

$$EST = 40^{\circ}F, ELT = 95^{\circ}F.$$

Model 036 Full Load, heating. Flow rate = 5 GPM. HE = 28,700 Btuh.

$$TD = 28,700 / (5 \times 500) = 11.5^{\circ}F$$

$$LWT = 40 - 11.5 = 28.5^{\circ}F$$

Water flow rate must be increased.

### Application Notes for Performance Data

Notes:

1. Desuperheater Capacity is based upon 0.4 GPM Flow per nominal ton at 90°F entering hot water temperature.
2. Extrapolation data down to 25°F for heating and interpolation between EST & GPM data is permissible.
3. EWT (Entering Water Temperature) is also called EST (Entering Source Temperature).
4. Load flow rate is the same as the nominal source flow rate, approximately 3 GPM per ton.