

Ident. No. 63-33272

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT
To appropriate the public waters of the State of Idaho

1. Name of applicant(s) Sage Collins and Nicole Collins Phone 208-468-2228
Name connector (check one): ☒ and ☐ or ☐ and/or

Mailing address: 1315 Williams Ln City Nampa

State ID Zip 83686 Email: _____

2. Source of water supply ground water which is a tributary of _____

3. Location of point(s) of diversion:

Twp	Rge	Sec	Govt Lot	1/4	1/4	1/4	County	Source	Local name or tag #
<u>2N</u>	<u>2W</u>	<u>10</u>	<u>-</u>	<u>-</u>	<u>SE</u>	<u>SE</u>	<u>Canyon</u>	<u>ground water</u>	<u>-</u>

4. Water will be used for the following purposes:

* Amount .03 for Heating purposes from 1/1 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)

Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per year)

5. Total quantity to be appropriated is (a) .03 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. Existing well, pump + pipeline; return flow to injection well

b. Height of storage dam N/A feet; active reservoir capacity _____ acre-feet; total reservoir capacity _____ acre-feet. If the reservoir will be filled more than once each year, describe the refill plan in item 12.

c. Proposed well diameter is _____ inches; proposed depth of well is _____ feet.

d. Is ground water with a temperature of greater than 85°F being sought? No

e. If well is already drilled, when? 7/17/1973; drilling firm Jesse Hill #216;

Well was drilled for (well owner) Jack Johns; Drilling Permit No. N/A

7. Time required for completion of works and application of water to proposed beneficial use is 1 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 or the applicant's qualifications as a municipal provider. _____

d. Domestic; show number of households. _____

e. Other; describe fully. Heating e 1 home (heat pump)

RECEIVED

SEP 22 2009

* e 15 gpm per pending injection well appl.

9. Description of place of use:

- If water is for irrigation, indicate acreage in each subdivision in the tabulation below.
- 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	
2N	2W	10																X	-

Total number of acres to be irrigated: N/A

10. 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? NONE for landscaping.

11. 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: _____

12. Describe your proposal in narrative form, and provide additional explanation for any of the items above. Attach additional pages if necessary.

Lot 16 GRAY'S FARM Subdivision.

Well also used for domestic right 63-27781, filing ownership change for that.

Injection well (exit?) per TAG D0030825 (Rick Williams).

13. **MAP OF PROPOSED PROJECT REQUIRED** - Attach an 8½"x11" 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.

[Signature]

Signature of Applicant

Sage Collins

Print Name (and title, if applicable)

[Signature]

Signature of Applicant

Nicole Collins

Print Name (and title, if applicable)

For Department Use:

Received by [Signature] Date 9-22-09 Time 1:15 PM Preliminary check by [Signature]
Fee \$ 100⁰⁰ Received by DB Receipt No. W037910 Date 9-22-09

Legend

- ESPA
- Counties
- GCDB Township/Range
- GCDB Section
- GCDB Quarter-Quarter



Property
1315 Williams
Lane
Lot 16, 9249's
Farm Subd.



65.33212

IDAHO DEPARTMENT OF WATER RESOURCES

Water Right Report 63-27781

WATER RIGHT NUMBER: 63-27781

Owner Type Name and Address

Current Owner MARLUS JOHNS
 1315 WILLIAMS LN
 NAMPA, ID 83686
 (208)466-6839

Current Owner JACK A JOHNS
 1315 WILLIAMS LN
 NAMPA, ID 83686
 (208)466-6839

Priority Date: 07/17/1973

Basis: Decreed

Status: Active

SEE Attached
 well report
 e 7/17/73

SourceTributary

GROUND WATER

<u>Beneficial Use</u>	<u>From</u> <u>To</u>	<u>Diversion Rate</u>	<u>Annual Volume</u>
DOMESTIC	1/01 to 12/31	0.060 CFS	
<u>Total Diversion:</u>		0.060 CFS	

Location of Point(s) of Diversion

GROUND WATER SE1/4SE1/4 Sec. 10, Twp 02N, Rge 02W, B.M.
 CANYON County

Place of Use

DOMESTIC

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 02W 10																X	

Conditions of Approval:

1. N13 THE QUANTITY OF WATER UNDER THIS RIGHT SHALL NOT EXCEED 13,000 GALLONS PER DAY.
2. C18 THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. SECTION 42-1412(6), IDAHO CODE.
3. PARCEL NO. 1R22322-000-0 PROPERTY ALSO KNOWN AS LOT 16, GRAY'S FARM SUBDIVISION.
4. N11 THE QUANTITY OF WATER DECREED FOR THIS WATER RIGHT IS NOT A DETERMINATION OF HISTORICAL BENEFICIAL USE.

Dates and Other Information:

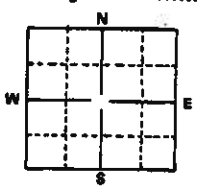
Decreed Date: 5/4/2000

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

RECEIVED

AUG 8 1973

1. WELL OWNER Name <u>Jack Johnson</u> Address <u>1013 Banner Nampa, Ida 83651</u> Owner's Permit No. _____		7. WATER LEVEL Static water level <u>4'-4"</u> feet below land surface Flowing? ☐ Yes ☒ No G.P.M. flow _____ Temperature _____ ° F. Quality <u>7 A.R.</u> Artesian closed-in pressure _____ p.s.i. Controlled by ☐ Valve ☐ Cap ☐ Plug																																																																																																																							
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____ <u>63-27781</u>		8. WELL TEST DATA ☐ Pump ☐ Bailer ☒ Other <u>AIR</u> Discharge G.P.M. <u>50</u> Draw Down <u>10</u> Hours Pumped <u>1</u>																																																																																																																							
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☐ Stock		9. LITHOLOGIC LOG <u>041835</u>																																																																																																																							
4. METHOD DRILLED ☒ Cable ☐ Rotary ☐ Dug ☐ Other		<table border="1"><thead><tr><th rowspan="2">Hole Diam.</th><th colspan="2">Depth</th><th rowspan="2">Material</th><th colspan="2">Water</th></tr><tr><th>From</th><th>To</th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>8</td><td>0</td><td>1</td><td>top Soil</td><td></td><td>X</td></tr><tr><td>8</td><td>1</td><td>3</td><td>Brn Clay</td><td></td><td>X</td></tr><tr><td>8</td><td>3</td><td>5</td><td>Hard Brn</td><td></td><td>X</td></tr><tr><td>8</td><td>5</td><td>7</td><td>Sandy Brn Clay</td><td></td><td>X</td></tr><tr><td>8</td><td>7</td><td>8'-4"</td><td>Broken Basalt</td><td></td><td>X</td></tr><tr><td>8</td><td>8'-4"</td><td>16</td><td>Basalt</td><td></td><td>X</td></tr><tr><td>8</td><td>16</td><td>17</td><td>Broken Basalt (some cinders)</td><td>X</td><td></td></tr><tr><td>8</td><td>17</td><td>25</td><td>Hard Gray Basalt</td><td>X</td><td></td></tr><tr><td>8</td><td>25</td><td>30</td><td>Basalt</td><td>X</td><td></td></tr><tr><td>8</td><td>30</td><td>40</td><td>Brn Clay (some cinders)</td><td>X</td><td></td></tr><tr><td>8</td><td>40</td><td>48</td><td>Brn Clay (some cinders)</td><td>X</td><td></td></tr><tr><td>8</td><td>48</td><td>53-1/2</td><td>Basalt</td><td>X</td><td></td></tr><tr><td>6</td><td>53-1/2</td><td>58</td><td>Hard Gray Basalt</td><td>X</td><td></td></tr><tr><td>6</td><td>58</td><td>68</td><td>Basalt</td><td>X</td><td></td></tr><tr><td>6</td><td>68</td><td>75</td><td>Basalt</td><td>X</td><td></td></tr><tr><td>6</td><td>75</td><td>80</td><td>Basalt</td><td>X</td><td></td></tr><tr><td>6</td><td>80</td><td>85</td><td>Basalt & Red Cinders</td><td>X</td><td></td></tr><tr><td>6</td><td>85</td><td>90</td><td>Basalt & Red Cinders</td><td>X</td><td></td></tr></tbody></table>		Hole Diam.	Depth		Material	Water		From	To	Yes	No	8	0	1	top Soil		X	8	1	3	Brn Clay		X	8	3	5	Hard Brn		X	8	5	7	Sandy Brn Clay		X	8	7	8'-4"	Broken Basalt		X	8	8'-4"	16	Basalt		X	8	16	17	Broken Basalt (some cinders)	X		8	17	25	Hard Gray Basalt	X		8	25	30	Basalt	X		8	30	40	Brn Clay (some cinders)	X		8	40	48	Brn Clay (some cinders)	X		8	48	53-1/2	Basalt	X		6	53-1/2	58	Hard Gray Basalt	X		6	58	68	Basalt	X		6	68	75	Basalt	X		6	75	80	Basalt	X		6	80	85	Basalt & Red Cinders	X		6	85	90	Basalt & Red Cinders	X	
Hole Diam.	Depth		Material		Water																																																																																																																				
	From	To		Yes	No																																																																																																																				
8	0	1	top Soil		X																																																																																																																				
8	1	3	Brn Clay		X																																																																																																																				
8	3	5	Hard Brn		X																																																																																																																				
8	5	7	Sandy Brn Clay		X																																																																																																																				
8	7	8'-4"	Broken Basalt		X																																																																																																																				
8	8'-4"	16	Basalt		X																																																																																																																				
8	16	17	Broken Basalt (some cinders)	X																																																																																																																					
8	17	25	Hard Gray Basalt	X																																																																																																																					
8	25	30	Basalt	X																																																																																																																					
8	30	40	Brn Clay (some cinders)	X																																																																																																																					
8	40	48	Brn Clay (some cinders)	X																																																																																																																					
8	48	53-1/2	Basalt	X																																																																																																																					
6	53-1/2	58	Hard Gray Basalt	X																																																																																																																					
6	58	68	Basalt	X																																																																																																																					
6	68	75	Basalt	X																																																																																																																					
6	75	80	Basalt	X																																																																																																																					
6	80	85	Basalt & Red Cinders	X																																																																																																																					
6	85	90	Basalt & Red Cinders	X																																																																																																																					
5. WELL CONSTRUCTION Diameter of hole <u>6</u> inches Total depth <u>90</u> feet Casing schedule: ☒ Steel ☐ Concrete Thickness <u>2-50</u> inches Diameter <u>6</u> inches From <u>1-6</u> feet To <u>52-4</u> feet Was a packer or seal used? ☐ Yes ☒ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch Size of perforation _____ inches by _____ inches Number _____ From _____ To _____ _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No Size of gravel _____ Placed from _____ feet to _____ feet Surface seal? ☒ Yes ☐ No To what depth <u>52</u> feet Material used in seal ☐ Cement grout ☒ Puddling clay																																																																																																																									
6. LOCATION OF WELL Sketch map location must agree with written location. <u>103</u>  County <u>Canyon</u> <u>SE 1/4 SE 1/4 Sec. 40, T. 2 N., R. 2 W.</u>		10. Work started <u>7/9/73</u> finished <u>7/16/73</u>																																																																																																																							
		11. DRILLER'S CERTIFICATION This well was drilled under my supervision and this report is true to the best of my knowledge. <u>James Hill</u> <u>216</u> Driller's or Firm's Name Number <u>449 High St Nampa, Ida 83651</u> Address <u>James Hill</u> <u>7/17/73</u> Signed By Date																																																																																																																							

Priority date for
Right #
63-27781

WELL TO USE FOR HEATING

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

809554

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 1/4 1/4
Lat _____ Long _____

1. WELL TAG NO. D0030825

DRILLING PERMIT NO. _____

Other IDWR No. _____

2. OWNER:

Name RICK WILLIAMS

Address 1315 WILLIAMS LANE

City NAMPA

State ID Zip 83686

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
W E S
Twp 2 North ☒ or South ☐
Rge 2 East ☐ or West ☒
Sec. 10 1/4 SE 1/4 SE 1/4
Gov't Lot _____
County CANYON Long: _____
Address of Well Site SAME

(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☒ Injection ☐ Other

5. TYPE OF WORK: check all that apply

☒ New Well ☐ Modify ☐ Abandonment ☐ Other (Replacement etc.)

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES:

Seal/Filter Pack			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
BENTONITE	0	18	200#		POUR

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____

Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8 +2	18	250	STEEL	☒	☐	☐	☐	☐

Length of Headpipe _____

Length of Tailpipe _____

9. PERFORATIONS/SCREENS:

☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

25 ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

☐ Pump	☐ Backer	☐ Air	☐ Flowing Artesian
Yield gal./min	Drawdown	Pumping Level	Time

Water Temp _____

Bottom hole temp _____

Water Quality test or comments: _____

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Wg	Y
10	0	15	TOP SOIL/ HARD PAN		
	15	18	LAVA		
6	18	25	LAVA		
	25	32	LAVA W/ CREVICES		X
	32	42	BROWN CLAY/ SHALE		X

RECEIVED

FEB 09 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 42

(Measurable)

Date: Started 12/11/2003

Completed 12/11/2003

13. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name DAVIS WELL & PUMP

Firm No. 101

Firm Official _____

Date 12/12/2003

and

Driller or Operator _____

(Sign once if Firm Official & Operator)

Date 12/12/2003

FORWARD WHITE COPY TO WATER RESOURCES

Well to use for injection

IDAHO PRESS TRIBUNE
AD AUTHORIZATION

Salesperson: MARISSA MCNEAL

Printed at 10/12/09 08:46 by \$LOGIN

Acct#: 29512 Ad#: 73089 Status: N
1 IDAHO DEPT. OF WATER RESOURCES Start: 10/15/09 Stop: 10/22/09
2735 AIRPORT WAY Times Ord: 2 Times Run: ****
BOISE ID 83705 LEG 3.00 X 51.00 Words: 317
Contact: DENISE BUFFINGTON Rate: L3 Cost: 242.08
Phone: (208)334-2190 Class: 0001 LEGAL NOTICES
Fax#: Descript: 63-33172/33-33272
Email: Denise.Buffington@idwr.idaho Given by: *
Created: mmcl4 10/12/09 08:41
Agency: Last Changed: mmcl4 10/12/09 08:46

PUB ZONE ED TP START INS STOP SMTWTFSS
IPT A 96 S 10/15,22

AUTHORIZATION

Under this agreement rates are subject to
change with 30 days notice. In the event
of a cancellation before schedule
completion, I understand that the rate
charged will be based upon the rate for
the number of insertions used.

DB ✓ OK
Name (print or type)

Name (signature)

(AD COPY ON NEXT PAGE)

E-mailed Press Tribune - ✓ OK 10/13/09.

IDAHO PRESS TRIBUNE
AD AUTHORIZATION
(CONTINUED)

Salesperson: MARISSA MCNEAL

Printed at 10/12/09 08:46 by \$LOGIN

Acct#: 29512

Ad#: 73089 Status: N

LEGAL NOTICE

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

63-33172

FRANCISCO MENDOZA
TINA MENDOZA
30748 PET LANE
PARMA, ID 83660

Point of Diversion NWNESW S12 T05N R06W CANYON County Source SPRING
Use: IRRIGATION 03/01 to 11/15 0.2 CFS
Total Diversion: 0.2 CFS
Date Filed: 2/18/2009
Place Of Use: IRRIGATION
T05N R06W S12 NESW
Total Acres: 10

63-33272

SAGE COLLINS
NICOLE COLLINS
1315 WILLIAMS LN
NAMPA, ID 83686

Point of Diversion SESE S10 T02N R02W CANYON County Source GROUND WATER
Use: HEATING 01/01 to 12/31 0.03 CFS
Total Diversion: 0.03 CFS
Date Filed: 9/22/2009
Place Of Use: HEATING
T02N R02W S10 SESE

PROPOSED CHANGE OF WATER RIGHT(S)

DDR Nampa LLC, c/o Tim Bruce, of 3300 Enterprise Parkway, Beachwood, OH 44122 filed Application No. 75264 to transfer a ground water rights with a 1977 priority date totaling 0.60 cfs. The purpose of the transfer is to change the point of diversion and place of use for 30 acres within a 107.6 acre permissible place of use to a well and property owned by the applicant. The new site, known as the Nampa Gateway commercial development is adjacent to I-84 on the south, just east of the Garrity Blvd. exit.

Permits will be subject to all prior water rights. For specific details regarding the application(s), please contact the Idaho Department of Water Resources (IDWR) Western Region at 208-334-2190 or visit www.idwr.idaho.gov with detail provided under "new water right applications." Protests may be submitted based on the criteria of Sec 42-222, Idaho Code. Any protest against the proposed change must be filed with the Director, IDWR Western Region, 2735 Airport Way, Boise ID 83705-5082 together with a protest fee of \$25.00 for each application on or before November 2, 2009. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Interim Director

October 15, 22, 2009

73089

✓ OK DB 10/13/09

Buffington, Denise

From: Buffington, Denise
Sent: Thursday, October 08, 2009 1:53 PM
To: 'legals@idahopress.com'
Subject: Legal Notices - Canyon County
Attachments: Canyon County Apps - Cover Letter.doc; Canyon County ADS 63-33172, 33272, 75264.doc; Inj. Well App 63-W-204-001.doc

Attached please find (2) legal notices being submitted for publication. We are implementing our new computer system for legal notices, therefore they may look a little bit different. I am combining the individual notices into one single legal notice. Attached is a notice for (3) water right applications, combined into one ad. The second attachment is for a separate application advertisement (not combined with the others at this time).

Please let me know if you have any questions, or if you are not able to run the ads on the dates requested.

Thank you in advance,

Denise Buffington
Administrative Assistant
Dept of Water Resources
Western Region

10/8/2009

October 8, 2009

LEGAL NOTICE DEPARTMENT

PRESS-TRIBUNE
PO BOX 9399
NAMPA, ID 83652

RE: Application For Permit No(s): 63-33172 & 63-33272

RE: Transfer No. 75264
Water Right No(s). 63-33210

RE: Injection Well No. 63-W-204-001

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 11/2/2009. Your cooperation is appreciated.

Sincerely,

Denise Buffington
Administrative Assistant

Enclosure(s)

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

63-33172

FRANCISCO MENDOZA
TINA MENDOZA
30748 PET LANE
PARMA, ID 83660

Point of Diversion NWNE SW S12 T05N R06W CANYON County Source SPRING
Use: IRRIGATION 03/01 to 11/15 0.2 CFS
Total Diversion: 0.2 CFS
Date Filed: 2/18/2009
Place Of Use: IRRIGATION
T05N R06W S12 NESW
Total Acres: 10

63-33272

SAGE COLLINS
NICOLE COLLINS
1315 WILLIAMS LN
NAMPA, ID 83686

Point of Diversion SESE S10 T02N R02W CANYON County Source GROUND WATER
Use: HEATING 01/01 to 12/31 0.03 CFS
Total Diversion: 0.03 CFS
Date Filed: 9/22/2009
Place Of Use: HEATING
T02N R02W S10 SESE

PROPOSED CHANGE OF WATER RIGHT(S)

DDR Nampa LLC, c/o Tim Bruce, of 3300 Enterprise Parkway, Beachwood, OH 44122 filed Application No. 75264 to transfer a ground water rights with a 1977 priority date totaling 0.60 cfs. The purpose of the transfer is to change the point of diversion and place of use for 30 acres within a 107.6 acre permissible place of use to a well and property owned by the applicant. The new site, known as the Nampa Gateway commercial development is adjacent to I-84 on the south, just east of the Garrity Blvd. exit.

Permits will be subject to all prior water rights. For specific details regarding the application(s), please contact the Idaho Department of Water Resources (IDWR) Western Region at 208-334-2190 or visit www.idwr.idaho.gov with detail provided under "new water right applications." Protests may be submitted based on the criteria of Sec 42-222, Idaho Code. Any protest against the proposed change must be filed with the Director, IDWR Western Region, 2735 Airport Way, Boise ID 83705-5082 together with a protest fee of \$25.00 for each application on or before November 2, 2009. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Interim Director Published on 10/15/2009 and 10/22/2009



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082

PHONE: (208) 334-2190 FAX: (208) 334-2348 www.idwr.idaho.gov

C.L. "BUTCH" OTTER, Governor
GARY SPACKMAN, Interim Director

August 31, 2009

Nicole Collins
1315 Williams Lane
Nampa, ID 83686

Re: Domestic Well for Heating

Dear Ms. Collins:

I understand you are working on securing an approved injection well application to use your existing domestic and injection wells for a heat pump system. A new water right is required for the proposed use, even though it only involves a minor amount of water.

The domestic well already covers a decreed water right for the home and yard, right no. 63-27781. Idaho law requires a new owner of an existing water right to update the record by filing a "Notice of Change in Water Right Ownership." This also enhances your property value by keeping the water right up to date in the Idaho Department of Water Resources (IDWR) records.

A partially completed "change" form is enclosed for your convenience. Please complete items 2A, 2B, 4, 5 and 7. The filing fee is \$25.

A partially completed "Application for Permit" is also included to help you obtain a new water right for heating. Items 1 and 7 should be completed along with a signature(s) at item 13. If the application is filed under more than one name, be sure to check the appropriate "name connector" box. Multiple names connected by "and" require a signature for each name. Otherwise, only one signature is needed. Item 7 describes the amount of time needed upon approval of the application to complete the project. The minimum answer is 1 year, and the maximum amount is 5 years. The filing fee is \$100.

Please return the completed forms to me at your earliest convenience. IDWR will expedite your application. Processing includes a legal notice prepared by IDWR and published twice in a two-week period in the "Press Tribune." Assuming no protests (protests would be highly unlikely in this case), expedited processing would take about six weeks.

Nicole Collins
August 31, 2009
Page 2

I enclosed some information about water rights, consultants and so forth for future reference. More IDWR information is available on the Internet at www.idwr.idaho.gov. Please contact me at 334-2190 if you have any questions. Thank you for your attention to these matters.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Lester". The signature is fluid and cursive, with the first name "Steve" and last name "Lester" clearly distinguishable.

Steve Lester
Water Rights Supervisor

Enclosure

Copy: Matthew Anders, IDWR State Office

Lester, Steve

From: Anders, Matthew
Sent: Friday, August 14, 2009 8:48 AM
To: Lester, Steve
Cc: Skaggs, Pam; Ragan, Brian
Subject: heat pump

Attachments: collins.pdf

Mr. Lester,

We recently received an injection well permit application for a residential heat pump. My preliminary calculation indicates that the heat pump and other domestic could potentially exceed the 13,000 gpd limit in the domestic exemption. Attached are the supporting documents.

Contact info:

Nicole Collins
208-468-2228

Location of heat pump:

1315 Williams Lane
Nampa, ID 83686

We will process the injection well application, but the permit will not be signed until you have made a determination if a water right is needed.

Thanks!

Matt



collins.pdf (3 MB)

From: Skaggs, Pam
Sent: Monday, January 05, 2009 3:21 PM
To: Anders, Matthew; Ragan, Brian
Cc: Keen, Shelley
Subject: Region Contacts for Injection Wells for Large Projects

Matt & Brian,

All the regions responded positively to your efforts. They each agreed that a simple email notice with a copy of the Injection Well Application would be sufficient notice for them to follow-up.

These are the preferred contacts designated for each region.

Southern: Nathan Erickson with cc to Allen Merritt
Northern: Al Beardslee & Dave Lapard
Western: Steve Lester
Eastern: Dennis Dunn

We appreciate your efforts to coordinate these matters between Resource Protection & Water Allocations.

Pam

From: Skaggs, Pam
Sent: Friday, December 26, 2008 1:27 PM
To: Franklin, Keith; Lester, Steve; Carlson, Dave; Merritt, Allen
Subject: Injection Wells for Large Projects-Survey

Hi All,

Matt Anders & Brian Ragan for Resource Protection have been working on a way to get more information on Injection Well applications that will help them identify uses that should have water rights related to the wells. Once they have identified those projects, they would like to pass this information over to the Water Rights staff to follow-up. We want to know your preference on who/how this information should be delivered to your region.

I suggest a simple email with the scanned DP Application(s) attached to a region contact. Let me know if you have any suggestions, ideas or want to designate a particular staff to receive the information.

Thanks,
Pam

UIC Program Guidance For Calculating Total Domestic Water Use For Permitting a Ground-Source Heat Pump



Idaho Code (42-111 & 42-227) defines domestic water use and states that a water right is not required for domestic use, provided that the volume of water does not exceed 13,000 gallons per day. When permitting an injection well for a ground-source heat pump, the UIC Program must determine if the use of a heat pump will cause a homeowner to exceed the 13,000 gallon per day limit for a domestic water right exemption. If domestic water use is anticipated to exceed 13,000 gallons per day, the applicant must obtain a water right before the injection well permit can be issued by IDWR.

The following table should be completed to document your calculation of total domestic water use for Section II of your injection well application.

Use	Gallons Per Day Per Person		Number of People		Total Gallons Used Per Day
Single Family Residence	75	x	4	=	300
Luxury Residence	150	x		=	

Use	Gallons Per Day Per Animal		Number of Animals		
Cattle	12	x		=	
Dairy Cattle	35	x		=	
Horses	12	x		=	
Mules	12	x		=	
Hogs	4	x		=	
Goats	2	x		=	
Sheep	2	x		=	
Other Livestock		x		=	

Use	Gallons Per Day Per 100 Animals		Number of Animals		
Chickens	10	x		=	
Turkeys	18	x		=	
Other Poultry		x		=	

Use	Gallons Per Day Per 1 Acre at 9 gpm		Number of Acres		
Irrigation	12,960	x	0.3	=	3,888

Use	Average Weekly Injection Rate (gpm) See Page 5 Guidance – Example 1		Minutes Per Day		
Heat Pump	11	x	1440	=	15840
Other Uses					

Total Gallons Per Day Used					20,028	summer
					16,140	winter

UIC Program Guidance For Calculating the Average Weekly Injection Rate



The UIC Program does not dictate what method you use to calculate the Average Weekly Injection Rate for your injection well. The following are options you can use to make your calculation or for guidance to develop your own method. Document your calculation by using one of the options below or attaching your calculation. This information is required in Section I.D.

Example 1 – Heat Pump (Injection well class 5A7)

Pumping rate of heat pump in gallons per minute (gpm)	Hours per day heat pump will run on coldest day of year	Number of days per week heat pump will run during week coldest day occurs	Constant to convert to gallons per minute (gpm)	Average Weekly Injection Rate (gpm)
8 gal/min x	18 hours/day x	7 days/wk x	0.00595 wks/hour	= 6.0 gpm
15 gpm x	18 x	7 x	0.00595	= 11 gpm
				=

Example 2 – Sprinkler Irrigation Return Flow (Injection well class 5F1)

Number of acres drained	Volume of water applied	% waste water	Constant to convert to gallons per minute (gpm)	Average Weekly Injection Rate
40 acres x	9 gal/min/acre x	x 0.05	x 0.000099 wk/min	= 18 gpm
	10080 min/wk	x	x	=
40 acres x	0.02 ft ³ /sec/acre x	x 0.05	x 0.0000017 wk/min	= 0.04 cfs
	604800 min/wk	x	x	=
		x	x	=

Example 3 – Theoretical Calculation of Flow Through a Pipe

The calculation used to generate this table assumes unrestricted flow through a well casing of the designated size. The calculation represents the maximum injection rate that is theoretically possible, which may be significantly larger than the subsurface will actually allow. Using this calculation will result in a relatively large radius of influence, which may cause your permit to include a monitoring requirement.

Well Diameter	Average Weekly Injection Rate
6"	2.5 cfs
8"	4.4 cfs
10"	6.8 cfs
12"	9.8 cfs
14"	13.4 cfs



GUIDE SPECIFICATIONS

GS Series

GENERAL

Units shall be performance certified to ISO standard 13256-1 for Water Loop Heat Pump, Ground Water Heat Pump and Ground Loop Heat Pump applications. Units shall be Underwriter Laboratories (UL and eUL) listed for safety on all models. Each unit shall be run tested at the factory. Each unit shall be pallet mounted and stretch wrapped. The units shall be manufactured in an ISO 9001:2000 certified facility.

The units shall be warranted by the manufacturer against defects in materials and workmanship for a period of one year on all parts, and 5 years on the compressor.

The units shall be designed to operate with entering fluid temperatures between 50°F (10°C) and 110°F (43.3°C) in cooling and temperatures between 25°F (-3.9°C) and 80°F (27°C) in heating.

CASING & CABINET

The cabinet shall be fabricated from heavy-gauge steel finished with Galvalume® plus, an aluminum-zinc alloy with a clear acrylic coating for additional corrosion protection. The interior shall be insulated with ½" (12.7mm) thick, multi density, coated, glass fiber. All units shall allow sufficient service access to replace the compressor without unit removal. One blower and two compressor compartment access panels shall be removable with supply and return ductwork in place. A duct collar shall be provided on the supply air opening. A filter rack with 1" (25.4mm) thick disposable filters and a 1" (25.4mm) return air duct collar shall be provided with each unit. The units shall have an insulated divider panel between the air handling section and the compressor section to minimize the transmission of compressor noise, and to permit service testing without air bypass. Units shall have a stainless steel condensate drain pan.

REFRIGERATION CIRCUITS

All units shall contain a sealed refrigerant circuit including a hermetic compressor, bi-directional thermal expansion valve metering device, finned tube air-to-refrigerant heat exchanger, refrigerant reversing valve and service ports. Compressor shall be high efficiency rotary or scroll type, designed for heat pump duty, quiet operation and mounted on rubber vibration isolators. Compressor motors shall be equipped with overload protection. Refrigerant reversing valves shall be pilot operated sliding piston type with replaceable encapsulated magnetic coils energized only during the cooling cycle. The finned tube coil shall be constructed of lanced aluminum fins not exceeding fourteen fins per inch bonded to rifled copper tubes in a staggered pattern not less than three rows deep and have a 450 PSIG (3100 kPa) working pressure. Coils shall have a baked polyester enamel coating for protection against most airborne chemicals. Coil end plates shall be aluminum. The coaxial water-to-refrigerant heat exchanger shall be constructed of a convoluted copper (optional cupronickel) inner tube and steel outer tube with a designed refrigerant working pressure of 450 PSIG (3100 kPa) and a designed water side working pressure of no less than 400 PSIG (2750 kPa). The water-to-refrigerant heat exchanger shall be insulated to prevent condensation at low fluid temperatures.

FAN MOTOR & ASSEMBLY

The fan shall be direct drive centrifugal forward curved type with a dynamically balanced wheel. The housing and wheel shall be designed for quiet low velocity operation. The fan housing shall be removable from the unit without disconnecting the supply air ductwork for servicing of the fan motor. The fan motor shall be an ECM-2 microprocessor controlled DC type motor with internal programming factory set for the specific unit and featuring soft start/stop and a delay off feature for maximum efficiency and quiet operation. There will further be provisions for adjusting the air delivery of the motor and blower by +/- 15% from rated air flow (GS070 -0-15%).

ELECTRICAL

Controls and safety devices will be factory wired and mounted within the unit. Controls shall include compressor contactor, 24V transformer, revers-

ing valve coil and solid state lock-out controller (UPM). The UPM controller shall include the following features: Anti-short cycle time delay, random start, brown out/surge/power interruption protection, 90 second low pressure switch bypass timer, shutdown on high or low refrigerant pressure safety switch inputs, shutdown for the optional freeze stat or high level condensate sensors, 24 VAC alarm output for remote fault indication, unit reset at thermostat or disconnect, ability to defeat time delays for servicing and automatic intelligent reset. The UPM shall automatically reset after a safety shut down and restart the unit, if the cause of the shut down no longer exists, after the anti-short cycle and random start timers expire. Should a fault re-occur within 10 minutes after reset, then a permanent lockout will occur. A light emitting diode (LED) shall announce the following alarms: high refrigerant pressure, low refrigerant pressure, low water temperature and a high level of condensate in the drain pan (when equipped with the optional low water temperature and high level condensate sensors). The LED will display each fault condition as soon as the fault occurs. If a permanent lockout occurs, then the fault LED will display the type of fault until the unit is reset.

Safety devices include a low pressure cutout set at 20 PSIG (140 kPa) for loss of charge protection (freeze stat and/or high discharge gas temperature sensor is not acceptable) and a high pressure cutout control set at 380 PSIG (2600 kPa).

True ECM motor interface board shall provide a screw type terminal block for thermostat connection, LED's to indicate thermostat status and air delivery. Direct wiring of the motor control harness to the thermostat is not acceptable.

An optional energy management relay to allow unit control by an external source shall be factory installed.

PIPING

Supply, return water and condensate drain connections shall be brass female pipe thread fittings and mounted flush to cabinet exterior.

INTERNAL ELECTRIC HEAT

208/230-1-60 volt units shall be equipped with optional factory installed internal electric resistance heat for auxiliary and emergency heat. Electric heater must be Underwriter's Laboratories (UL and ULc) approved for safety when installed in the unit. External heater packages or heater packages not specifically listed for use with the unit are unacceptable. Electric heater packages shall include a heater collar mounted to the blower outlet, individual thermal overload protected heater elements no greater than 5kW each and magnetic contactors. Heater packages shall have a separate power supply connection from the compressor and this power supply shall also power the unit blower motor and control transformer for safe operation.

HEAT RECOVERY PACKAGE

208/230 volt units shall be equipped with a optional factory installed internal heat recovery kit for domestic hot water production. This kit shall include an internally protected pump, double walled coaxial water-to-refrigerant heat exchanger, 140°F (60°C) hot water temperature limit switch and an on/off switch/circuit breaker.

LOOP PUMP PACKAGE - CONSULT FACTORY

208/230-1-60 volt units shall be equipped with an optional factory installed ground loop pump kit. This kit shall include a 1/6 HP loop pump, isolation valves and a set of purge connections for purging and pressurizing the ground loop with the unit in place. The pump, all piping and valves shall be internal to the unit.



PACKAGED UNITS SPECIFICATION DATA SHEET

FHP MANUFACTURING HIGH-EFFICIENCY WATER SOURCE HEAT PUMPS

GS062

GEO-SAVER

ELECTRICAL SPECIFICATIONS

Electrical Characteristics	Elect. Symbol	Compressor		Blower		Loop Pump		Min. Circuit Amps	Max. Fuse/Breaker
		RLA	LRA	FLA	HP	FLA	HP		
208/230-1-60	-1	25.6	169.0	6.8	3/4	-	-	40.6	60
208/230-3-60	-3	17.7	123.0	6.8	3/4	-	-	29.0	45

MECHANICAL SPECIFICATIONS

Refrigerant: R-22			
Air Coil			
Square Feet	Rows Deep	Tube O.D.	Fins/Inch
4.5	3	3/8	14
Water Coil			
Type	Work	Press	
Coaxial	450	psig	
Blower Size	Compr Type		
11 x 9 DD	Scroll		
Net Weight	Ship Weight		
376 lbs	402 lbs		

BLOWER PERFORMANCE

Available External Static Pressure (Inches of Water, Gauge. Wet Coil and Filter Included)

Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
+						2300						
Norm						2000						
-						1700						



FLUID PRESSURE DROP

Fluid Flow (GPM)	Pressure Drop (FOH) (PSIG)	
8	3.48	1.51
10	5.21	2.25
15	10.80	4.68
18	15.00	6.49
22	21.52	9.32

ISO 13256-1 CERTIFIED PERFORMANCE DATA Rated at 2000 CFM and 15.0 GPM

Water Loop				Ground Water				Ground Loop			
Cooling		Heating		Cooling		Heating		Cooling		Heating	
Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
60,000	13.2	77,000	4.6	65,000	18.3	60,000	4.1	60,500	14.6	48,000	3.3

CAPACITY DATA All performance at 2000 CFM and 15.0 GPM

COOLING

EFT Range (Standard)
50°F to 100°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Sensible Capacity (MBtuH)	Sensible to Total Ratio	Power Input (kW)	Heat of Reject (MBtuH)	EER
50°	70°db 61°wb	56.86	37.71	0.66	3.19	67.74	17.8
60°		55.27	36.97	0.67	3.54	67.37	15.6
70°		53.68	36.35	0.68	3.90	67.00	13.
85°		51.30	35.66	0.70	4.44	66.45	11.6
100°		48.92	35.18	0.72	4.97	65.90	9.8
50°	75°db 63°wb	60.89	45.00	0.74	3.20	71.83	19.0
60°		59.19	44.11	0.75	3.56	71.36	16.6
70°		57.49	43.38	0.75	3.92	70.89	14.7
85°		54.95	42.55	0.77	4.46	70.18	12.3
100°		52.40	41.99	0.80	5.00	69.47	10.5
50°	80°db 67°wb	66.79	49.64	0.74	3.23	77.82	20.7
60°		64.93	48.66	0.75	3.59	77.19	18.1
70°		63.07	47.85	0.76	3.96	76.57	15.9
85°		60.27	46.94	0.78	4.50	75.63	13.4
100°		57.48	46.32	0.81	5.04	74.69	11.4
50°	85°db 71°wb	72.69	54.32	0.75	3.26	83.81	22.3
60°		70.67	53.25	0.75	3.62	83.03	19.5
70°		68.64	52.37	0.76	3.99	82.25	17.2
85°		65.60	51.37	0.78	4.54	81.08	14.5
100°		62.56	50.69	0.81	5.08	79.91	12.3

Units are complete packages containing compressor, reversing valve, expansion valve metering device, ECM fan motor and heat exchangers. Also included are safety controls: Overload protection for motors, high and low refrigerant pressure switches and solid state lock-out circuit. Optional UL approved internal electric heater, factory installed with primary thermal overload protection and magnetic contactors (208/230-1-60 only) optional UL approved internal Heat Recovery Package and/or Ground Loop Pump with purge connections available

Performance based on ARI/ISO rated air flow, fluid flow and voltage. For conditions other than rated, consult the FHP EAD selection software. Due to variations in installation actual performance may vary marginally from tabulated values.

As a result of continuing research and development, specifications are subject to change without notice.
gs062p6 mod2 Rev: 10-06

HEATING

EFT Range (Standard)
25°F to 80°F

Entering Fluid Temp. (°F)	Entering Air Temp. (°F)	Total Capacity (MBtuH)	Power Input (kW)	Heat of Abs. (MBtuH)	COP
50°	60°	65.21	4.44	50.06	4.3
60°		73.35	4.61	57.61	4.7
70°		81.50	4.79	65.15	5.0
80°		89.64	4.97	72.69	5.3
50°	70°	61.63	4.52	46.20	4.0
60°		69.32	4.70	53.28	4.3
70°		77.02	4.88	60.36	4.6
80°		84.71	5.06	67.44	4.9
50°	80°	57.43	4.62	41.65	3.6
60°		64.59	4.81	48.18	3.9
70°		71.76	4.99	54.72	4.2
80°		78.92	5.17	61.26	4.5

LOW TEMP HEATING

Antifreeze Required

25°	60°	43.98	4.00	30.33	3.2
30°		47.97	4.09	34.02	3.4
40°		55.95	4.26	41.40	3.8
25°	70°	41.57	4.07	27.67	3.0
30°		45.34	4.16	31.13	3.2
40°		52.88	4.34	38.06	3.6
25°	80°	38.74	4.17	24.53	2.7
30°		42.25	4.26	27.72	2.9
40°		49.28	4.44	34.12	3.3

FHP MANUFACTURING COMPANY

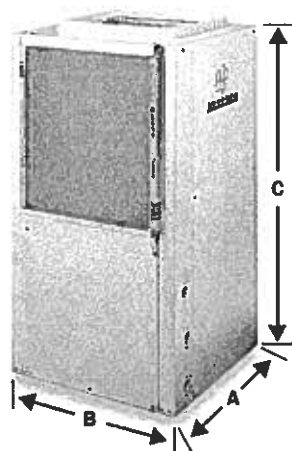
601 N.W. 65th Court - Fort Lauderdale, FL 33309

Phone: (954) 776-5471 - Fax: (800) 776-5529

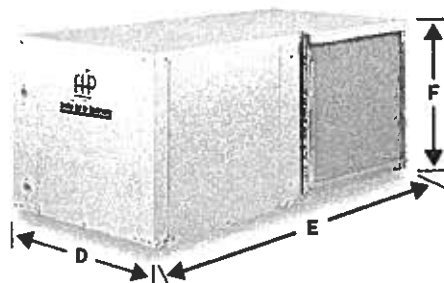
<http://www.fhp-mfg.com>

GS SERIES

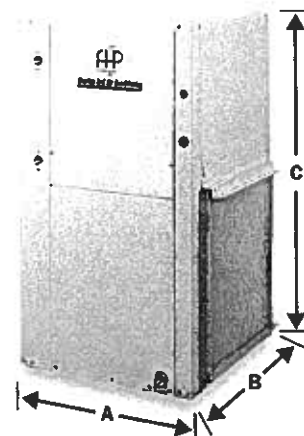
VERTICAL



HORIZONTAL



COUNTERFLOW



DIMENSIONS						
MODEL	VERTICAL/C. FLOW			HORIZONTAL		
	WIDTH	DEPTH	HEIGHT	WIDTH	LENGTH	HEIGHT
	A	B	C	D	E	F
GS018	21.50	21.50	40.25	25.50	45.00	21.75
GS024	21.50	21.50	40.25	25.50	43.00	21.75
GS030, 036	21.50	26.00	47.25	26.00	54.50	21.75
GS042, 048	24.00	32.75	47.25	30.00	68.00	21.75
GS054, 062	26.00	33.25	51.25	30.00	68.00	21.75
GS070	26.00	33.25	58.25	30.00	78.00	21.75

All ratings & specifications are subject to change without notice.

MODEL	CFM	ARI / ISO 13256-1 PERFORMANCE DATA											
		ENTERING WATER TEMPERATURES											
		Water Loop				Ground Water				Ground Loop			
		86°F		68°F		59°F		50°F		77°F		32°F	
		CAPACITY AND EFFICIENCY DATA											
		COOLING CAPACITY (WLHP)	EER (WLHP)	HEATING CAPACITY (WLHP)	COP (WLHP)	COOLING CAPACITY (GWHP)	EER (GWHP)	HEATING CAPACITY (GWHP)	COP (GWHP)	COOLING CAPACITY (GLHP)	EER (GLHP)	HEATING CAPACITY (GLHP)	COP (GLHP)
GS018	600	15,500	16.8	16,300	5.2	17,200	25.9	13,200	4.5	16,000	19.4	10,600	3.8
GS024	800	23,500	14.9	28,500	4.8	26,400	22.6	23,200	4.2	24,500	16.7	18,200	3.6
GS030	1000	28,000	17.6	33,200	5.9	30,000	25.9	26,000	4.9	29,000	20.7	19,000	4.1
GS036	1200	34,000	15.5	40,500	5.3	37,800	22.8	32,400	4.6	35,000	18.7	24,500	3.6
GS042	1400	39,600	15.7	48,500	5.5	44,000	22.8	39,000	4.6	41,000	17.9	30,000	3.8
GS048	1600	47,000	14.5	58,000	5.1	52,000	21.1	47,000	4.3	49,000	16.6	36,500	3.6
GS054	1800	51,000	14.0	62,000	4.5	57,000	19.8	52,000	4.1	52,000	15.4	41,000	3.5
GS062	2000	60,000	13.2	77,000	4.6	65,000	18.3	60,000	4.1	60,500	14.6	48,000	3.3
GS070	2200	68,000	13.0	82,000	4.7	76,000	19.2	66,000	3.9	69,000	14.3	53,000	3.5

Tabulated performance data is at noted entering water temperatures and entering air conditions of 80.6° F DB/66.2° F WB at ARI/ISO 13256-1 rated CFM and copper heat exchangers.



FHP MANUFACTURING COMPANY

601 N.W. 65TH COURT • FT. LAUDERDALE, FL 33309 • PHONE: (954) 776-5471 • FAX: (800) 776-5529

<http://www.fhp-mfg.com>

heat pumps

970-204 Rev. 4/06

PERFORMANCE DATA

Operating Temperatures & Pressures, GS054-070

			OPERATING DATA							
			COOLING				HEATING			
MODEL	ENTERING WATER TEMP, °F	WATER FLOW GPM	SUCTION PRESSURE PSIG	DISCHARGE PRESSURE PSIG	WATER TEMP RISE, °F	AIR TEMP DROP, °F	SUCTION PRESSURE PSIG	DSICH PRESS., PSIG	WATER TEMP DROP, °F	AIR TEMP RISE, °F
GS054	30°	8.0					33-41	167-204	3-4	18-22
		18.0					37-45	173-212	2-3	19-24
	40°	8.0	66-80	117-143	13-16	21-26	42-52	184-225	5-6	22-27
		18.0	66-80	107-131	7-9	22-27	47-57	191-233	3-4	24-29
	50°	8.0	68-83	137-167	13-16	20-25	51-63	201-246	7-9	27-32
		18.0	68-83	125-152	7-9	21-25	57-69	209-255	4-5	28-35
	60°	8.0	69-84	161-197	13-16	20-24	60-74	214-262	8-10	31-38
		18.0	69-84	147-180	7-9	20-24	67-82	222-271	5-6	33-40
	70°	8.0	70-86	178-218	13-16	20-24	72-88	229-280	10-12	34-42
		18.0	70-86	162-198	7-9	20-24	79-97	238-290	6-7	37-45
	80°	8.0	71-87	206-252	12-15	19-23	83-101	247-302	11-14	39-47
		18.0	71-87	188-230	7-8	19-23	91-111	256-313	7-8	42-51
	90°	8.0	73-89	235-287	12-15	18-22	94-115	263-321	12-15	43-53
		18.0	73-89	214-261	7-8	18-23	104-127	272-333	7-9	46-56
	100°	8.0	73-89	263-321	12-15	18-22				
		18.0	73-89	239-292	7-8	19-23				
GS062	30°	10.0					31-38	169-206	3-4	19-23
		20.0					34-41	174-213	2-3	20-25
	40°	10.0	61-74	115-141	13-16	22-27	39-48	186-227	6-7	23-28
		20.0	61-74	106-129	8-9	22-27	43-52	192-235	3-4	25-30
	50°	10.0	62-76	134-164	14-17	21-25	47-58	203-248	8-10	28-34
		20.0	62-76	123-150	8-10	21-26	52-64	210-257	5-6	29-36
	60°	10.0	63-77	158-193	13-16	20-24	56-68	216-264	9-11	32-39
		20.0	63-77	145-177	8-9	20-25	61-75	224-273	6-7	34-42
	70°	10.0	63-77	177-217	14-17	19-24	66-81	228-278	11-13	35-43
		20.0	63-77	163-199	8-10	20-24	73-89	235-287	6-8	37-46
	80°	10.0	64-78	206-251	13-16	18-23	76-93	245-300	12-15	40-49
		20.0	64-78	188-230	8-9	19-23	84-102	254-310	7-9	42-52
	90°	10.0	65-80	234-285	13-16	18-22	87-106	261-319	14-17	44-54
		20.0	65-80	214-262	7-9	18-22	95-117	270-329	8-10	47-57
	100°	10.0	66-80	262-320	13-16	18-22				
		20.0	66-80	240-293	7-9	18-22				
GS070	30°	12.0					31-38	169-206	3-4	19-23
		22.0					34-41	174-213	2-3	20-25
	40°	12.0	61-74	115-141	13-16	22-27	39-48	186-227	6-7	23-28
		22.0	61-74	106-129	8-9	22-27	43-52	192-235	3-4	25-30
	50°	12.0	62-76	134-164	14-17	21-25	47-58	203-248	8-10	28-34
		22.0	62-76	123-150	8-10	21-26	52-64	210-257	5-6	29-36
	60°	12.0	63-77	158-193	13-16	20-24	56-68	216-264	9-11	32-39
		22.0	63-77	145-177	8-9	20-25	61-75	224-273	6-7	34-42
	70°	12.0	63-77	177-217	14-17	19-24	66-81	228-278	11-13	35-43
		22.0	64-78	163-199	8-10	20-24	73-89	235-287	6-8	37-46
	80°	12.0	64-78	206-251	13-16	18-23	76-93	245-300	12-15	40-49
		22.0	64-80	188-230	8-9	19-23	84-102	254-310	7-9	42-52
	90°	12.0	65-80	234-285	13-16	18-22	87-106	261-319	14-17	44-54
		22.0	65-80	214-262	7-9	18-22	95-117	270-329	8-10	47-57
	100°	12.0	66-80	262-320	13-16	18-22				
		22.0	66-80	240-293	7-9	18-22				

This chart shows approximate temperatures and pressures for a unit in good repair. The values shown are meant as a guide only and should not be used to estimate system charge. This chart assumes rated air flow and 80° d.b./67° w.b. entering air temperature in cooling, 70° d.b. entering air temperature in heating. Heating data at entering fluid temperatures below 50° assumes the use of antifreeze.

As a result of continuing research and development, specifications are subject to change without notice.