

PTCS® Ground Source Heat Pump Form

All fields must be completed. Work must be performed by one or more technicians certified in PTCS and/or IGSHPA. Multiple technicians may be employed to meet these certification requirements, but all must have been present at the time of the install.

- 1) Enter this information online at ptcs.bpa.gov or fax it to 1-877-848-4074 for entry.
- 2) Submit this form to customer's utility with additional documentation required by utility, including sizing documentation.

Have questions? Visit www.bpa.gov/goto/reshvac, call 1-800-941-3867, or email ResHVAC@bpa.gov.

Site Information (Please print clearly)		Install Date	Fall River Rural Electric Cooperative	
PTCS Tech Name	PTCS Tech #	IGSHPA Certified Tech Name		IGSHPA #
Member Name		Installation Site Address*		
Site City*	Site State*	Site Zip*	Customer Phone # () -	
*Mailing address if different (#, City, St, Zip):				
Home Type: <input type="checkbox"/> Existing Site Built <input type="checkbox"/> New Construction Site Built <input type="checkbox"/> Manufactured: # of Sections <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3				
Heated Area:	Sq. Ft	Foundation Type (Site Built): <input type="checkbox"/> Crawlspace <input type="checkbox"/> Full Basement <input type="checkbox"/> Half Basement <input type="checkbox"/> Slab		
Existing Heating System Being Replaced (If new home, indicate heating system installed):				
<input type="checkbox"/> Electric Forced Air w/out AC <input type="checkbox"/> Electric Forced Air w/ AC <input type="checkbox"/> Electric Zonal <input type="checkbox"/> Air Source Heat Pump <input type="checkbox"/> Ground Source Heat Pump <input type="checkbox"/> Natural Gas Furnace (Gas Company: _____) <input type="checkbox"/> Other Non-Electric Space Heating: _____				
Back up Heat: <input type="checkbox"/> None <input type="checkbox"/> Electric Forced Air <input type="checkbox"/> Electric Zonal <input type="checkbox"/> Natural Gas Furnace <input type="checkbox"/> Non-Electric Space Heating				

New Heat Pump Equipment Data

**PTCS requires GSHPs to be Energy Star qualified. Visit energystar.gov.

**Energy Star? <input type="checkbox"/> Y <input type="checkbox"/> N	AHRI#	<input type="checkbox"/> Closed Loop <input type="checkbox"/> Open Loop <input type="checkbox"/> Pond	<input type="checkbox"/> Vertical Loop <input type="checkbox"/> Horizontal Loop	<input type="checkbox"/> Forced Air Furn. <input type="checkbox"/> Hydronic
Heat Pump Make	Heat Pump Model #		Capacity (tons)	
<input type="checkbox"/> Non-Variable Speed HP <input type="checkbox"/> Variable Speed HP	What is the Balance Point? _____ Provide BP documentation to utility.		Are the refrigeration piping/other penetrations sealed? <input type="checkbox"/> Yes <input type="checkbox"/> No	
For Closed Loop Systems Total external loop length: _____ ft.		For Horizontal ground loop Average in-ground loop depth: _____ ft.		For Vertical Loop No. _____ and depth _____ ft. of boreholes
For Open loop Systems Supply side depth (elevation difference between water source and heat pump): _____ ft. Return water: Re-injected into ground. Re-injection depth (elevation difference between heat pump and re-injection point): _____ ft. Discharged onto the surface. Specify surface: _____				

True Flow Test

Not necessary for Water to Water systems.

Testing Mode Used: <input type="checkbox"/> Heating <input type="checkbox"/> Cooling		External Static Pressure		Plate Location: <input type="checkbox"/> Air Handler <input type="checkbox"/> Return Grille <input type="checkbox"/> Other:		Units: <input type="checkbox"/> Pa <input type="checkbox"/> H ₂ O	
Plate Size	Plate 1 <input type="checkbox"/> 14 <input type="checkbox"/> 20	Plate 2 <input type="checkbox"/> 14 <input type="checkbox"/> 20	Plate 3 <input type="checkbox"/> 14 <input type="checkbox"/> 20	<i>True Flow Test Notes</i>			
NSOP [A]							
TFSOP [B]							
Plate Pressure							
Correction Factor [C] = √([A]/[B]) or from table							
Raw Flow CFM from tables [D]							
Corrected Flow CFM = [C] x [D]				Total CFM	CFM/ton		

Auxiliary Heating System

Auxiliary (strip) heat lockout: greater than 30°F Other (specify):

Flow Rate in GPM

*For GPM flow rate use manufacture's startup instructions, numbers in PTCS specs, or measure directly.

Loop in Pressure [A]	Loop Out Pressure [B]	Pressure Drop [A-B]
GPM flow rate from Mfg. table*	Calculate GPM/ton	GPM/ton requirement met: <input type="checkbox"/> Y <input type="checkbox"/> N

PTCS Commissioned Ground Source Installation Checklist

Temperature Rise/Drop across Ground Loop. Tests to be performed w/o desuperheater after 15 min continuous operation.					
Mode unit tested in: <input type="checkbox"/> Heating <input type="checkbox"/> Cooling					
Existing Condition	Cooling	Heating	After Adjusted Cond. (If necessary)	Cooling	Heating
Loop in Temp.	°F	°F	Loop in Temp.	°F	°F
Loop out Temp.	°F	°F	Loop out Temp.	°F	°F
Temp. Diff.	°F	°F	Temp. Diff.	°F	°F
Target Diff.**	°F	°F	Target Diff.**	°F	°F
Temperature Rise/Drop across Air Coil Check after 15 minutes of continuous operation.					
Existing Condition	Cooling	Heating	After Adjusted Cond. (If necessary)	Cooling	Heating
Supply Air Temp.	°F	°F	Supply Air Temp.	°F	°F
Return Air Temp.	°F	°F	Return Air Temp.	°F	°F
Temp. Diff.	°F	°F	Temp. Diff.	°F	°F
Target Diff.**	°F	°F	Target Diff.**	°F	°F

**Refer to manufacturer's installation guide for target loop and air-side temperature splits. If measured splits do not meet the manufacturer's specifications, repair and re-test until specs are met.

Notes

Ground source Heat Pump Upgrade (Compressor Only) Rebate \$350.00
Ground Source Heat Pump Upgrade or Conversion without Desuperheater \$2,100.00
Ground Source Heat Pump Upgrade or Conversion with Desuperheater \$2,500.00

Required Member and Technician Signatures

To be filled out by the Fall River Electric account holder. This form must be signed by the person whose name appears on the electric utility account. ENERGY INFORMATION RELEASE: The undersigned Fall River member requests and authorizes to release billing and usage information for the account listed below to the PTCS program. With this authorization, the PTCS program can request billing information for up to two years pre-installation and two years post-installation. The Fall River member also hereby releases Fall River Electric from any and all liability arising from or connected with providing this information.

Fall River Rural Electric Cooperative		Account #	
Member Name Name	Member Signature	Date	
By signing below, technician certifies that this form and any accompanying documentation are complete and accurate, and that all measures associated with this project were completed as of the signature date below.			
PTCS Technician Name		Installation Company	
PTCS Technician Signature		Date	PTCS Tech Phone # () -
IGHSPA Certified Tech Signature <i>(if different)</i>		Date	IGHSPA Tech Phone # () -

PRIVACY ACT STATEMENT Basic authority for collecting this information is authorized by 16 U.S.C. §§ 832 et. seq., and 838 et. seq., pursuant to Bonneville Power Administration's Conservation Program system of records established in 46 FR 31700. This information is primarily intended to further, but is incidental to the performance of, BPA's overall Energy Efficiency Program, the objective of which is to acquire energy resources through energy efficiency, to determine what cost-effective conservation and direct application renewable resources measures should be installed or adopted under different circumstances, and to provide incentives for the installation of such measures. Other routine issues of this information include: aggregation into a public database on energy efficiency; furnished to authorized personnel for installation/repair of equipment; aggregated into a database for program publicity; and in some instances information regarding buildings will be made available to subsequent purchasers of the buildings. Your disclosure of the requested information is voluntary, however failure to provide requested information means that it will not be possible for you to participate in this BPA Energy Efficiency program.

Closed Loop GSHP Specification Requirements Checklist (Specification dated October 4, 2011)

Installation	Equipment, including filter(s), is accessible. <input type="checkbox"/> Y <input type="checkbox"/> N	All direct potable water connections protected by approved backflow prevention devices. <input type="checkbox"/> Y <input type="checkbox"/> N	
Pump(s)	≤ 165 Watts/nominal ton and sized to provide 3 GPM/ton. <input type="checkbox"/> Y <input type="checkbox"/> N	Pumps are cast iron and or bronze. <input type="checkbox"/> Y <input type="checkbox"/> N	Flow centers have filling and air purge ports. <input type="checkbox"/> Y <input type="checkbox"/> N
Pipe	HDPE & PEX piping rated/designed for GSHP systems per IGSHPA. <input type="checkbox"/> Y <input type="checkbox"/> N	HDPE socket weld, electro-fusion, or butt weld. <input type="checkbox"/> Y <input type="checkbox"/> N	Only non-metallic connections on PEX. <input type="checkbox"/> Y <input type="checkbox"/> N
Controls	Installed auxiliary heat capacity does not exceed 125 percent of the heating design load. <input type="checkbox"/> Y <input type="checkbox"/> N	Auxiliary heat does not operate during a 1 st stage heating call, except in emergency heat. <input type="checkbox"/> Y <input type="checkbox"/> N	
Horizontal Loops NA	Designed and sized for 30°F min Entering Water Temperature (EWT). <input type="checkbox"/> Y <input type="checkbox"/> N		
Vertical Ground Loop NA	Designed/sized for 30°F min EWT. <input type="checkbox"/> Y <input type="checkbox"/> N	Detailed drilling log for boreholes. <input type="checkbox"/> Y <input type="checkbox"/> N	Boreholes grouted correctly. <input type="checkbox"/> Y <input type="checkbox"/> N
Pond/Lake Loop NA	Heat exchanger is installed beneath at least 8 feet of water in all seasons and designed/sized for 30°F min EWT. <input type="checkbox"/> Y <input type="checkbox"/> N		
Hydronic Systems NA	Newly poured concrete slabs designed for 100°F design water delivery temperatures. <input type="checkbox"/> Y <input type="checkbox"/> N	Insulation R-15 4' perimeter and R-10 under the rest of the slab. <input type="checkbox"/> Y <input type="checkbox"/> N	
Desuperheater NA	Approved for this model by manufacturer. <input type="checkbox"/> Y <input type="checkbox"/> N	Vented double-wall heat exchanger. <input type="checkbox"/> Y <input type="checkbox"/> N	Constructed of copper, cupronickel, or stainless. <input type="checkbox"/> Y <input type="checkbox"/> N
Desuperheater Pump NA	Is rated by UL or ETL-US. <input type="checkbox"/> Y <input type="checkbox"/> N	Bronze construction. <input type="checkbox"/> Y <input type="checkbox"/> N	Potable water rated. <input type="checkbox"/> Y <input type="checkbox"/> N
Desuperheater Preheat Tank NA	IAPMO/NSF/GAMA rated electric tank manufacturer. <input type="checkbox"/> Y <input type="checkbox"/> N	GAMA EF rating 0.93. <input type="checkbox"/> Y <input type="checkbox"/> N	Glass Lined Steel tank, 50gal min size. <input type="checkbox"/> Y <input type="checkbox"/> N