



Minnesota Woody Biomass Facility Directory



**Minnesota Department of Natural Resources
Division of Forestry
Forest Products Utilization & Marketing Program**

October 2008



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This directory is a companion to the DNR publication “Woody Biomass Utilization Report”, also released in October 2008.

The directory is not an exhaustive list of woody biomass-using facilities in Minnesota. Some facilities chose not to have a listing in the directory for various reasons, including proprietary and privacy concerns. Using best available information, contacts and sources, an attempt was made to contact as many woody biomass-using facilities as possible and produce a useful directory.

Ainsworth Engineered (USA)LLC 9358 Hightway 53 south Cook MN 55723 Contact: Kent Jacobson Woodlands manager	Type of Energy Facility: Steam, thermal oil Year Installed: 1980/2001 Season of Use: Continuous Facility Output: Heat and Steam District Heat: No
Facility Size; Output per Hour: 104MM BTUs, ,<80,000 lbs steam	
Size of fuel Used: small uniform	
Percent of Fuel used by TYPE: 21% sawdust, shavings other mill residue 79% chips derived from mill residue.	
Fuel Supply Source: 100% mill residue	Comments: Operations curtailed at
Annual volume used: none provided	this plant as of October 2008.
Fuel Supply Radius: Residue on site	

Ainsworth Engineered (USA) LLC 29647 US Hwy 2 East Bemidji MN 56601 Contact: Kent Jacobson Woodlands manager	Type of Energy Facility: Steam 7Thermal Oil Year Installed: 1982 Season of Use: Continuous Facility Output: Heat District Heat: No
Facility Size; Output per Hour: 135 MM BTUs	
Size of fuel Used: Small Uniform size	
Percent of Fuel used by TYPE: 100% Chips from mill residue	
Fuel Supply Source: 100% Mill residue from operations.	Comments: Operations curtailed at
Annual volume used: 50,001-200,000 Green tons	this plant as of October 2008.
Fuel Supply Radius: All from internal operations	

Ainsworth Engineered (USA) LLC 502 County Road 63 Grand Rapids MN 556744 Contact: Kent Jacobson Woodlands Manager	Type of Energy Facility: Heat Year Installed: 1980 Season of Use: operations curtailed Facility Output: Heat District Heat: No
Facility Size; Output per Hour: 140MM BTUs	
Size of fuel Used: Small uniform	
Percent of Fuel used by TYPE: 100% sawdust, shavings, mill residue	
Fuel Supply Source: 100% Mill operations	Comments: Mill operations
Annual volume used: currently 0	curtailed in September 2006.
Fuel Supply Radius: 0	

Andersen Corporation
100 Fourth Ave N
Bayport MN 55003

Type of Energy Facility: Steam

Contact: Kirk Hogheva
Manager, Energy and Environmental

Year Installed: 1913/2007
Season of Use: Continuous
Facility Output: Steam
District Heat: No

Facility Size; Output per Hour: 80,000 MM BTUs

Size of fuel Used: Small uniform

Percent of Fuel used by TYPE: 100 % sawdust, shavings, mill residue

Fuel Supply Source: 100% Mill waste from operations.

Comment:

Annual volume used: 5001-50,000 green tons

Fuel Supply Radius: 0

Bagley Hardwood Products
1004 Central St West
PO Box C
Bagley MN 56621

Type of Energy Facility: Steam
Year Installed: 1997
Season of Use: Continuous
Facility Output: Heat and Steam
District Heat: No

Contact Peggy Fultz
Office Manager

Facility Size; Output per Hour: 9.5MM BTU's ; 840 lbs

Size of fuel Used: Coarse undefined size

Percent of Fuel used by TYPE: 100% sawdust, shavings and Mill residue

Fuel Supply Source: 100% Mill operations

Comments: Kiln dried wood

***Annual volume used:** 5001-50,000 green tons

shavings available in summer months.

Fuel Supply Radius: 0 miles

Bergen's Greenhouses
801 Willow Street West
Detroit Lakes MN 56501

Type of Energy Facility: Hot Water
Year Installed: 1984
Season of Use: Seasonal
Facility Output: Hot water
District Heat: No

Contact: Christopher Bergen, Owner

www.Bergensgreenhouses.com

Facility Size; Output per Hour: No information

Size of fuel Used: Coarse undefined size

Percent of Fuel used by TYPE: 100% sawdust, shavings, slabs and other mill residue.

Fuel Supply Source: 100% purchased of obtained free.

Comments: Wood heat has been very beneficial for the company.

Annual volume used: 5,001 -50,000 green tons

Fuel Supply Radius: 200 miles, mill residue

Boise Cascade, LLC 400 3 rd Av East International Falls MN 56649	Type of Energy Facility: Steam, electricity Year Installed: 1985 Season of Use: Continuous Facility Output: Combined heat and power (CHP) District Heat: No
Contact: Steve Earley Region Woodlands Manager	
Mill location; 400 2 nd Av	
Facility Size; Output per Hour: 185,000 lbs	
Size of fuel Used: Small uniform size	
Percent of Fuel used by TYPE: 100% sawdust, shavings and other mill residue	
Fuel Supply Source: 90% mill residue, 10% purchased or obtain free from outside supplier	Comments:
Annual volume used: >201,001 green tons	
Fuel Supply Radius: 60 miles – mill residue	

Cass Forest Products PO Box 1008 Cass Lake MN 56633	Type of Energy Facility: Steam Year Installed: 2005 Season of Use: Continuous Facility Output: Steam & Hot water District Heat: No
Contact: Dave Getz Owner	
Facility Size; Output per Hour: 3.2 MM BTUs	
Size of fuel Used: Small Uniform	
Percent of Fuel used by TYPE: 100% Sawdust, shavings, other mill residue	
Fuel Supply Source: 100% own operations	Comments:
Annual volume used: 501-5,0000 Green tons	
Fuel Supply Radius: 1 Mile	

Creative Sawmilling & Products LLC 313 Lawson Dr Bovey MN 55709	Type of Energy Facility: Hot Water Year Installed: 1991 Season of Use: Seasonal Facility Output: Heat District Heat: No
Contact: Jerry Suppala	
Facility Size; Output per Hour: No information	
Size of fuel Used: Coarse undefined	
Percent of Fuel used by TYPE: 75% Sawdust, shavings, mill residue; 25% Roundwood	
Fuel Supply Source: 75% waste from operations; Comment:	
25% Chips purchased or obtained free of charge	
Annual volume used: <500 green tons	
Fuel Supply Radius: 10 miles	

Environmental Wood Supply LLC 1350 Landmark Tower, #345 St. Peter St St. Paul MN 55102	Type of Energy Facility: Steam Year Installed: 2003 Season of Use: Continuous Facility Output: CHP District Heat: Yes
Contact: Michael Burns Jeff Guillmette, Wood procurement Facility location: 125 Shepard Road W, St. Paul MN 55125	
Facility Size; Output per Hour: 25 MgWatts, 310,000 lbs	
Size of fuel Used: Small undefined	
Percent of Fuel used by TYPE: 70% roundwood urban residue, 20% chips forest harvest, 5% clean construction debris	
Fuel Supply Source: 20% forest harvest; 80% purchased or obtained free of charge.	Comment: supplier for St. Paul District Energy
Annual volume used: >200,001 green tons	
Fuel Supply Radius: 100 miles	

Ferche Millwork 400 Division Street N Rice MN 56367	Type of Energy Facility: Steam Year Installed: 1987 Season of Use: Continuous Facility Output: Steam District Heat: No
Contact: Gerald Grider	
Facility Size; Output per Hour: 1. 509,304 lbs 2. 764,010 lbs	
Size of fuel Used: Small uniform size	
Percent of Fuel used by TYPE: 100% Sawdust, shavings, mill residue	
Fuel Supply Source: 100% Mill residue from mill operations	Comment: Two facilities, company sells much more than it consumes for animal bedding and residue markets
Annual volume used: 501-5000 green tons	
Fuel Supply Radius: 0	

Fibrominn 900 Industry Dr Benson MN 56215	Type of Energy Facility: Steam Year Installed: 2007 Season of Use: Continuous Facility Output: Electricity District Heat: No
Contact: Greg Langmo	
Facility Size; Output per Hour: 55 Megawatts	
Size of fuel Used: Small uniform size	
Percent of Fuel used by TYPE: 25% Sawdust, shavings, mill residue; 25% roundwood; 25%; 25% mill residue; 25% other sources	
Fuel Supply Source: No information provided	Comments:
Annual volume used: 50,001-200,000 green tons	
Fuel Supply Radius: None designated	

Foldcraft Company 615 Centennial Dr Kenyon MN 55946	Type of Energy Facility: Steam& radiant heat Year Installed: no information Season of Use: Continuous Facility Output: Heat and steam District Heat: No
Contact: Doug David Facility Manager	
Facility Size; Output per Hour: 4.46MM ;bs	
Size of fuel Used: Coarse undefined and small uniforms size	
Percent of Fuel used by TYPE: 95% sawdust, shavings form operations, 5% Chips from mill residue.	
Fuel Supply Source: 100% from process operations	Comments:
Annual volume used: 5001-50,000 green tons	
Fuel Supply Radius: 0	

Georgia-Pacific Wood Products LLC 1220 W Railroad St Duluth MN 55802	Type of Energy Facility: Steam Year Installed: 1972 Season of Use: Continuous Facility Output: Steam District Heat: No
Contact Brian Lochner Wood Procurement Manager	
Facility Size; Output per Hour: 25,000 lbs	
Size of fuel Used: Small uniform size	
Percent of Fuel used by TYPE: 100% sawdust, shavings, mill residue	
Fuel Supply Source: 100% waste residue from operations	Comments:
Annual volume used: 5001-50,000 green tons	
Fuel Supply Radius: 0	

Hill Wood Products PO Box 398 Cook MN 55723	Type of Energy Facility: Suspension burner Year Installed: 1986 Season of Use: Continuous Facility Output: Heat District Heat: No
Contact: Steve Hill	
Facility location: Mtn Iron	
Facility Size; Output per Hour: 350MM BTUs	
Size of fuel Used: Small uniform	
Percent of Fuel used by TYPE: 40% dry sawdust; 60% oat hulls	
Fuel Supply Source: 5% waste residue for own process; 95% purchased	
Annual volume used: >200,001 green tons	
Fuel Supply Radius: 200 miles	

Hill Wood Products 9483 Ashawa Road Cook MN 55722 Contact Steve Hill Facility #2 Ashawa Road	Type of Energy Facility: Suspension burner Year Installed: 1965 Season of Use: Continuous Facility Output: Heat & Steam District Heat: No
Facility Size; Output per Hour: 13,900 BTUs ,600 lbs	
Size of fuel Used: Small uniform size	
Percent of Fuel used by TYPE: 100% sawdust, shavings, mill residue	
Fuel Supply Source: 20% waste own operations; 80% purchased	
Annual volume used: >200,001 green tons	
Fuel Supply Radius: 200 miles	

Hull's Sawmill 3173 E Alger Rd Two Harbors MN 56616 Contact: Gregory Hull	Type of Energy Facility: Hot water Year Installed: 2003 Season of Use: Continuous Facility Output: Hot water District Heat: No
Facility Size; Output per Hour: No information provided	
Size of fuel Used: Coarse undefined	
Percent of Fuel used by TYPE: 75% Sawdust, shavings, mill residue; 25% roundwood, split	
Fuel Supply Source: 100% waste residue for own operations Comments:	
Annual volume used: <500 green tons	
Fuel Supply Radius: 30 miles	

Isabella Community Center 9521 Lankinen Road, PO Box 5 Isabella MN 55607 Contact: Patricia Thums	Type of Energy Facility: Hot water Year Installed: 1985 Season of Use: Seasonal Facility Output: Heat District Heat: No
Facility Size; Output per Hour: No information provided	
Size of fuel Used: Small Uniform 8 inch	
Percent of Fuel used by TYPE: 100% Roundwood, split wood	
Fuel Supply Source: 100% Forest Harvest Comments:	
Annual volume used: <500 green tons	
Fuel Supply Radius: 20 miles	

Fon du Lac Resource Management Division 1720 Big Lake Road Cloquet MN 55720	Type of Energy Facility: <i>Gasification</i> Year Installed: <i>2008</i> Season of Use: <i>Seasonal</i> Facility Output: <i>Heat & Electricity</i> District Heat: <i>No</i>
Contact: Steve Usu Reservation Forester	
Facility Size; Output per Hour: <i>200,000 BTUs , 20 Kw</i>	
Size of fuel Used: <i>Coarse undefined size</i>	
Percent of Fuel used by TYPE: <i>100% Chips – Harvest operations</i>	
Fuel Supply Source: <i>100% Forest harvest ops</i>	
Annual volume used: <i>< 500 green tons</i>	
Fuel Supply Radius: <i>20 miles</i>	

Hedstrom Lumber 1504 Gunflint Trail Grand Marais MN 55604	Type of Energy Facility: <i>Steam</i> Year Installed <i>1970</i> Season of Use: <i>Continuous</i> Facility Output: <i>Steam</i> District Heat: <i>No</i>
Contact : Howard Hedstrom	
Facility Size; Output per Hour: <i>15,000 lbs.</i>	
Size of fuel Used: <i>Coarse undefined size</i>	
Percent of Fuel used by TYPE: <i>100% Sawdust and bark</i>	
Fuel Supply Source: <i>100% waste residue from mill operations</i>	Comments:
Annual volume used: <i>5,001 –50,000 green tons</i>	
Fuel Supply Radius: <i>150 mile harvest radius</i>	

Itasca Community College 1851 East Hwy 169 Grand Rapids MN 55744	Type of Energy Facility: <i>Steam</i> Year Installed: <i>1989</i> Season of Use: <i>Seasonal</i> Facility Output: <i>Steam</i> District Heat: <i>No</i>
Contact: Mike Kee	
Facility Size; Output per Hour: <i>956,544 BTUs</i>	
Size of fuel Used: <i>Coarse undefined size</i>	
Percent of Fuel used by TYPE: <i>100% Chips from mill residue</i>	
Fuel Supply Source: <i>100% purchased or obtained free of charge</i>	Comments: Difficulty in obtaining chips for the boiler.
Annual volume used: <i>None used in 2007</i>	
Fuel Supply Radius: <i>100 miles</i>	

Itasca County Community YMCA 400 River Road Grand Rapids MN 55744 Contact: Amy Morissette	Type of Energy Facility: Hot water Year Installed: 1986-87 Season of Use: continuous Facility Output: Heat – Hot water District Heat: No
Facility Size; Output per Hour: No information	
Size of fuel Used: Small uniform size	
Percent of Fuel used by TYPE: 100% pellets or Briquettes	
Fuel Supply Source: 100% purchased - outside Comments: supply	
Annual volume used: 501-5000 green tons	
Fuel Supply Radius: No information	

Jarden Home Brands 1800 Cloquet Av Cloquet MN 55720 Contact: Peter Grames Plant engineer	Type of Energy Facility: Steam Year Installed: 1932; modified 1940 Season of Use: Continuous Facility Output: Steam District Heat: No
Facility Size; Output per Hour: 8MM BTU per boiler X 4 boilers	
Size of fuel Used: Coarse undefined size, chips and hogged fuel	
Percent of Fuel used by TYPE: 5% Sawdust, shavings; 60% chips from forest harvest ops; 35% chips from mill residue	
Fuel Supply Source: 40% waste residue from own Comments: ops; 60% purchased or obtained free	
Annual volume used: 5001-50,000 green tons	
Fuel Supply Radius: 50 mile radius harvest operations	

Len Busch Roses 4045 Hwy 101 North Plymouth MN 55446 Contact: Pat Etzel Director of Physical Plant	Type of Energy Facility: Steam Year Installed: 1977 & 2006 Season of Use: Continuous Facility Output: Steam District Heat: No
Facility Size; Output per Hour: 24,398 lbs	
Size of fuel Used: Small Uniform size	
Percent of Fuel used by TYPE: 20% sawdust, shavings, mill residue; 80% roundwood, split wood, urban residue	
Fuel Supply Source: 100% purchased or Comments: obtained free of charge.	
Annual volume used: 5001-50,000 green tons	
Fuel Supply Radius: 15 miles	

Minnesota Power – Hibbard Plant 100 North Central Av Hibbard Energy Center Duluth MN 55802	Type of Energy Facility: Steam Year Installed: 1987 Season of Use: continuous Facility Output: Electricity & Steam District Heat: No
Contact : Mike Polzin 30 W Superior St Duluth MN 55802	
Facility Size; Output per Hour: 450,000 lbs; 2 – 25 MgW turbines	
Size of fuel Used: Coarse undefined size	
Percent of Fuel used by TYPE: 10% Forest harvest ops, 60% Chips-mill residue, 30% chipped RR ties	
Fuel Supply Source: 10% forest harvest ops, 09% purchased or obtained free of charge	Comments: Power for New Page mill
Annual volume used: >200,001 green tons	
Fuel Supply Radius: 75 miles forest harvest ops, 120 miles – mill residue	

Minnesota Power Rapids Energy Center Grand Rapids MN 56744	Type of Energy Facility: Steam Year Installed: 1980 Season of Use: continuous Facility Output: Electricity & Steam District Heat: No
Contact : Mike Polzin 30 W Superior St Duluth MN 55802	
Facility Size; Output per Hour: 350,000 lbs	
Size of fuel Used: Coarse undefined size	
Percent of Fuel used by TYPE: 40% Forest harvest ops, 60% Chips-mill residue	
Fuel Supply Source: 40% forest harvest ops, 09% purchased or obtained free of charge	Comments: Power and steam for UPM mill
Annual volume used: >200,001 green tons	
Fuel Supply Radius: 100 miles forest harvest ops, 80 miles – mill residue	

Ponderosa Sawmill 48055 Tamarck River Road Sandstone MN 55072	Type of Energy Facility: Hot water Year Installed: 2002 Season of Use: Continuous Facility Output: Heat & Hot water District Heat: No
Contact: Randy Michel	
Facility Size; Output per Hour: 100,000 Btus	
Size of fuel Used: Coarse undefined size	
Percent of Fuel used by TYPE: 75% slabs, 25% roundwood	
Fuel Supply Source: 75% processing waste, 12% Harvest ops, 13% purchased or obtained free	Comments:
Annual volume used: <500 green tons	
Fuel Supply Radius: 1 mile harvest and on site	

Potlatch Forest Products Corp.
50518 Cty Road 45
Bemidji MN 56607

Contact: Peter Aube

Type of Energy Facility: Steam
Year Installed: 1990 / 2007
Season of Use: Continuous
Facility Output: Steam
District Heat: No

Facility Size; Output per Hour: 60,000 lbs for 2 boilers

Size of fuel Used: Small uniform size

Percent of Fuel used by TYPE: 100% sawdust, shavings, other mill residue

Fuel Supply Source: 100% mill operations **Comments:**

Annual volume used: 5001 –50,000 green tons

Fuel Supply Radius: on site

Rajala Mill Company
Box 231
Bigfork MN 56628

Contact: Jack Rajala

Type of Energy Facility: Steam
Year Installed: 1969
Season of Use: Continuous
Facility Output: Steam
District Heat: No

Facility Size; Output per Hour: 1000 lbs

Size of fuel Used: Small uniform size

Percent of Fuel used by TYPE: 100% sawdust, shavings, mill residue

Fuel Supply Source: 100% own operations **Comments:**

Annual volume used: 501-5000 green tons

Fuel Supply Radius: On site

Rasley's Blueberry Bowl
44919 Golf Course Road / PO Box 37
Deer River MN 56636

Contact: Thomas Rasley

Type of Energy Facility: Hot water
Year Installed: 1986
Season of Use: Continuous
Facility Output: Heat
District Heat: No

Facility Size; Output per Hour: No information

Size of fuel Used: Coarse undefined size

Percent of Fuel used by TYPE: 100% Roundwood or split wood

Fuel Supply Source: 100% purchased from **Comments:**
outside supplier

Annual volume used: <500 green tons

Fuel Supply Radius: 20 miles

SAPPI Fine Paper 20 North 22 nd St Cloquet MN 55720 Contact: Ross Korpela	Type of Energy Facility: Steam Year Installed: Season of Use: Continuous Facility Output: Heat & Steam District Heat: No
Facility Size; Output per Hour: No information	
Size of fuel Used: Coarse undefined size	
Percent of Fuel used by TYPE: 3%Roundwood; 90 Chips – forest harvest; 7%Chips mill residue.	
Fuel Supply Source: 66% waste process-mill residue; 34 %purchased or obtained free	Comments:
Annual volume used: >200,001 green tons	
Fuel Supply Radius: 150 forest harvest; 0 mill residue	

St. Gabriel's Hospital 815 2 nd St SE Little Falls MN 56345 Contact: Kevin O'Neil Facility Services Director	Type of Energy Facility: Steam Year Installed: 1985 Season of Use: Seasonal Facility Output: Steam District Heat: No
Facility Size; Output per Hour: 10,000 lbs	
Size of fuel Used: Coarse undefined size <2"	
Percent of Fuel used by TYPE: 100% Chips- Mill residue	
Fuel Supply Source: 100% purchased from mill	Comments:
Annual volume used: 501-5000 green tons	
Fuel Supply Radius: 60 miles – Mill residue	

Valley Forest Wood Products 48985 State Hwy 38 Marcell MN 56657 Contact: Amos Wolf Logistics Manager	Type of Energy Facility: Gasification Year Installed: no information Season of Use: Continuous Facility Output: Heat District Heat: No
Facility Size; Output per Hour: 1000 lbs	
Size of fuel Used: Small uniform	
Percent of Fuel used by TYPE: 60% Sawdust, shavings and other mill residue, 40% round or split wood	
Fuel Supply Source: 20% own operations, 10% forest harvest ops, 70% purchased or obtained free	Comments:
Annual volume used: 50,001-200,000 green tons	
Fuel Supply Radius: 90 miles radius forest harvest ops, 70% purchased or free of charged.	

Verso Paper 100 East Sartell St Sartell MN 56377 Contact: Eric Dyckhuis	Type of Energy Facility: Steam Year Installed: 1982 Season of Use: Continuous Facility Output: Electricity & Steam District Heat: No
Facility Size; Output per Hour: 300,000 lbs Steam	
Size of fuel Used: Coarse undefined size	
Percent of Fuel used by TYPE: 10% Chips from forest harvest ops, 960% Chips from mill residue	
Fuel Supply Source: 10% Forest Harvest ops, 90% from own mill operations	Comments: the mill expects to increase the amount of wood residue utilized in the future to relieve the use of coal.
Annual volume used: 50,001-200,000 green tons	
Fuel Supply Radius: up to 100 miles harvest ops;	

Wick's Wood Products 85 W Broadway Akeley MN 56433 Contact Donald Wicks	Type of Energy Facility: Steam Year Installed: No information Season of Use: Continuous Facility Output: Steam District Heat: No
Facility Size; Output per Hour: No information	
Size of fuel Used: Small uniform size	
Percent of Fuel used by TYPE: 80% sawdust and other mill residue, 20% Chips – mill residue	
Fuel Supply Source: 90% own process waste, 10% purchased or obtained free of charge	Comments:
Annual volume used: No information	
Fuel Supply Radius: On site	

Woodcraft Industries 525 Lincoln Av SE St Cloud MN 56304 Contact: Dave Forst Materials Manager	Type of Energy Facility: Hot water, Steam, radiant heat Year Installed: 1970 Season of Use: Continuous Facility Output: Steam District Heat: No
Facility Size; Output per Hour: 5000lbs	
Size of fuel Used: Coarse undefined size	
Percent of Fuel used by TYPE: 100% sawdust, shavings from mill residue	
Fuel Supply Source: 100% waste from own operations	Comments: Company operates three mills in the country.
Annual volume used: >200,001 green tons	
Fuel Supply Radius: 300 miles	

Schools

Goodridge School ISD # 561 Osmund Av, PO Box 195 Goodridge MN 56725 Contact: Ronald Kotrba Maintenance Dept.	Type of Energy Facility: <i>Steam</i> Year Installed: <i>1982/83</i> Season of Use: <i>Seasonal</i> Facility Output: <i>Steam</i> District Heat: <i>No</i>
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Facility Size; Output per Hour: *1,104 MM BTUs*

Size of fuel Used: *3/8 inch wood pellet*

Percent of Fuel used by TYPE: *100% wood pellet*

Fuel Supply Source: *100% forest harvest ops* **Comments:**

Annual volume used: *85 dry tons*

Fuel Supply Radius: *50 miles harvest ops*

Mahnomen Public Schools ISD # 432 209 1st St. S.PO Box 319 Mahnomen MN 56557 Contact: Josh Bendickson Head of Maintenance	Type of Energy Facility: <i>Steam</i> Year Installed: <i>1985</i> Season of Use: <i>Seasonal</i> Facility Output: <i>Steam</i> District Heat: <i>No</i>
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Facility Size; Output per Hour: *8625 lbs*

Size of fuel Used: *Small uniform size*

Percent of Fuel used by TYPE: *100% chips from forest harvest ops*

Fuel Supply Source: *100% forest harvest ops* **Comments:**

Annual volume used: *1000 green tons*

Fuel Supply Radius: *100 miles harvest site*

Northome School ISD # 363 11071 Hwy 1 Northome MN 56661 Contact: Jerry Struss Superintendent	Type of Energy Facility: <i>Hot water</i> Year Installed: <i>1981</i> Season of Use: <i>Continuous</i> Facility Output: <i>Heat</i> District Heat: <i>No</i>
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Facility Size; Output per Hour: *1,351,240 BTUs*

Size of fuel Used: *Small uniform size*

Percent of Fuel used by TYPE: *100% pelletized wood*

Fuel Supply Source: *100% purchased from outside source.* **Comments:**

Annual volume used: *272 dry tons*

Fuel Supply Radius: *Local manufacturer*

Pine River – Backus Schools
PO Box 619810 1st St North and 401
Merry Av
Pine River MN 56474
Contact: Karl Flin Buildings & Grounds
Director

Type of Energy Facility: Hot water, steam and radiant heat
Year Installed: 1991
Season of Use: Seasonal
Facility Output: Steam & hot water
District Heat: No

Facility Size; Output per Hour: 251,900 lbs #1; 361,000 lbs #2.

Size of fuel Used: Coarse undefined size

Percent of Fuel used by TYPE: 100% Chips from mill residue

Fuel Supply Source: 100 % forest harvest ops **Comments**

Annual volume used: 380 dry tons

Fuel Supply Radius: 0,5 miles from mill

Swanville Public Schools ISD #486
PO Box 98
Swanville MN 56382
Contact: Gene Horthan
Superintendent

Type of Energy Facility: Steam
Year Installed: 1981 modified 2005
Season of Use: Seasonal
Facility Output: Heat
District Heat: No

Facility Size; Output per Hour: 100,000 BTUs

Size of fuel Used: Small uniform size

Percent of Fuel used by TYPE: 100% pelletized wood

Fuel Supply Source: 100% purchased or **Comments:**
obtained free of charge

Annual volume used: 350 Dry tons

Fuel Supply Radius: 50-100 miles

Warroad Schools ISD# 690
510 Cedar Av
Warroad MN 56763
Contact: Albert Hasbargen
Facilities Supervisor

Type of Energy Facility: Hot water
Year Installed: 1984
Season of Use: Seasonal
Facility Output: Hot water
District Heat: No

Facility Size; Output per Hour: 7MM BTUs

Size of fuel Used: Small uniform size

Percent of Fuel used by TYPE: 100% chips from mill residue

Fuel Supply Source: 100% purchased from **Comments:**
outside supplier

Annual volume used: 700 green tons

Fuel Supply Radius: 100 miles mill

