

Wed, Feb 24, 2016 @ 11:58 AM

Recommended Dealer:

Requested By:

Bob Bernardi

Group:

Portland ME
United States

Recommended Heat Siphon System:

M.S.R.P.: \$ 2,995.00

Model : C200HP Qty:1

Heating Capacity Used: 59%

INPUT SECTION

HSA.Bernardi_2-9-2016.pdf

Heating Season - June 1st to September 1st

Pool/Spa Location:	Outdoor		Pool/ Spa Data				Pool/Spa Type: Pool							
	POOL	SPA	Units				FILTRATION							
Surface Area:	500		SQFT				Pump Hrs/Day: 24							
Water Volume:	15,000		Gallons				Pump Size: 1 HP							
Desired Water Temp:	82						Solar Panels (Sq. Ft.)= 0							
Amount of Shade @Noon:	0%						Efficiency= 75%			Included: YES				
Wind @Water Surface:	2.50		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Days Pool Heated:								30	31	31				
Days Spa Heated:								30	31	31				
Hrs/Day Pool Covered:	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Hrs/Day Spa Covered:	23	23	23	23	23	23	23	23	23	23	23	23	23	23
Days Heat Siphon Avail.							0	30	31	31	0			

Local Fuel and Heater Cost Data in \$ US Dollars (1 US \$ =

	Local Fuel Cost	Cost/KWH	Breakeven	Heater Cost	Efficiency	Life Cycle
Electric Resistance	\$0.06 per Kw-Hr	\$0.06	COP	\$1,500	100%	5 Year
Propane (LP) Gas	\$2.89 per	\$0.17	0.36	\$2,000	65%	5 Year
Fuel Oil	\$3.38 per	\$0.13	0.47	\$3,000	65%	5 Year
Natural Gas	\$1.53 per Therm	\$0.07	0.92	\$2,000	80%	5 Year
HEAT SIPHON	\$0.06 per Kw-Hr	\$0.06	-	\$2,995	400 - 700%	12 Year

Local Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Air Temp °F	21.0	21.5	31.5	42.0	52.5	62.0	68.0	66.0	58.5	48.5	37.5	25.5
% Clear Sky	55	62	59	57	56	63	68	66	63	60	49	54
Solar Gain, Langley	152	235	352	409	514	539	561	488	383	278	157	137
Relative Humidity %	73	71	68	65	67	68	70	73	73	75	72	65
Water Vapor Press. psia	0.011	0.004	0.064	0.092	0.144	0.212	0.195	0.215	0.155	0.109	0.047	0.018

EXECUTIVE SUMMARY

Total Pool / Spa Heat Loss (Heat Req'd to Maintain Desired Water Temperature)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
KWH	0	0	0	0	0	4,379	2,858	3,844	0	0	0	0	11,082
BTU/Hr	0	0	0	0	0	20,772	13,119	17,646	0	0	0	0	51,537

Monthly Heater Fuel Cost

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Cost/Yr
Electric Resist.						\$263	\$171	\$231					\$665
Propane (LP)						\$727	\$475	\$638					\$1,423
Fuel Oil						\$562	\$367	\$494					\$1,840
Natural Gas						\$286	\$187	\$251					\$723
HEAT SIPHON						\$59	\$36	\$50					\$145

MONTHLY SAVINGS using HEAT SIPHON vs. Other Fuels

ANNUAL SAVINGS

HEAT SIPHON vs.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ANNUAL SAVINGS
Electric Resist.						\$263	\$171	\$231					\$519
Propane/LP Gas						\$727	\$475	\$638					\$1,695
Fuel Oil						\$562	\$367	\$494					\$1,277
Natural Gas						\$286	\$187	\$251					\$578

1 HP Filtration Pump Operating Cost

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Cost/Yr
Scheduled Hrs	0	0	0	0	0	720	744	744	0	0	0	0	
Electric Cost	\$0	\$0	\$0	\$0	\$0	\$32	\$33	\$33	\$0	\$0	\$0	\$0	\$99
Extra Heating Hrs	0	0	0	0	0	0	0	0	0	0	0	0	
Extra Pump Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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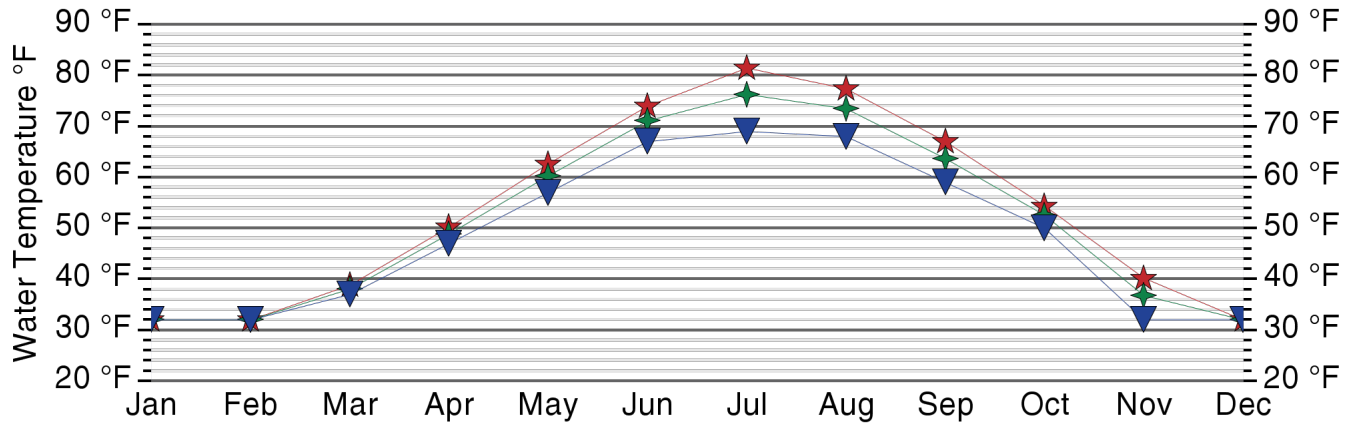
The following data and graph shows the normal pool water temperature an unheated pool will reach using the specified location, shade, wind & weather data

UNHEATED POOL TEMPERATURE

Location: Portland ,ME

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
100% Covered (24/7)	32	32	39	50	63	74	81	77	67	54	40	32
Covered per Analysis	32	32	38	49	60	71	76	73	64	53	37	32
No Cover	32	32	37	47	57	67	69	68	59	50	32	32
Hrs/day Pool Covered	14	14	14	14	14	14	14	14	14	14	14	14

▼ NO Cover
 ◆ Covered per Analysis
 ★ 100% Covered



HEAT SIPHON® RUNTIME

Owner: Bob Bernardi

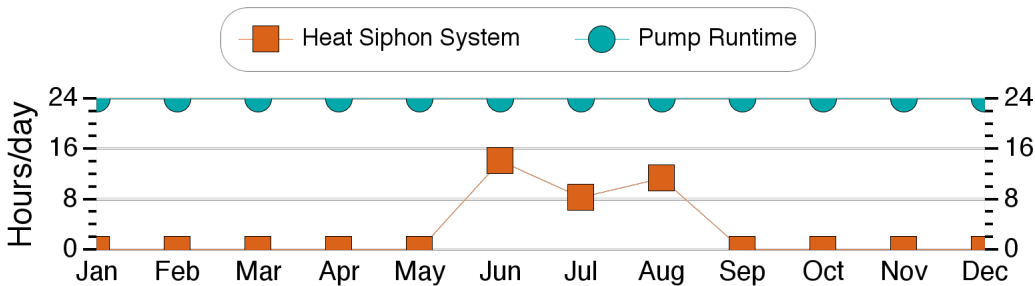
Location: Portland ,ME

Pool Area: 500

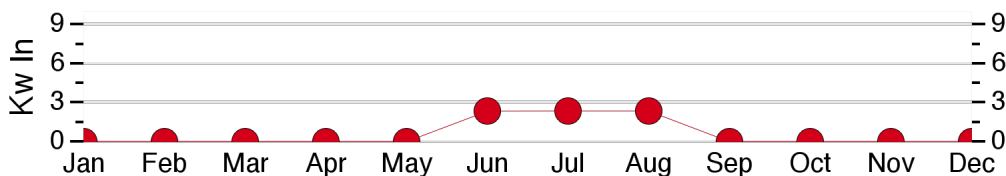
Spa Area: 50

Heat Siphon®:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
System Runtime Hrs/Day						14.1	8.3	11.3				
% of Heating Capacity Used						59%	35%	47%				
Total Kilowatts Input						2.34	2.35	2.35				

Heat Siphon® System Runtime Hours / Day



Heat Siphon® System Maximum Kilowatt Input



Heat Siphon Systems Models / Options

Model Selected	Qty Req'd.	System MSRP
C200HP	1	\$2,995
Z200HP	1	\$3,195
C375HP	1	\$3,995
Z375HP	1	\$4,195
C575HP	1	\$4,495
Z575HP	1	\$4,695
Z700HP	1	\$5,795

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HEAT SIPHON® Operating Cost Comparison

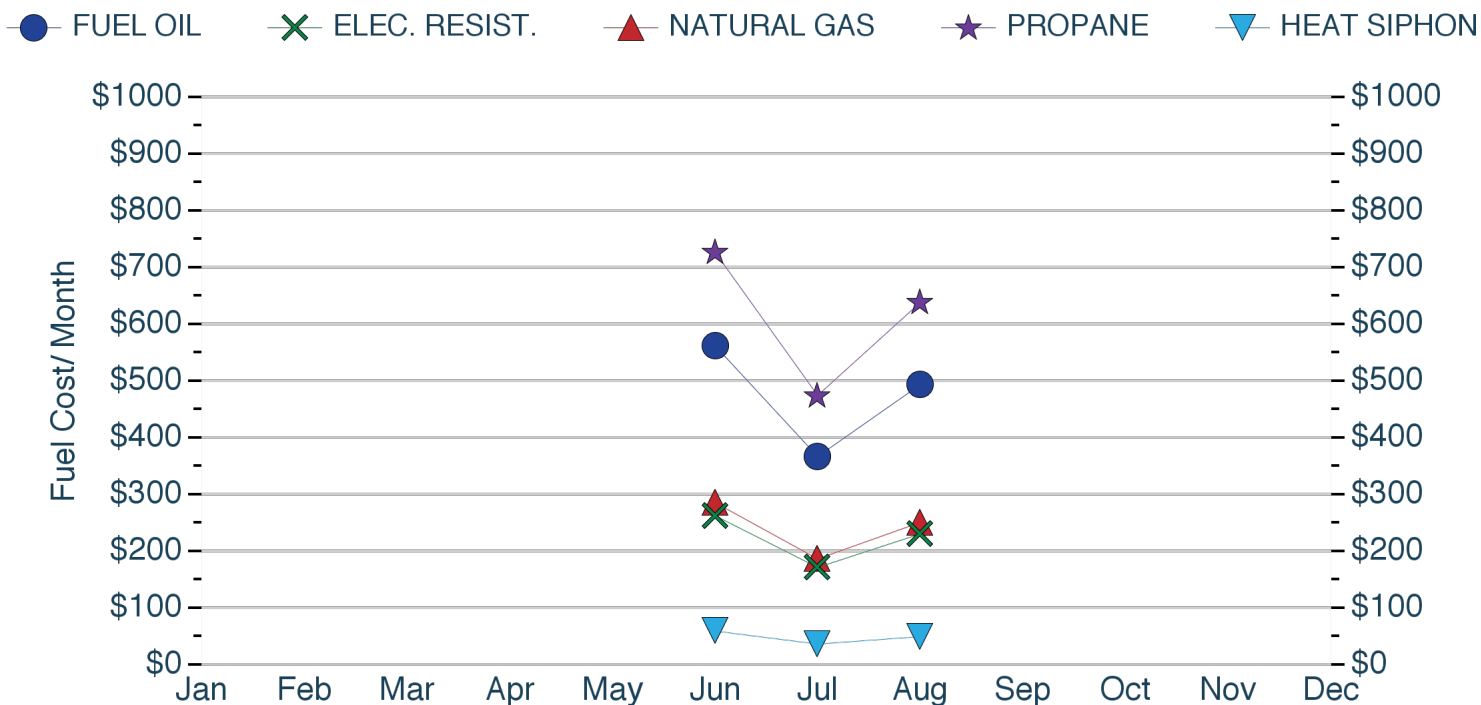
Owner: Bob Bernardi

Location: Portland ,ME

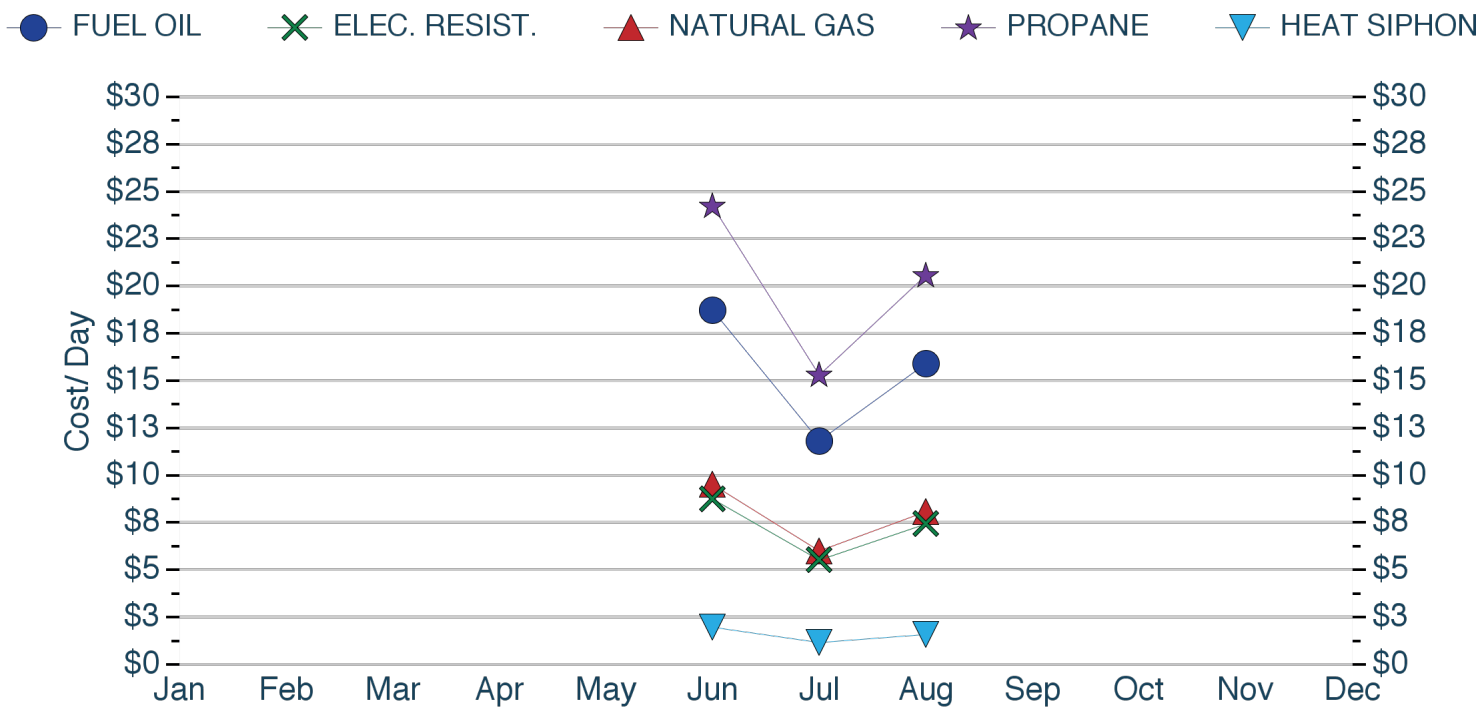
Pool Area: 500

Spa Area: 50

MONTHLY OPERATING COST by Heater Type

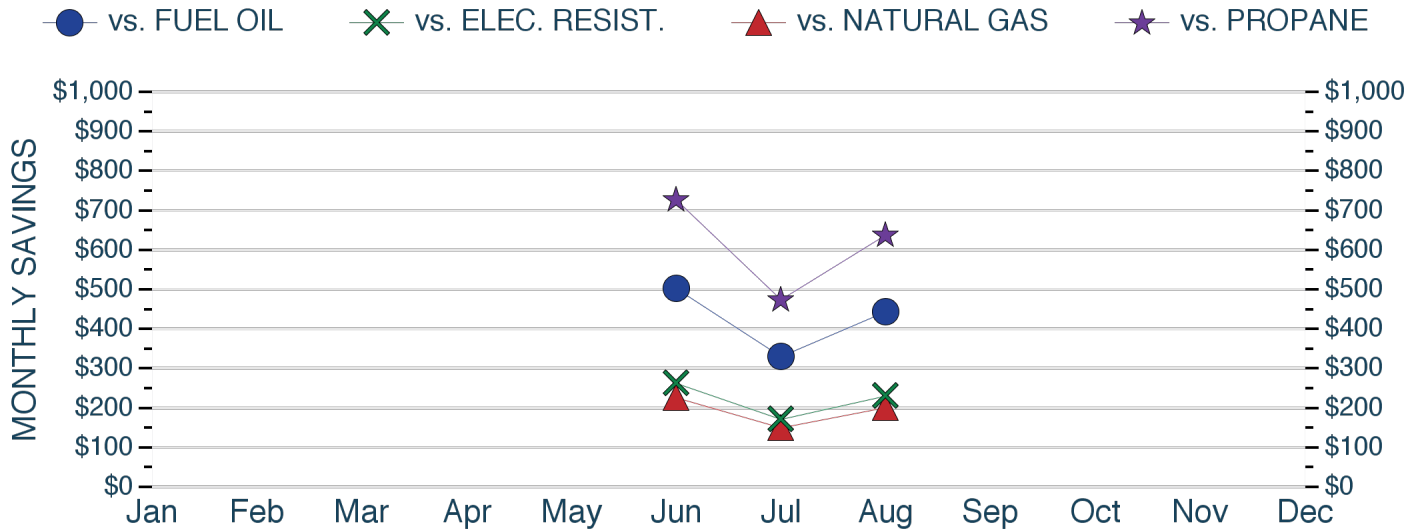


Fuel Cost per Day



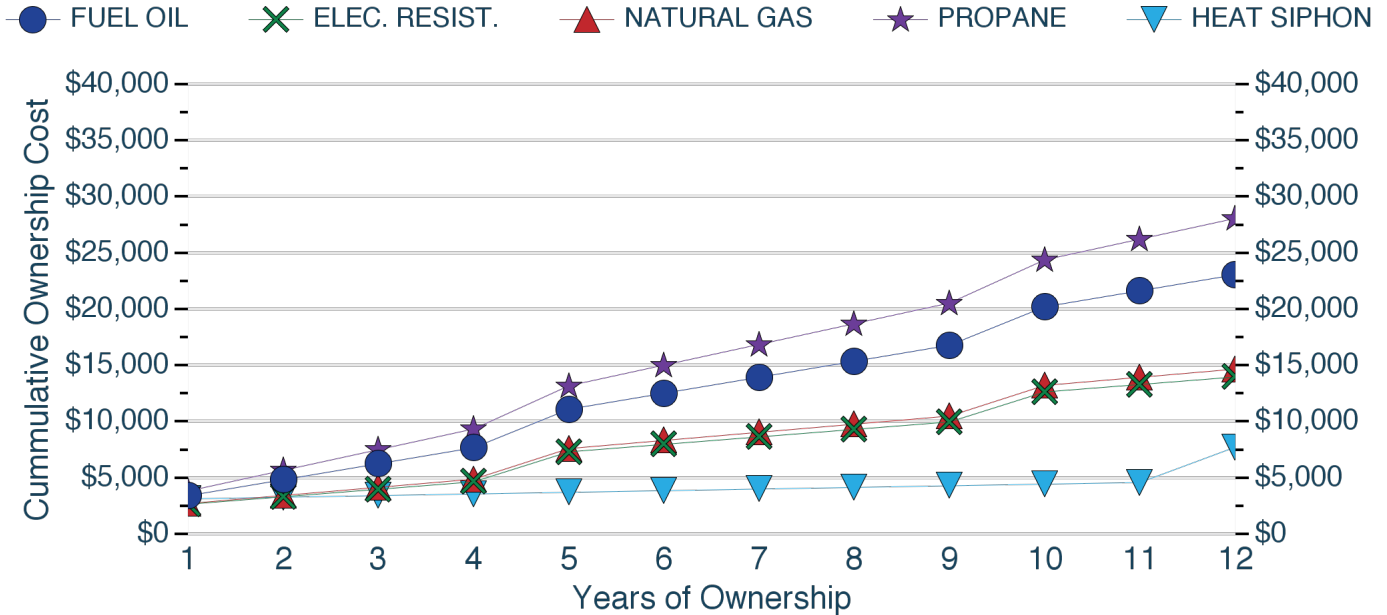
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MONTHLY FUEL COST SAVINGS using HEAT SIPHON vs other heaters



BREAK-EVEN ANALYSIS vs HEAT SIPHON System

The chart below shows the TOTAL CUMMULATIVE HEATING COST by Heater Type including purchase cost + the YEARLY FUEL COST + replacement cost. No other costs (maintenance etc.) are included. Replacement cost the heater is added in the season which Life Expectancy runs out:



CUMMULATIVE COST OF OWNERSHIP *

YEAR	1	2	3	4	5	6	7	8	9	10	11	12
Electric Resist.	\$2,665	\$3,330	\$3,995	\$4,660	\$7,325	\$7,990	\$8,654	\$9,319	\$9,984	\$12,649	\$13,314	\$13,979
Propane (LP)	\$3,840	\$5,680	\$7,521	\$9,361	\$13,201	\$15,041	\$16,881	\$18,722	\$20,562	\$24,402	\$26,242	\$28,083
Fuel Oil	\$3,423	\$4,845	\$6,268	\$7,691	\$11,113	\$12,536	\$13,959	\$15,382	\$16,804	\$20,227	\$21,650	\$23,072
Natural Gas	\$2,723	\$3,446	\$4,169	\$4,893	\$7,616	\$8,339	\$9,062	\$9,785	\$10,508	\$13,232	\$13,955	\$14,678
HEAT SIPHON	\$3,140	\$3,286	\$3,431	\$3,577	\$3,722	\$3,868	\$4,013	\$4,159	\$4,304	\$4,450	\$4,595	\$7,736

*Purchase cost + fuel cost + replacement cost