

Home Energy Rating Certificate

Property

Weber State University
2807 Quincy Ave.
Ogden, UT 84403

HERS

Rating Type: Confirmed
Rating Date: 2020-09-14
Registry ID: 050808825

Certified Energy Rater: Steve Thon

Rating Number:

HERS Index: -8

General Information			
Conditioned Area	2696 sq. ft.	House Type	Single-family detached
Conditioned Volume	23343 cubic ft.	Foundation	Conditioned basement
Bedrooms	6		

Mechanical Systems Features	
Air-source heat pump:	Electric, Htg: 11.3 HSPF. Clg: 19.1 SEER.
Water Heating:	Heat pump, Electric, 2.45 EF, 50.0 Gal.
Duct Leakage to Outside	32.00 CFM25
Ventilation System	Balanced: HRV, 92 cfm, 30.0 watts.
Programmable Thermostat	Heat=Yes; Cool=Yes

Building Shell Features			
Ceiling Flat	R-60.0	Slab	R-0.0 Edge, R-0.0 Under
Sealed Attic	NA	Exposed Floor	NA
Vaulted Ceiling	NA	Window Type	U-Value: 0.270, SHGC: 0.250
Above Grade Walls	R*-25.9(assembly)	Infiltration Rate	Htg: 2.30 Clg: 2.30 ACH50
Foundation Walls	R-22.0	Method	Blower door

Lights and Appliance Features			
Interior Fluor Lighting (%)	0.0	Range/Oven Fuel	Electric
Interior LED Lighting (%)	100.0	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	566	Clothes Dryer CEF	2.62
Dishwasher (kWh/yr)	225	Ceiling Fan (cfm/Watt)	0.00

Estimated Annual Energy Cost			
Use	MMBtu	Cost	Percent
Heating	17.4	\$398	-251%
Cooling	2.5	\$61	-39%
Hot Water	4.3	\$102	-64%
Lights/Appliances	21.4	\$503	-317%
Photovoltaics	-53.6	\$-1263	797%
Service Charges		\$40	-25%
Total	-8.0	\$-159	100%

Criteria
This home meets or exceeds the minimum criteria for the following:

TITLE

Company

Address

City, State, Zip

Phone #

Fax #

REM/Rate - Residential Energy Analysis and Rating Software v16.0.4
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The Home Energy Rating Standard Disclosure for this home is available from the rating provider.

Building Summary

Property Weber State University 2807 Quincy Ave. Ogden, UT 84403	Organization Provident Energy, INC 801-668-7910 Steve Thon	HERS Confirmed 2020-09-14 Rater ID:0359372
Weather:Ogden, UT OCAN Net-Zero Housing OCAN Home Model - wBasement 16.0.4-RMP 2400 SF-UPLOADED	Builder Wadman Construction	

Property/Builder Information

Building Name	OCAN Net-Zero Housing
Owner's Name	Weber State University
Property Address	2807 Quincy Ave.
City, St, Zip	Ogden, UT 84403
Phone Number	801-626-6000
Builder's Name	Wadman Construction
Phone Number	801-391-7613
Email Address	
Plan/Model Name	
Community/Development	
Identifier/Other	

Organization Information

Organization Name	Provident Energy, INC
Address	523 W. 4300 N.
City, St, Zip	Pleasant View, UT 84414
Phone Number	801-668-7910
Website	www.provident-energy.com

Rating/RESNET Information

Provider ID	1998-004
Sample Set ID	00000000
Registry ID	650320419
Registry Date Registered	10/07/2020
Rater's Name	Steve Thon
Rater's ID	0359372
Rater's Email	gordon@provident-energy.com
Last Field Insp	2020-09-14
Rating Type	Confirmed
Reason for Rating	New Home
Rating Number	
Rating Permit Date	12/18/2019

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General Building Information	
Area of Conditioned. Space(sq ft)	2400
Volume of Conditioned. Space	19200
Year Built	2020
Housing Type	Single-family detached
Level Type(Apartments Only)	None
Floors on or Above-Grade	1
Number of Bedrooms	6
Foundation Type	Conditioned basement
Foundation is w/in Infiltration Volume:	N/A
Enclosed Crawl Space Type	N/A
Number of Stories Including Conditioned Basement	1
Thermal Boundary Location	N/A

Foundation Wall Information								
Name	Library Entry	Location	Length(ft)	Total Height(ft)	Depth Below Grade(ft)	Height Above Grade(ft)	Uo Value Combo*	Uo Value (wall only)
ICF WSU	WSU IVF R-22*****	Cond->ambient/grm	145.30	8.00	7.00	1.00	0.033	0.044

* Uo Value Combo combines wall, airfilm, and soil path

Foundation Wall Library List	
Foundation Wall: WSU IVF R-22*****	
Type	Solid concrete or stone
Thickness(in)	8.0
Studs	None
Interior Insulation	
Continuous R-Value	22.0
Frame Cavity R-Value	0.0
Cavity Insulation Grade	1
Ins top	0.00 ft from top of wall
Ins Bottom	0.00 ft from bottom of wall
Exterior Insulation	
R-Value	0.0

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Foundation Wall Library List

Ins top	0.00 ft from top of wall
Ins bottom	0.00 ft below grade
Note	

Slab Floor Information

Name	Library Entry	Area(sq ft)	Depth Below Grade(ft)	Full Perimeter(ft)	Exposed Perimeter(ft)	On-Grade Perimeter(ft)
slab floor	Uninsulated	1280	7.00	145	145	0

Slab Floor Library List

Slab Floor: Uninsulated

Slab Covering	Carpet
Perimeter Insulation (R-Value)	0.0
Perimeter Insulation Depth (ft)	0.0
Under-Slab Insulation (R-Value)	0.0
Under-Slab Insulation Width (ft)	0.0
Slab Insulation Grade	1
Radiant Slab	No
Note	

Rim and Band Joist Information

Name	Location	Area(sq ft)	Continuous Ins	Framed Cavity Ins	Cavity Ins Thk(in)	Joist Spacing	Insulation Grade	Uo Value
R30	Cond -> ambient	145.30	0.0	30.0	5.5	16.0	1	0.038

Above-Grade Wall

Name	Library Entry	Location	Exterior Color	Area(sq ft)	Uo Value
WSU SIP	SIP 5-5/8" WSU*	Cond -> ambient	Medium	1234.95	0.050

Above-Grade Wall Library List

Above-Grade Wall: SIP 5-5/8" WSU*

Information From Quick Fill Screen	
Wall Construction Type	Standard Wood Frame

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Above-Grade Wall Library List	
Continuous Insulation (R-Value)	0.0
Frame Cavity Insulation (R-Value)	29.0
Frame Cavity Insulation Thickness (in)	5.5
Frame Cavity Insulation Grade	1
Stud Size (w x d, in)	1.5 x 5.5
Stud Spacing (in o.c.)	16.0
Framing Factor - (default)	0.2300
Gypsum Thickness (in)	0.5
Note	

Window Information												
Name	Wall Assignment	Orient	U-Value	SHGC	Area (sqft)	Overhang			Interior		Adjacent	
						Depth (ft)	To Top (ft)	To Btm (ft)	Winter Shading	Summer Shading	Winter Shading	Summer Shading
	AGWall 1	North	0.270	0.250	50.00	2.5	1.0	6.0	0.50	0.80	None	None
	AGWall 1	West	0.270	0.250	104.00	2.5	1.0	6.0	0.50	0.80	Most	Most
	FndWall 1	West	0.270	0.250	80.00	2.5	1.0	6.0	0.50	0.80	Most	Most
	AGWall 1	East	0.270	0.250	49.50	4.0	1.0	6.0	0.50	0.80	None	None
	FndWall 1	East	0.270	0.250	60.00	4.0	1.0	6.0	0.50	0.80	None	None

Door Information						
Name	Library Entry	Wall Assignment	Opaque Area(sq ft)	Uo Value	R-Value of Opaque Area	Storm Door
	Steel-urth w/brk	AGWall 1	21.0	0.187	4.4	No
	Steel-urth w/brk	AGWall 1	21.0	0.187	4.4	No

Roof Information									
Name	Library Entry	Ceiling Area(sq ft)	Roof Area(sq ft)	Exterior Color	Radiant Barrier	Type	Uo Value	Cement or Clay Tiles	Roof Tile Ventilation
	R-60 Blown, Attic*****	1280.00	1600.00	Dark	No	Attic	0.033	No	No

Roof Library List	
Ceiling: R-60 Blown, Attic*****	

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Roof Library List

Information From Quick Fill Screen	
Continous Insulation (R-Value)	0.0
Cavity Insulation (R-Value)	60.0
Cavity Insulation Thickness (in)	12.0
Cavity Insulation Grade	1
Gypsum Thickness (in)	0.500
Insulated Framing Size(w x h, in)	1.5 x 3.5
Insulated Framing Spacing (in o.c.)	24.0
Framing Factor - (default)	0.1100
Ceiling Type	Attic
Note	

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Mechanical Equipment	
Number of Mechanical Systems	2
Heating SetPoint(F)	68.0
Heating Setback Thermostat	Present
Cooling SetPoint(F)	78.0
Cooling Setup Thermostat	Present
DHW SetPoint(F)	125.0
ASHP: 4k 19.1seer11.3hspf*****	
Fuel Type	Electric
Heating Seasonal Efficiency	11.30 HSPF
Compressor Heating Output Capacity at 17F (kBtuh)	34.0
Compressor Heating Output Capacity at 47F (kBtuh)	45.0
Electric Resistance Backup Capacity (kW)	10
Cooling Output Capacity (kBtuh)	48.0
Cooling Seasonal Efficiency	19.10 SEER
Desuperheater	No
Note	
Number Of Units	1
Location	Conditioned area
Performance Adjustment	100
Percent Heating Load Served	100
Percent Cooling Load Served	100
DHW: WSU HPWH*****	
Water Heater Type	Heat pump
Fuel Type	Electric
Energy Factor	2.45
Recovery Efficiency	0.00
Water Tank Size (gallons)	50
Extra Tank Insulation (R-Value)	0.0
Note	
Number Of Units	1
Location	Conditioned area

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Mechanical Equipment		
Performance Adjustment		100
Percent Load Served		100
DHW Efficiencies		
All bath faucets & showers <= 2gpm		true
All DHW pipes fully insulated >= R-3		true
Recirculation type		None (standard system)
Farthest fixture to DHW heater		15
TOTAL Pipelength for longest DHW run		25
DWHR unit present?		false
DHW Diagnostics		
dhwGpd		58.99
peRatio		0.23
dishwasherGpd		2.39
clothesWasherHotWaterGPD		0.87
EDeff		0.88
ewaste		12.20
tmains		57.20
dwhrWhInletTempAdj		0.00
pumpConsKwh		0.00
pumpConsMmbtu		0.00

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Duct Systems			
Name	bedrooms up (2)		
Conditioned Floor Area(sq ft)	198.0		
# of Returns	1		
Heating System	4k 19.1seer11.3hspf*****		
Cooling System	4k 19.1seer11.3hspf*****		
Supply Duct Surface Area(sq ft)	40.1		
Return Duct Surface Area(sq ft)	7.4		
No bldg cavities used as ducts	TRUE		
Type	Location	Percent Location	R-Value
Supply	Attic, under insulation	100.0	0.0
Return	Attic, under insulation	100.0	0.0
Test Exemptions			
IECC	FALSE		
RESNET 2019	FALSE		
ENERGY STAR LtO	FALSE		
Duct Leakage			
Input Type	Measured		
Test Type	Both Tested		
Duct Test Stage	Postconstruction Test		
	LtO (Leakage to Outside)	Total Duct Leakage	
Supply & Return	32.00 CFM @ 25 Pascals	47.00 CFM @ 25 Pascals	
Supply Only	Not Applicable		
Return Only	Not Applicable		

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Infiltration and Mechanical Ventilation

Whole Dwelling Infiltration	
Input Type	Blower door
Heating Season Infiltration Value	2.30 ACH @ 50 Pascals
Cooling Season Infiltration Value	2.30 ACH @ 50 Pascals
Shelter Class	4
Code Verification	Tested
Mechanical Ventilation for IAQ	
Type	Balanced
Unable to Measure Mechanical Ventilation	FALSE
Rate(cfm)	92
Adjusted Sensible Recovery Efficiency(%)	0.70
Adjusted Total Recovery Efficiency(%)	0.70
Hours per Day	24.0
Fan Power (watts)	30.00
ECM Fan Motor	true
Ventilation Strategy for Cooling	
Cooling Season Ventilation	Natural Ventilation
Good Air Exchange for Multi-Family	NA

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Lights and Appliances

Rating/RESNET audit		
Ceiling Fan CFM / Watt		0.00
Refrigerator kWh/yr		566
Refrigerator Location		Conditioned
Range/Oven Fuel Type		Electric
Induction Range		No
Convection Oven		No
Dishwasher		
Energy Factor		0.00
Dishwasher kWh/yr		225
Place Setting Capacity		12
Clothes Dryer		
Fuel Type		Electric
Location		Conditioned
Moisture Sensing		Yes
CEF		2.62
Clothes Washer		
Location		Conditioned
LER (kWh/yr)		86
IMEF		2.155
Capacity (CU.Ft)		2.500
Electricity Rate		0.11
Gas Rate		0.00
Annual Gas Cost		0.00
Qualifying Light Fixtures		
Interior Lights %		0.0
Exterior Lights %		0.0
Garage Lights %		0.0
Interior LEDs %		100.0
Exterior LEDs %		100.0
Garage LEDs %		100.0

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Mandatory Requirements

IECC Requirements	
Verified IECC 06	true
Verified IECC 09	true
Verified IECC 12	true
Verified IECC 15	true
Verified IECC 18	true
Verified NY-ECCC 2020	false
Verified IECC MI	false
Verified IECC NC 2018	false
EPA Requirements	
Rater certifies that the home complies with the following requirements for:	
Rater Design Review Checklist	ENERGY STAR v3.0
Rater Field Checklist	
HVAC Design Report	
HVAC Commissioning Checklist (optional)	
ENERGY STAR Version 3 Appliances	
Refrigerators	Amount
Ceiling Fans	1
Exhaust Fans	0
Dishwashers	3
ENERGY STAR Multi-Family Checks	
Clothes washer is in a category with no ENERGY STAR options.	1
Clothes dryer is in a category with no ENERGY STAR options.	0
Apt or Townhome uses 'Class AW' Windows.	3
ENERGY STAR Version 3 Basements	
Basement Wall Area 50% Below Grad:	1
Basement Floor Area	NA
Slab Insulation Exemption:	NA
Indoor airPlus Verification Checklist	NA
EPA Field App ID	NA

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DOE Zero Energy Ready Home

Home Builder ID Number

Mandatory Requirements

Verified Fenestration	false
Verified Insulation	false
Verified Duct Location	false
Verified Appliance	false
Verified Lighting	false
Verified Fan Efficiency	false
Verified Water Efficiency	false
Verified EPA Indoor airPLUS	false
Verified Renewable Energy Ready Solar Electric	false

Optional Home Builder Commitments for Recognition

Certified under the EPA WaterSense for New Homes Program	No
Certified under the IBHS fortified for Safer Living Program	No
Followed the DOE Zero Energy Ready Home Quality Management Guidelines	No
The buyer of this home signed a waiver giving DOE Zero Energy Ready Home access to utility bill data for one year.	No

Active Solar

System Type	None
Collector Loop Type	None
Collector Type	None
Collector Orientation	None
Area(sq ft)	0.0
Tilt(degrees)	0.0
Volume(cu ft/gal)	0.0

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Emissions

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Emissions By End-Use

Carbon Dioxide (CO2) - tons/year	
Heating	5.0
Cooling	0.6
WaterHeating	1.2
LightsAppliances	5.5
Photovoltaics	0.0
Total	12.2
 Sulfur Dioxide (SO2) - lbs/year	
Heating	6.2
Cooling	0.7
WaterHeating	1.5
LightsAppliances	6.8
Photovoltaics	0.0
Total	15.1
 Nitrogen Oxide (NOx) - lbs/year	
Heating	15.9
Cooling	1.8
WaterHeating	3.7
LightsAppliances	17.3
Photovoltaics	0.0
Total	38.8

Site-to-source energy multipliers and air emission data were taken from the US EPA eGRID2012 database.

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Fuel Summary

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Annual Energy Cost	\$/yr
Electric	1046
Annual End-Use Cost	\$/yr
Heating	420
Cooling	52
Water Heating	102
Lights & Appliances	472
Photovoltaics	-0
Service Charge	40
Total	1086
Annual End-Use Consumption	
Heating (kWh)	5392
Cooling (kWh)	624
Water Heating (kWh)	1272
Lights & Appliances (kWh)	5891
Total (kWh)	13178
Annual Energy Demands	kW
Heating	6.5
Cooling	1.0
Water Heating (Winter Peak)	0.2
Water Heating (Summer Peak)	0.2
Lights & Appliances (Winter Peak)	0.5
Lights & Appliances (Summer Peak)	1.1
Total Winter Peak	7.2
Total Summer Peak	2.3
Utility Rates	
Electricity	Rocky Mountain Power*

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Lights and Appliances

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Electric Consumption	kWh/yr
Interior Lighting	622.6
Exterior Lighting	36.7
Garage Lighting	0.0
Refrigerator	566.0
Freezer	0.0
Dishwasher	188.7
Oven/Range	565.0
Clothes Washer	0.0
Clothes Dryer	637.9
Mechanical Ventilation Fan	262.8
Ceiling Fan	0.0
Plug Loads	3011.0
Total	5890.7
Annual Energy Cost	\$/yr
Interior Lighting	50
Exterior Lighting	3
Garage Lighting	0
Refrigerator	45
Freezer	0
Dishwasher	15
Oven/Range	45
Clothes Washer	0
Clothes Dryer	51
Mechanical Ventilation Fan	21
Ceiling Fan	0
Plug Loads	241
Total	472

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02. ENGINEERING

Performance Report

Property

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Organization

Provident Energy, INC
801-668-7910
Steve Thon

HERS

Confirmed
2020-09-14
Rater ID:0359372

Weather:Ogden, UT

Ogden Net-Zero Housing

Ogden Home Model - wBasement

16.0.4-RMP 2400 SF-UPLOADED

Builder

Wadman Construction

Annual Load

	MMBtu/yr
Heating	43.0
Cooling	9.9
Water Heating	13.1
Water Heating w/out Tank Loss	12.2

Annual Consumption

	MMBtu/yr
Heating	18.4
Cooling	2.1
Water Heating	4.3
Lights & Appliances	20.1
Photovoltaics	-0.0
Total	45.0

Annual Energy Cost

	\$/yr
Heating	420
Cooling	52
Water Heating	102
Lights & Appliances	472
Photovoltaics	-0
Service Charges	40
Total	1086

Design Loads

	kBtu/hr
Space Heating	24.7
Space Cooling	14.8

Utility Rates

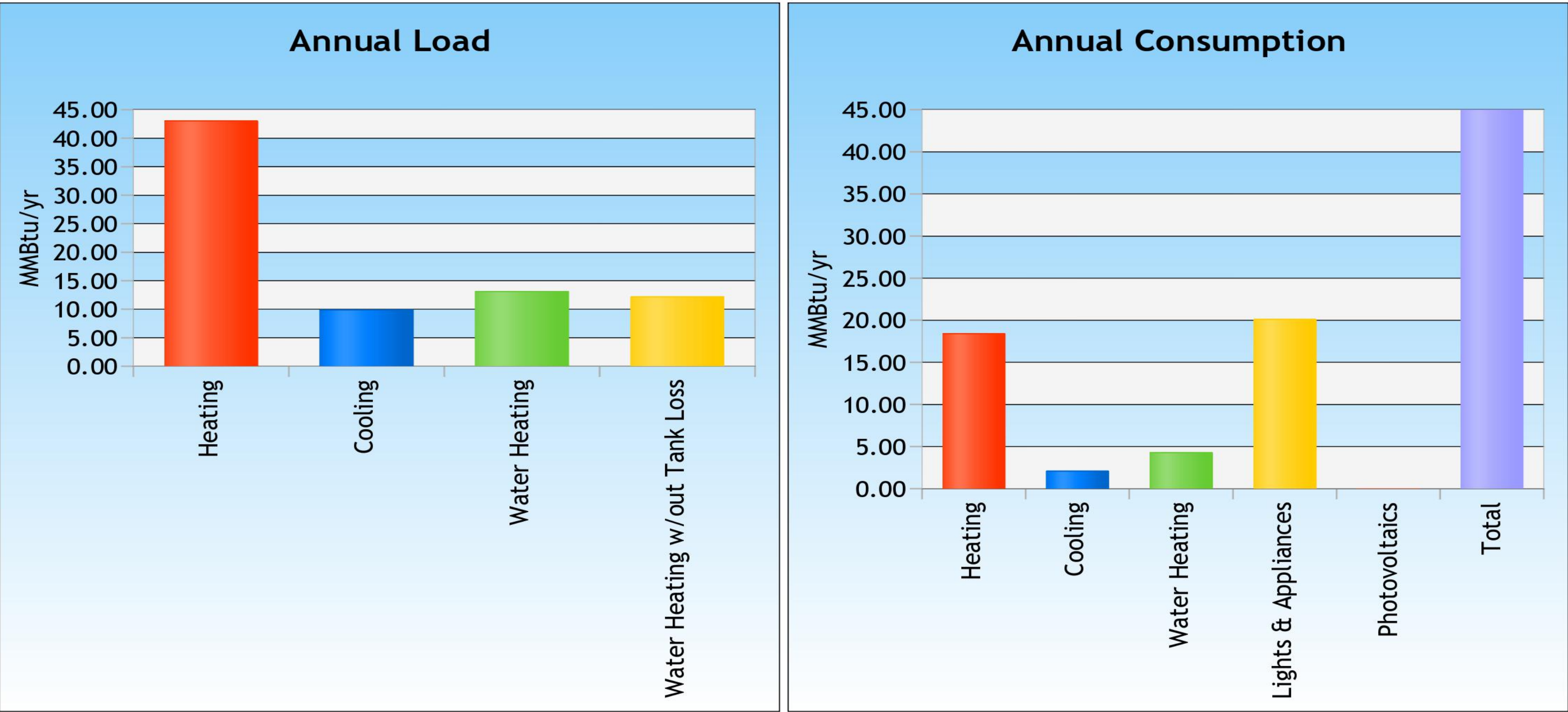
Electricity	Rocky Mountain Power*
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Performance Report

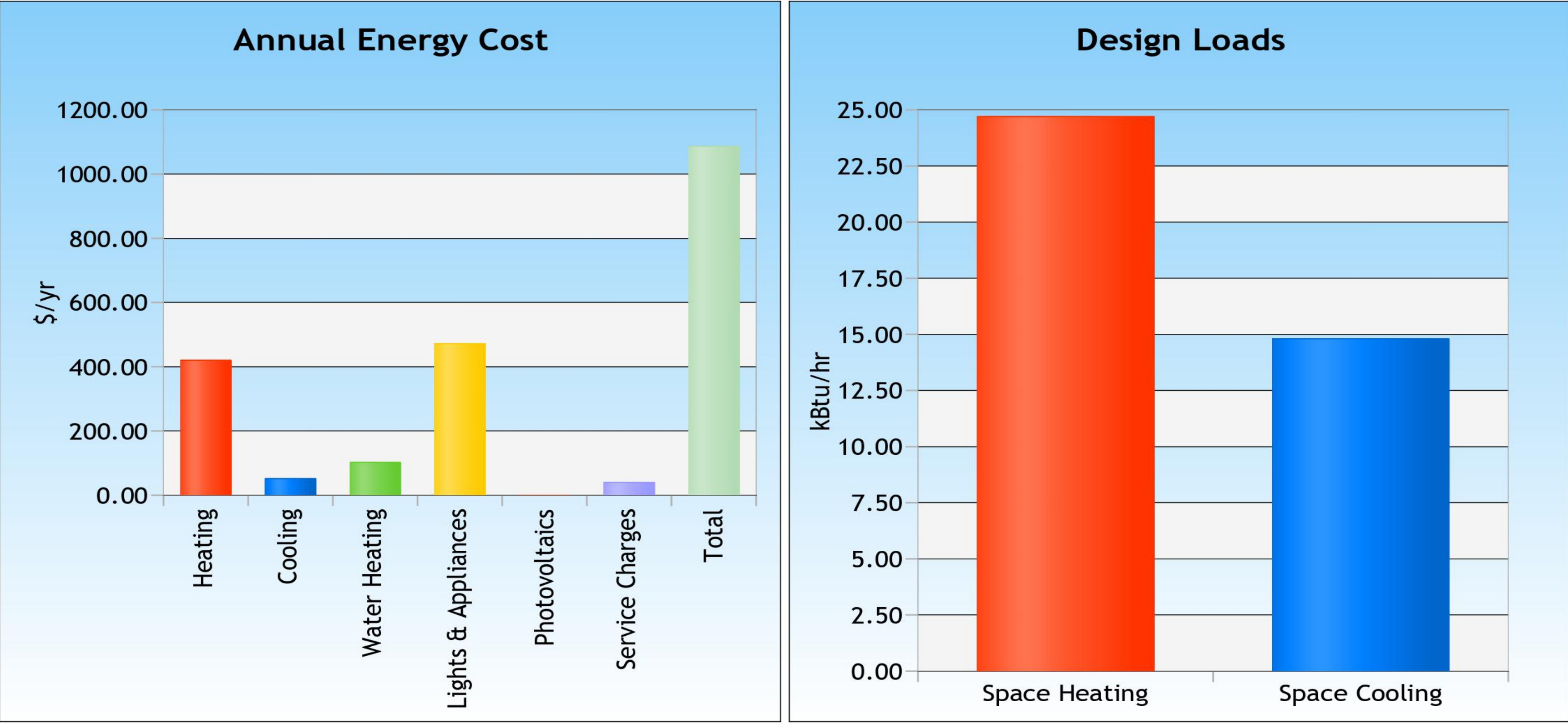
Property
Weber State University
2807 Quincy Ave.
Ogden, UT 84403

Organization
Provident Energy, INC
801-668-7910
Steve Thon

HERS
Confirmed
2020-09-14
Rater ID:0359372

Weather:Ogden, UT
OCAN Net-Zero Housing
OCAN Home Model - wBasement
16.0.4-RMP 2400 SF-UPLOADED

Builder
Wadman Construction



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Source Energy & Emissions

Property Weber State University 2807 Quincy Ave. Ogden, UT 84403	Organization Provident Energy, INC 801-668-7910 Steve Thon	HERS Confirmed 2020-09-14 Rater ID:0359372
Weather:Ogden, UT OCAN Net-Zero Housing OCAN Home Model - wBasement 16.0.4-RMP 2400 SF-UPLOADED	Builder Wadman Construction	

Source Energy Consumption (MMBtu/year)

	HERS Reference Home	As Designed	Difference	% Difference
Heating	95.5	63.0	-32.4	-34.0%
Cooling	25.5	8.6	-16.9	-66.3%
WaterHeating	62.5	15.2	-47.3	-75.7%
LightsAppliances	114.6	70.7	-43.9	-38.3%
Photovoltaics	0.0	0.0		
Total	298.0	157.4	-140.6	-47.2%

Total Emissions

Type of Emissions	HERS Reference Home	As Designed	Difference	% Difference
Carbon Dioxide (CO2) - tons/year	23.1	12.2	-10.9	-47.2%
Sulfur Dioxide (SO2) - lbs/year	28.6	15.1	-13.5	-47.2%
Nitrogen Oxides (NOx) - lbs/year	73.4	38.8	-34.6	-47.2%

Emissions By End-Use

(HERS Reference Home versus As Designed)

	CO2-tons/yr		SO2-lbs/yr		NOx-lbs/yr	
	Reference	Design	Reference	Design	Reference	Design
Heating	7.4	4.9	9.2	6.0	23.5	15.5
Cooling	2.0	0.7	2.4	0.8	6.3	2.1
WaterHeating	4.9	1.2	6.0	1.5	15.4	3.7
LightsAppliances	8.9	5.5	11.0	6.8	28.2	17.4
Photovoltaics	0.0	0.0	0.0	0.0	0.0	0.0

The energy and emission values are calculated by comparing the Rated Home to the HERS Referece Home as defined in the ANSI/RESNET/ICC Std 301. Site-to-source multipliers and air emission data were taken from the US EPA eGRID2012 database.

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ENERGY STAR v3.0 Home Report

Property Weber State University 2807 Quincy Ave. Ogden, UT 84403	Organization Provident Energy, INC 801-668-7910 Steve Thon	HERS Confirmed 2020-09-14 Rater ID:0359372
Weather:Ogden, UT OCAN Net-Zero Housing OCAN Home Model - wBasement 16.0.4-RMP 2400 SF-UPLOADED	Builder Wadman Construction	

Normalized, Modified End-Use Loads (MMBtu/yr)			
	ENERGY STAR	As Designed	
Heating	23.3	27.6	
Cooling	12.1	6.8	
Water Heating	16.6	4.1	
Lights and Appliances	25.5	20.2	
Total	77.5	58.7	
HERS Index of Reference Design Home	69	49	HERS Index w/o PV
HERS Index Target (SAF Adjusted)	69	49	HERS Index
Size Adjustment Factor	1.00		
HERS Index w/o PV <= HERS Index of Reference Design Home AND HERS Index <= HERS Index Target to comply.			

ENERGY STAR v3.0 Mandatory Requirements

X	Duct leakage at post construction better than or equal to ENERGY STAR v3/3.1 requirements.
X	Envelope insulation levels meet or exceed ENERGY STAR v3/3.1 requirements.
X	Slab on Grade Insulation must be > R-5, and at IECC 2009 Depth for Climate Zones 4 and above.
X	Envelope insulation achieves RESNET Grade I installation, or Grade II with insulated sheathing.
X	Windows meet the 2009 IECC Requirements - Table 402.1.1.
X	Duct insulation meets the EPA minimum requirements of R-6.
X	Mechanical ventilation system has been measured in the home.
X	ENERGY STAR Checklists fully verified and complete.



This home **MEETS** or **EXCEEDS** the energy efficiency requirements for designation as an EPA ENERGY STAR Version 3 Certified Home.

Pollution Prevented		Energy Cost Savings	\$/yr
Type of Emissions	Reduction	Heating	212
Carbon Dioxide (CO2) - tons/yr	10.9	Cooling	149
Sulfur Dioxide (SO2) - lbs/yr	13.5	Water Heating	349
Nitrogen Oxides (NOx) - lbs/yr	34.6	Lights & Appliances	352
		Total	1062

The energy savings and pollution prevented are calculated by comparing the Rated Home to the Reference Home as defined in the Mortgage Industry National Home Energy Rating Systems Standards as promulgated by the Residential Energy Services Network (RESNET) . In accordance with these guidelines, building inputs affecting setpoints, infiltration rates, window shading and the existence of mechanical systems may have been changed prior to calculating loads.

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ENERGY STAR v3.0 Home Verification Summary

Property Weber State University 2807 Quincy Ave. Ogden, UT 84403	Organization Provident Energy, INC 801-668-7910 Steve Thon	HERS Confirmed 2020-09-14 Rater ID:0359372
Weather:Ogden, UT OCAN Net-Zero Housing OCAN Home Model - wBasement 16.0.4-RMP 2400 SF-UPLOADED	Builder Wadman Construction	

Building Information

Conditioned Area (sq ft)	2400
Conditioned Volume (cubic ft)	19200
Insulated Shell Area (sq ft)	5103
Number of Bedrooms	6
Housing Type	Single-family detached
Foundation Type	Conditioned basement

Rating

HERS Index	49
HERS Index w/o PV	49
HERS Index Target (SAF Adjusted)	69
HERS Index of Reference Design Home	69
Size Adjustment Factor	1.00

HERS Index w/o PV <= HERS Index of Reference Design Home AND HERS Index <= HERS Index Target to comply.



This home MEETS or EXCEEDS the energy efficiency requirements for designation as an EPA ENERGY STAR Version 3 Certified Home.

Building Shell

Ceiling w/Attic	R-60 Blown, Attic***** U=0.033	Window Type	DbL/LoE/Arg - Vinyl*****0*
Sealed Attic	None	Window	U-Value: 0.270, SHGC: 0.250
Vaulted Ceiling	None	Window/Wall Ratio	0.28
Above Grade Walls	SIP 5-5/8" WSU* U=0.050	Infiltration Type	Blower door
Found. Walls(Cond)	WSU IVF R-22***** R=22.0	Infiltration	Htg: 2.30 Clg: 2.30 ACH50
Found. Walls(Uncond)	None	Duct Leakage to Outside	32.00 CFM @ 25 Pascals
Floors	None	Total Duct Leakage	47.00 CFM @ 25 Pascals
Slab Floors	Uninsulated U=0.365		

Mechanical Systems

ASHP	Htg: 79.1 kBtuh, 11.3 HSPF. Clg: 48.0 kBtuh, 19.1 SEER.
Water Heating	Heat pump, Elec, 2.45 EF.
Programmable Thermostat	Heat=Yes; Cool=Yes
Ventilation System	Balanced: HRV, 92 cfm, 30.0 watts.

Lights and Appliances

Interior LED Lighting (%)	100.00	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	566.00	Clothes Dryer CEF	2.62
Dishwasher (kWh/yr)	225	Clothes Washer LER	86.00
Ceiling Fan (cfm/Watt)	0.00	Clothes Washer Capacity	2.50
Range/Oven Fuel	Electric		

Note: Where feature level varies in home, the dominant value is shown.

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02. ENGINEERING



ENERGY STAR® CERTIFIED NEW CONSTRUCTION

Builder/Developer Name: Wadman Construction

Permit Date/Number:

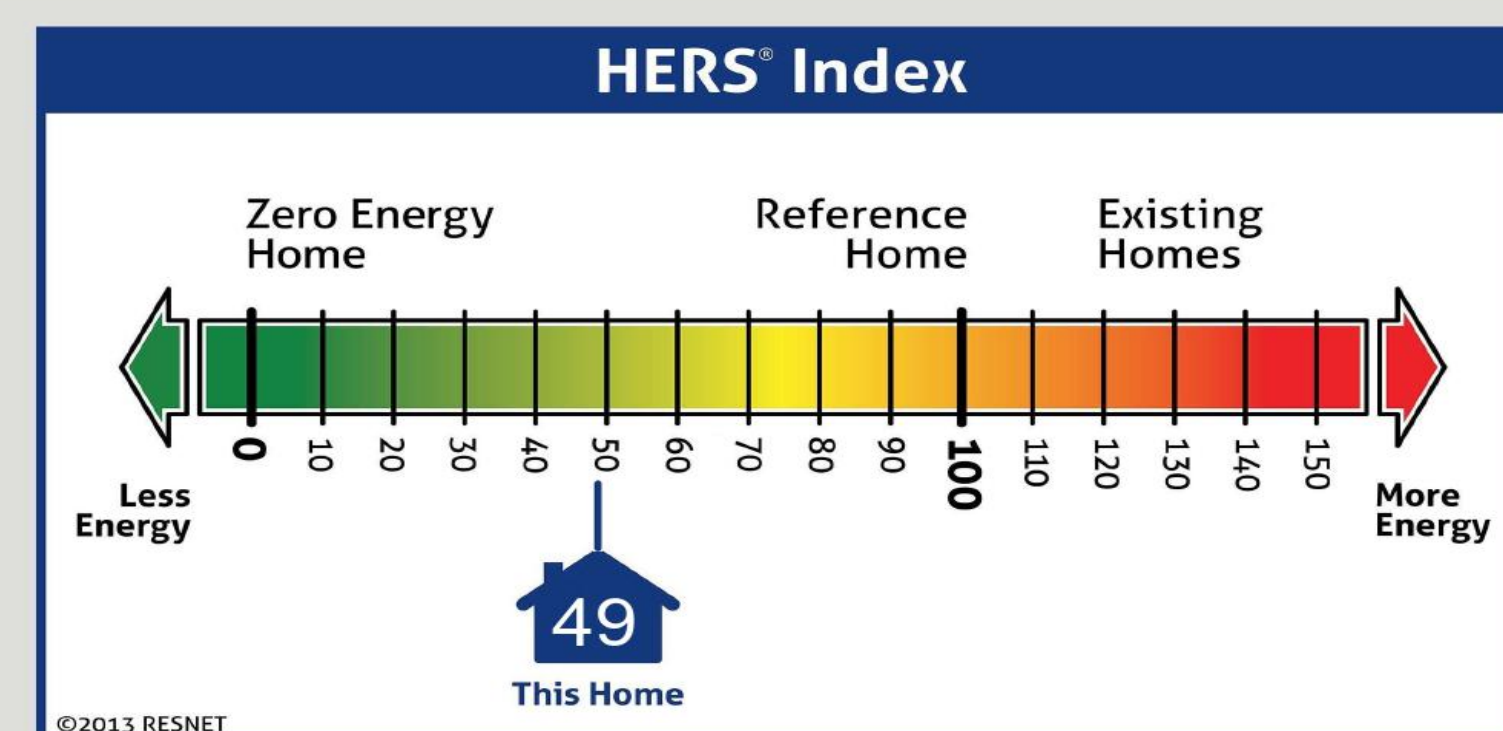
Home/Unit Address: 2807 Quincy Ave.
Ogden, UT 84403

Rating Company: Provident Energy, INC

Rater Identification Number: 0359372

Rating Date: 2020-09-14

ENERGY STAR Program/Version Number: 3.0



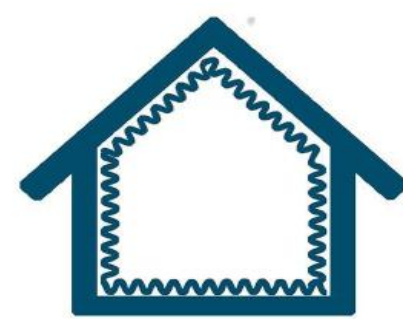
This value is not intended to be used for code compliance.

Standard Features of ENERGY STAR Certified New Homes and Apartments

Your ENERGY STAR certified new home or apartment has been designed, constructed, and independently verified to meet rigorous requirements for energy efficiency set by the U.S. Environmental Protection Agency (EPA), including:

Thermal Enclosure System

A complete thermal enclosure system that includes comprehensive air sealing, quality-installed insulation, and high-performing windows to deliver improved comfort and lower utility bills.



Air Infiltration Test: Htg: 2.30 Clg: 2.30 ACH50

Primary Insulation Levels:

Ceiling: R-60.0

FndWall: R-22.0

Slab: R-0.0, R-0.0

AGWall: R-29.0

Primary Window Efficiency:

U-Value: 0.270, SHGC: 0.250

Heating, Cooling, and Ventilation System

A high-efficiency heating, cooling, and ventilation system that is designed and installed for optimal performance.



Total Duct Leakage:
47.00 CFM25

Duct Leakage to Outdoors:
32.00 CFM25

Primary Heating (System Type • Fuel Type • Efficiency):

Electric, Htg: 11.3 HSPF. Clg: 19.1 SEER.

Primary Cooling (System Type • Fuel Type • Efficiency):

Electric, Htg: 11.3 HSPF. Clg: 19.1 SEER.

Water Management System

A comprehensive water management system to protect roofs, walls, and foundations.



Flashing, a drainage plane, and site grading to move water from the roof to the ground and then away from the home or building.

Water-resistant materials on below-grade walls and underneath slabs to reduce the potential for water entering the home or building.

Management of moisture levels in building materials during construction.

Energy Efficient Lighting and Appliances

Energy efficient products to help reduce utility bills, while providing high-quality performance.



Energy Efficient Lighting: 100%

ENERGY STAR Certified Appliances and Fans:

Refrigerators: 1

Dishwashers: 1

Ceiling Fans: 0

Exhaust Fans: 3

Primary Water Heater (System Type • Fuel Type • Efficiency):

Heat pump, Electric, 2.45 EF, 50.0 Gal.

About this certificate


The certificate provides a summary of the major energy efficiency and other construction features that contribute to this home or apartment earning the ENERGY STAR, as determined through independent inspection and verification performed by a trained professional. The Energy Rating Index or HERS index for this home, if reported, is calculated in accordance with ANSI/RESNET/ICC Standard 301, with any exceptions approved by EPA. Because the version of Standard 301 used to calculate this

index may not align with the version referenced by code, this value is not intended to be used to demonstrate compliance with code.

Note that when a home or apartment contains multiple performance levels for a particular feature (e.g., window efficiency or insulation levels), the predominant value is shown. Also, homes and apartments may be certified to earn the ENERGY STAR using a sampling protocol, whereby one home or apartment is randomly selected from a set for representative inspections and testing. In

such cases, the features found in each home or apartment within the set are intended to meet or exceed the values presented on this certificate. The actual values for your home or apartment may differ, but offer equivalent or better performance.

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	CERTIFIED HOME
ENERGY STAR	Independently verified to meet EPA's strict guidelines for energy efficiency.
Address:	
2807 Quincy Ave. Ogden, UT	
Built by:	
Wadman Construction	
Verified by:	
Steve Thon	
Date:	
2020-09-14	
Program/Version number:	
Version 3.0	
Optional information:	
HERS Index: 49	
Learn more at energystar.gov	

02. ENGINEERING

2018 IECC Building UA Compliance

Property

Weber State University
2807 Quincy Ave.
Ogden, UT 84403

Organization

Provident Energy, INC
801-668-7910
Steve Thon

HERS

Confirmed
2020-09-14
Rater ID:0359372

Weather:Ogden, UT
OCAN Net-Zero Housing
OCAN Home Model - wBasement
16.0.4-RMP 2400 SF-UPLOADED

Builder

Wadman Construction

Elements

Insulation Levels

	2018 IECC	As Designed
Shell UA Check		
Ceilings:	33.3	41.8
Above-Grade Walls:	68.1	54.9
Windows and Doors:	115.7	100.6
Basement Walls:	51.1	34.0
Overall UA (Design must be equal or lower):	268.1	231.3

Mandatory Requirements

The following Mandatory Requirements Fail:

The IECC 2018 requires duct leakage testing for ducts and/or air handlers located beyond the thermal boundary. At least one system in this home is not exempt from testing or tested above the duct leakage requirements in the IECC.

This home DOES NOT MEET the overall thermal performance requirements and verifications of the International Energy Conservation Code based on a climate zone of 5B. (Section 402, International Energy Conservation Code, 2018 edition.)

Name	Steve Thon
Organization	Provident Energy, INC

Signature	
Date	17 February 2021

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2018 IECC Energy Cost Compliance

Property
Weber State University
2807 Quincy Ave.
Ogden, UT 84403

Organization
Provident Energy, INC
801-668-7910
Steve Thon

HERS
Confirmed
2020-09-14
Rater ID:0359372

Weather:Ogden, UT
OCAN Net-Zero Housing
OCAN Home Model - wBasement

Builder
Wadman Construction

Annual Energy Cost

	2018 IECC	\$/yr As Designed
Heating	408	437
Cooling	125	95
Water Heating	176	175
Mechanical Ventilation Fan	46	21
SubTotal - Used to Determine Compliance	755	728
Lights & Appliances (minus MechVent)	494	456
Photovoltaics	-0	-0
Service Charge	40	40
Total	1289	1224

Mandatory Requirements

Annual Energy Cost Check	PASSES
Duct Insulation R-Value Check (per Section 405.2)	PASSES
Window U-Value and SHGC Check (per Section 402.5)	PASSES
Home Infiltration (Section 402.4.1)	PASSES
Duct Testing (Section 403.3.3)	PASSES
Mechanical Ventilation (Section 403.6)	PASSES
Mechanical Ventilation Fan Efficacy (Section 403.6.1)	PASSES
Mandatory Requirements Check Box (2018 IECC)	PASSES

This home MEETS the annual energy cost requirements of Section 405 of the 2018 International Energy Conservation Code based on a climate zone of 5B. In fact, this home surpasses the requirements by 3.6%.

Name | Steve Thon
Organization | Provident Energy, INC

Signature |
Date | 17 February 2021

In accordance with IECC, building inputs, such as setpoints, infiltration rates, and window shading may have been changed prior to calculating annual energy cost. Furthermore, the standard reference design HVAC system efficiencies are set equal to those in the design home as specified in the 2018 IECC. These standards are subject to change, and software updates should be obtained periodically to ensure the compliance calculations reflect current federal minimum standards.

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HOME CERTIFIED TO MEET THE PROVISIONS OF THE
2018 INTERNATIONAL ENERGY CONSERVATION CODE

This home built at
2807 Quincy Ave., Ogden, UT
by Wadman Construction
exceeds the minimum requirements

Building Features			
Ceiling Flat	R-60.0	Duct	NA
Sealed Attic:	NA	Duct Leakage to Outside:	32.00 CFM @ 25 Pascals
Vaulted Ceiling	NA	Total Duct Leakage:	47.00 CFM @ 25 Pascals
Above Grade Walls	R-29.0	Infiltration:	Htg: 2.30 Clg: 2.30 ACH50
Foundation Walls	R-22.0	Window	U-Value: 0.270, SHGC: 0.250
Exposed Floor	NA	Air-Source HP	Electric, Htg: 11.3 HSPF. Clg: 19.1 SEER.
Slab	R-0.0 Edge, R-0.0 Under	Water Heating	Heat pump, Electric, 2.45 EF, 50.0 Gal.

The organization below certifies that the proposed building design described herein is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2018 IECC requirements in compliance with Chapter 4 based on Climate Zone 5B and with all mandatory requirements.

Name	Steve Thon	Signature	
Organization	Provident Energy, INC	Date	17 February 2021

The 2018 International Energy Conservation Code is a registered trademark of the International Code Council, Inc. (“ICC”).
No version of this software has been reviewed or approved by ICC or its affiliates.
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2018 IECC Certificate

2807 Quincy Ave., Ogden, UT 84403

Building Envelope Insulation

Ceiling	R-60.0
Above Grade Walls	R-29.0
Foundation Walls	R-22.0
Exposed Floor	NA
Slab	R-0.0 Edge, R-0.0 Under
Infiltration	Htg: 2.30 Clg: 2.30 ACH50
Duct	NA
Total Duct Leakage	47.00 CFM @ 25 Pascals

Window Data

U-Factor

SHGC

Window	0.270	0.250
--------	-------	-------

Mechanical Equipment

ASHP: Electric, Htg: 11.3 HSPF. Clg: 19.1 SEER.

DHW: Heat pump, Electric, 2.45 EF, 50.0 Gal.

Builder or Design Professional

Signature _____

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v16.0.4

IECC 2018 Energy Rating Index Report

Property
Weber State University
2807 Quincy Ave.
Ogden, UT 84403

Organization
Provident Energy, INC
801-668-7910
Steve Thon

ERI
Final

Annual Energy Consumption		
	Rated Home Calculated Energy Use (MBTU)	Rated Home Cost (\$/yr)
Heating	17.8	405
Cooling	2.5	62
Water Heating	4.3	102
Lights & Appliances	21.5	507
Photovoltaics	-0.0	-0
Total	46.1	1117

Annual Estimates			
Electric(kWh):	13521	CO2 Emissions(Tons):	13
		Energy Savings (\$)**:	949
*Based on standard operating conditions			
**Based on the 2018 IECC Energy Rating Index Reference Design Home			

TARGET ERI: 61		2018 ERI: 57		PASS
This home MEETS the 2018 Energy Rating Index requirements of Sections 406.3 and 406.4 of the 2018 IECC for climate zone 5B. This 2018 ERI is calculated per ANSI/RESNET/ICC Standard 301-2014, as published January 2016 with Addenda A & B.				
Name	Steve Thon	Signature		
Organization	Provident Energy, INC	Date	17 February 2021	

Mandatory Requirements			
2018 ERI Target	PASS	Duct Insulation (Ducts outside R-6, inside is R-0)	PASS
2009 IECC UA	PASS	Maximum Fenestration U-factor/SHGC (R402.5)	PASS
Duct Testing (2015)	PASS	Air Leakage (5 ACH50 for CZ1-2, 3 ACH50 for CZ3-8)	PASS
Mechanical Ventilation	PASS	High efficacy lights installed (90%)	PASS
Hot water pipe insulated to R-3	PASS	Mandatory Requirements Checkbox (2018 IECC)	PASS
Mechanical Ventilation Efficacy	PASS		

Emissions Data		Provider Data and Seal	
Pollution Prevented		Rater	
Carbon Dioxide (CO2) - tons/year	9.6	Provident Energy, INC	
Sulfur Dioxide (SO2) - lbs/year	11.9	523 W. 4300 N.	
Nitrogen Oxides (NOx) - lbs/year	30.4	Pleasant View, Utah 84414	
		801-668-7910	

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Home Energy Rating Certificate

Property
Weber State University
2807 Quincy Ave.
Ogden, UT 84403

HERS
Rating Type: Confirmed
Rating Date: 2020-09-14
Registry ID: 650320419

Certified Energy Rater: Steve Thon
Rating Number:

HERS Index: 49

General Information			
Conditioned Area	2400 sq. ft.	House Type	Single-family detached
Conditioned Volume	19200 cubic ft.	Foundation	Conditioned basement
Bedrooms	6		

Mechanical Systems Features	
Air-source heat pump:	Electric, Htg: 11.3 HSPF. Clg: 19.1 SEER.
Water Heating:	Heat pump, Electric, 2.45 EF, 50.0 Gal.
Duct Leakage to Outside	32.00 CFM25
Ventilation System	Balanced: HRV, 92 cfm, 30.0 watts.
Programmable Thermostat	Heat=Yes; Cool=Yes

Building Shell Features			
Ceiling Flat	R-60.0	Slab	R-0.0 Edge, R-0.0 Under
Sealed Attic	NA	Exposed Floor	NA
Vaulted Ceiling	NA	Window Type	U-Value: 0.270, SHGC: 0.250
Above Grade Walls	R-29.0	Infiltration Rate	Htg: 2.30 Clg: 2.30 ACH50
Foundation Walls	R-22.0	Method	Blower door

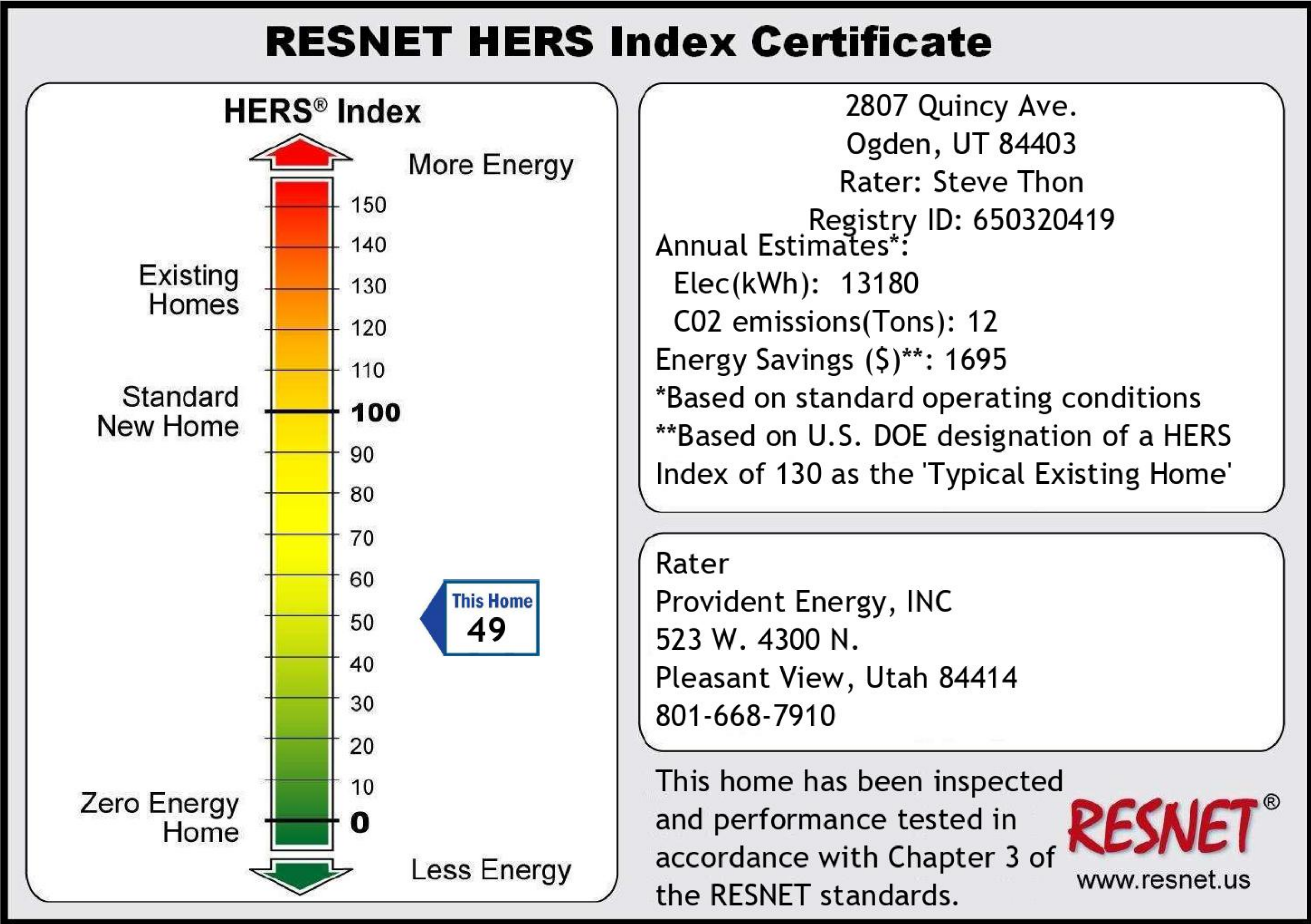
Lights and Appliance Features			
Interior Fluor Lighting (%)	0.0	Range/Oven Fuel	Electric
Interior LED Lighting (%)	100.0	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	566	Clothes Dryer CEF	2.62
Dishwasher (kWh/yr)	225	Ceiling Fan (cfm/Watt)	0.00

Estimated Annual Energy Cost			
Use	MMBtu	Cost	Percent
Heating	18.0	\$411	38%
Cooling	2.4	\$60	6%
Hot Water	4.3	\$102	9%
Lights/Appliances	20.2	\$475	44%
Photovoltaics	-0.0	\$-0	-0%
Service Charges		\$40	4%
Total	45.0	\$1087	100%

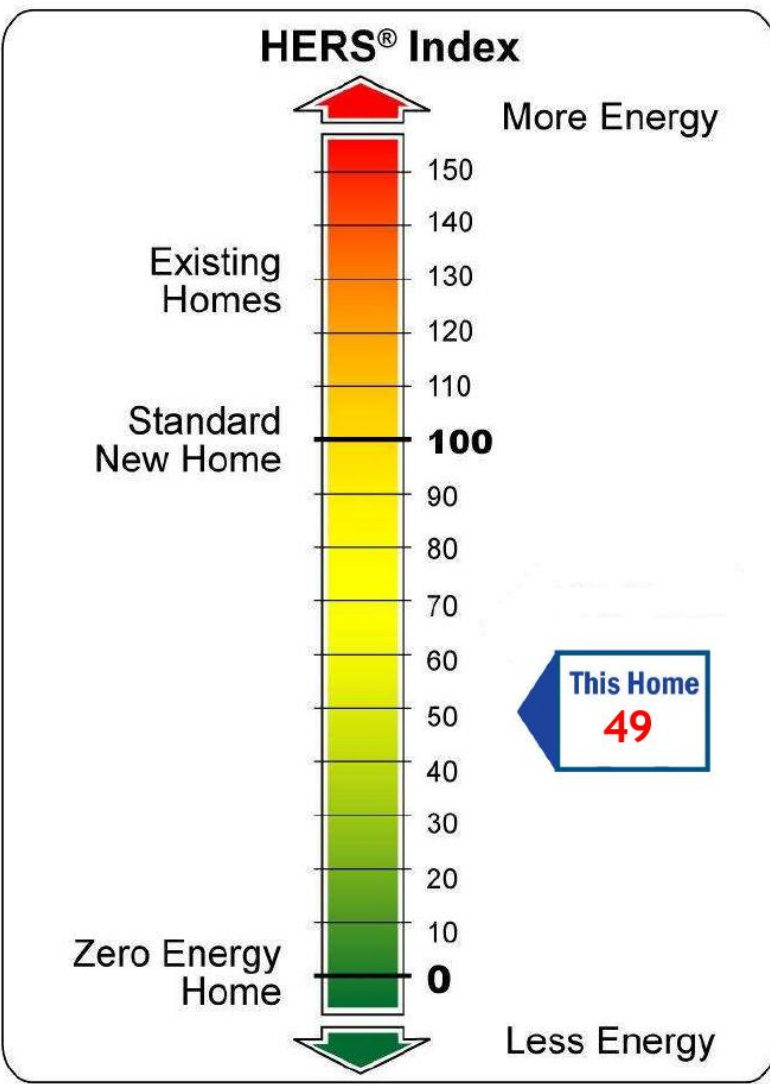
Criteria
This home meets or exceeds the minimum criteria for the following:
ENERGY STAR Version 3 Home
2006 International Energy Conservation Code
2015 IECC Performance Path
2015 IECC HERS ERI
2015 IECC ERI
2018 IECC Performance Path
2018 IECC ERI

Rater
Provident Energy, INC
523 W. 4300 N.
Pleasant View, Utah 84414
801-668-7910
Fax #

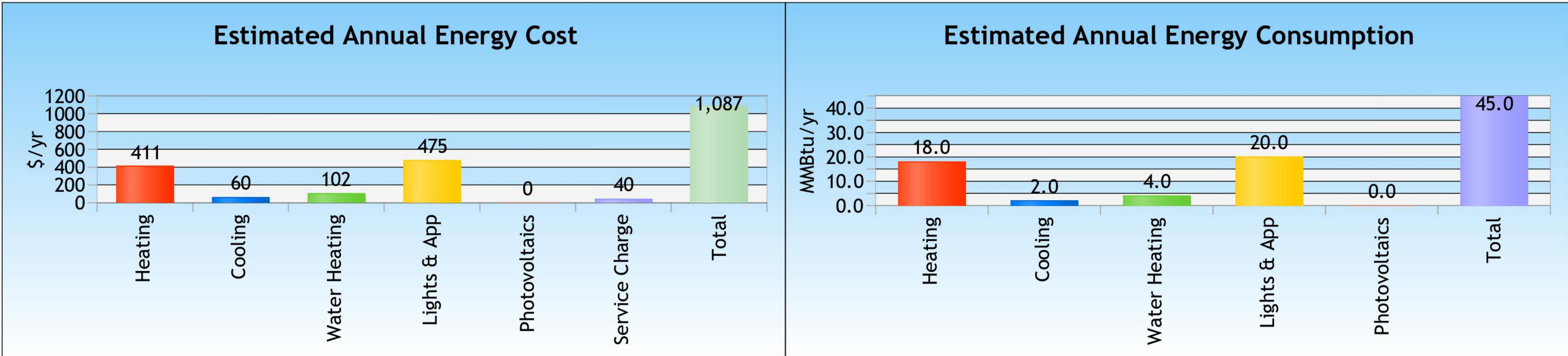
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The Home Energy Rating Standard Disclosure for this home is available from the rating provider.



HERS PERFORMANCE



ENERGY RATING CERTIFICATE



Address	2807 Quincy Ave. Ogden, UT 84403	Annual Estimates*	Rater
House Type	Single-family detached	Electric(kWh): 13180	Provident Energy, INC
Cond. Area	2400 sq. ft.	CO2 emissions(Tons): 12	523 W. 4300 N.
Rating No.		Annual Savings**: \$1695	Certified Rater Steve Thon
Issue Date	February 17, 2021	* Based on standard operating conditions	Rater ID 0359372
Certification	Inspected and Tested	** Based on a HERS 130 Index Home	Registry ID 650320419
			Rating Date 2020-09-14

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