

CLC Heating Boilers Replacements

Building 30 Basement A

Philadelphia VAMC

3900 Baltimore AVE Philadelphia, PA 19104

Provide Labor and material necessary for removing two old hot water heating oilers from nursing home Basement A mechanical room and install two new boilers. The contractor is to maintain one boiler operational while upgrading the other boiler:

- 1) Remove and properly dispose of Boiler #2 from the basement mechanical room of the CLC, including disconnecting the existing gas piping, fuel oil piping, electrical, heating hot water supply piping, heating hot water return piping, drain piping, induced draft fan and breeching, and concrete equipment pad. Boiler #1 to remain in service during this portion of the work.
- 2) Remove existing concrete equipment pad and provide new concrete pad, as required for the new boiler dimensions. Pad is 6" high, 4000# concrete strength with wire mesh.
- 3) Provide and install one new Weil-McClain or equal boiler. Model BGL-2394-W, each rated for 6,390 MBH input, 5,557 MBH output, Provide submittal for VA engineer approval and Boiler is to include the following :
 - a) Power Flame WCR5-GO-30 (7-1/2 HP) Dual Fuel Burner and modulating control panel.
 - b) 30 psi Water Pressure Relief Valve
 - c) Honeywell RM7840L/UV Flame Safeguard
 - d) CSD-1/UL approved Gas Train sized for 7.0" WC to 14.0" WC.
 - e) Alarm bell, panel relay, and silencing switch.
 - f) Hydro level 45-550 Low Water Cutoff with Manual Reset
 - g) Honeywell L4006E1117 High Limit Control with Manual Reset.
 - h) Sequencing Modulating Control with BAC Net, Indoor, and Outdoor Sensor, including output cards.
 - i) 24 inch Barometric Damper
- 4) Modify existing breeching to match new boiler location, and connect to the new boiler.
- 5) Install new utility piping for gas, fuel oil, heating hot water supply and return piping, drain piping, and electrical. All piping to be schedule 40 carbon steel. Heating hot water supply and return piping to include new hi-performance butterfly valves with carbon steel bodies and stainless steel trim, for isolation of the boiler from the system for future maintenance.

- 6) Commission the new boiler for operation. , Start boiler, start operation for one week. Provide 8 hours of training for the VA staff. Put new boiler in operation for at least one week. Use existing boiler # 1 as back up in case of failure of the new boiler. Upon proving to the VA staff, the dependability of the new boiler, proceed to item 7 actions.
- 7) Remove and properly dispose of Boiler #1 from the basement mechanical room of the CLC, including disconnecting the existing gas piping, fuel oil piping, electrical, heating hot water supply piping, heating hot water return piping, drain piping, induced draft fan and breeching, and concrete equipment pad (if required). The new boiler previously installed to remain in service during this portion of the work.
- 8) Remove existing concrete pad and provide new concrete pad as described in item 2 and as required for the second boiler.
- 9) Provide and install one additional new Weil McClain boiler or equal, to match the boiler as specified in Work Scope Item #3, above.
- 10) Connect the new boiler to the existing breeching, including breeching modifications as required.
- 11) Install new utility piping to the new second boiler for gas, fuel oil, heating hot water supply and return piping, drain piping, and electrical. All piping to be schedule 40 carbon steel. Heating hot water supply and return piping to include new hi-performance butterfly valves with carbon steel bodies and stainless steel trim, for isolation of the boiler from the system for future maintenance.
- 12) Insulate all new heating hot water supply and return piping, and repair all insulation on existing pipe affected by the work. Insulation to match existing.
- 13) Commission each new boiler for operation. start up and put in operation as described in item 6
- 14) All Boilers controls shall interface with existing building management system, new graphic controls and alarms status.
- 15) Provide one year of factory authorized service for each boiler.) Job duration is 120 colander days.
- 16) All work shall be coordinated with A/C foreman at 215-823-5103.
- 17) Portion of work such as crane work, loading unloading equipment to building 30, shall be performed on week end hours. Work on Boilers assembly is to be performed during normal hours, 7:00 AM to 4:00, with no disruption to the day to day operation of the medical center.
- 17) The contractor shall submit to equipment for approval by the VA engineer. Three copies are required. After installation the contractor shall submit three copies of O &M and as built drawing.
- 17) The contractor shall provide 8hours period of training for A/C shop staff.
- 18) The contractor shall provide one year warranty for labor and material for the project.
- 19) Qualified mechanical contractor, with at least five years of work experience in health care facility. The contractor shall submit at least five similar projects that completed, to be considered for this work.
- 20) The base design is Weil- McClain, since boiler design varies in the industries. The contractor is allowed to use another manufacturer; In this case, the contractor will be responsible for Steel tonnage design, the electrical changes, such as breakers and variable

speed drive, pipe modifications, breach changes, gas /oil train changes, control and electrical changes at no cost to the government. Provide Insulation for new pipe as required

21) All Acronyms are HVAC standards; all mechanical contractors are familiar with those acronyms. For reference, the contractor can review the manufacturer literatures to identify the Acronyms.

23) Only one walk through will be scheduled for the bidders, the walk through is must to evaluate the work place constrains. The Boilers are located below the loading dock only one main road leads to CLC loading dock. Walk in contractors will not be considered.

24) Interface the new boilers operation with existing BMS.

25) End

80, 88 SERIES 2, and 94
Weil-McLain Commercial

 **WEIL-McLAIN**

Clad in Cast Iron and Steel

Weil-McLain Commercial cast iron boilers are available as packaged, assembled blocks or as knockdowns with an array of approved burner options:

Beckett

Ⓐ Gordon-Piatt



 **WEIL-McLAIN**

www.weil-mclain.com

94 Output 2,028-6,970 MBH (60-208 HP)

WEL-MCLAN

- 3 pass heat exchange design for maximum heat transfer
- Approved for heavy oil

Oil Gas

Combustion 84% 81%
Thermal 83% 81%

Ratings

Boiler Unit No. Steam or Water	I-B-R Burner Capacity			I-B-R Burner Capacity			Net Sq. Ft. Water	Boiler H.P.	Net Firebox Volume Cu. Ft.	Stack Gas Volume CFM Light Oil & Gas	Draft Loss Through Boiler-in. H ₂ O	I-B-R Chimney Size Vent Dia. Inches
	Light Oil GPH	Heavy Oil GPH	Gas MBH	I-B-R Output MBH	Steam Sq. Ft.	Steam MBH						
894	17.50	16.65	2528	2,028	8,560	1,574	1,763	60.6	45.40	1068	375	14
904	20.00	19.00	2887	2,320	7,505	1,801	2,017	69.3	51.48	1242	215	14
1004	22.50	21.35	3247	2,612	6,450	2,028	2,271	78.0	57.58	1397	255	16
1104	25.00	23.75	3606	2,904	5,395	2,254	2,525	86.7	63.64	1555	295	16
1204	27.50	26.30	3966	3,196	4,340	2,476	2,773	95.3	69.72	1710	335	16
1304	30.00	28.45	4326	3,488	3,285	2,701	3,026	104.0	75.80	1868	375	18
1404	32.50	30.80	4686	3,779	2,230	2,927	3,278	112.8	81.88	2020	415	18
1504	35.00	33.15	5046	4,070	1,175	3,158	3,539	121.6	87.96	2175	455	18
1604	37.50	35.55	5412	4,360	606	3,385	3,791	130.2	94.04	2329	495	18
1704	40.00	37.90	5773	4,650	505	3,610	4,043	138.9	100.12	2480	535	20
1804	42.50	40.25	6134	4,940	404	3,835	4,295	147.6	106.20	2640	575	20
1904	45.00	42.80	6495	5,230	303	4,060	4,547	156.2	112.28	2795	615	20
2004	47.50	45.00	6856	5,520	202	4,285	4,800	164.9	118.36	2945	655	20
2104	50.00	47.40	7216	5,810	101	4,510	5,052	173.6	124.44	3120	730	20
2204	52.50	49.80	7577	6,100	1	4,735	5,304	182.2	130.52	3255	850	22
2304	55.00	52.20	7938	6,390		4,960	5,556	190.9	136.60	3410	950	22
2404	57.50	54.60	8298	6,680		5,185	5,808	199.6	142.68	3565	1050	22
2504	60.00	57.00	8660	6,970		5,411	6,060	208.2	148.76	3730	1350	22

- Burner input based on minimum of 2,000 ft. altitude for higher altitudes consult WEL-MCLAN Applications Engineering Department.
- No. 2 oil Commercial standard spec. C375-94 Heat value 140,000 BTU/G.
- Consult WEL-MCLAN Applications Engineering Department for gas pressure ratings.
- Gross I-B-R ratings have been determined under the I-B-R pressure governing federal draft boiler burner units.
- Net I-B-R ratings are based on net installed conditions of sufficient quality for the requirements of the building and ceiling need to select for normal piping and push-up. Water ratings are based on a piping and push-up allowance of 15%. Steam ratings are an allowance of 1.25%.

- For additional information should be made for greatly full water systems or for unusual piping and push-up loads. Consult WEL-MCLAN Applications Engineering Department.
- Based on average water temperature of 170°F in hot circulating units.
- Stack gas volume at outlet temperature.
- Add 250 to obtain boiler pressure.

Dimensions

Boiler No.	Water		Steam		A	B	C	D	E	F	G	H	I	J	K	L	M
	Supply Outlet No. & Size	Return Inlet Size	Supply Outlet Size	Return Inlet Size													
894	1-6"	6"	1-6"	6"	-	7 1/2"	8 1/2"	45	-	76	29 1/2"	25	-	82 1/2"	51	-	-
904	1-6"	6"	2-6"	6"	77 1/2"	7 1/2"	7 1/2"	51	-	76	29 1/2"	25	16 1/2"	84 1/2"	57	-	-
1004	1-6"	6"	2-6"	6"	83 1/2"	7 1/2"	7 1/2"	57	-	76	24 1/2"	25	16 1/2"	84 1/2"	63	-	-
1104	1-6"	6"	2-6"	6"	89 1/2"	7 1/2"	7 1/2"	63	-	76	24 1/2"	25	16 1/2"	70 1/2"	69	-	-
1204	1-6"	6"	2-6"	6"	95 1/2"	7 1/2"	7 1/2"	69	-	76	24 1/2"	25	16 1/2"	78 1/2"	75	-	-
1304	1-6"	6"	2-6"	6"	101 1/2"	8 1/2"	7 1/2"	75	-	76	24 1/2"	25	16 1/2"	82 1/2"	81	-	-
1404	1-6"	6"	2-6"	6"	107 1/2"	8 1/2"	7 1/2"	81	-	76	24 1/2"	30 1/2"	16 1/2"	88 1/2"	87	-	-
1504	1-6"	6"	2-6"	6"	113 1/2"	8 1/2"	7 1/2"	87	-	76	24 1/2"	30 1/2"	16 1/2"	94 1/2"	93	-	-
1604	1-6"	6"	2-6"	6"	119 1/2"	8 1/2"	7 1/2"	93	-	76	24 1/2"	30 1/2"	16 1/2"	100 1/2"	99	-	-
1704	1-6"	6"	2-6"	6"	125 1/2"	8 1/2"	7 1/2"	99	-	76	24 1/2"	30 1/2"	16 1/2"	106 1/2"	105	-	-
1804	1-6"	6"	2-6"	6"	131 1/2"	8 1/2"	7 1/2"	105	-	76	24 1/2"	30 1/2"	16 1/2"	112 1/2"	111	-	-
1904	1-6"	6"	2-6"	6"	137 1/2"	8 1/2"	7 1/2"	111	-	76	30 1/2"	30 1/2"	16 1/2"	118 1/2"	117	-	-
2004	1-6"	6"	2-6"	6"	143 1/2"	8 1/2"	7 1/2"	117	-	76	30 1/2"	30 1/2"	16 1/2"	124 1/2"	123	-	-
2104	1-10"	10"	2-10"	6"	72	8 1/2"	7 1/2"	123	29 1/2"	82 1/2"	30 1/2"	30 1/2"	-	130 1/2"	129	-	-
2204	1-10"	10"	2-10"	6"	78	8 1/2"	7 1/2"	129	17 1/2"	82 1/2"	30 1/2"	30 1/2"	-	136 1/2"	135	-	-
2304	1-10"	10"	2-10"	6"	84	8 1/2"	7 1/2"	135	17 1/2"	82 1/2"	37 1/2"	37 1/2"	-	142 1/2"	141	-	-
2404	1-10"	10"	2-10"	6"	90	8 1/2"	7 1/2"	141	17 1/2"	82 1/2"	37 1/2"	37 1/2"	-	148 1/2"	147	-	-
2504	1-10"	10"	2-10"	6"	96	8 1/2"	7 1/2"	147	17 1/2"	82 1/2"	37 1/2"	37 1/2"	-	154 1/2"	153	-	-

*All 6" supply outlets are tapered - off 6" and 10" supply outlets are flanged. 6" return is tapered.

Standard Equipment

All Boilers

- Flame Retention Oil, Gas, or Gas/Oil Burner
- Insulated Flush Jacket
- Burner Mounting Flange with Refractory
- Flue Collar with Built-in Breeching Damper
- Front Cleanout Doors and Wing Nuts
- Front Cleanout Plates and Wing Nuts
- Back Access Door
- Flue Brushes and Handles
- Two Close Nipples and Caps for Washout Tappings on Front Section
- Supply Elbow(s) or Top Outlet(s)

Water Boilers

- ASME Safety Relief Valve
- Combination High-Limit and Low-Limit Control
- Combination Pressure-Temperature-Altitude Gauge

Steam Boilers

- ASME Safety Relief Valve
- Low-Limit and High-Limit Pressure Controls
- 4-2" Steam Pressure Gauge
- Syphon
- Gauge Glass
- Gauge Cocks

Optional Equipment

- Factory-Assembled Sections (894-2194 only)
- Fire-Tested Package Units
- Burner Controls
- Water Level Controls and Low-Water Cutoffs
- Barometric Damper
- 1-2" Side Inspection Openings with Plugs
- 60 PSI Working Pressure Manometer
- Tankless Heater(s)

