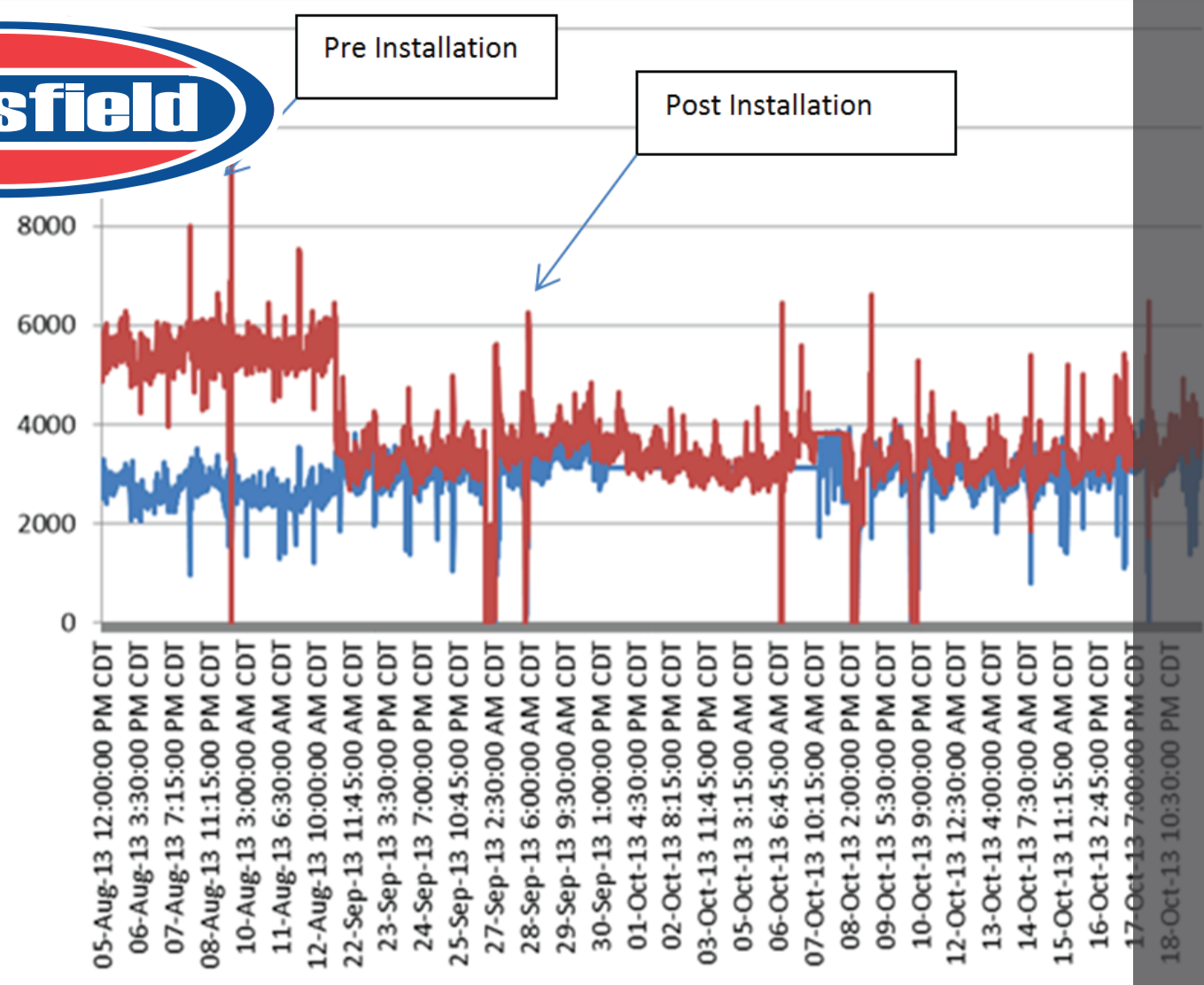




contract report



Customer:
ESG Summit Medical

Location:
Nashville, TN, USA

Boiler Type:
Cleaver brooks 300hp

Burner Model:
LCN36

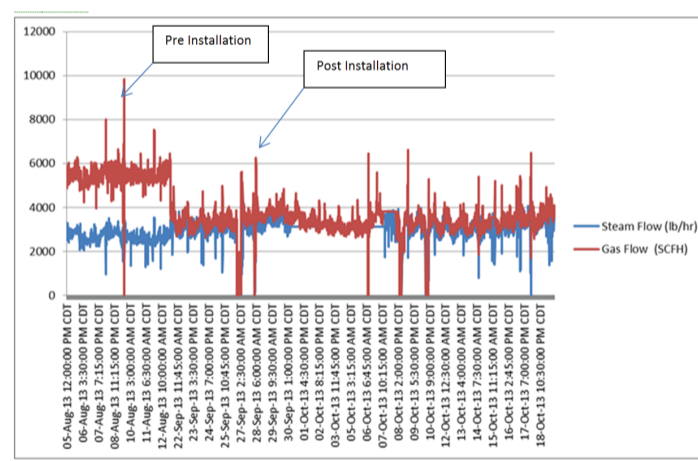
Fuels:
Natural Gas

Fuel Savings:
39%

In 2013 Limpsfield engineering completed a project for ESG Summit medical in collaboration with Ware Inc. Ware Inc completed all of the burner install and commissioning work on site. Below is the savings report put together by the customer.



Improvements to the boiler and steam system included replacement of the existing linkage style burner on boiler #2 with a fully modulating linkage-less Limpsfield burner, replacing defective steam traps, and installation of drip legs as needed. These improvements increase the efficiency of the overall steam system and reduce natural gas usage. To document efficiency improvements, gas and steam meters were installed on boiler #2 prior to installation of the steam system energy conservation measures. Data was then collected pre and post and compared to evaluate system improvements. The graph below shows steam generation as a function of natural gas consumption. As can be seen in the graph, following installation of the steam system improvements (September 22nd 2013), significantly less natural gas is needed to generate approximately the same quantity of building steam.



Pre - Installation				Post - Installation			
Date	lbs/hr steam (avg usage)	HDD	gas usage (scfh)	Date	lbs/hr steam	HDD	gas usage (scfh)
5-Aug	2788	0	5471	21-Sep	2565	0.8	2670
6-Aug	2645	0	5427	22-Sep	3053	3.9	3360
7-Aug	2594	0	5316	23-Sep	3021	3.6	3333
8-Aug	2834	0	5730	24-Sep	2967	1.3	3327
9-Aug	2696	0	5621	25-Sep	3023	0	3370
10-Aug	2626	0	5498	30-Sep	3283	1.1	3692
11-Aug	2511	0	5433	12-Oct	3011	3.3	3267
12-Aug	2636	0	5561	13-Oct	2964	0.8	3167
Average	2666		5507	14-Oct	2963	1.5	3221
				15-Oct	2830	0.5	3360
				16-Oct	3096	1.1	3391
				17-Oct	3271	7.4	3654
				18-Oct	3146	11.4	3541
				Average	3015		3335

Pre and post measurements for gas and steam usage are shown below for periods of similar steam load and low heating degree days (HDD).

Average steam usage for the pre installation period is 2666 lbs/hr and an average of 5507 scfh of gas consumed. Average steam usage for the post installation period was 3015 lbs/hr and an average of 3335 scfh of gas consumed. Minimal baseline savings can be estimated by taking the difference in these averages as follows:

$2172 \text{ scfh} / (96.7 \text{ cfh/therm}) \times 8760 \text{ hours} = 196,760 \text{ therms per year. That's a fuel saving of 39% when compared to the old burner.}$

Reference: ESG Savings report - Summit Hospital - Section 5.0: Boiler and steam system - September 2014

For more information on the Limpsfield burner range, please do not hesitate to contact us.



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