



LIFT STATION EVALUATION REPORT

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Station: Carignan LS4
Installation: October 2009
Contact: MAID Labs inc.

Layout: 1sr settings
From: 10/1/2009 12:00:00 AM
Phone: 514-295-9680

Device: 515042
To: 10/31/2009 11:59:59 PM
Email: Info@maidlabs.com

Dimensions

Geometry of well: Other

	Distance	Volume
Between start level for one pump and stop level	ft	1,583 US gal.
Between start level for two pumps and start level of one pump	ft	264 US gal.
Between start level for three pumps and start level of two pumps	ft	264 US gal.

Electricity

Input	Unit	#	Phase 1 Avg	Unbal	Phase 2 Avg	Unbal	Phase 3 Avg	Unbal	Avg	Run time hours	Starts	Suspicious events
Voltage	Fixed	V	480.0	0.0%	480.0	0.0%	480.0	0.0%	480.0			
Voltage	Computed	V	277.1	0.0%	277.1	0.0%	277.1	0.0%	277.1			
Current	Pump 1	A	20.4	1.4%	19.3	-4.2%	20.7	2.8%	20.2	156.57	1,757	0
Current	Pump 2	A	21.3	1.4%	20.1	-4.4%	21.7	3.1%	21.0	109.21	1,768	0
Current	Pump 3	A	24.2	1.8%	22.7	-4.3%	24.3	2.5%	23.7	53.13	1,763	0

Efficiency

Power consumption

Reference efficiency: 4.35

Pumps	Total	Phase 1	Phase 2	Phase 3	Run time	Events	Pump capacity	Pumped Volume	Efficiency	Average cycle		
	kVAh	%	kVAh	kVAh	kVAh	hours	GPM (US)	US gal. x 1000	%	US gal./VAh	min	
None	0	0.0	0	0	0	365.77	5,265				00:04:10	
1	2,594	46.5	877	829	889	154.72	1,757	776	7,203	41.5	2.78	00:05:17
2	1,867	33.4	631	595	642	106.92	1,755	906	5,811	33.5	3.11	00:03:39
3	1,036	18.6	352	331	354	52.51	1,756	1,323	4,167	24.0	4.02	00:01:47
1 & 2	60	1.1	20	19	20	1.69	13	1,234	125	0.7	2.09	00:07:46
1 & 3	1	0.0	0	0	0	0.02	2	1,734	2	0.0	2.90	
2 & 3	17	0.3	6	6	6	0.47	6	1,630	46	0.3	2.61	
1 & 2 & 3	7	0.1	2	2	2	0.14	1	2,202	18	0.1	2.49	
Total ¹	5,583	100	1,888	1,781	1,914	682.24	10555		17,372	100		

Annual Energy Cost

Cost per kVAh	\$0.10	Actual cost	%	Cost if single ²	% variation	Variation/Std	\$ Equal ³
Pump 1		\$3,333.32	46.5%	\$8,039.18	16.2%	\$2,908.11	\$969.37
Pump 2		\$2,399.40	33.4%	\$7,172.38	3.6%	\$2,041.30	\$680.43
Pump 3		\$1,331.43	18.6%	\$5,551.07	-19.8%	\$419.99	\$140.00
Other		\$109.61	1.5%				
Total		\$7,173.76	100%				
Total annual extra cost of electricity if no modification occurs:						\$2,043	28 %

(1) Total : Include stopped time (2) Cost if single : Cost if only one pump would pump everything (3) \$ Equal Run Time : Extra cost of electricity if each pump pumps the same volume of water

This analysis is for constant pumps only. The hydraulic data are based on volumes between the levels of operation of the pumps. If the levels of operation are defective, the data could not be valid. It is not the responsibility of MAID Labs to correct the operation of the lift station. This analysis allows to discover anomalies undetectable otherwise.