1430 Upper Wellington Measurement & Verification Findings

Summary Findings

The following Measurement and Verification (M&V) analysis demonstrate the positive effect the H2minusO Flow Management Device (FMD) has had on the meter reading efficiency at 1430 Upper Middilington1998 Ironstone Drive.

Key Project Metrics

One time project investment: $14,190.00
Projected consumption 2018: 29,876 m3 (based on .7441 m3 * 110 units * 365 days)
Cost per m3: $2.76
Install date: March 2, 2017

Pre-Installation

Projected Savings ($): $4,784
Projected Savings (%): 5.60%
Projected ROI (yrs) : 2.97 years

Post-Installation

Measured Savings ($): $4,345
Measured Savings (%): 10.12%
Measured ROI (yrs): 1.73 Years

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Detail Findings

Table 1 details consumption patterns for the current measurement period in addition to the prior 2 years. Column 8 shows the increase/decrease in consumption based on the start and end period as indicated in columns 3 and 4. So the first 3 rows show what the consumption patterns were during a similar pre-installation measurement period including the year in which the FMD was installed. In this case, the FMD was installed on March 2, 2017, so we reviewed what the consumption pattern was like before March 2nd in 2015, 2016 and 2017 (this is based on the consumption data provided via actual bills and meter readings). Prior year period comparison is part of our M&V process so that we can develop a complete picture on how the FMD has impacted consumption relative to similar time periods from prior years. Table 1, rows 4-6 show the consumption post-installation of the FMD in the 3 years being analyzed.

When looking at the same pre-installation periods, consumption showed an increase period over period. We note that during the same pre-installation periods consumption showed an increasing trend. This can be seen from the consumption increase of 11.55% (table-1 row-2 column-8) in 2016 compared to 2015; and a further nominal increase of .15% (table-1 row-3 column-8) from 2016 to 2017. During the post-installation period we observed no such 3 year trend because of the installation of the FMD in 2017. We did observe a similar increase of 13.36% (table-1 row-5 column-8) in 2016 compared to 2015, but unlike the slight consumption increase we saw pre-installation in 2017 compared to 2016,, we observed a siginificant decrease in consumption of 10.12% (table-1 row-6 column-8) in 2017 compared to the same period in 2016. That is consumption decreased from 58.52 m3/day (row 5 column 7) in 2016 to 52.59 m3/day (row 6 column 7) in 2017.This decrease demenostrates the improved meter reading efficiency of the water meter post-installation of the FMD.

Table 1: M&V Results

#	H2 Reference	Start Measurement Period	End Measurement Period	Total Consumption/Period (m3)	# Days in Period	Average Consumption (m3/day)	Same Period Change in Consumption (%)
1	Pre-Install	2015-03-30	2015-04-30	1331	31	42.94	N/A
2	Pre-Install	2016-03-31	2016-04-28	1341	28	47.89	11.55%
3	Pre-Install	2017-03-28	2017-04-20	1391	29	47.97	0.15%
4	Post-Install	2015-04-30	2015-05-29	1497	29	51.62	N/A
5	Post-Install	2016-04-28	2016-05-31	1931	33	58.52	13.36%
6	Post-Install	2017-04-26	2017-05-18	1157	22	52.59	-10.12%

Chart 1: Average Daily Consumption

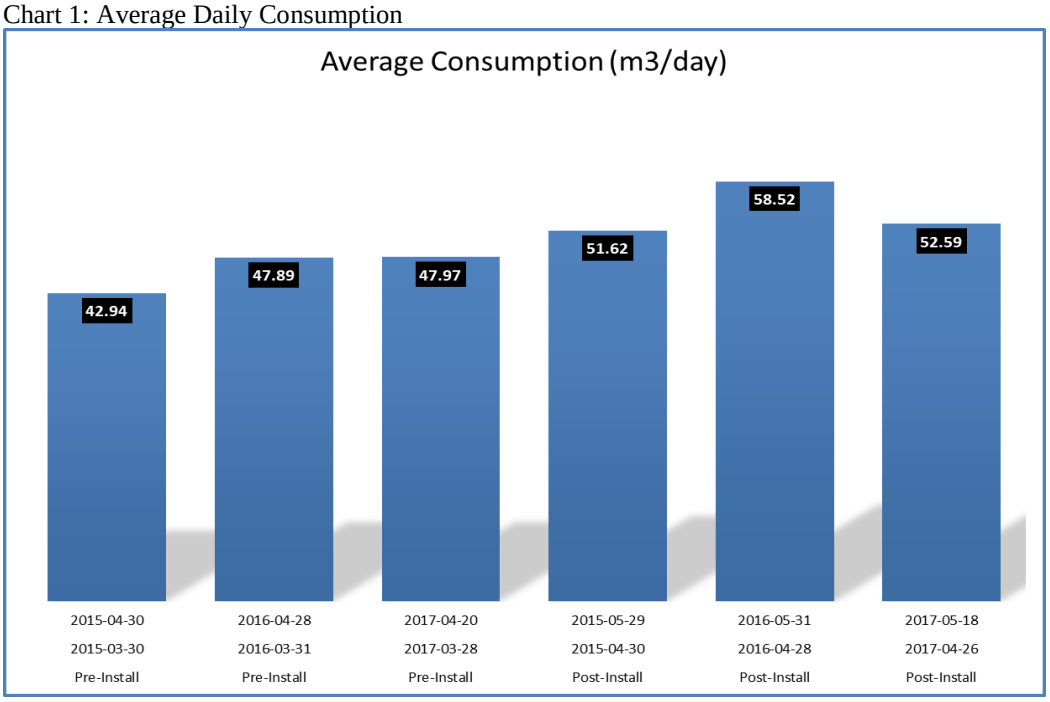

Chart 1 shows the average daily consumption for the FMD for both the pre/post install periods over the last 3 years.

Chart 2: Same Period Comparison

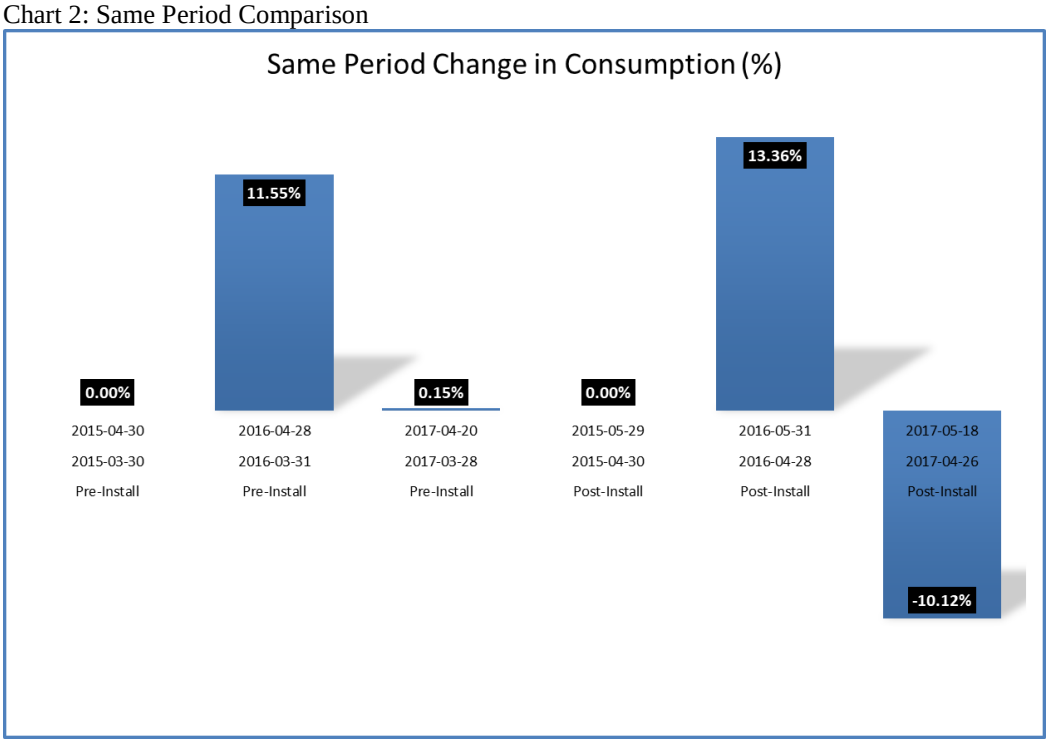

Chart 2 shows the average percentage change in consumption over the pre/post measurement periods for the FMD over the last 3 years.

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