

**TO: HOVMSD COMMISSION**

**FR: KEVIN SKOGMAN  
DIRECTOR OF OPERATIONS & MAINTENANCE**

**RE: CHEMICAL USE REPORT FOR 2016**

**DT: MARCH 2, 2017**

Attached is the Chemical Use Report for 2016, the quantities, and cost of chemicals. The cost and quantities relative to millions of gallons of wastewater treated at the plant are also provided.

District staff and crew strive to maintain and improve efficiencies in chemical quantities, as well as cost relative to the quantity of wastewater treated. In comparison to total influent flow between 2016 and 2013 there was a difference of 6.5 million gallons of flow. As shown, 2016 shows a substantial total cost savings of chemicals purchased.

Also included is the natural gas, electricity, and water consumption by the Heart of the Valley MSD and the cost associated with each utility.

## CHEMICAL USE REPORT - FOR 2016

GALLONS	2009	2010	2011	2012	2013	2014	2015	2016
TOTAL INFLUENT FLOW	2,191,105,000	2,391,172,000	2,359,297,000	1,844,606,000	2,014,148,000	2,101,955,000	1,887,988,000	2,020,671,000
**FLOW, MAY - SEPTEMBER	810,774,000	1,156,045,000	901,167,000	729,640,000	808,344,000	905,023,000	780,667,000	769,869,000
<b>TOTAL \$ COST OF PURCHASES</b>								
TREATMENT CHEMICAL	2009	2010	2011	2012	2013	2014	2015	2016
FERRIC SULFATE - ACTIFLO	\$430,552.62	\$429,425.29	\$448,904.10	\$388,000.50	\$345,375.00	\$289,797.00	\$282,560.00	\$306,169.00
POLYMER - ACTIFLO	58,114.43	56,026.00	52,973.80	52,659.20	## 44,903.57	67,245.65	41,055.00	48,185.00
POLYMER - DAF	75,455.30	32,432.27	23,414.00	20,930.00	23,920.00	23,920.00	20,930.00	26,910.00
SULFURIC ACID - BIOFILTER	32,766.54	30,023.28	49,639.34	32,851.47	43,709.57	20,458.29	34,709.00	35,368.00
SODIUM HYPOCHLORITE**	12,188.26	13,559.72	12,078.67	13,995.34	18,563.48	14,315.34	14,695.00	14,530.00
SODIUM BISULFATE**	6,949.84	7,436.89	4,940.04	3,867.65	2,630.16	2,632.29	2,326.00	3,943.00
TOTAL	\$616,026.99	\$568,903.45	\$591,949.95	\$512,304.16	\$479,101.78	\$418,368.57	\$396,275.00	\$435,105.00
<b>\$ COST / MGD TREATED</b>								
TREATMENT CHEMICAL	2009	2010	2011	2012	2013	2014	2015	2016
FERRIC SULFATE - ACTIFLO	\$196.50	\$179.59	\$190.27	\$210.34	\$171.47	\$137.87	\$149.66	\$151.49
POLYMER - ACTIFLO	26.52	23.43	22.45	28.55	22.29	31.99	21.75	23.84
POLYMER - DAF	34.44	13.56	9.92	11.35	11.88	11.38	11.08	13.32
SULFURIC ACID - BIOFILTER	14.95	12.56	21.04	17.81	21.70	9.73	18.38	17.50
SODIUM HYPOCHLORITE**	15.03	11.73	13.40	19.18	22.96	15.82	18.82	18.87
SODIUM BISULFATE**	8.57	6.43	5.48	5.30	3.25	2.91	2.98	5.12
TOTAL	\$296.01	\$247.30	\$262.56	\$292.53	\$253.55	209.70	\$222.67	\$230.14
<b>TOTAL GALLONS PURCHASED</b>								
TREATMENT CHEMICAL	2009	2010	2011	2012	2013	2014	2015	2016
FERRIC SULFATE - ACTIFLO	162,636	205,953	231,938	201,651	181,300	149,457	142,252	171,981
POLYMER - ACTIFLO	4,444	5,906	5,030	5,000	## 5,225	6,375	4,677	5,502
POLYMER - DAF	3,170	2,368	2,114	1,925	2,200	2,200	1,930	2,476
SULFURIC ACID - BIOFILTER	13,511	11,518	14,238	10,780	14,031	6,914	11,587	13,067
SODIUM HYPOCHLORITE**	9,100	10,146	8,919	9,188	11,832	9,130	9,220	9,116
SODIUM BISULFATE**	4,263	4,639	2,914	2,204	1,542	1,533	1,399	2,396

## CHEMICAL USE REPORT - FOR 2016 CONTINUED

TREATMENT CHEMICAL	GALLONS OF CHEMICAL / MGD TREATED						2015	2016
	2009	2010	2011	2012	2013	2014		
FERRIC SULFATE - ACTIFLO	74.23	86.13	98.31	109.32	90.01	71.10	75.35	85.10
POLYMER - ACTIFLO	2.03	2.47	2.13	2.71	2.59	3.03	2.48	2.72
POLYMER - DAF	1.45	0.99	0.90	1.04	1.09	1.05	1.02	1.23
SULFURIC ACID - BIOFILTER	6.17	4.82	6.03	5.84	6.97	3.29	6.14	6.47
SODIUM HYPOCHLORITE**	11.22	8.78	9.90	12.59	14.64	10.09	11.81	11.84
SODIUM BISULFATE**	5.26	4.01	3.23	3.02	1.91	1.69	1.79	1.19

\*\* May through September chemical use only

## Emptied bulk tank contents and switched to totes. Gallons estimated.

### GAS, ELECTRIC AND WATER CONSUMPTION

NATURAL GAS		2011	2012	2013	2014	2015	2016	
Cubic Feet		87,515	80,140	101,195	104,315	81,752	70,013	
Cost \$		\$82,357.54	\$57,132.00	\$60,247.96	\$90,580.17	\$51,661.64	\$38,836.02	
POTABLE WATER		2011	2012	2013	2014	2015	2016	
Cubic Feet		446,600	542,449	519,381	447,992	385,130	380,677	
Cost \$		\$23,370	\$27,306.64	\$17,715.85	\$21,010.64	\$20,226.56	\$20,436.52	
ELECTRICAL POWER		2010	2011	2012	2013	2014	2015	2016
KWH		7,229,374	7,253,463	7,151,221	6,755,637	7,589,498	7,356,888	7,446,624
COST \$		\$478,170.12	\$485,898.56	\$518,223.94	\$489,531.09	\$527,632.56	\$534,006.19	\$499,300.03
KWH / MGD Treated		3,023.4	3,074.4	3,876.8	3,354.1	3,610.7	3,896.68	3,684.62