

## FLOW AND STRENGTH PROJECTIONS

MONTH: May 2018

	<u>PROJECTED</u>	<u>ACTUAL</u>	<u>DIFFERENCE</u>	<u>PROJECTED INCOME FOR MONTH</u>	<u>ACTUAL INCOME FOR MONTH</u>	<u>SURPLUS OR DEFICIT</u>
FLOW (GALLONS)	178,681,277	245,134,860	66,453,583	\$ 142,230.30	\$ 195,127.35	\$ 52,897.05
B.O.D. (#s)	275,795	357,943	82,148	\$ 72,258.29	\$ 93,781.14	\$ 21,522.85
S. SOLIDS (#s)	349,710	325,191	-24,519	\$ 93,022.86	\$ 86,500.81	\$ (6,522.05)
PHOSPHORUS (#s)	7,079	6,464	-615	\$ 44,526.91	\$ 40,658.56	\$ (3,868.35)
AMMONIA-N (#s)	38,929	39,569	640	\$ 58,354.57	\$ 59,313.93	\$ 959.36
CHLORIDES (#s)	663,211	828,942	165,731	\$ 3,316.06	\$ 4,144.71	\$ 828.66
			<b>TOTAL:</b>	<b>\$ 413,708.98</b>	<b>\$ 479,526.49</b>	<b>\$ 65,817.51</b>

(THRU MAY 2018)

PROJECTED FOR 2018

	<u>END OF YEAR PROJECTED</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT</u>	<u>YEAR TO DATE SURPLUS/ DEFICIT \$\$</u>
FLOW (GALLONS)	1,947,278,400	15,225,537	\$ 12,119.53
B.O.D. (#s)	3,292,724	192,579	\$ 50,455.72
S. SOLIDS (#s)	3,957,399	-123,519	\$ (32,856.03)
PHOSPHORUS (#s)	83,650	-5,042	\$ (31,715.56)
AMMONIA-N (#s)	464,411	11,468	\$ 17,189.84
CHLORIDES (#s)	7,768,031	303,918	\$ 1,519.59
		<b>TOTAL:</b>	<b>\$ 16,713.09</b>

# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

MONTH: MAY 2018

## HYDRAULIC AND ORGANIC LOADINGS DATA

### INFLUENT\*

**TOTAL FLOW TO PLANT:** 249,379,000 GALLONS  
**AVERAGE B.O.D. :** 179 mg/L  
**AVERAGE SUSPENDED SOLIDS :** 151 mg/L  
**AVERAGE PHOSPHORUS :** 3.61 mg/L  
**AVERAGE AMMONIA-N :** 23.48 mg/L  
**AVERAGE CHLORIDES :** 510.67 mg/L

**MAXIMUM DAILY FLOW TO PLANT:**  
23,269,000

### PERCENT (%) BY COMMUNITY OF TOTAL MONTHLY VOLUME TREATED AT WWTP

<u>COMMUNITY</u>	<u>FLOW</u>	<u>BOD</u>	<u>TSS</u>	<u>PHOSPHORUS</u>	<u>AMMONIA</u>	<u>CHLORIDES</u>
KAUKAUNA	41.70	31.97	33.55	31.84	27.95	35.79
LITTLE CHUTE	24.77	28.68	24.96	24.70	34.00	31.00
KIMBERLY	13.94	12.00	13.05	12.59	9.58	14.35
COMBINED LOCKS	6.55	5.94	6.47	7.24	6.91	2.07
DARBOY	13.04	21.41	21.97	23.63	21.56	16.79

### AVERAGE DAILY INFLUENT LOADINGS

**FLOW :** 8,044,484 GALLONS  
**B.O.D. :** 12,034 POUNDS  
**SUSPENDED SOLIDS :** 10,103 POUNDS  
**PHOSPHORUS :** 242 POUNDS  
**AMMONIA-N :** 1,575 POUNDS  
**CHLORIDES :** 34,261 POUNDS

### %

67.6  
82.1  
62.1  
59.6  
82.0

### PLANT DESIGN CRITERIA

11,900,000 GALLONS/DAY  
14,651 POUNDS/DAY  
16,278 POUNDS/DAY  
407 POUNDS/DAY  
1,920 POUNDS/DAY

### FINAL EFFLUENT

<u>MONTHLY AVERAGE</u>	<u>%</u>	<u>MONTHLY AVG PERMIT LIMIT</u>
<b>FLOW:</b> 6,132,129		
<b>SUSPENDED SOLIDS :</b> 11.15 mg/L	37.2	30 mg/L
<b>SUSPENDED SOLIDS :</b> 649.27 lbs	81.1	801 lbs
<b>cB.O.D. :</b> 4.51 mg/L	18.1	25 mg/L
<b>PHOSPHORUS :</b> 0.20 mg/L	19.9	1 mg/L
<b>AMMONIA-N :</b> 0.24 mg/L	2.4	10 mg/L
<b>CHLORIDES :</b> 466.67 mg/L		

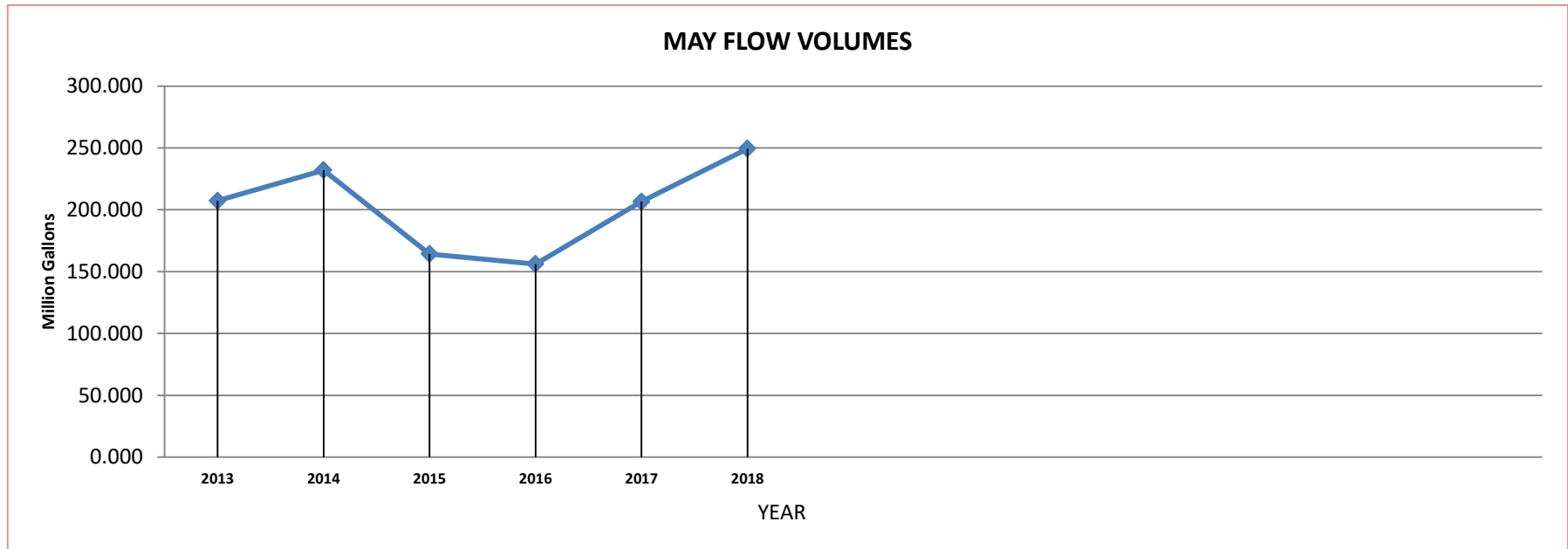
**FOX ENERGY CENTER PUMPED:** 59,283,000 GALLONS

Effluent to Fox Energy  
**24%**

\* INCLUDES HAULED WASTE

# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

<u>Year</u>	<u>May Flow Million Gallons</u>	<u>Precipitation Inches</u>
2013	207.246	2.76
2014	231.951	3.03
2015	164.246	3.44
2016	156.148	2.52
2017	206.521	2.88
2018	249.379	3.71





# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

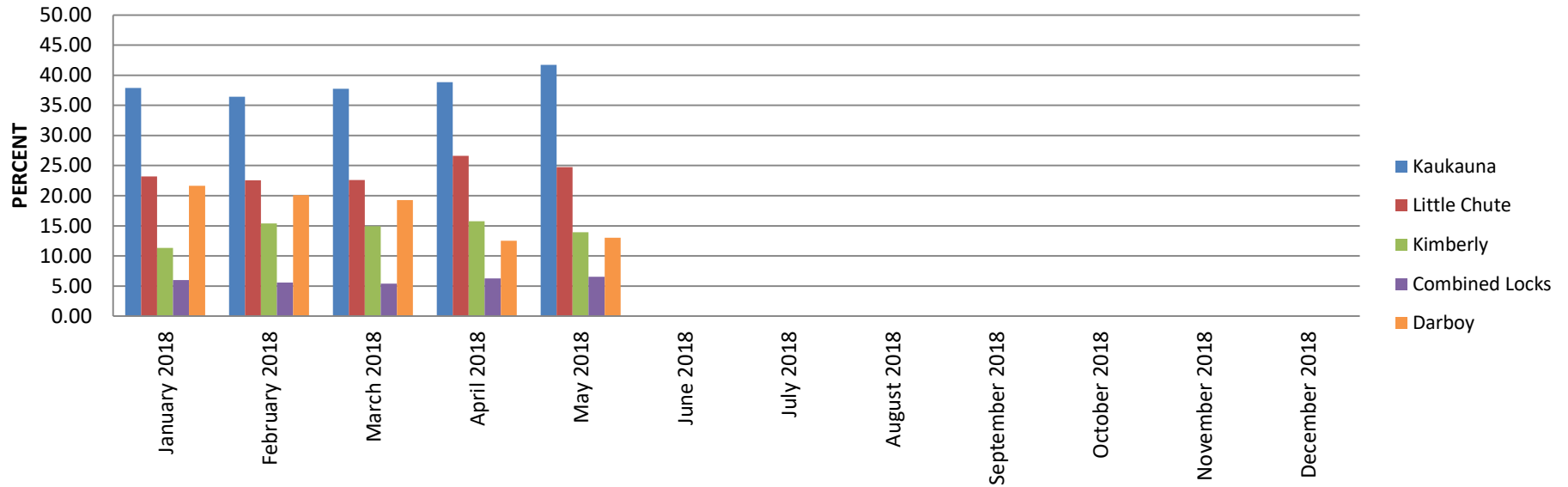
## % CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>	<u>Rainfall - Inches</u>
January 2018	37.87	23.18	11.32	5.97	21.65	0.60
February 2018	36.41	22.54	15.39	5.58	20.08	0.00
March 2018	37.77	22.61	14.95	5.41	19.26	0.63
April 2018	38.85	26.62	15.77	6.25	12.51	1.02
May 2018	41.70	24.77	13.94	6.55	13.04	3.71
June 2018						
July 2018						
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December 2018						

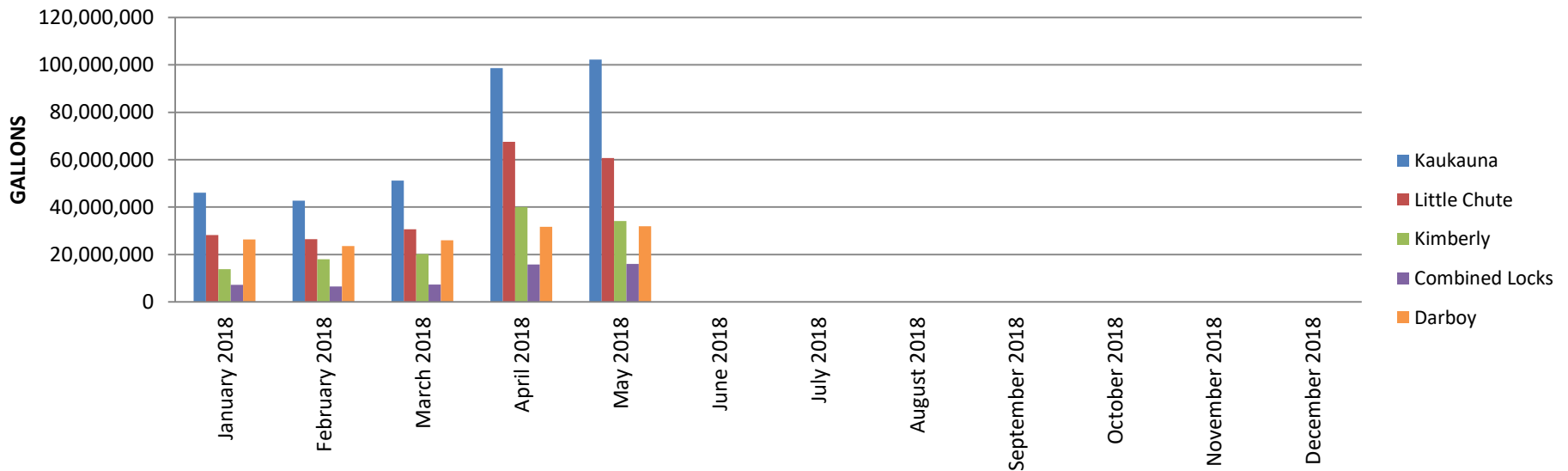
## GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	46,099,140	28,215,000	13,781,000	7,268,000	26,355,000
February 2018	42,761,360	26,468,000	18,068,000	6,547,000	23,585,000
March 2018	51,131,810	30,606,000	20,240,000	7,321,000	26,073,000
April 2018	98,618,990	67,582,000	40,021,000	15,865,000	31,749,000
May 2018	102,220,860	60,725,000	34,166,000	16,054,000	31,969,000
June 2018					
July 2018					
August 2018					
September 2018					
October 2018					
November 2018					
December 2018					

**% CONTRIBUTION BY COMMUNITY - FLOW GALLONS**



**GALLONS CONTRIBUTION BY COMMUNITY - FLOW GALLONS**



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

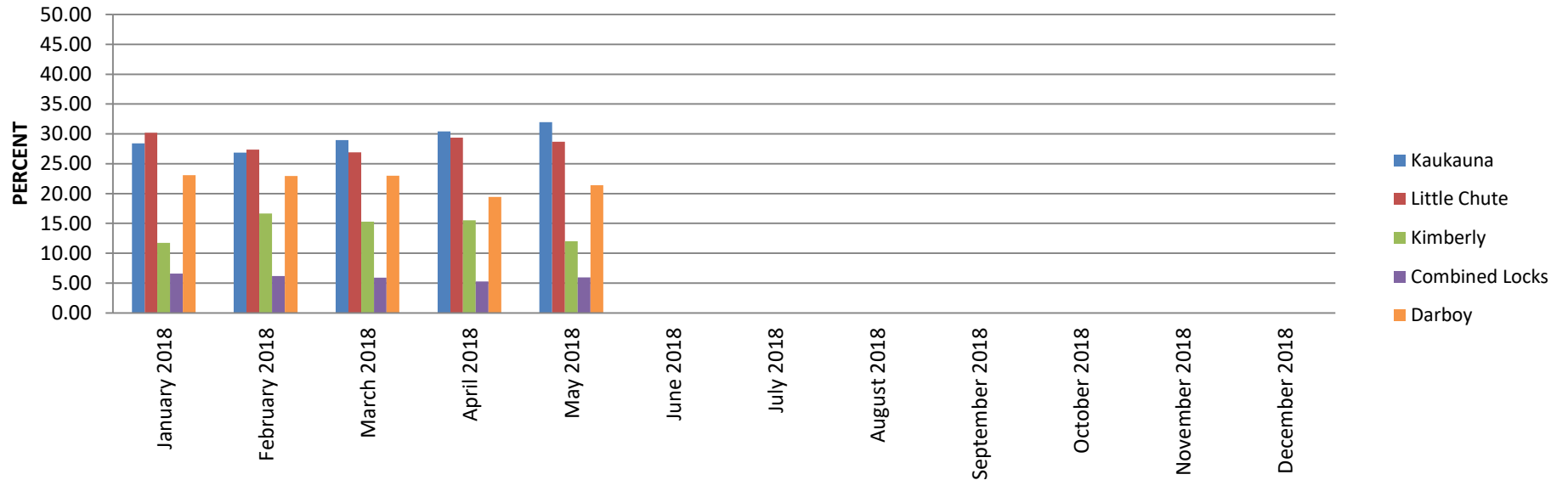
## % CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	28.42	30.18	11.73	6.60	23.07
February 2018	26.85	27.36	16.67	6.19	22.93
March 2018	28.94	26.89	15.29	5.90	22.98
April 2018	30.40	29.35	15.53	5.29	19.42
May 2018	31.97	28.68	12.00	5.94	21.41
June 2018					
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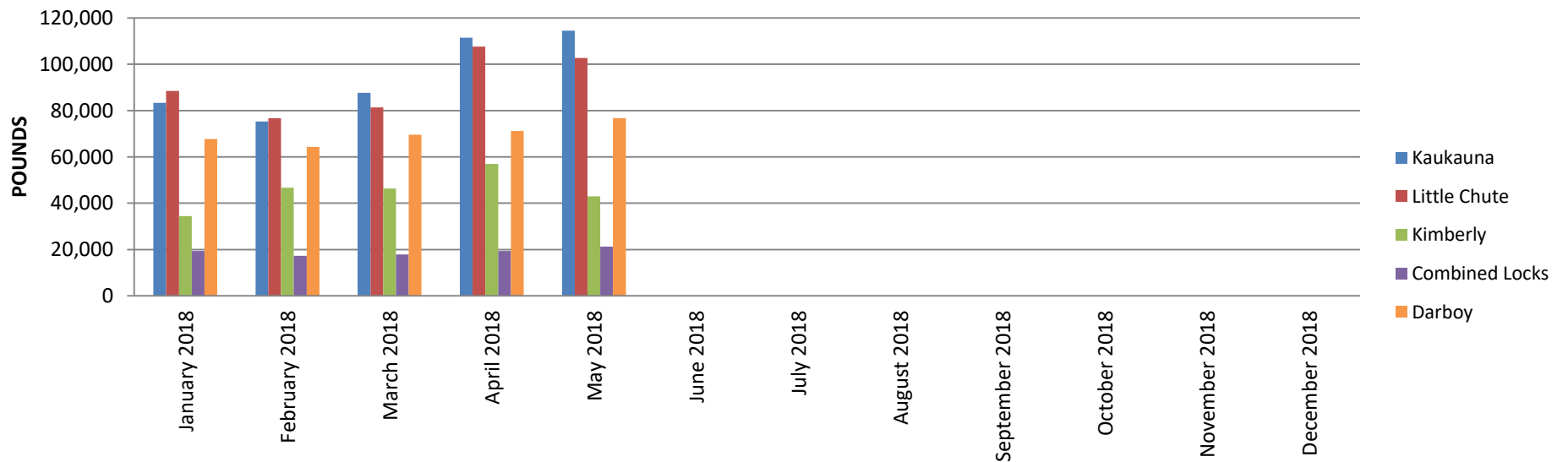
## POUNDS CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	83,358	88,512	34,420	19,362	67,661
February 2018	75,247	76,661	46,699	17,352	64,259
March 2018	87,606	81,400	46,292	17,857	69,552
April 2018	111,405	107,553	56,921	19,377	71,170
May 2018	114,432	102,670	42,942	21,259	76,640
June 2018					
July 2018					
August 2018					
September 2018					
October 2018					
November 2018					
December 2018					

## % CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - B.O.D. POUNDS





# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

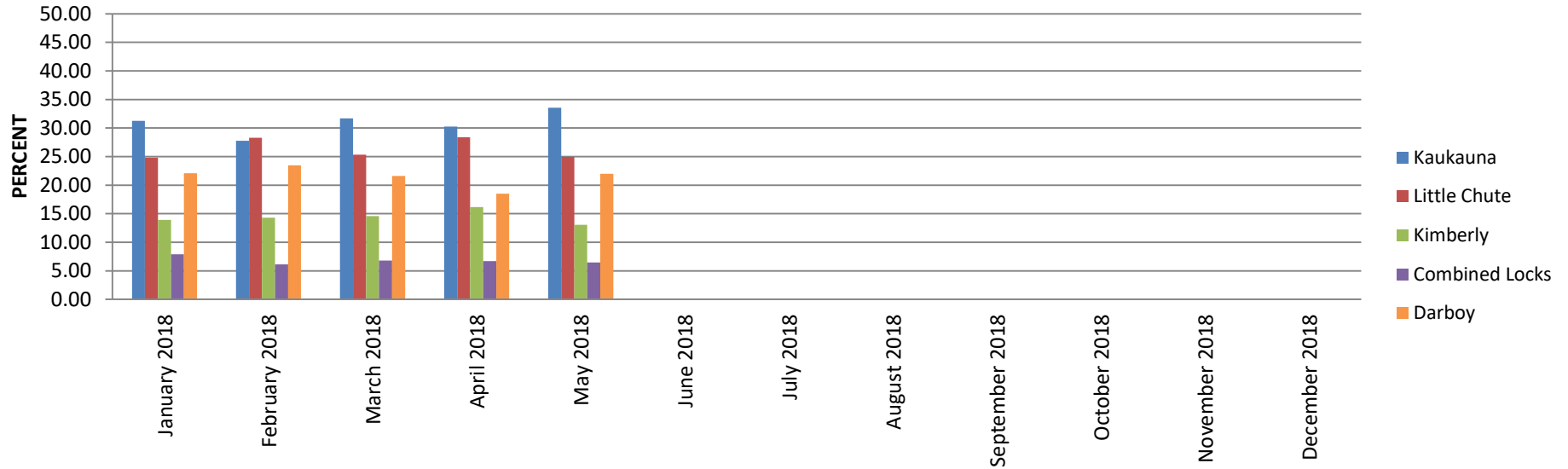
## % CONTRIBUTION BY COMMUNITY -TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	31.24	24.81	13.94	7.91	22.10
February 2018	27.78	28.30	14.32	6.15	23.45
March 2018	31.67	25.34	14.58	6.82	21.59
April 2018	30.25	28.41	16.15	6.69	18.50
May 2018	33.55	24.96	13.05	6.47	21.97
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December 2018					

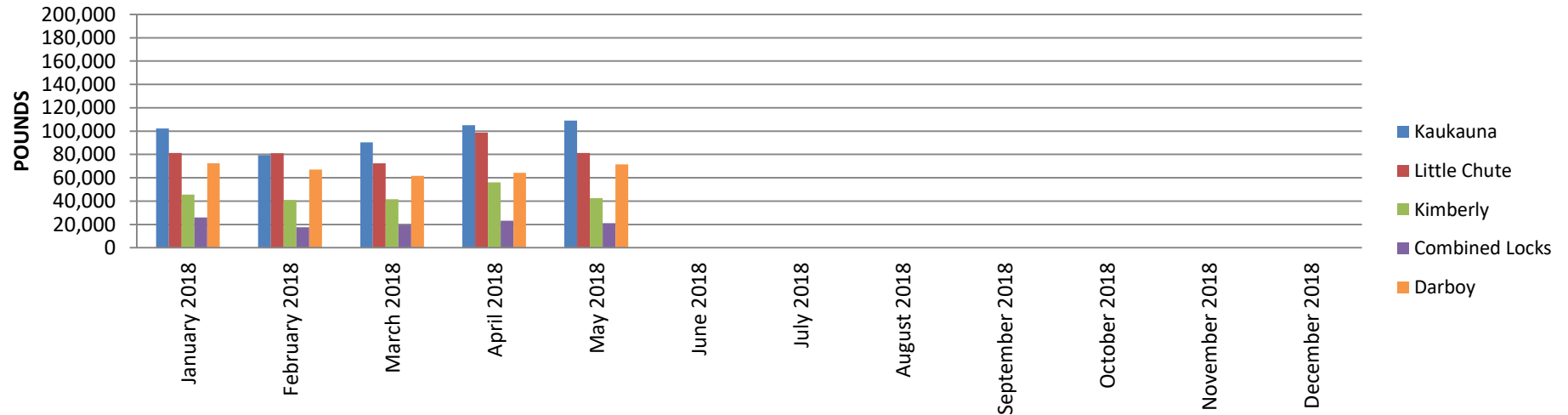
## POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	102,297	81,227	45,639	25,895	72,372
February 2018	79,448	80,940	40,972	17,598	67,074
March 2018	90,343	72,301	41,602	19,470	61,582
April 2018	105,064	98,675	56,092	23,255	64,262
May 2018	109,090	81,176	42,441	21,055	71,429
June 2018					
July 2018					
August 2018					
September 2018					
October 2018					
November 2018					
December 2018					

## % CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - TOTAL SUSPENDED SOLIDS POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

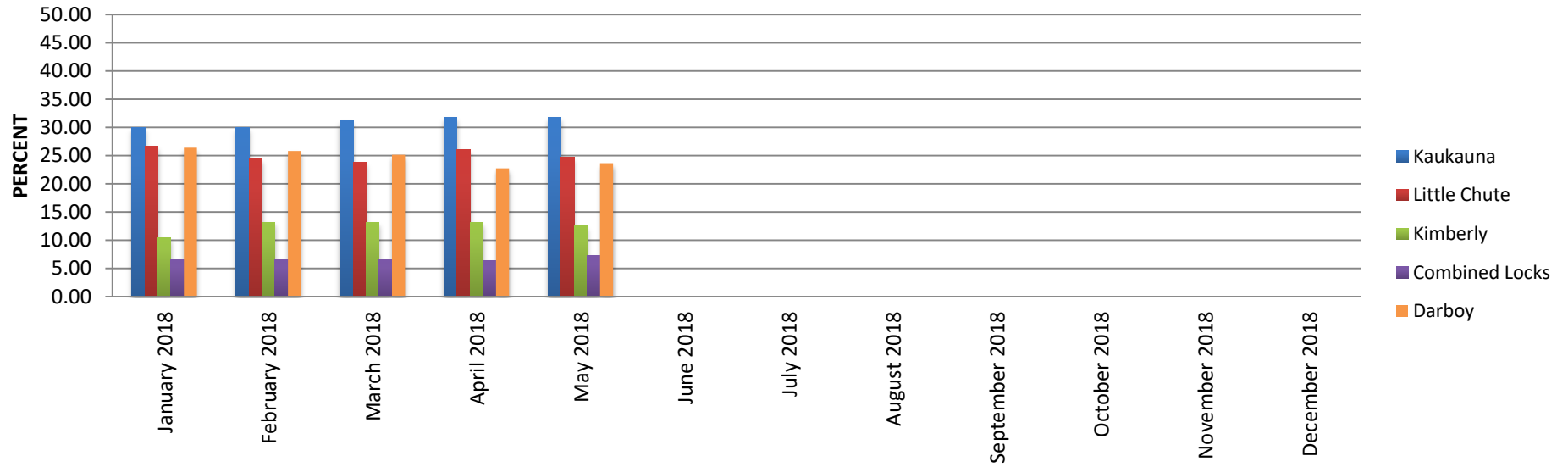
## % CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	29.96	26.61	10.44	6.60	26.40
February 2018	29.98	24.42	13.22	6.58	25.80
March 2018	31.22	23.87	13.16	6.59	25.16
April 2018	31.70	26.02	13.19	6.36	22.73
May 2018	31.84	24.70	12.59	7.24	23.63
June 2018					
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December 2018					

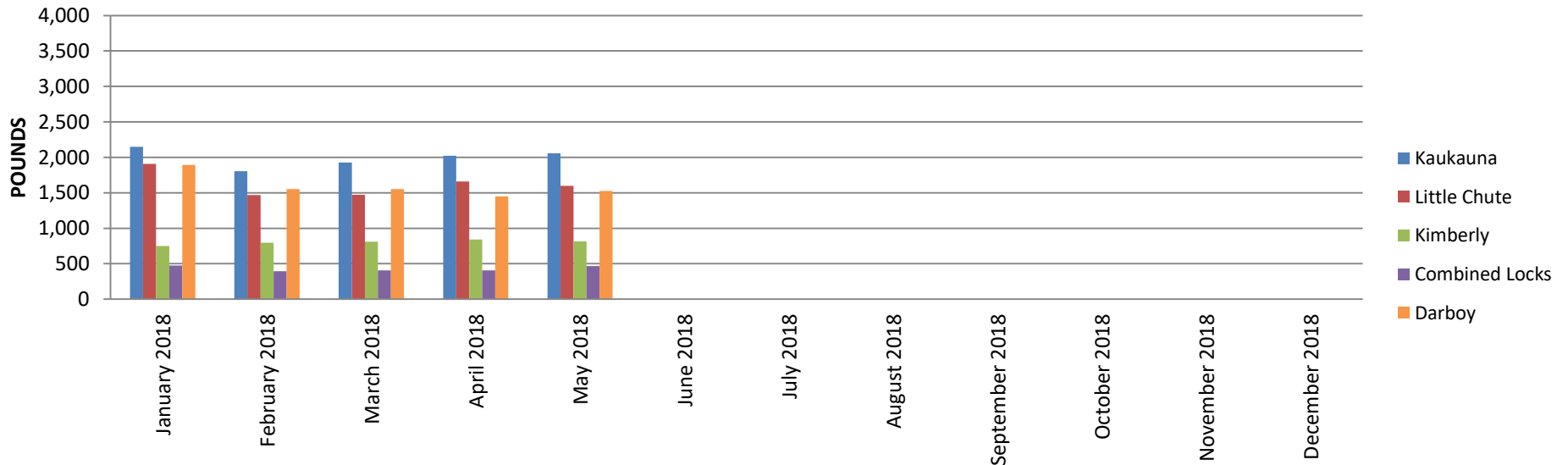
## POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	2,150	1,910	749	474	1,895
February 2018	1,805	1,470	796	396	1,553
March 2018	1,927	1,474	812	407	1,553
April 2018	2,021	1,659	841	406	1,449
May 2018	2,058	1,597	814	468	1,527
June 2018					
July 2018					
August 2018					
September 2018					
October 2018					
November 2018					
December 2018					

## % CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - PHOSPHORUS POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

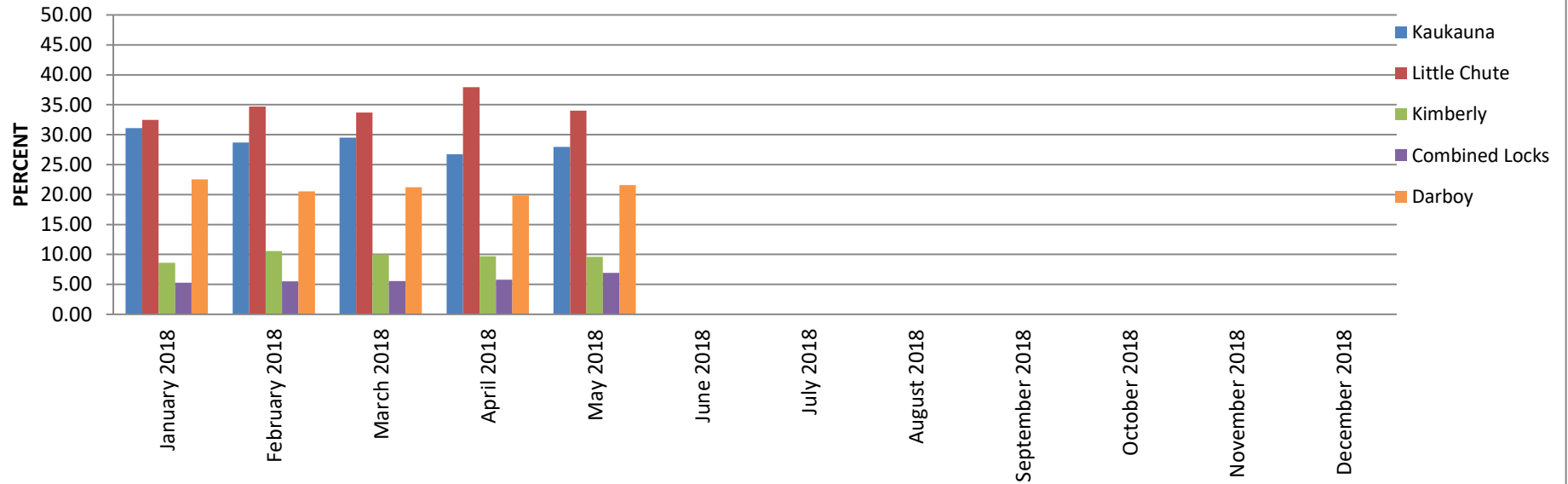
## % CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	31.10	32.48	8.61	5.26	22.55
February 2018	28.69	34.71	10.57	5.49	20.54
March 2018	29.51	33.70	10.03	5.56	21.20
April 2018	26.73	37.94	9.69	5.78	19.86
May 2018	27.95	34.00	9.58	6.91	21.56
June 2018					
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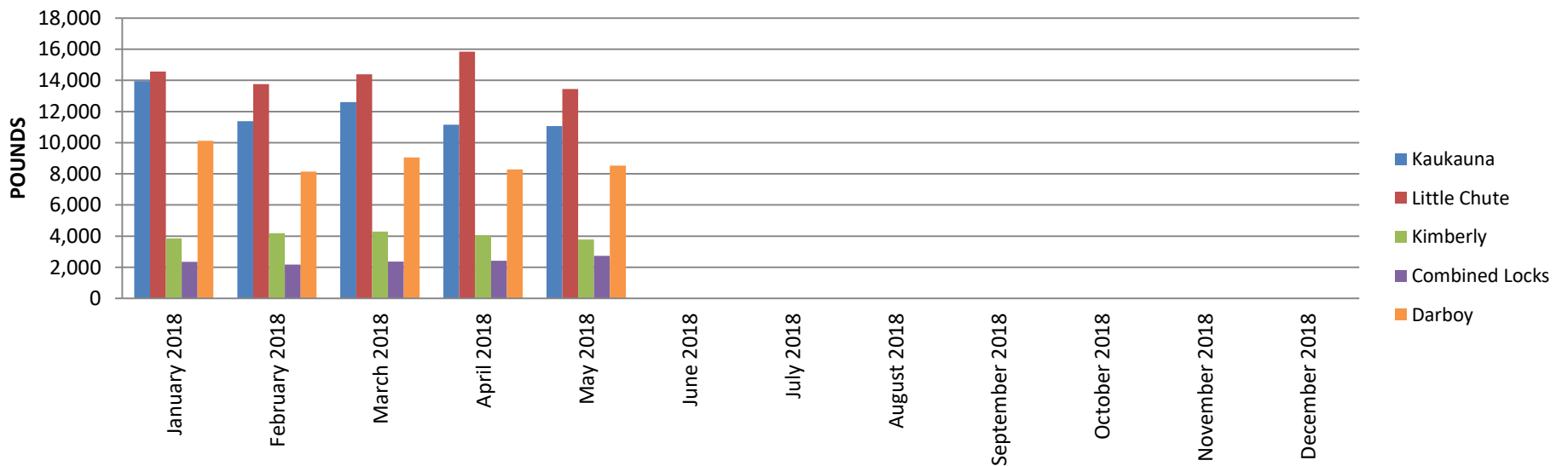
## POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	13,947	14,563	3,860	2,358	10,111
February 2018	11,375	13,761	4,191	2,176	8,142
March 2018	12,606	14,396	4,286	2,373	9,054
April 2018	11,159	15,835	4,044	2,413	8,291
May 2018	11,061	13,452	3,793	2,734	8,530
June 2018					
July 2018					
August 2018					
September 2018					
October 2018					
November 2018					
December 2018					

## % CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS



## POUNDS CONTRIBUTION BY COMMUNITY - AMMONIA POUNDS



# HEART OF THE VALLEY METROPOLITAN SEWERAGE DISTRICT

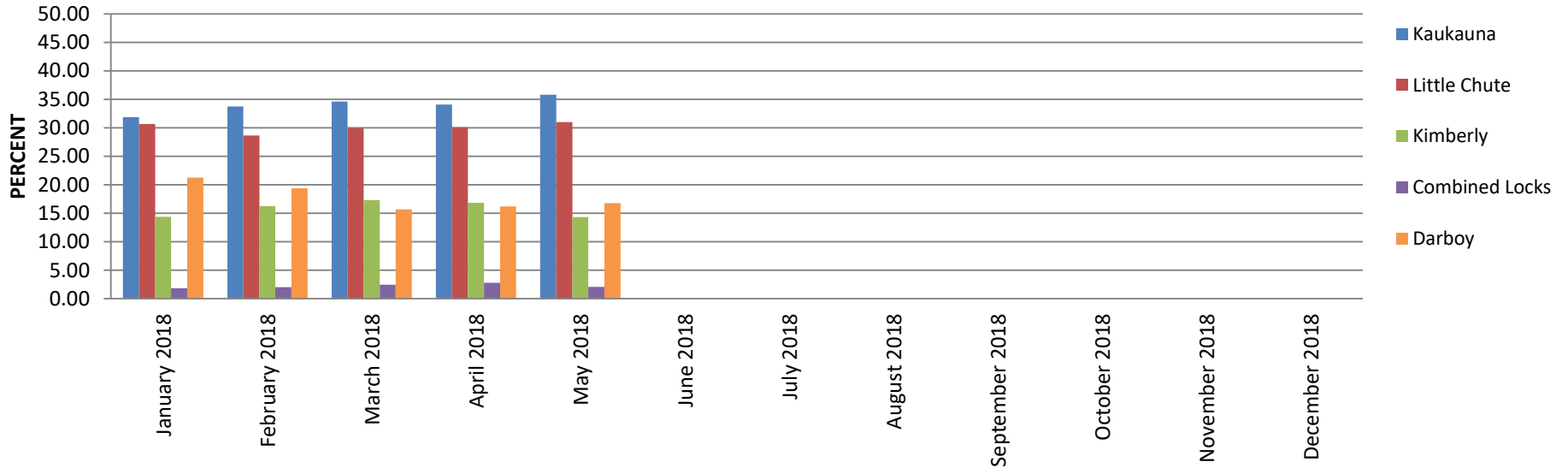
## % CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	31.85	30.69	14.39	1.82	21.26
February 2018	33.73	28.65	16.24	2.03	19.36
March 2018	34.62	29.96	17.30	2.45	15.66
April 2018	34.09	30.08	16.81	2.81	16.21
May 2018	35.79	31.00	14.35	2.07	16.79
June 2018					
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November 2018					
December 2018					

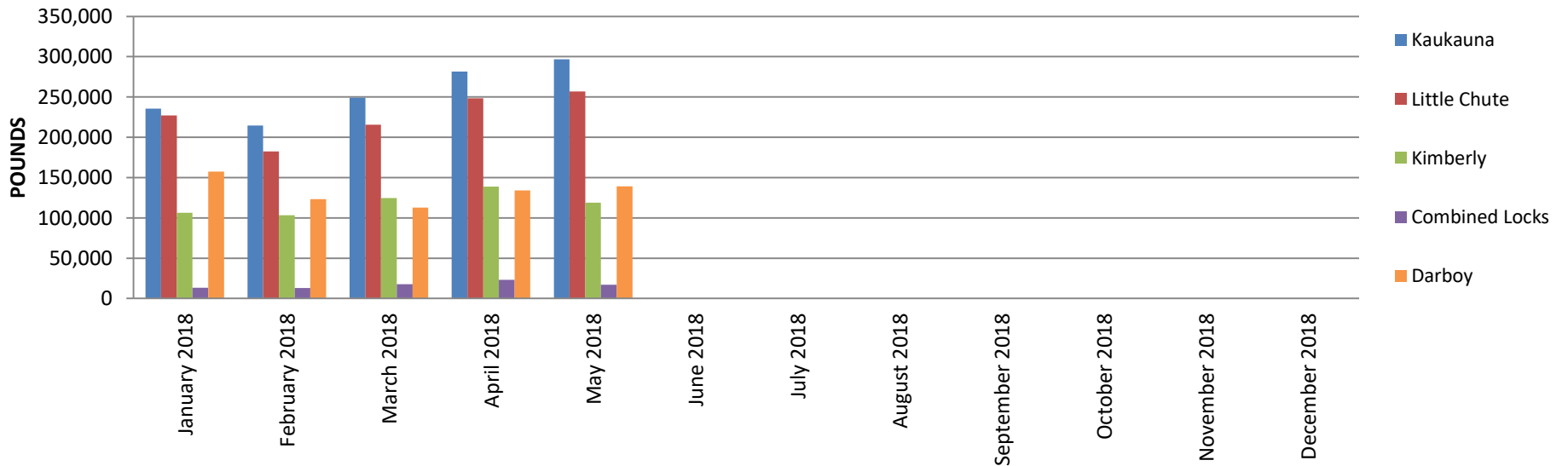
## POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS

	<u>Kaukauna</u>	<u>Little Chute</u>	<u>Kimberly</u>	<u>Combined Locks</u>	<u>Darboy</u>
January 2018	235,615	226,992	106,418	13,443	157,237
February 2018	214,675	182,327	103,385	12,914	123,204
March 2018	249,175	215,698	124,537	17,668	112,756
April 2018	281,686	248,544	138,915	23,201	133,966
May 2018	296,681	256,956	118,993	17,174	139,138
June 2018					
July 2018					
August 2018					
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October 2018					
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December 2018					

## % CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS



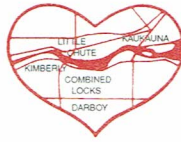
## POUNDS CONTRIBUTION BY COMMUNITY - CHLORIDE POUNDS





**DISTRICT DIRECTOR:**

Brian M. Helminger

**COMMISSIONERS:**

David J. Casper, President  
 Bruce M. Siebers, Vice-Pres.  
 Patrick E. Hennessey, Secretary  
 Kevin P. Coffey  
 John W. Sundelius

**SERVING:**

Combined Locks  
 Kaukauna  
 Kimberly  
 Little Chute  
 Darboy S.D.

**Heart of the Valley****METROPOLITAN SEWERAGE DISTRICT**

801 THILMANY ROAD  
 KAUKAUNA, WISCONSIN 54130  
 (920) 766-5731 FAX (920) 766-5733  
 www.hvmsd.org

**Facility:** Wisconsin Public Service Corporation - Fox Energy Center  
 P.O. Box 5651  
 Bismarck, ND 58506

**Attn:** Account # N2310E

**Month:** May

**Year:** 2018

## Gallons of Final Effluent Purchased (Billing)

<u>Date</u>	<u>Gallons</u>	<u>Date</u>	<u>Gallons</u>
5/1/2018	0	5/21/2018	3,286,000
5/2/2018	0	5/22/2018	3,460,000
5/3/2018	0	5/23/2018	3,217,000
5/4/2018	0	5/24/2018	3,143,000
5/5/2018	0	5/25/2018	3,167,000
5/6/2018	0	5/26/2018	3,388,000
5/7/2018	0	5/27/2018	3,550,000
5/8/2018	0	5/28/2018	3,602,000
5/9/2018	0	5/29/2018	3,598,000
5/10/2018	0	5/30/2018	3,663,000
5/11/2018	697,000	5/31/2018	3,732,000
5/12/2018	742,000		
5/13/2018	753,000		
5/14/2018	1,092,000	<b>Total:</b>	59,283,000
5/15/2018	2,608,000		
5/16/2018	3,065,000		
5/17/2018	3,379,000		
5/18/2018	3,025,000		
5/19/2018	3,021,000		
5/20/2018	3,095,000		

**Facility:** Wisconsin Public Service Corporation - Fox Energy Center  
P.O. Box 5651  
Bismarck, ND 58506

**Attn:** Account # N2310E

## **MONTHLY BILLING**

**Month:** May

**Year:** 2018

**GALLONS PURCHASED:** 59,283,000

**BILLING RATE:** \$0.1532146 PER 1000 GALLONS

**TOTAL AMOUNT DUE: \$9,083.02**

**Heart of the Valley  
Metropolitan Sewerage District**

**Fox Energy Revenue  
From the Sale of Final Effluent**

**2018**

**Final Effluent Sent to Fox Energy Facility**

**Gallons: 305,230,000**

**Charge Per 1000 Gallons: \$0.1532146 Per 1000 Gallons**

**Sale of Final Effluent (Revenue Collected): \$46,765.69**