

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: January 2017
Number of Days in Month: 31

Metered Volumes

Date	Pump 1	Pump 2
1/31/2017=	38423650	34462190
1/1/2017=	<u>28730340</u>	<u>26908000</u>
Totals in Gallons	9693310	7554190

Lift Station 5 Volume 9693310 + 7554190 = 17247500 Gallons

Monthly Average Daily Flow $\frac{17247500}{31} = \underline{556370.97}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
1/31/2017=	4269.6	3996.4
1/1/2017=	<u>4017.3</u>	<u>3816.2</u>
Totals in Hours	252.3	180.2

	Pump 1	Pump 2
Hours x	252.3	180.2
GPM average x	640.2	698.6
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	9691348	7553263

Percent Difference

Pump 1 $\frac{9691348 - 9693310}{9693310} = 0.0\%$ calculated volume is less than metered volume

Pump 2 $\frac{7553263 - 7554190}{7554190} = 0.0\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for January 2017

Total Volume Recorded at Lift Station 5: 17,247,500 Gallons

Monthly Average Daily Flow: 556,371 Gallons

Reporting Dates: January 1 through 31
Number of Days: 31

Rainfall Estimate: 11.5"

Comments: No Can-17 injected during the month of January

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 = 9,693,310 Gallons
Meter 2 = 7,554,190 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: February 2017
Number of Days in Month: 28

Metered Volumes

Date	Pump 1	Pump 2
2/28/2017=	46943280	40775750
2/1/2017=	<u>38423650</u>	<u>34462190</u>
Totals in Gallons	8519630	6313560

Lift Station 5 Volume 8519630 + 6313560 = 14833190 Gallons

Monthly Average Daily Flow $\frac{14833190}{28} = \underline{529756.79}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
2/28/2017=	4483.1	4143.0
2/1/2017=	<u>4269.6</u>	<u>3996.4</u>
Totals in Hours	213.5	146.6

	Pump 1	Pump 2
Hours x	213.5	146.6
GPM average x	665.4	718
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	8523774	6315528

Percent Difference

Pump 1 $\frac{8523774 - 8519630}{8519630} = 0.0\%$ calculated volume is greater than metered volume

Pump 2 $\frac{6315528 - 6313560}{6313560} = 0.0\%$ calculated volume is greater than metered volume



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Cayucos Sanitary District Monthly Flow Report for February 2017

Total Volume Recorded at Lift Station 5: 14,833,190 Gallons

Monthly Average Daily Flow: 529,757 Gallons

Reporting Dates: February 1 through 28

Number of Days: 28

Rainfall Estimate: 6.6"

Comments: Can-17 at 20gpd

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 = 8,519,630 Gallons

Meter 2 = 6,313,560 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: March 2017
Number of Days in Month: 31

Metered Volumes

Date	Pump 1	Pump 2
3/31/2017=	51774520	45352560
3/1/2017=	<u>46943280</u>	<u>40775750</u>
Totals in Gallons	4831240	4576810

Lift Station 5 Volume 4831240 + 4576810 = 9408050 Gallons

Monthly Average Daily Flow $\frac{9408050}{31} = \underline{303485.48}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
3/31/2017=	4596.2	4246.2
3/1/2017=	<u>4483.1</u>	<u>4143.0</u>
Totals in Hours	113.1	103.2

	Pump 1	Pump 2
Hours x	113.1	103.2
GPM average x	712.3	731.7
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	4833668	4530686

Percent Difference

Pump 1 $\frac{4833668 - 4831240}{4831240} = 0.1\%$ calculated volume is greater than metered volume

Pump 2 $\frac{4530686 - 4576810}{4576810} = -1.0\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for **March 2017**

Total Volume Recorded at Lift Station 5: 9,408,050 Gallons

Monthly Average Daily Flow: 303,485 Gallons

Reporting Dates: March 1 through 31
 Number of Days: 31

Rainfall Estimate: 1.4"

Comments: Ferrous Chloride set at ~ 7gpd

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 =	4,831,240	Gallons
Meter 2 =	4,576,810	Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: April 2017
Number of Days in Month: 30

Metered Volumes

Date	Pump 1	Pump 2
4/30/2017=	55998630	49400230
4/1/2017=	51774520	45352560
Totals in Gallons	4,224,110	4047670

Lift Station 5 Volume 4,181,060 + 4047670 = 8228730 Gallons

Monthly Average Daily Flow $\frac{8228730}{30} = \underline{274291}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
4/30/2017=	4691.9	4333.2
4/1/2017=	4596.2	4246.2
Totals in Hours	95.7	87.0

Calibration Formula		
	Line 1	Line 2
pre calibration	54,737,240	48,171,240
post calibration +	1,261,390	1,228,990
month total	55,998,630	49,400,230

	Pump 1	Pump 2
Hours x	95.7	87.0
GPM average x	739.3	761.12
Minutes/Hr	60	60
Total Gallonage	4245061	3973046

Sampling Formula	
active 1,410min @ 10gpm	14,100 gallons
static 5,790min @ 5gpm	28,950 gallons
	43,050 gallons
<u>4,224,110</u> - 43,050 =	4,181,060 gallons

Percent Difference

Pump 1 $\frac{4245061 - 4181060}{4224110} = 0.5\%$ calculated volume is greater than metered volume

Pump 2 $\frac{3973046 - 4047670}{4047670} = -1.8\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for April 2017

Total Volume Recorded at Lift Station 5: 8,228,730 Gallons

Monthly Average Daily Flow: 274,291 Gallons

Reporting Dates: April 1 through 30

Number of Days: 30

Rainfall Estimate: 1.4"

Comments: Ferrous Chloride set at ~ 5gpd

Ferrous Chloride was turned off over the days of 4/13/17-4/24/2017

Flow meters were calibrated on April 21st and flow meters were reset.

Sample collection occurred 4/16-4/21 = 120 hours of back flow from Line 1 force main into the well. Which results in a double metering of the same water. Static flow (pump off) into the well is 5gpm, and Active flow (the pump running) results in a 10gpm flow into the well.

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 = 4,181,060 Gallons

Meter 2 = 4,047,670 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: May 2017
Number of Days in Month: 31

Metered Volumes

Date	Pump 1	Pump 2
5/31/2017=	4965920	4803950
5/1/2017=	1261390	1228990
Totals in Gallons	<u>3704530</u>	<u>3574960</u>

Lift Station 5 Volume 3704530 + 3574960 = 7279490 Gallons

Monthly Average Daily Flow $\frac{7279490}{31} = \underline{234822.26}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
5/31/2017=	4776.6	4409.4
5/1/2017=	4691.9	4333.2
Totals in Hours	<u>84.7</u>	<u>76.2</u>

Sampling Formula

active 1,410min @ 10gpm 14,100 gallons
static 5,790min @ 5gpm 28,950 gallons
43,050 gallons

	Pump 1	Pump 2
Hours x	84.7	76.2
GPM average x	739.3	761.12
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	<u>3757123</u>	<u>3479841</u>

Percent Difference

Pump 1 $\frac{3757123 - 3704530}{3704530} =$

1.4 % calculated volume is greater than metered volume

Pump 2 $\frac{3479841 - 3574960}{3574960} =$

-2.7 % calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for May 2017

Total Volume Recorded at Lift Station 5: 7,279,490 **-43,050**
Total= 7,236,440 Gallons
Monthly Average Daily Flow: 234,822 Gallons

Reporting Dates: May 1 through 31
Number of Days: 31
Rainfall Estimate: .25"

Comments: Ferrous Chloride set at ~ 7gpd

Sample collection occurred 5/14-5/19 = 120 hours of back flow from
Line 1 force main into the well. Which results in a double metering
of the same water. Static flow (pump off) into the well is 5gpm, and
Active flow (the pump running) results in a 10gpm flow into the well.

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 = 3,704,530 Gallons
Meter 2 = 3,574,960 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: June 2017
Number of Days in Month: 30

Metered Volumes

Date	Pump 1	Pump 2
6/30/2017=	8693820	8425530
6/1/2017=	4965920	4803950
Totals in Gallons	<u>3727900</u>	<u>3621580</u>

Lift Station 5 Volume 3727900 + 3621580 = 7349480 Gallons

Monthly Average Daily Flow $\frac{7349480}{30} = \underline{244982.67}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
6/30/2017=	4862.4	4486.8
6/1/2017=	4776.6	4409.4
Totals in Hours	<u>85.8</u>	<u>77.4</u>

Sampling Formula

active 1,410min @ 10gpm 14,100 gallons
static 5,790min @ 5gpm 28,950 gallons
43,050 gallons

	Pump 1	Pump 2
Hours x	85.8	77.4
GPM average x	730.0	767.86
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	<u>3758040</u>	<u>3565942</u>

Percent Difference

Pump 1 $\frac{3758040 - 3727900}{3727900} = 0.8\%$ calculated volume is greater than metered volume

Pump 2 $\frac{3565942 - 3621580}{3621580} = -1.5\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for June 2017

Total Volume Recorded at Lift Station 5: 7,349,480 **-43,050**
Total= 7,306,430 Gallons
Monthly Average Daily Flow: 244,983 Gallons

Reporting Dates: June 1 through 30
Number of Days: 30
Rainfall Estimate: 0

Comments: Ferrous Chloride set at ~ 7gpd
Sample collection occurred 6/25-6/30 = 120 hours of back flow from
Line 1 force main into the well. Which results in a double metering
of the same water. Static flow (pump off) into the well is 5gpm, and
Active flow (the pump running) results in a 10gpm flow into the well.

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:
Meter 1 = 3,727,900 Gallons
Meter 2 = 3,621,580 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: July 2017
Number of Days in Month: 31

Metered Volumes

Date	Pump 1	Pump 2
7/31/2017=	13302790	12785170
7/1/2017=	<u>8693820</u>	<u>8425530</u>
Totals in Gallons	4608970	4359640

Lift Station 5 Volume 4608970 + 4359640 = 8968610 Gallons

Monthly Average Daily Flow $\frac{8968610}{31} = \underline{289310}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
7/31/2017=	4968.8	4581.2
7/1/2017=	<u>4862.4</u>	<u>4486.8</u>
Totals in Hours	106.4	94.4

	Pump 1	Pump 2
Hours x	106.4	94.4
GPM average x	725.4	763.8
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	4630698	4326163

Percent Difference

Pump 1 $\frac{4630698 - 4608970}{4608970} = 0.5\%$ calculated volume is greater than metered volume

Pump 2 $\frac{4326163 - 4359640}{4359640} = -0.8\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for July 2017

Total Volume Recorded at Lift Station 5: 8,968,610

Monthly Average Daily Flow: 289,310 Gallons

Reporting Dates: July 1 through 31

Number of Days: 31

Rainfall Estimate: 0

Comments: Ferrous Chloride set at ~ 7gpd

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 = 4,608,970 Gallons

Meter 2 = 4,359,640 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: August 2017
Number of Days in Month: 31

Metered Volumes

Date	Pump 1	Pump 2
8/31/2017=	16871240	16206830
8/1/2017=	13302790	12785170
Totals in Gallons	3568450	3421660

Lift Station 5 Volume 3568450 + 3421660 = 6990110 Gallons

Monthly Average Daily Flow $\frac{6990110}{31} = \underline{225487.42}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
8/31/2017=	5052.3	4656.1
8/1/2017=	4968.8	4581.2
Totals in Hours	83.5	74.9

Sampling Formula

active 576 min @ 10gpm 5,760 gallons
static 6,624 min @ 5gpm 33,120 gallons
38,880 gallons

	Pump 1	Pump 2
Hours x	83.5	74.9
GPM average x	715.6	757.9
Minutes/Hr	60	60
Total Gallonage	3585156	3406003

Percent Difference

Pump 1 $\frac{3585156 - 3568450}{3568450} = 0.5\%$ calculated volume is greater than metered volume

Pump 2 $\frac{3406003 - 3421660}{3421660} = -0.5\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for August 2017

Total Volume Recorded at Lift Station 5: 6,990,110 **-38,880**
6,951,230 Gallons

Monthly Average Daily Flow: 225,487 Gallons

Reporting Dates: August 1 through 31
Number of Days: 31

Rainfall Estimate: 0

Comments: Ferrous Chloride set at ~ 7gpd

Sample collection occurred 8/27-9/1 = 120 hours of back flow from
Line 1 force main into the well. Which results in a double metering
of the same water. Static flow (pump off) into the well is 5gpm, and
Active flow (the pump running) results in a 10gpm flow into the well.

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 = 3,568,450 Gallons
Meter 2 = 3,421,660 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: October 2017
Number of Days in Month: 31

Metered Volumes

Date	Pump 1	Pump 2
10/31/2017=	24952190	20184150
10/1/2017=	<u>20027890</u>	<u>19226970</u>
Totals in Gallons	4924300	957180

Lift Station 5 Volume 4924300 + 957180 = 5881480 Gallons

Monthly Average Daily Flow $\frac{5881480}{31} = \underline{189725.16}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
10/31/2017=	5242.5	4743.7
10/1/2017=	<u>5126.4</u>	<u>4722.6</u>
Totals in Hours	116.1	21.1

	Pump 1	Pump 2
Hours x	116.1	21.1
GPM average x	702.4	748.3
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	4892918	947347.8

Percent Difference

Pump 1 $\frac{4892918 - 4924300}{4924300} = -0.6\%$ calculated volume is less than metered volume

Pump 2 $\frac{947347.8 - 957180}{957180} = -1.0\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for **October 2017**

Total Volume Recorded at Lift Station 5: 5,881,480

Monthly Average Daily Flow: 189,725 Gallons

Reporting Dates: October 1 through 31
Number of Days: 31
Rainfall Estimate: 0.18"

Comments: Ferrous Chloride set at ~ 7gpd

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:
Meter 1 = 4,924,300 Gallons
Meter 2 = 957,180 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: November 2017
Number of Days in Month: 30

Metered Volumes

Date	Pump 1	Pump 2
11/30/2017=	27414260	23464320
11/1/2017=	<u>24952190</u>	<u>20184150</u>
Totals in Gallons	2462070	3280170

Lift Station 5 Volume 2462070 + 3280170 = 5742240 Gallons

Monthly Average Daily Flow $\frac{5742240}{30} = \underline{191408}$ Gallons/Day

Calculated Volumes

Sampling Formula

	Pump 1	Pump 2	
11/30/2017=	5301.0	4815.7	active 1,194 min @ 10gpm 11,940 gallons
11/1/2017=	<u>5242.5</u>	<u>4743.7</u>	static 6,006 min @ 5gpm 30,030 gallons
Totals in Hours	58.5	72.0	41,970 gallons

	Pump 1	Pump 2
Hours x	58.5	72.0
GPM average x	700.1	754.2
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	2457351	3258144

Percent Difference

Pump 1 $\frac{2457351 - 2462070}{2462070} = -0.2\%$ calculated volume is less than metered volume

Pump 2 $\frac{3258144 - 3280170}{3280170} = -0.7\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for November 2017

Total Volume Recorded at Lift Station 5: 5,742,240 -41,970
5,700,270 gallons total

Monthly Average Daily Flow: 191,408 Gallons

Reporting Dates: November 1 through 30

Number of Days: 30

Rainfall Estimate: 0.7"

Comments: Sample collection occurred 11/13-11/17 = 120 hours of back flow from Line 2 force main into the well. Which results in a double metering of the same water. Static flow (pump off) into the well is 5gpm, and Active flow (the pump running) results in a 10gpm flow into the well. Total flow double pumped was 41,970 gallons.

Pump #2 placed back into operation on 11/6 and programmed as Lead Pump until 11/17

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 = 2,462,070 Gallons
Meter 2 = 3,280,170 Gallons

Cayucos Sanitary District
Lift Station 5 Flow Calculations

Reporting Month/Year: December 2017
Number of Days in Month: 31

Metered Volumes

Date	Pump 1	Pump 2
12/31/2017=	28934320	27674870
12/1/2017=	<u>27414260</u>	<u>23464320</u>
Totals in Gallons	1520060	4210550

Lift Station 5 Volume 1520060 + 4210550 = 5730610 Gallons

Monthly Average Daily Flow $\frac{5730610}{31} = \underline{184858.39}$ Gallons/Day

Calculated Volumes

	Pump 1	Pump 2
12/31/2017=	5339.0	4906.4
12/1/2017=	<u>5301.0</u>	<u>4815.7</u>
Totals in Hours	38.0	90.7

Sampling Formula

active 585 min @ 10gpm 5,850 gallons
static 6,615 min @ 5gpm 33,075 gallons
38,925 gallons

	Pump 1	Pump 2
Hours x	38.0	90.7
GPM average x	668.1	758.68
Minutes/Hr	<u>60</u>	<u>60</u>
Total Gallonage	1523268	4128737

Percent Difference

Pump 1 $\frac{1523268 - 1520060}{1520060} = 0.2\%$ calculated volume is greater than metered volume

Pump 2 $\frac{4128737 - 4210550}{4210550} = -1.9\%$ calculated volume is less than metered volume



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Cayucos Sanitary District Monthly Flow Report for December 2017

Total Volume Recorded at Lift Station 5: 5,730,610 **-38,925**
5,691,685 gallons

Monthly Average Daily Flow: 184,858 Gallons

Reporting Dates: December 1 through 31
Number of Days: 31

Rainfall Estimate: 0

Comments: Sample collection occurred 12/3-12/8 = 120 hours of back flow from Line 2 force main into the well. Which results in a double metering of the same water. Static flow (pump off) into the well is 5gpm, and Active flow (the pump running) results in a 10gpm flow into the well. Total flow double pumped was 38,925 gallons.

Reporting Period Volumes for Meters 1 and 2 at Lift Station 5:

Meter 1 = 1,520,060 Gallons
Meter 2 = 4,210,550 Gallons