Neptune Terminals Dust Suppression System Upgrade

Port of Vancouver Permit Application # 16-072

Energy Efficiency Study

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1.0 Introduction

Neptune Terminals is applying for a Permit with the Port of Vancouver for a Dust Suppression System Upgrade Project. The intent of this project is to provide the best in class dust suppression system for our coal stockpile, by proactively making this environmental improvement.

2.0 Energy Savings Calculations

Neptune has enlisted PBX Engineering to assist in this Energy Efficiency Study. PBX has created two documents in support of this PER process:

Appendix A: Spray Pole Upgrade Projected Energy Savings Summary

Appendix B: BC Hydro Energy Savings Calculator

The BC Hydro Energy Savings Calculator did not have the possibility to add in pump and heat trace information with ease so the summary page was added for simplicity.

2.1 Assumptions

There were several assumptions made in order to complete these calculations. As discussed in previous submittals to the Port, the precise energy usage of even the existing system is difficult to estimate due to the following factors:

- The lights turn on and off on a photocell so each day they are on for a different period of time depending on the weather and on the season
- The pumps are only used when the algorithm calls for the spray poles to be turned on, and the algorithm looks at environmental factors like rainfall, humidity, and wind

Therefore, the following assumptions were used in filling out the BC Hydro Energy Savings Spreadsheet and estimating the energy usage of the booster pumps:

1) Pump operation hours were not available, but daily water usage is something that is recorded in our systems. The operation hours of the pumps were estimated by dividing the water usage by 200 gal/min. Although this is not a precise value for pump operation it is the closest we can get at this time
2) Water usage data for Group 1 of our spray poles was available, but not water usage data for Group 2 or Group 3. The pump running time for Group 1 was calculated as above, and then it was assumed that the pumps for Group 2 and Group 3 ran the same number of hours as the Group 1 pumps did

3) The heat trace energy calculation is based on an average of 41 days per year of freezing temperatures
4) The projected annual cost savings is based on an energy rate of 5¢/kWh since the exact rate for Neptune is only known to certain people within the organization

2.2 Results

With the assumptions made in Section 2.1 and the data available, it is projected that by upgrading Neptune's Dust Suppression System, an estimated 110,378 kWh will be saved every year.

Projected Energy Savings		
	Demand (kW)	Energy (kWh)
Spray Pole and Pumphouse Lighting	21.1	98,343
Spray Pole System Pumps	0	227
Spray Pole Heat Trace	12	11,808
Total	**33**	**110,378**

Figure 1: Projected Energy Savings (see Appendix A for more details)

In addition to Appendix A, please refer to Appendix B for the BC Hydro Energy Savings Calculator which was an aid in calculating the total kWh consumed each year.

3.0 Conclusion

Although it was not possible to get exact values for energy consumption, we were able to make several assumptions about the energy use of the existing and proposed systems and come up with an estimate. Based on these calculations it can be estimated that the proposed system will use less energy than the new system despite increasing the number of poles and lights. The proposed system is intended to improve dust suppression at Neptune's site, and if it can do so while simultaneously using less energy than the existing system then that is just extra incentive to get the project underway.

Neptune Terminals Dust Suppression System Upgrade

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Appendix A: Dust Suppression Upgrade Project Projected Energy Savings Summary

Existing System		
	Demand (kW)	**Energy (kWh)**
Spray Pole and Pumphouse Lighting	36.1	169,188
Spray Pole System Pumps	100	68,467
Spray Pole Heat Trace	12	11,808
Total	**148**	**249,463**

Proposed System		
	Demand (kW)	**Energy (kWh)**
Spray Pole and Pumphouse Lighting	15	70,845
Spray Pole System Pumps	100	68,240
Spray Pole Heat Trace	0	0
Total	**115**	**139,085**

Projected Energy Savings		
	Demand (kW)	**Energy (kWh)**
Spray Pole and Pumphouse Lighting	21.1	98,343
Spray Pole System Pumps	0	227
Spray Pole Heat Trace	12	11,808
Total	**33**	**110,378**

Projects Annual Cost Savings ($)		
Spray Pole and Pumphouse Lighting	$	4,917.15
Spray Pole System Pumps	$	11.37
Spray Pole Heat Trace	$	590.40
Total	**$**	**5,518.92**

Calculations for Existing and Proposed Pump Motor Electrical Loads

Existing Pumps

Pump	FLA	Qty.	Voltage	kVA	kWh	
40HP	45	2	480	74.82	51,180	
25HP	30.4	1	480	25.27	17,287	
				100.10	**68,467**	Total

Proposed Pumps

Pump	FLA	Qty.	Voltage	kVA	kWh	
30HP	40	3	480	99.77	**68,240**	

Notes:

1. Annual pump running hours is based on daily gallons used divided by approximate flow rate of 200 gal/min over period between October 2015 and October 2016 (total of 684 hours).
2. Heat trace running hours is based on Vancouver average of 41 days per year of freezing temperatures (0 degrees celsius or lower).
3. Project annual cost savings is based on energy rate of 5 cents/kWh.

Neptune Terminals Dust Suppression System Upgrade

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Energy Efficiency Study

Appendix B: BC Hydro Energy Savings Calculator

Energy Savings Report

BC Hydro Power Smart ES Lighting Calculator, version 7.0 - 2014.12.12

Consultant	**PBX**	
Customer	**Neptune**	
Project	**Neptune Bulk Terminals Dust Suppression Upgrade 2016**	
Site name / Site ID	**1001 Low Level Rd, North Vancouver, BC V7L 1A7**	
Project type	**Incentive Application**	
Blended energy rate (¢/kWh)	**5.0**	
Date	**9/1/2016**	
Annual energy consumption (kWh)		Missing Inf
% of Total Building Being Retrofit		Missing Inf

Project data

	Demand (kW)	Energy (kWh)
Existing system	36.1	169,188
Proposed system	15.0	70,845

	Demand (kW)		Energy (kWh)	
	Site	BC Hydro Peak	Site	Potentially incentable
Projected savings	**21.1**	**21.1**	**98,343**	**98,343**

Projected savings breakdown

	Estimated Demand Savings (kW)		Estimated Energy Savings (kWh)	
	Site	*BC Hydro Peak*	Site	*Potentially incentable*
T12 to T8 ES Lamp / HEF ballast retrofit	-	-	-	-
Non-LED lighting retrofit (incl. removal)	-	-	-	-
Fluorescent lamps only (incl. delamping)	-	-	-	-
HID lamps only	-	-	-	-
Halogen IR reflector lamps	-	-	-	-
LED screw-in/snap-in lamps	-	-	-	-
LED luminaire and retrofit kit	21.1	21.1	98,343	98,343
Exterior LED signage	-	-	-	-
LED exit signs	-	-	-	-
LED refrigerated lighting system per door	-	-	-	-
LED parkade lighting	-	-	-	-
Non-LED parkade lighting	-	-	-	-
No incentives	-	-	-	-
New Lighting Control	-	-	-	-
DDC Re-scheduling	-	-	-	-
LED Lighting with Adaptive/ Bi-Level Control	-	-	-	-
Non-LED Lighting with Adaptive/ Bi-Level Control	-	-	-	-
Totals	**21.1**	**21.1**	**98,343**	**98,343**

Projected annual cost savings ($)

Estimated O/M cost savings		Missing Inf
Estimated energy cost savings	$4,917	
Total savings	**$4,917**	

Cost analysis

Project cost	**$0**
Simple project payback (years)	0.0

Existing Luminaire Schedule

BC Hydro Power Smart ES Lighting Calculator, version 7.0 - 2014.12.12

Customer: ***Neptune*** Project: ***Neptune Bulk Terminals Dust***

Luminaire type	Lamp technology	Lamp length, ft	Lamp nominal wattage, W	# of lamps	Ballast type	Ballast factor	# of ballasts	Wattage per luminaire, W	Reference wattage, W	# of luminaires	Lamp/ Luminaire Model # or Comments
HID flood light on existing pole	HPS		1500	1				1500	1,500	-	
HID flood (Industry Standard)	HPS		1500	1				1500	1,500	22	
HID Marker (Industry Standard	HPS		100	1				100	100	22	
HID Pump house	MH		100	1				100	100	9	
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New Luminaire Schedule

BC Hydro Power Smart ES Lighting Calculator, version 7.0 - 2014.12.12

Customer: ***Neptune*** Project: ***Neptune Bulk Terminals Dust Suppression Upgrade 2016***

Luminaire type	Lamp technology	Lamp length, ft	Lamp nominal wattage, W	# of lamps	Ballast type	Ballast factor	# of ballasts	Luminaire W (also high power for bi-level/adaptive)	# of luminaires	Lamp/ Luminaire Model # or Comments
LED Flood Light	LED		263					263	52	se-Hinds PFM25LCY/UNV1 76
Marker LED	LED		36					36	26	Crouse-Hinds EVLEDBX3W701
Linear LED	LED		48					48	9	Generic
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Energy Savings Lighting Calculator

BC Hydro Power Smart ES Lighting Calculator, version 7.0 - 2014.12.12

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Customer: **Neptune** *Project:* **Neptune Bulk Terminals Dust Suppression Upgrade 2016**

		Existing lighting system								Proposed lighting system								Retrofit Savings							
№	Room name	Luminaire type	Luminaire Description	Qty	Pwr	Annual hours	Demand	Energy	Energy Conservation Measure	Luminaire type	Luminaire description	Qty	Pwr	Control type	Annual hours	Hours change	Demand	Energy	Overall Demand Savings in kW		Overall Energy Savings in kWh		Energy Cost	Retrofit cost	Comments
					W		kW	kWh					W			%	kW	kWh	Site	BC Hydro Peak	Site	Potentially incentable	$	$	
1	Spray Towers	HID flood (Industry Standard)	HPS-1500W-1L--NBF-1	22	####	4304	33.0	142,032	LED luminaire and retrofit kit	LED Flood Light	LED-263W-L--LBF-1	52	263	Photocell	4304	0%	13.7	58,862	19	19	83,170	83,170	$4,159		
2	Spray Towers	HID Marker (Industry Standard)	HPS-100W-1L--NBF-1	22	100	8760	2.2	19,272	LED luminaire and retrofit kit	Marker LED	LED-36W-L--HBF-1	26	36	Photocell	8760	0%	0.9	8,199	1	1	11,073	11,073	$554		
3	Pump Houses	HID Pump house	MH-100W-1L--NBF-1	9	100	8760	0.9	7,884	LED luminaire and retrofit kit	Linear LED	LED-48W-L--NBF-1	9	48	No control	8760	0%	0.4	3,784	0	0	4,100	4,100	$205		
4					-		-	-					-			0%	-	-	-	-	-	-	$0		
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			Total				**36.1**	**169,188**									**15.0**	**70,845**	**21**	**21**	**98,343**	**98,343**	**$4,917**	**$ -**	
			Payback (years)					**-**																	

Neptune Terminals Dust Suppression System Upgrade

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Energy Efficiency Study

Appendix C: Spray Pole Group 1 Flow September 2015 - September 2016

TagName	DateTime	Value (gal/day)	vValue	Quality	StartDateTime	Approximate time on (based on 200 gal/min)	% of day ON	L/day
Coal_Water_Grp_1_Last_Day_Gallons	8/22/2015 23:59	(null)	(null)	1	8/21/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/23/2015 23:59	(null)	(null)	1	8/22/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/24/2015 23:59	(null)	(null)	1	8/23/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/25/2015 23:59	(null)	(null)	1	8/24/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/26/2015 23:59	(null)	(null)	1	8/25/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/27/2015 23:59	(null)	(null)	1	8/26/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/28/2015 23:59	(null)	(null)	1	8/27/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/29/2015 23:59	(null)	(null)	1	8/28/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/30/2015 23:59	(null)	(null)	1	8/29/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	8/31/2015 23:59	(null)	(null)	1	8/30/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/1/2015 23:59	(null)	(null)	1	8/31/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/2/2015 23:59	(null)	(null)	1	9/1/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/3/2015 23:59	(null)	(null)	1	9/2/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/4/2015 23:59	(null)	(null)	1	9/3/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/5/2015 23:59	(null)	(null)	1	9/4/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/6/2015 23:59	(null)	(null)	1	9/5/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/7/2015 23:59	(null)	(null)	1	9/6/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/8/2015 23:59	(null)	(null)	1	9/7/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/9/2015 23:59	(null)	(null)	1	9/8/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/10/2015 23:59	(null)	(null)	1	9/9/2015 23:59			
Coal_Water_Grp_1_Last_Day_Gallons	9/11/2015 23:59	43686	43686	0	9/10/2015 23:59	218.43	15.2%	165369.4
Coal_Water_Grp_1_Last_Day_Gallons	9/12/2015 23:59	54552	54552	0	9/11/2015 23:59	272.76	18.9%	206501.7
Coal_Water_Grp_1_Last_Day_Gallons	9/13/2015 23:59	95950	95950	0	9/12/2015 23:59	479.75	33.3%	363210.1
Coal_Water_Grp_1_Last_Day_Gallons	9/14/2015 23:59	63967	63967	0	9/13/2015 23:59	319.835	22.2%	242141.3
Coal_Water_Grp_1_Last_Day_Gallons	9/15/2015 23:59	73206	73206	0	9/14/2015 23:59	366.03	25.4%	277114.7
Coal_Water_Grp_1_Last_Day_Gallons	9/16/2015 23:59	27122	27122	0	9/15/2015 23:59	135.61	9.4%	102667.9
Coal_Water_Grp_1_Last_Day_Gallons	9/17/2015 23:59	17114	17114	0	9/16/2015 23:59	85.57	5.9%	64783.5
Coal_Water_Grp_1_Last_Day_Gallons	9/18/2015 23:59	14364	14364	0	9/17/2015 23:59	71.82	5.0%	54373.6
Coal_Water_Grp_1_Last_Day_Gallons	9/19/2015 23:59	4509	4509	0	9/18/2015 23:59	22.545	1.6%	17068.4
Coal_Water_Grp_1_Last_Day_Gallons	9/20/2015 23:59	12890	12890	0	9/19/2015 23:59	64.45	4.5%	48793.9
Coal_Water_Grp_1_Last_Day_Gallons	9/21/2015 23:59	7677	7677	0	9/20/2015 23:59	38.385	2.7%	29060.6
Coal_Water_Grp_1_Last_Day_Gallons	9/22/2015 23:59	40716	40716	0	9/21/2015 23:59	203.58	14.1%	154126.8
Coal_Water_Grp_1_Last_Day_Gallons	9/23/2015 23:59	15134	15134	0	9/22/2015 23:59	75.67	5.3%	57288.4
Coal_Water_Grp_1_Last_Day_Gallons	9/24/2015 23:59	19027	19027	0	9/23/2015 23:59	95.135	6.6%	72025.0
Coal_Water_Grp_1_Last_Day_Gallons	9/25/2015 23:59	1804	1804	0	9/24/2015 23:59	9.02	0.6%	6828.9
Coal_Water_Grp_1_Last_Day_Gallons	9/26/2015 23:59	13396	13396	0	9/25/2015 23:59	66.98	4.7%	50709.4
Coal_Water_Grp_1_Last_Day_Gallons	9/27/2015 23:59	28310	28310	0	9/26/2015 23:59	141.55	9.8%	107165.0
Coal_Water_Grp_1_Last_Day_Gallons	9/28/2015 23:59	26088	26088	0	9/27/2015 23:59	130.44	9.1%	98753.8
Coal_Water_Grp_1_Last_Day_Gallons	9/29/2015 23:59	34183	34183	0	9/28/2015 23:59	170.915	11.9%	129396.7
Coal_Water_Grp_1_Last_Day_Gallons	9/30/2015 23:59	17092	17092	0	9/29/2015 23:59	85.46	5.9%	64700.2
Coal_Water_Grp_1_Last_Day_Gallons	10/1/2015 23:59	18851	18851	0	9/30/2015 23:59	94.255	6.5%	71358.8
Coal_Water_Grp_1_Last_Day_Gallons	10/2/2015 23:59	28332	28332	0	10/1/2015 23:59	141.66	9.8%	107248.2
Coal_Water_Grp_1_Last_Day_Gallons	10/3/2015 23:59	20941	20941	0	10/2/2015 23:59	104.705	7.3%	79270.3
Coal_Water_Grp_1_Last_Day_Gallons	10/4/2015 23:59	38319	38319	0	10/3/2015 23:59	191.595	13.3%	145053.1
Coal_Water_Grp_1_Last_Day_Gallons	10/5/2015 23:59	26198	26198	0	10/4/2015 23:59	130.99	9.1%	99170.2
Coal_Water_Grp_1_Last_Day_Gallons	10/6/2015 23:59	13924	13924	0	10/5/2015 23:59	69.62	4.8%	52708.0
Coal_Water_Grp_1_Last_Day_Gallons	10/7/2015 23:59	154	154	0	10/6/2015 23:59	0.77	0.1%	583.0
Coal_Water_Grp_1_Last_Day_Gallons	10/8/2015 23:59	4157	4157	0	10/7/2015 23:59	20.785	1.4%	15735.9
Coal_Water_Grp_1_Last_Day_Gallons	10/9/2015 23:59	3717	3717	0	10/8/2015 23:59	18.585	1.3%	14070.4
Coal_Water_Grp_1_Last_Day_Gallons	10/10/2015 23:59	4465	4465	0	10/9/2015 23:59	22.325	1.6%	16901.9
Coal_Water_Grp_1_Last_Day_Gallons	10/11/2015 23:59	176	176	0	10/10/2015 23:59	0.88	0.1%	666.2
Coal_Water_Grp_1_Last_Day_Gallons	10/12/2015 23:59	4927	4927	0	10/11/2015 23:59	24.635	1.7%	18650.7
Coal_Water_Grp_1_Last_Day_Gallons	10/13/2015 23:59	330	330	0	10/12/2015 23:59	1.65	0.1%	1249.2
Coal_Water_Grp_1_Last_Day_Gallons	10/14/2015 23:59	42564	42564	0	10/13/2015 23:59	212.82	14.8%	161122.2
Coal_Water_Grp_1_Last_Day_Gallons	10/15/2015 23:59	103913	103913	0	10/14/2015 23:59	519.565	36.1%	393353.3
Coal_Water_Grp_1_Last_Day_Gallons	10/16/2015 23:59	148149	148149	0	10/15/2015 23:59	740.745	51.4%	560804.7
Coal_Water_Grp_1_Last_Day_Gallons	10/17/2015 23:59	148897	148897	0	10/16/2015 23:59	744.485	51.7%	563636.2
Coal_Water_Grp_1_Last_Day_Gallons	10/18/2015 23:59	132003	132003	0	10/17/2015 23:59	660.015	45.8%	499685.5
Coal_Water_Grp_1_Last_Day_Gallons	10/19/2015 23:59	130684	130684	0	10/18/2015 23:59	653.42	45.4%	494692.5
Coal_Water_Grp_1_Last_Day_Gallons	10/20/2015 23:59	118321	118321	0	10/19/2015 23:59	591.605	41.1%	447893.5
Coal_Water_Grp_1_Last_Day_Gallons	10/21/2015 23:59	116342	116342	0	10/20/2015 23:59	581.71	40.4%	440402.2
Coal_Water_Grp_1_Last_Day_Gallons	10/22/2015 23:59	123623	123623	0	10/21/2015 23:59	618.115	42.9%	467963.7
Coal_Water_Grp_1_Last_Day_Gallons	10/23/2015 23:59	101340	101340	0	10/22/2015 23:59	506.7	35.2%	383613.4
Coal_Water_Grp_1_Last_Day_Gallons	10/24/2015 23:59	23493	23493	0	10/23/2015 23:59	117.465	8.2%	88930.6
Coal_Water_Grp_1_Last_Day_Gallons	10/25/2015 23:59	13110	13110	0	10/24/2015 23:59	65.55	4.6%	49626.7
Coal_Water_Grp_1_Last_Day_Gallons	10/26/2015 23:59	10361	10361	0	10/25/2015 23:59	51.805	3.6%	39220.6
Coal_Water_Grp_1_Last_Day_Gallons	10/27/2015 23:59	27210	27210	0	10/26/2015 23:59	136.05	9.4%	103001.0
Coal_Water_Grp_1_Last_Day_Gallons	10/28/2015 23:59	4399	4399	0	10/27/2015 23:59	21.995	1.5%	16652.0
Coal_Water_Grp_1_Last_Day_Gallons	10/29/2015 23:59	14606	14606	0	10/28/2015 23:59	73.03	5.1%	55289.7
Coal_Water_Grp_1_Last_Day_Gallons	10/30/2015 23:59	21447	21447	0	10/29/2015 23:59	107.235	7.4%	81185.7
Coal_Water_Grp_1_Last_Day_Gallons	10/31/2015 23:59	28002	28002	0	10/30/2015 23:59	140.01	9.7%	105999.1
Coal_Water_Grp_1_Last_Day_Gallons	11/2/2015 23:59	9635	9635	0	11/1/2015 23:59	48.175	3.3%	36472.4
Coal_Water_Grp_1_Last_Day_Gallons	11/3/2015 23:59	10119	10119	0	11/2/2015 23:59	50.595	3.5%	38304.6
Coal_Water_Grp_1_Last_Day_Gallons	11/4/2015 23:59	154	154	0	11/3/2015 23:59	0.77	0.1%	583.0
Coal_Water_Grp_1_Last_Day_Gallons	11/5/2015 23:59	5059	5059	0	11/4/2015 23:59	25.295	1.8%	19150.4
Coal_Water_Grp_1_Last_Day_Gallons	11/6/2015 23:59	1320	1320	0	11/5/2015 23:59	6.6	0.5%	4996.7
Coal_Water_Grp_1_Last_Day_Gallons	11/7/2015 23:59	726	726	0	11/6/2015 23:59	3.63	0.3%	2748.2
Coal_Water_Grp_1_Last_Day_Gallons	11/8/2015 23:59	6423	6423	0	11/7/2015 23:59	32.115	2.2%	24313.7
Coal_Water_Grp_1_Last_Day_Gallons	11/9/2015 23:59	9283	9283	0	11/8/2015 23:59	46.415	3.2%	35140.0
Coal_Water_Grp_1_Last_Day_Gallons	11/10/2015 23:59	15178	15178	0	11/9/2015 23:59	75.89	5.3%	57455.0
Coal_Water_Grp_1_Last_Day_Gallons	11/11/2015 23:59	17070	17070	0	11/10/2015 23:59	85.35	5.9%	64616.9
Coal_Water_Grp_1_Last_Day_Gallons	11/12/2015 23:59	5323	5323	0	11/11/2015 23:59	26.615	1.8%	20149.7
Coal_Water_Grp_1_Last_Day_Gallons	11/13/2015 23:59	6709	6709	0	11/12/2015 23:59	33.545	2.3%	25396.3
Coal_Water_Grp_1_Last_Day_Gallons	11/14/2015 23:59	11108	11108	0	11/13/2015 23:59	55.54	3.9%	42048.3
Coal_Water_Grp_1_Last_Day_Gallons	11/15/2015 23:59	42916	42916	0	11/14/2015 23:59	214.58	14.9%	162454.7

TagName	DateTime	Value (gal/day)	vValue	Quality	StartDateTime	Approximate time on (based on 200 gal/min)	% of day ON	L/day
Coal_Water_Grp_1_Last_Day_Gallons	11/16/2015 23:59	17554	17554	0	11/15/2015 23:59	87.77	6.1%	66449.1
Coal_Water_Grp_1_Last_Day_Gallons	11/17/2015 23:59	10427	10427	0	11/16/2015 23:59	52.135	3.6%	39470.5
Coal_Water_Grp_1_Last_Day_Gallons	11/18/2015 23:59	1804	1804	0	11/17/2015 23:59	9.02	0.6%	6828.9
Coal_Water_Grp_1_Last_Day_Gallons	11/19/2015 23:59	9987	9987	0	11/18/2015 23:59	49.935	3.5%	37804.9
Coal_Water_Grp_1_Last_Day_Gallons	11/20/2015 23:59	3234	3234	0	11/19/2015 23:59	16.17	1.1%	12242.0
Coal_Water_Grp_1_Last_Day_Gallons	11/21/2015 23:59	110	110	0	11/20/2015 23:59	0.55	0.0%	416.4
Coal_Water_Grp_1_Last_Day_Gallons	11/22/2015 23:59	110	110	0	11/21/2015 23:59	0.55	0.0%	416.4
Coal_Water_Grp_1_Last_Day_Gallons	11/23/2015 23:59	2508	2508	0	11/22/2015 23:59	12.54	0.9%	9493.8
Coal_Water_Grp_1_Last_Day_Gallons	11/24/2015 23:59	396	396	0	11/23/2015 23:59	1.98	0.1%	1499.0
Coal_Water_Grp_1_Last_Day_Gallons	11/25/2015 23:59	198	198	0	11/24/2015 23:59	0.99	0.1%	749.5
Coal_Water_Grp_1_Last_Day_Gallons	11/26/2015 23:59	176	176	0	11/25/2015 23:59	0.88	0.1%	666.2
Coal_Water_Grp_1_Last_Day_Gallons	11/27/2015 23:59	154	154	0	11/26/2015 23:59	0.77	0.1%	583.0
Coal_Water_Grp_1_Last_Day_Gallons	11/28/2015 23:59	66	66	0	11/27/2015 23:59	0.33	0.0%	249.8
Coal_Water_Grp_1_Last_Day_Gallons	11/29/2015 23:59	22	22	0	11/28/2015 23:59	0.11	0.0%	83.3
Coal_Water_Grp_1_Last_Day_Gallons	11/30/2015 23:59	19929	19929	0	11/29/2015 23:59	99.645	6.9%	75439.4
Coal_Water_Grp_1_Last_Day_Gallons	12/1/2015 23:59	23669	23669	0	11/30/2015 23:59	118.345	8.2%	89596.9
Coal_Water_Grp_1_Last_Day_Gallons	12/2/2015 23:59	814	814	0	12/1/2015 23:59	4.07	0.3%	3081.3
Coal_Water_Grp_1_Last_Day_Gallons	12/3/2015 23:59	462	462	0	12/2/2015 23:59	2.31	0.2%	1748.9
Coal_Water_Grp_1_Last_Day_Gallons	12/4/2015 23:59	6577	6577	0	12/3/2015 23:59	32.885	2.3%	24896.6
Coal_Water_Grp_1_Last_Day_Gallons	12/5/2015 23:59	41464	41464	0	12/4/2015 23:59	207.32	14.4%	156958.2
Coal_Water_Grp_1_Last_Day_Gallons	12/6/2015 23:59	31786	31786	0	12/5/2015 23:59	158.93	11.0%	120323.0
Coal_Water_Grp_1_Last_Day_Gallons	12/7/2015 23:59	330	330	0	12/6/2015 23:59	1.65	0.1%	1249.2
Coal_Water_Grp_1_Last_Day_Gallons	12/8/2015 23:59	10998	10998	0	12/7/2015 23:59	54.99	3.8%	41631.9
Coal_Water_Grp_1_Last_Day_Gallons	12/9/2015 23:59	15222	15222	0	12/8/2015 23:59	76.11	5.3%	57621.5
Coal_Water_Grp_1_Last_Day_Gallons	12/10/2015 23:59	3761	3761	0	12/9/2015 23:59	18.805	1.3%	14236.9
Coal_Water_Grp_1_Last_Day_Gallons	12/11/2015 23:59	16762	16762	0	12/10/2015 23:59	83.81	5.8%	63451.0
Coal_Water_Grp_1_Last_Day_Gallons	12/12/2015 23:59	242	242	0	12/11/2015 23:59	1.21	0.1%	916.1
Coal_Water_Grp_1_Last_Day_Gallons	12/13/2015 23:59	770	770	0	12/12/2015 23:59	3.85	0.3%	2914.8
Coal_Water_Grp_1_Last_Day_Gallons	12/14/2015 23:59	11548	11548	0	12/13/2015 23:59	57.74	4.0%	43713.9
Coal_Water_Grp_1_Last_Day_Gallons	12/15/2015 23:59	286	286	0	12/14/2015 23:59	1.43	0.1%	1082.6
Coal_Water_Grp_1_Last_Day_Gallons	12/16/2015 23:59	396	396	0	12/15/2015 23:59	1.98	0.1%	1499.0
Coal_Water_Grp_1_Last_Day_Gallons	12/17/2015 23:59	682	682	0	12/16/2015 23:59	3.41	0.2%	2581.6
Coal_Water_Grp_1_Last_Day_Gallons	12/18/2015 23:59	1650	1650	0	12/17/2015 23:59	8.25	0.6%	6245.9
Coal_Water_Grp_1_Last_Day_Gallons	12/19/2015 23:59	4047	4047	0	12/18/2015 23:59	20.235	1.4%	15319.6
Coal_Water_Grp_1_Last_Day_Gallons	12/20/2015 23:59	1760	1760	0	12/19/2015 23:59	8.8	0.6%	6662.3
Coal_Water_Grp_1_Last_Day_Gallons	12/21/2015 23:59	3080	3080	0	12/20/2015 23:59	15.4	1.1%	11659.1
Coal_Water_Grp_1_Last_Day_Gallons	12/22/2015 23:59	330	330	0	12/21/2015 23:59	1.65	0.1%	1249.2
Coal_Water_Grp_1_Last_Day_Gallons	12/23/2015 23:59	264	264	0	12/22/2015 23:59	1.32	0.1%	999.3
Coal_Water_Grp_1_Last_Day_Gallons	12/24/2015 23:59	176	176	0	12/23/2015 23:59	0.88	0.1%	666.2
Coal_Water_Grp_1_Last_Day_Gallons	12/25/2015 23:59	44	44	0	12/24/2015 23:59	0.22	0.0%	166.6
Coal_Water_Grp_1_Last_Day_Gallons	12/26/2015 23:59	242	242	0	12/25/2015 23:59	1.21	0.1%	916.1
Coal_Water_Grp_1_Last_Day_Gallons	12/27/2015 23:59	242	242	0	12/26/2015 23:59	1.21	0.1%	916.1
Coal_Water_Grp_1_Last_Day_Gallons	12/28/2015 23:59	1320	1320	0	12/27/2015 23:59	6.6	0.5%	4996.7
Coal_Water_Grp_1_Last_Day_Gallons	12/29/2015 23:59	264	264	0	12/28/2015 23:59	1.32	0.1%	999.3
Coal_Water_Grp_1_Last_Day_Gallons	12/30/2015 23:59	242	242	0	12/29/2015 23:59	1.21	0.1%	916.1
Coal_Water_Grp_1_Last_Day_Gallons	12/31/2015 23:59	44	44	0	12/30/2015 23:59	0.22	0.0%	166.6
Coal_Water_Grp_1_Last_Day_Gallons	1/1/2016 23:59	22	22	0	12/31/2015 23:59	0.11	0.0%	83.3
Coal_Water_Grp_1_Last_Day_Gallons	1/2/2016 23:59	110	110	0	1/1/2016 23:59	0.55	0.0%	416.4
Coal_Water_Grp_1_Last_Day_Gallons	1/3/2016 23:59	770	770	0	1/2/2016 23:59	3.85	0.3%	2914.8
Coal_Water_Grp_1_Last_Day_Gallons	1/4/2016 23:59	132	132	0	1/3/2016 23:59	0.66	0.0%	499.7
Coal_Water_Grp_1_Last_Day_Gallons	1/5/2016 23:59	154	154	0	1/4/2016 23:59	0.77	0.1%	583.0
Coal_Water_Grp_1_Last_Day_Gallons	1/6/2016 23:59	6489	6489	0	1/5/2016 23:59	32.445	2.3%	24563.5
Coal_Water_Grp_1_Last_Day_Gallons	1/7/2016 23:59	1056	1056	0	1/6/2016 23:59	5.28	0.4%	3997.4
Coal_Water_Grp_1_Last_Day_Gallons	1/8/2016 23:59	990	990	0	1/7/2016 23:59	4.95	0.3%	3747.6
Coal_Water_Grp_1_Last_Day_Gallons	1/9/2016 23:59	88	88	0	1/8/2016 23:59	0.44	0.0%	333.1
Coal_Water_Grp_1_Last_Day_Gallons	1/10/2016 23:59	132	132	0	1/9/2016 23:59	0.66	0.0%	499.7
Coal_Water_Grp_1_Last_Day_Gallons	1/11/2016 23:59	15046	15046	0	1/10/2016 23:59	75.23	5.2%	56955.3
Coal_Water_Grp_1_Last_Day_Gallons	1/12/2016 23:59	462	462	0	1/11/2016 23:59	2.31	0.2%	1748.9
Coal_Water_Grp_1_Last_Day_Gallons	1/13/2016 23:59	132	132	0	1/12/2016 23:59	0.66	0.0%	499.7
Coal_Water_Grp_1_Last_Day_Gallons	1/14/2016 23:59	6753	6753	0	1/13/2016 23:59	33.765	2.3%	25562.9
Coal_Water_Grp_1_Last_Day_Gallons	1/15/2016 23:59	88	88	0	1/14/2016 23:59	0.44	0.0%	333.1
Coal_Water_Grp_1_Last_Day_Gallons	1/16/2016 23:59	242	242	0	1/15/2016 23:59	1.21	0.1%	916.1
Coal_Water_Grp_1_Last_Day_Gallons	1/17/2016 23:59	15596	15596	0	1/16/2016 23:59	77.98	5.4%	59037.3
Coal_Water_Grp_1_Last_Day_Gallons	1/18/2016 23:59	682	682	0	1/17/2016 23:59	3.41	0.2%	2581.6
Coal_Water_Grp_1_Last_Day_Gallons	1/19/2016 23:59	176	176	0	1/18/2016 23:59	0.88	0.1%	666.2
Coal_Water_Grp_1_Last_Day_Gallons	1/20/2016 23:59	594	594	0	1/19/2016 23:59	2.97	0.2%	2248.5
Coal_Water_Grp_1_Last_Day_Gallons	1/21/2016 23:59	484	484	0	1/20/2016 23:59	2.42	0.2%	1832.1
Coal_Water_Grp_1_Last_Day_Gallons	1/22/2016 23:59	594	594	0	1/21/2016 23:59	2.97	0.2%	2248.5
Coal_Water_Grp_1_Last_Day_Gallons	1/23/2016 23:59	242	242	0	1/22/2016 23:59	1.21	0.1%	916.1
Coal_Water_Grp_1_Last_Day_Gallons	1/24/2016 23:59	5411	5411	0	1/23/2016 23:59	27.055	1.9%	20482.9
Coal_Water_Grp_1_Last_Day_Gallons	1/25/2016 23:59	8161	8161	0	1/24/2016 23:59	40.805	2.8%	30892.7
Coal_Water_Grp_1_Last_Day_Gallons	1/26/2016 23:59	462	462	0	1/25/2016 23:59	2.31	0.2%	1748.9
Coal_Water_Grp_1_Last_Day_Gallons	1/27/2016 23:59	858	858	0	1/26/2016 23:59	4.29	0.3%	3247.9
Coal_Water_Grp_1_Last_Day_Gallons	1/28/2016 23:59	462	462	0	1/27/2016 23:59	2.31	0.2%	1748.9
Coal_Water_Grp_1_Last_Day_Gallons	1/29/2016 23:59	1298	1298	0	1/28/2016 23:59	6.49	0.5%	4913.5
Coal_Water_Grp_1_Last_Day_Gallons	1/30/2016 23:59	110	110	0	1/29/2016 23:59	0.55	0.0%	416.4
Coal_Water_Grp_1_Last_Day_Gallons	1/31/2016 23:59	5697	5697	0	1/30/2016 23:59	28.485	2.0%	21565.5
Coal_Water_Grp_1_Last_Day_Gallons	2/1/2016 23:59	814	814	0	1/31/2016 23:59	4.07	0.3%	3081.3
Coal_Water_Grp_1_Last_Day_Gallons	2/2/2016 23:59	19137	19137	0	2/1/2016 23:59	95.685	6.6%	72441.4
Coal_Water_Grp_1_Last_Day_Gallons	2/3/2016 23:59	374	374	0	2/2/2016 23:59	1.87	0.1%	1415.7
Coal_Water_Grp_1_Last_Day_Gallons	2/4/2016 23:59	308	308	0	2/3/2016 23:59	1.54	0.1%	1165.9
Coal_Water_Grp_1_Last_Day_Gallons	2/5/2016 23:59	3388	3388	0	2/4/2016 23:59	16.94	1.2%	12825.0
Coal_Water_Grp_1_Last_Day_Gallons	2/6/2016 23:59	968	968	0	2/5/2016 23:59	4.84	0.3%	3664.3
Coal_Water_Grp_1_Last_Day_Gallons	2/7/2016 23:59	220	220	0	2/6/2016 23:59	1.1	0.1%	832.8
Coal_Water_Grp_1_Last_Day_Gallons	2/8/2016 23:59	264	264	0	2/7/2016 23:59	1.32	0.1%	999.3

TagName	DateTime	Value (gal/day)	vValue	Quality	StartDateTime	Approximate time on (based on 200 gal/min)	% of day ON	L/day
Coal_Water_Grp_1_Last_Day_Gallons	2/9/2016 23:59	220	220	0	2/8/2016 23:59	1.1	0.1%	832.8
Coal_Water_Grp_1_Last_Day_Gallons	2/10/2016 23:59	418	418	0	2/9/2016 23:59	2.09	0.1%	1582.3
Coal_Water_Grp_1_Last_Day_Gallons	2/11/2016 23:59	352	352	0	2/10/2016 23:59	1.76	0.1%	1332.5
Coal_Water_Grp_1_Last_Day_Gallons	2/12/2016 23:59	264	264	0	2/11/2016 23:59	1.32	0.1%	999.3
Coal_Water_Grp_1_Last_Day_Gallons	2/13/2016 23:59	1034	1034	0	2/12/2016 23:59	5.17	0.4%	3914.1
Coal_Water_Grp_1_Last_Day_Gallons	2/14/2016 23:59	176	176	0	2/13/2016 23:59	0.88	0.1%	666.2
Coal_Water_Grp_1_Last_Day_Gallons	2/15/2016 23:59	11790	11790	0	2/14/2016 23:59	58.95	4.1%	44630.0
Coal_Water_Grp_1_Last_Day_Gallons	2/16/2016 23:59	484	484	0	2/15/2016 23:59	2.42	0.2%	1832.1
Coal_Water_Grp_1_Last_Day_Gallons	2/17/2016 23:59	924	924	0	2/16/2016 23:59	4.62	0.3%	3497.7
Coal_Water_Grp_1_Last_Day_Gallons	2/18/2016 23:59	396	396	0	2/17/2016 23:59	1.98	0.1%	1499.0
Coal_Water_Grp_1_Last_Day_Gallons	2/19/2016 23:59	418	418	0	2/18/2016 23:59	2.09	0.1%	1582.3
Coal_Water_Grp_1_Last_Day_Gallons	2/20/2016 23:59	2706	2706	0	2/19/2016 23:59	13.53	0.9%	10243.3
Coal_Water_Grp_1_Last_Day_Gallons	2/21/2016 23:59	396	396	0	2/20/2016 23:59	1.98	0.1%	1499.0
Coal_Water_Grp_1_Last_Day_Gallons	2/22/2016 23:59	6115	6115	0	2/21/2016 23:59	30.575	2.1%	23147.8
Coal_Water_Grp_1_Last_Day_Gallons	2/23/2016 23:59	4421	4421	0	2/22/2016 23:59	22.105	1.5%	16735.3
Coal_Water_Grp_1_Last_Day_Gallons	2/24/2016 23:59	2838	2838	0	2/23/2016 23:59	14.19	1.0%	10743.0
Coal_Water_Grp_1_Last_Day_Gallons	2/25/2016 23:59	5631	5631	0	2/24/2016 23:59	28.155	2.0%	21315.6
Coal_Water_Grp_1_Last_Day_Gallons	2/26/2016 23:59	12670	12670	0	2/25/2016 23:59	63.35	4.4%	47961.1
Coal_Water_Grp_1_Last_Day_Gallons	2/27/2016 23:59	11922	11922	0	2/26/2016 23:59	59.61	4.1%	45129.7
Coal_Water_Grp_1_Last_Day_Gallons	2/28/2016 23:59	792	792	0	2/27/2016 23:59	3.96	0.3%	2998.0
Coal_Water_Grp_1_Last_Day_Gallons	2/29/2016 23:59	2618	2618	0	2/28/2016 23:59	13.09	0.9%	9910.2
Coal_Water_Grp_1_Last_Day_Gallons	3/1/2016 23:59	770	770	0	2/29/2016 23:59	3.85	0.3%	2914.8
Coal_Water_Grp_1_Last_Day_Gallons	3/2/2016 23:59	440	440	0	3/1/2016 23:59	2.2	0.2%	1665.6
Coal_Water_Grp_1_Last_Day_Gallons	3/3/2016 23:59	3036	3036	0	3/2/2016 23:59	15.18	1.1%	11492.5
Coal_Water_Grp_1_Last_Day_Gallons	3/4/2016 23:59	2508	2508	0	3/3/2016 23:59	12.54	0.9%	9493.8
Coal_Water_Grp_1_Last_Day_Gallons	3/5/2016 23:59	9371	9371	0	3/4/2016 23:59	46.855	3.3%	35473.1
Coal_Water_Grp_1_Last_Day_Gallons	3/6/2016 23:59	264	264	0	3/5/2016 23:59	1.32	0.1%	999.3
Coal_Water_Grp_1_Last_Day_Gallons	3/7/2016 23:59	1914	1914	0	3/6/2016 23:59	9.57	0.7%	7245.3
Coal_Water_Grp_1_Last_Day_Gallons	3/8/2016 23:59	330	330	0	3/7/2016 23:59	1.65	0.1%	1249.2
Coal_Water_Grp_1_Last_Day_Gallons	3/9/2016 23:59	9415	9415	0	3/8/2016 23:59	47.075	3.3%	35639.6
Coal_Water_Grp_1_Last_Day_Gallons	3/10/2016 23:59	2002	2002	0	3/9/2016 23:59	10.01	0.7%	7578.4
Coal_Water_Grp_1_Last_Day_Gallons	3/11/2016 23:59	330	330	0	3/10/2016 23:59	1.65	0.1%	1249.2
Coal_Water_Grp_1_Last_Day_Gallons	3/12/2016 23:59	506	506	0	3/11/2016 23:59	2.53	0.2%	1915.4
Coal_Water_Grp_1_Last_Day_Gallons	3/15/2016 23:59	4223	4223	0	3/14/2016 23:59	21.115	1.5%	15985.8
Coal_Water_Grp_1_Last_Day_Gallons	3/16/2016 23:59	352	352	0	3/15/2016 23:59	1.76	0.1%	1332.5
Coal_Water_Grp_1_Last_Day_Gallons	3/17/2016 23:59	572	572	0	3/16/2016 23:59	2.86	0.2%	2165.3
Coal_Water_Grp_1_Last_Day_Gallons	3/18/2016 23:59	6203	6203	0	3/17/2016 23:59	31.015	2.2%	23480.9
Coal_Water_Grp_1_Last_Day_Gallons	3/19/2016 23:59	11988	11988	0	3/18/2016 23:59	59.94	4.2%	45379.5
Coal_Water_Grp_1_Last_Day_Gallons	3/20/2016 23:59	5763	5763	0	3/19/2016 23:59	28.815	2.0%	21815.3
Coal_Water_Grp_1_Last_Day_Gallons	3/21/2016 23:59	3168	3168	0	3/20/2016 23:59	15.84	1.1%	11992.2
Coal_Water_Grp_1_Last_Day_Gallons	3/22/2016 23:59	3366	3366	0	3/21/2016 23:59	16.83	1.2%	12741.7
Coal_Water_Grp_1_Last_Day_Gallons	3/23/2016 23:59	6115	6115	0	3/22/2016 23:59	30.575	2.1%	23147.8
Coal_Water_Grp_1_Last_Day_Gallons	3/24/2016 23:59	660	660	0	3/23/2016 23:59	3.3	0.2%	2498.4
Coal_Water_Grp_1_Last_Day_Gallons	3/25/2016 23:59	9283	9283	0	3/24/2016 23:59	46.415	3.2%	35140.0
Coal_Water_Grp_1_Last_Day_Gallons	3/26/2016 23:59	19049	19049	0	3/25/2016 23:59	95.245	6.6%	72108.3
Coal_Water_Grp_1_Last_Day_Gallons	3/27/2016 23:59	31082	31082	0	3/26/2016 23:59	155.41	10.8%	117658.1
Coal_Water_Grp_1_Last_Day_Gallons	3/28/2016 23:59	3256	3256	0	3/27/2016 23:59	16.28	1.1%	12325.3
Coal_Water_Grp_1_Last_Day_Gallons	3/29/2016 23:59	6225	6225	0	3/28/2016 23:59	31.125	2.2%	23564.2
Coal_Water_Grp_1_Last_Day_Gallons	3/30/2016 23:59	8865	8865	0	3/29/2016 23:59	44.325	3.1%	33557.7
Coal_Water_Grp_1_Last_Day_Gallons	3/31/2016 23:59	22921	22921	0	3/30/2016 23:59	114.605	8.0%	86765.4
Coal_Water_Grp_1_Last_Day_Gallons	4/1/2016 23:59	14738	14738	0	3/31/2016 23:59	73.69	5.1%	55789.4
Coal_Water_Grp_1_Last_Day_Gallons	4/2/2016 23:59	19445	19445	0	4/1/2016 23:59	97.225	6.8%	73607.3
Coal_Water_Grp_1_Last_Day_Gallons	4/3/2016 23:59	13792	13792	0	4/2/2016 23:59	68.96	4.8%	52208.4
Coal_Water_Grp_1_Last_Day_Gallons	4/4/2016 23:59	30422	30422	0	4/3/2016 23:59	152.11	10.6%	115159.7
Coal_Water_Grp_1_Last_Day_Gallons	4/5/2016 23:59	2706	2706	0	4/4/2016 23:59	13.53	0.9%	10243.3
Coal_Water_Grp_1_Last_Day_Gallons	4/6/2016 23:59	35349	35349	0	4/5/2016 23:59	176.745	12.3%	133810.5
Coal_Water_Grp_1_Last_Day_Gallons	4/7/2016 23:59	64143	64143	0	4/6/2016 23:59	320.715	22.3%	242807.6
Coal_Water_Grp_1_Last_Day_Gallons	4/8/2016 23:59	70302	70302	0	4/7/2016 23:59	351.51	24.4%	266121.9
Coal_Water_Grp_1_Last_Day_Gallons	4/9/2016 23:59	37813	37813	0	4/8/2016 23:59	189.065	13.1%	143137.7
Coal_Water_Grp_1_Last_Day_Gallons	4/10/2016 23:59	27936	27936	0	4/9/2016 23:59	139.68	9.7%	105749.2
Coal_Water_Grp_1_Last_Day_Gallons	4/11/2016 23:59	33787	33787	0	4/10/2016 23:59	168.935	11.7%	127897.6
Coal_Water_Grp_1_Last_Day_Gallons	4/12/2016 23:59	34733	34733	0	4/11/2016 23:59	173.665	12.1%	131478.6
Coal_Water_Grp_1_Last_Day_Gallons	4/13/2016 23:59	29036	29036	0	4/12/2016 23:59	145.18	10.1%	109913.2
Coal_Water_Grp_1_Last_Day_Gallons	4/14/2016 23:59	26528	26528	0	4/13/2016 23:59	132.64	9.2%	100419.4
Coal_Water_Grp_1_Last_Day_Gallons	4/15/2016 23:59	14870	14870	0	4/14/2016 23:59	74.35	5.2%	56289.0
Coal_Water_Grp_1_Last_Day_Gallons	4/16/2016 23:59	23031	23031	0	4/15/2016 23:59	115.155	8.0%	87181.8
Coal_Water_Grp_1_Last_Day_Gallons	4/17/2016 23:59	22899	22899	0	4/16/2016 23:59	114.495	8.0%	86682.1
Coal_Water_Grp_1_Last_Day_Gallons	4/18/2016 23:59	11856	11856	0	4/17/2016 23:59	59.28	4.1%	44879.8
Coal_Water_Grp_1_Last_Day_Gallons	4/19/2016 23:59	47403	47403	0	4/18/2016 23:59	237.015	16.5%	179439.8
Coal_Water_Grp_1_Last_Day_Gallons	4/20/2016 23:59	64803	64803	0	4/19/2016 23:59	324.015	22.5%	245305.9
Coal_Water_Grp_1_Last_Day_Gallons	4/21/2016 23:59	21777	21777	0	4/20/2016 23:59	108.885	7.6%	82434.9
Coal_Water_Grp_1_Last_Day_Gallons	4/22/2016 23:59	6929	6929	0	4/21/2016 23:59	34.645	2.4%	26229.1
Coal_Water_Grp_1_Last_Day_Gallons	4/23/2016 23:59	286	286	0	4/22/2016 23:59	1.43	0.1%	1082.6
Coal_Water_Grp_1_Last_Day_Gallons	4/24/2016 23:59	25054	25054	0	4/23/2016 23:59	125.27	8.7%	94839.7
Coal_Water_Grp_1_Last_Day_Gallons	4/25/2016 23:59	28970	28970	0	4/24/2016 23:59	144.85	10.1%	109663.3
Coal_Water_Grp_1_Last_Day_Gallons	4/26/2016 23:59	42982	42982	0	4/25/2016 23:59	214.91	14.9%	162704.5
Coal_Water_Grp_1_Last_Day_Gallons	4/27/2016 23:59	23867	23867	0	4/26/2016 23:59	119.335	8.3%	90346.4
Coal_Water_Grp_1_Last_Day_Gallons	4/28/2016 23:59	25428	25428	0	4/27/2016 23:59	127.14	8.8%	96255.4
Coal_Water_Grp_1_Last_Day_Gallons	4/29/2016 23:59	27386	27386	0	4/28/2016 23:59	136.93	9.5%	103667.2
Coal_Water_Grp_1_Last_Day_Gallons	4/30/2016 23:59	25318	25318	0	4/29/2016 23:59	126.59	8.8%	95839.0
Coal_Water_Grp_1_Last_Day_Gallons	5/1/2016 23:59	71776	71776	0	4/30/2016 23:59	358.88	24.9%	271701.6
Coal_Water_Grp_1_Last_Day_Gallons	5/2/2016 23:59	91771	91771	0	5/1/2016 23:59	458.855	31.9%	347390.9
Coal_Water_Grp_1_Last_Day_Gallons	5/3/2016 23:59	54948	54948	0	5/2/2016 23:59	274.74	19.1%	208000.7
Coal_Water_Grp_1_Last_Day_Gallons	5/4/2016 23:59	18323	18323	0	5/3/2016 23:59	91.615	6.4%	69360.1
Coal_Water_Grp_1_Last_Day_Gallons	5/5/2016 23:59	28090	28090	0	5/4/2016 23:59	140.45	9.8%	106332.2

TagName	DateTime	Value (gal/day)	vValue	Quality	StartDateTime	Approximate time on (based on 200 gal/min)	% of day ON	L/day
Coal_Water_Grp_1_Last_Day_Gallons	5/6/2016 23:59	35613	35613	0	5/5/2016 23:59	178.065	12.4%	134809.8
Coal_Water_Grp_1_Last_Day_Gallons	5/7/2016 23:59	53694	53694	0	5/6/2016 23:59	268.47	18.6%	203253.8
Coal_Water_Grp_1_Last_Day_Gallons	5/8/2016 23:59	116210	116210	0	5/7/2016 23:59	581.05	40.4%	439902.5
Coal_Water_Grp_1_Last_Day_Gallons	5/9/2016 23:59	62185	62185	0	5/8/2016 23:59	310.925	21.6%	235395.7
Coal_Water_Grp_1_Last_Day_Gallons	5/10/2016 23:59	69004	69004	0	5/9/2016 23:59	345.02	24.0%	261208.4
Coal_Water_Grp_1_Last_Day_Gallons	5/11/2016 23:59	38715	38715	0	5/10/2016 23:59	193.575	13.4%	146552.1
Coal_Water_Grp_1_Last_Day_Gallons	5/12/2016 23:59	24681	24681	0	5/11/2016 23:59	123.405	8.6%	93427.7
Coal_Water_Grp_1_Last_Day_Gallons	5/13/2016 23:59	38671	38671	0	5/12/2016 23:59	193.355	13.4%	146385.6
Coal_Water_Grp_1_Last_Day_Gallons	5/14/2016 23:59	100152	100152	0	5/13/2016 23:59	500.76	34.8%	379116.4
Coal_Water_Grp_1_Last_Day_Gallons	5/15/2016 23:59	42322	42322	0	5/14/2016 23:59	211.61	14.7%	160206.1
Coal_Water_Grp_1_Last_Day_Gallons	5/16/2016 23:59	29520	29520	0	5/15/2016 23:59	147.6	10.3%	111745.3
Coal_Water_Grp_1_Last_Day_Gallons	5/17/2016 23:59	39572	39572	0	5/16/2016 23:59	197.86	13.7%	149796.2
Coal_Water_Grp_1_Last_Day_Gallons	5/18/2016 23:59	43796	43796	0	5/17/2016 23:59	218.98	15.2%	165785.8
Coal_Water_Grp_1_Last_Day_Gallons	5/19/2016 23:59	36251	36251	0	5/18/2016 23:59	181.255	12.6%	137224.9
Coal_Water_Grp_1_Last_Day_Gallons	5/20/2016 23:59	52155	52155	0	5/19/2016 23:59	260.775	18.1%	197428.1
Coal_Water_Grp_1_Last_Day_Gallons	5/21/2016 23:59	40144	40144	0	5/20/2016 23:59	200.72	13.9%	151961.5
Coal_Water_Grp_1_Last_Day_Gallons	5/22/2016 23:59	16080	16080	0	5/21/2016 23:59	80.4	5.6%	60869.4
Coal_Water_Grp_1_Last_Day_Gallons	5/23/2016 23:59	28970	28970	0	5/22/2016 23:59	144.85	10.1%	109663.3
Coal_Water_Grp_1_Last_Day_Gallons	5/24/2016 23:59	34249	34249	0	5/23/2016 23:59	171.245	11.9%	129646.5
Coal_Water_Grp_1_Last_Day_Gallons	5/25/2016 23:59	50659	50659	0	5/24/2016 23:59	253.295	17.6%	191765.1
Coal_Water_Grp_1_Last_Day_Gallons	5/26/2016 23:59	73008	73008	0	5/25/2016 23:59	365.04	25.4%	276365.2
Coal_Water_Grp_1_Last_Day_Gallons	5/27/2016 23:59	17620	17620	0	5/26/2016 23:59	88.1	6.1%	66698.9
Coal_Water_Grp_1_Last_Day_Gallons	5/28/2016 23:59	264	264	0	5/27/2016 23:59	1.32	0.1%	999.3
Coal_Water_Grp_1_Last_Day_Gallons	5/29/2016 23:59	84864	84864	0	5/28/2016 23:59	424.32	29.5%	321245.0
Coal_Water_Grp_1_Last_Day_Gallons	5/30/2016 23:59	48613	48613	0	5/29/2016 23:59	243.065	16.9%	184020.1
Coal_Water_Grp_1_Last_Day_Gallons	5/31/2016 23:59	56136	56136	0	5/30/2016 23:59	280.68	19.5%	212497.8
Coal_Water_Grp_1_Last_Day_Gallons	6/1/2016 23:59	52727	52727	0	5/31/2016 23:59	263.635	18.3%	199593.3
Coal_Water_Grp_1_Last_Day_Gallons	6/2/2016 23:59	21711	21711	0	6/1/2016 23:59	108.555	7.5%	82185.0
Coal_Water_Grp_1_Last_Day_Gallons	6/3/2016 23:59	15310	15310	0	6/2/2016 23:59	76.55	5.3%	57954.6
Coal_Water_Grp_1_Last_Day_Gallons	6/4/2016 23:59	25098	25098	0	6/3/2016 23:59	125.49	8.7%	95006.2
Coal_Water_Grp_1_Last_Day_Gallons	6/5/2016 23:59	88428	88428	0	6/4/2016 23:59	442.14	30.7%	334736.2
Coal_Water_Grp_1_Last_Day_Gallons	6/6/2016 23:59	70940	70940	0	6/5/2016 23:59	354.7	24.6%	268537.0
Coal_Water_Grp_1_Last_Day_Gallons	6/7/2016 23:59	48503	48503	0	6/6/2016 23:59	242.515	16.8%	183603.7
Coal_Water_Grp_1_Last_Day_Gallons	6/8/2016 23:59	27100	27100	0	6/7/2016 23:59	135.5	9.4%	102584.6
Coal_Water_Grp_1_Last_Day_Gallons	6/9/2016 23:59	22481	22481	0	6/8/2016 23:59	112.405	7.8%	85099.8
Coal_Water_Grp_1_Last_Day_Gallons	6/10/2016 23:59	10888	10888	0	6/9/2016 23:59	54.44	3.8%	41215.5
Coal_Water_Grp_1_Last_Day_Gallons	6/11/2016 23:59	110	110	0	6/10/2016 23:59	0.55	0.0%	416.4
Coal_Water_Grp_1_Last_Day_Gallons	6/12/2016 23:59	176	176	0	6/11/2016 23:59	0.88	0.1%	666.2
Coal_Water_Grp_1_Last_Day_Gallons	6/13/2016 23:59	37285	37285	0	6/12/2016 23:59	186.425	12.9%	141139.0
Coal_Water_Grp_1_Last_Day_Gallons	6/14/2016 23:59	11196	11196	0	6/13/2016 23:59	55.98	3.9%	42381.5
Coal_Water_Grp_1_Last_Day_Gallons	6/15/2016 23:59	12626	12626	0	6/14/2016 23:59	63.13	4.4%	47794.6
Coal_Water_Grp_1_Last_Day_Gallons	6/16/2016 23:59	62867	62867	0	6/15/2016 23:59	314.335	21.8%	237977.4
Coal_Water_Grp_1_Last_Day_Gallons	6/17/2016 23:59	99866	99866	0	6/16/2016 23:59	499.33	34.7%	378033.8
Coal_Water_Grp_1_Last_Day_Gallons	6/18/2016 23:59	14034	14034	0	6/17/2016 23:59	70.17	4.9%	53124.4
Coal_Water_Grp_1_Last_Day_Gallons	6/19/2016 23:59	30334	30334	0	6/18/2016 23:59	151.67	10.5%	114826.6
Coal_Water_Grp_1_Last_Day_Gallons	6/20/2016 23:59	34777	34777	0	6/19/2016 23:59	173.885	12.1%	131645.2
Coal_Water_Grp_1_Last_Day_Gallons	6/21/2016 23:59	43950	43950	0	6/20/2016 23:59	219.75	15.3%	166368.8
Coal_Water_Grp_1_Last_Day_Gallons	6/22/2016 23:59	47447	47447	0	6/21/2016 23:59	237.235	16.5%	179606.3
Coal_Water_Grp_1_Last_Day_Gallons	6/23/2016 23:59	33083	33083	0	6/22/2016 23:59	165.415	11.5%	125232.7
Coal_Water_Grp_1_Last_Day_Gallons	6/24/2016 23:59	27870	27870	0	6/23/2016 23:59	139.35	9.7%	105499.4
Coal_Water_Grp_1_Last_Day_Gallons	6/25/2016 23:59	70038	70038	0	6/24/2016 23:59	350.19	24.3%	265122.5
Coal_Water_Grp_1_Last_Day_Gallons	6/26/2016 23:59	126262	126262	0	6/25/2016 23:59	631.31	43.8%	477953.4
Coal_Water_Grp_1_Last_Day_Gallons	6/27/2016 23:59	121137	121137	0	6/26/2016 23:59	605.685	42.1%	458553.2
Coal_Water_Grp_1_Last_Day_Gallons	6/28/2016 23:59	100416	100416	0	6/27/2016 23:59	502.08	34.9%	380115.7
Coal_Water_Grp_1_Last_Day_Gallons	6/29/2016 23:59	92915	92915	0	6/28/2016 23:59	464.575	32.3%	351721.4
Coal_Water_Grp_1_Last_Day_Gallons	6/30/2016 23:59	95027	95027	0	6/29/2016 23:59	475.135	33.0%	359716.2
Coal_Water_Grp_1_Last_Day_Gallons	7/1/2016 23:59	80597	80597	0	6/30/2016 23:59	402.985	28.0%	305092.7
Coal_Water_Grp_1_Last_Day_Gallons	7/2/2016 23:59	80707	80707	0	7/1/2016 23:59	403.535	28.0%	305509.1
Coal_Water_Grp_1_Last_Day_Gallons	7/3/2016 23:59	192935	192935	0	7/2/2016 23:59	964.675	67.0%	730338.1
Coal_Water_Grp_1_Last_Day_Gallons	7/4/2016 23:59	83830	83830	0	7/3/2016 23:59	419.15	29.1%	317330.9
Coal_Water_Grp_1_Last_Day_Gallons	7/5/2016 23:59	48085	48085	0	7/4/2016 23:59	240.425	16.7%	182021.4
Coal_Water_Grp_1_Last_Day_Gallons	7/6/2016 23:59	60140	60140	0	7/5/2016 23:59	300.7	20.9%	227654.6
Coal_Water_Grp_1_Last_Day_Gallons	7/7/2016 23:59	15838	15838	0	7/6/2016 23:59	79.19	5.5%	59953.3
Coal_Water_Grp_1_Last_Day_Gallons	7/8/2016 23:59	3563	3563	0	7/7/2016 23:59	17.815	1.2%	13487.4
Coal_Water_Grp_1_Last_Day_Gallons	7/9/2016 23:59	7325	7325	0	7/8/2016 23:59	36.625	2.5%	27728.1
Coal_Water_Grp_1_Last_Day_Gallons	7/10/2016 23:59	19203	19203	0	7/9/2016 23:59	96.015	6.7%	72691.2
Coal_Water_Grp_1_Last_Day_Gallons	7/11/2016 23:59	14914	14914	0	7/10/2016 23:59	74.57	5.2%	56455.6
Coal_Water_Grp_1_Last_Day_Gallons	7/12/2016 23:59	9569	9569	0	7/11/2016 23:59	47.845	3.3%	36222.6
Coal_Water_Grp_1_Last_Day_Gallons	7/13/2016 23:59	15134	15134	0	7/12/2016 23:59	75.67	5.3%	57288.4
Coal_Water_Grp_1_Last_Day_Gallons	7/14/2016 23:59	39022	39022	0	7/13/2016 23:59	195.11	13.5%	147714.3
Coal_Water_Grp_1_Last_Day_Gallons	7/15/2016 23:59	9767	9767	0	7/14/2016 23:59	48.835	3.4%	36972.1
Coal_Water_Grp_1_Last_Day_Gallons	7/16/2016 23:59	5367	5367	0	7/15/2016 23:59	26.835	1.9%	20316.3
Coal_Water_Grp_1_Last_Day_Gallons	7/17/2016 23:59	11394	11394	0	7/16/2016 23:59	56.97	4.0%	43131.0
Coal_Water_Grp_1_Last_Day_Gallons	7/18/2016 23:59	15046	15046	0	7/17/2016 23:59	75.23	5.2%	56955.3
Coal_Water_Grp_1_Last_Day_Gallons	7/19/2016 23:59	9723	9723	0	7/18/2016 23:59	48.615	3.4%	36805.5
Coal_Water_Grp_1_Last_Day_Gallons	7/20/2016 23:59	7875	7875	0	7/19/2016 23:59	39.375	2.7%	29810.1
Coal_Water_Grp_1_Last_Day_Gallons	7/21/2016 23:59	20853	20853	0	7/20/2016 23:59	104.265	7.2%	78937.2
Coal_Water_Grp_1_Last_Day_Gallons	7/22/2016 23:59	22833	22833	0	7/21/2016 23:59	114.165	7.9%	86432.3
Coal_Water_Grp_1_Last_Day_Gallons	7/23/2016 23:59	6797	6797	0	7/22/2016 23:59	33.985	2.4%	25729.4
Coal_Water_Grp_1_Last_Day_Gallons	7/24/2016 23:59	8205	8205	0	7/23/2016 23:59	41.025	2.8%	31059.3
Coal_Water_Grp_1_Last_Day_Gallons	7/25/2016 23:59	4047	4047	0	7/24/2016 23:59	20.235	1.4%	15319.6
Coal_Water_Grp_1_Last_Day_Gallons	7/26/2016 23:59	24461	24461	0	7/25/2016 23:59	122.305	8.5%	92594.9
Coal_Water_Grp_1_Last_Day_Gallons	7/27/2016 23:59	14782	14782	0	7/26/2016 23:59	73.91	5.1%	55955.9
Coal_Water_Grp_1_Last_Day_Gallons	7/28/2016 23:59	2882	2882	0	7/27/2016 23:59	14.41	1.0%	10909.6
Coal_Water_Grp_1_Last_Day_Gallons	7/29/2016 23:59	3256	3256	0	7/28/2016 23:59	16.28	1.1%	12325.3

TagName	DateTime	Value (gal/day)	vValue	Quality	StartDateTime	Approximate time on (based on 200 gal/min)	% of day ON	L/day
Coal_Water_Grp_1_Last_Day_Gallons	7/30/2016 23:59	46281	46281	0	7/29/2016 23:59	231.405	16.1%	175192.6
Coal_Water_Grp_1_Last_Day_Gallons	7/31/2016 23:59	11438	11438	0	7/30/2016 23:59	57.19	4.0%	43297.5
Coal_Water_Grp_1_Last_Day_Gallons	8/1/2016 23:59	30576	30576	0	7/31/2016 23:59	152.88	10.6%	115742.7
Coal_Water_Grp_1_Last_Day_Gallons	8/2/2016 23:59	10031	10031	0	8/1/2016 23:59	50.155	3.5%	37971.4
Coal_Water_Grp_1_Last_Day_Gallons	8/3/2016 23:59	21491	21491	0	8/2/2016 23:59	107.455	7.5%	81352.2
Coal_Water_Grp_1_Last_Day_Gallons	8/4/2016 23:59	5015	5015	0	8/3/2016 23:59	25.075	1.7%	18983.8
Coal_Water_Grp_1_Last_Day_Gallons	8/5/2016 23:59	4619	4619	0	8/4/2016 23:59	23.095	1.6%	17484.8
Coal_Water_Grp_1_Last_Day_Gallons	8/6/2016 23:59	4355	4355	0	8/5/2016 23:59	21.775	1.5%	16485.5
Coal_Water_Grp_1_Last_Day_Gallons	8/7/2016 23:59	6093	6093	0	8/6/2016 23:59	30.465	2.1%	23064.5
Coal_Water_Grp_1_Last_Day_Gallons	8/8/2016 23:59	2354	2354	0	8/7/2016 23:59	11.77	0.8%	8910.9
Coal_Water_Grp_1_Last_Day_Gallons	8/9/2016 23:59	2684	2684	0	8/8/2016 23:59	13.42	0.9%	10160.0
Coal_Water_Grp_1_Last_Day_Gallons	8/10/2016 23:59	4025	4025	0	8/9/2016 23:59	20.125	1.4%	15236.3
Coal_Water_Grp_1_Last_Day_Gallons	8/11/2016 23:59	5367	5367	0	8/10/2016 23:59	26.835	1.9%	20316.3
Coal_Water_Grp_1_Last_Day_Gallons	8/12/2016 23:59	15332	15332	0	8/11/2016 23:59	76.66	5.3%	58037.9
Coal_Water_Grp_1_Last_Day_Gallons	8/13/2016 23:59	22261	22261	0	8/12/2016 23:59	111.305	7.7%	84267.0
Coal_Water_Grp_1_Last_Day_Gallons	8/14/2016 23:59	23229	23229	0	8/13/2016 23:59	116.145	8.1%	87931.3
Coal_Water_Grp_1_Last_Day_Gallons	8/15/2016 23:59	39594	39594	0	8/14/2016 23:59	197.97	13.7%	149879.5
Coal_Water_Grp_1_Last_Day_Gallons	8/16/2016 23:59	50131	50131	0	8/15/2016 23:59	250.655	17.4%	189766.4
Coal_Water_Grp_1_Last_Day_Gallons	8/17/2016 23:59	37021	37021	0	8/16/2016 23:59	185.105	12.9%	140139.7
Coal_Water_Grp_1_Last_Day_Gallons	8/18/2016 23:59	48041	48041	0	8/17/2016 23:59	240.205	16.7%	181854.9
Coal_Water_Grp_1_Last_Day_Gallons	8/19/2016 23:59	92343	92343	0	8/18/2016 23:59	461.715	32.1%	349556.1
Coal_Water_Grp_1_Last_Day_Gallons	8/20/2016 23:59	53408	53408	0	8/19/2016 23:59	267.04	18.5%	202171.2
Coal_Water_Grp_1_Last_Day_Gallons	8/21/2016 23:59	45160	45160	0	8/20/2016 23:59	225.8	15.7%	170949.1
Coal_Water_Grp_1_Last_Day_Gallons	8/22/2016 23:59	25252	25252	0	8/21/2016 23:59	126.26	8.8%	95589.2
Coal_Water_Grp_1_Last_Day_Gallons	8/23/2016 23:59	37109	37109	0	8/22/2016 23:59	185.545	12.9%	140472.8
Coal_Water_Grp_1_Last_Day_Gallons	8/24/2016 23:59	15926	15926	0	8/23/2016 23:59	79.63	5.5%	60286.4
Coal_Water_Grp_1_Last_Day_Gallons	8/25/2016 23:59	39506	39506	0	8/24/2016 23:59	197.53	13.7%	149546.4
Coal_Water_Grp_1_Last_Day_Gallons	8/26/2016 23:59	51297	51297	0	8/25/2016 23:59	256.485	17.8%	194180.2
Coal_Water_Grp_1_Last_Day_Gallons	8/27/2016 23:59	39506	39506	0	8/26/2016 23:59	197.53	13.7%	149546.4
Coal_Water_Grp_1_Last_Day_Gallons	8/28/2016 23:59	23647	23647	0	8/27/2016 23:59	118.235	8.2%	89513.6
Coal_Water_Grp_1_Last_Day_Gallons	8/29/2016 23:59	29740	29740	0	8/28/2016 23:59	148.7	10.3%	112578.1
Coal_Water_Grp_1_Last_Day_Gallons	8/30/2016 23:59	24263	24263	0	8/29/2016 23:59	121.315	8.4%	91845.4
Coal_Water_Grp_1_Last_Day_Gallons	8/31/2016 23:59	7765	7765	0	8/30/2016 23:59	38.825	2.7%	29393.7
Coal_Water_Grp_1_Last_Day_Gallons	9/1/2016 23:59	10537	10537	0	8/31/2016 23:59	52.685	3.7%	39886.9
Coal_Water_Grp_1_Last_Day_Gallons	9/2/2016 23:59	5081	5081	0	9/1/2016 23:59	25.405	1.8%	19233.7
Coal_Water_Grp_1_Last_Day_Gallons	9/3/2016 23:59	8689	8689	0	9/2/2016 23:59	43.445	3.0%	32891.4
Coal_Water_Grp_1_Last_Day_Gallons	9/4/2016 23:59	21205	21205	0	9/3/2016 23:59	106.025	7.4%	80269.6
Coal_Water_Grp_1_Last_Day_Gallons	9/5/2016 23:59	14012	14012	0	9/4/2016 23:59	70.06	4.9%	53041.2
Coal_Water_Grp_1_Last_Day_Gallons	9/6/2016 23:59	14914	14914	0	9/5/2016 23:59	74.57	5.2%	56455.6
Coal_Water_Grp_1_Last_Day_Gallons	9/7/2016 23:59	3849	3849	0	9/6/2016 23:59	19.245	1.3%	14570.0
Coal_Water_Grp_1_Last_Day_Gallons	9/8/2016 23:59	40364	40364	0	9/7/2016 23:59	201.82	14.0%	152794.3
Coal_Water_Grp_1_Last_Day_Gallons	9/9/2016 23:59	12384	12384	0	9/8/2016 23:59	61.92	4.3%	46878.5
Coal_Water_Grp_1_Last_Day_Gallons	9/10/2016 23:59	22613	22613	0	9/9/2016 23:59	113.065	7.9%	85599.5
Coal_Water_Grp_1_Last_Day_Gallons	9/11/2016 23:59	29278	29278	0	9/10/2016 23:59	146.39	10.2%	110829.2
Coal_Water_Grp_1_Last_Day_Gallons	9/12/2016 23:59	48261	48261	0	9/11/2016 23:59	241.305	16.8%	182687.7
Coal_Water_Grp_1_Last_Day_Gallons	9/13/2016 23:59	47249	47249	0	9/12/2016 23:59	236.245	16.4%	178856.8
Coal_Water_Grp_1_Last_Day_Gallons	9/14/2016 23:59	33589	33589	0	9/13/2016 23:59	167.945	11.7%	127148.1
Coal_Water_Grp_1_Last_Day_Gallons	9/15/2016 23:59	15706	15706	0	9/14/2016 23:59	78.53	5.5%	59453.6
Coal_Water_Grp_1_Last_Day_Gallons	9/16/2016 23:59	14166	14166	0	9/15/2016 23:59	70.83	4.9%	53624.1
Coal_Water_Grp_1_Last_Day_Gallons	9/17/2016 23:59	2794	2794	0	9/16/2016 23:59	13.97	1.0%	10576.4
Coal_Water_Grp_1_Last_Day_Gallons	9/18/2016 23:59	12516	12516	0	9/17/2016 23:59	62.58	4.3%	47378.2
Coal_Water_Grp_1_Last_Day_Gallons	9/19/2016 23:59	6577	6577	0	9/18/2016 23:59	32.885	2.3%	24896.6
Coal_Water_Grp_1_Last_Day_Gallons	9/20/2016 23:59	25890	25890	0	9/19/2016 23:59	129.45	9.0%	98004.3
Coal_Water_Grp_1_Last_Day_Gallons	9/21/2016 23:59	18961	18961	0	9/20/2016 23:59	94.805	6.6%	71775.2
Coal_Water_Grp_1_Last_Day_Gallons	9/22/2016 23:59	11262	11262	0	9/21/2016 23:59	56.31	3.9%	42631.3
Coal_Water_Grp_1_Last_Day_Gallons	9/23/2016 23:59	4025	4025	0	9/22/2016 23:59	20.125	1.4%	15236.3
Coal_Water_Grp_1_Last_Day_Gallons	9/24/2016 23:59	2552	2552	0	9/23/2016 23:59	12.76	0.9%	9660.4
Coal_Water_Grp_1_Last_Day_Gallons	9/25/2016 23:59	11218	11218	0	9/24/2016 23:59	56.09	3.9%	42464.7
Coal_Water_Grp_1_Last_Day_Gallons	9/26/2016 23:59	5807	5807	0	9/25/2016 23:59	29.035	2.0%	21981.9
Coal_Water_Grp_1_Last_Day_Gallons	9/27/2016 23:59	12406	12406	0	9/26/2016 23:59	62.03	4.3%	46961.8
Coal_Water_Grp_1_Last_Day_Gallons	9/28/2016 23:59	7765	7765	0	9/27/2016 23:59	38.825	2.7%	29393.7
Coal_Water_Grp_1_Last_Day_Gallons	9/29/2016 23:59	5015	5015	0	9/28/2016 23:59	25.075	1.7%	18983.8
Coal_Water_Grp_1_Last_Day_Gallons	9/30/2016 23:59	5697	5697	0	9/29/2016 23:59	28.485	2.0%	21565.5
Coal_Water_Grp_1_Last_Day_Gallons	10/1/2016 23:59	10515	10515	0	9/30/2016 23:59	52.575	3.7%	39803.6

Neptune Terminals Dust Suppression System Upgrade

Port of Vancouver Permit Application # 16-072

Energy Efficiency Study

Appendix D: Champ Pro PFM Hi-Lumen LED Floodlights Brochure

Pro LED Lighting
Champ® hi-lumen LED floodlights

CROUSE-HINDS SERIES

Champ® Pro PFM

Hi-lumen LED floodlights for heavy industrial

EATON
Powering Business Worldwide

Champ® Pro Series Floodlights

Safe. Reliable. Efficient.

Eaton's Crouse-Hinds offers the broadest portfolio of LED luminaires for any industrial or hazardous application.

We utilize more than 100 years of lighting expertise to maximize the benefits of LED technology and provide the safest, most reliable LED luminaires on the market today.

Why LED?

Useful life
- Economic life is up to 100,000 hours of maintenance-free and safe operation

Energy efficiency
- LED average energy consumption is up to 65% less than HID and 85% less than incandescent

Start/restart time
- Instant illumination compared to 10 min restrike time for HID

Light quality
- Higher color rendering and color temperature compared to HID

Environmental benefits
- LED reduces carbon footprint
- Mercury-free

Why Crouse-Hinds?

Industry-best reliability
- Built to withstand extreme temperatures, vibration, water and dust

Thermal management
- Effective heat sinking ensures longer life

Quality of light
- Custom optics designed to maximize light distribution and intensity

Retrofit compatibility
- LED fixtures are compatible with Crouse-Hinds' HID installed base

Success story
Dragline retrofit

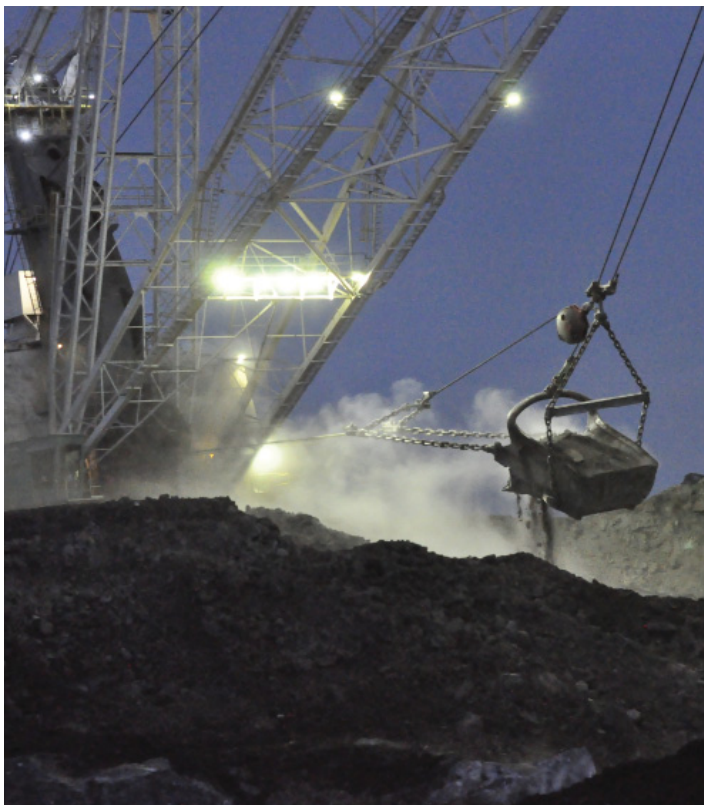
Location:
Colowyo Mine, Meeker, CO

Background:
Colowyo was looking for a reliable, low maintenance solution to replace 1000W metal halide fixtures on the boom of their dragline.

Challenge:
Reduce maintenance/downtime and increase visibility on dragline. Colowyo had been using 1000W metal halide fixtures and wanted to look at LED from a maintenance and safety aspect. Key driving issues were the time factor to replace fixtures on the boom and the dragline's downtime cost (several thousands of dollars per hour) to perform maintenance.

Solution:
Eaton's Crouse-Hinds PFM25L LED Floodlights

Results:
Increased visibility, eliminated downtime and over $27,000 in savings



Design features

HIGH LUMEN OUTPUT

- High efficiency drivers and LEDs provide 100 LPW output for reliable, low cost operation in harsh and heavy industrial applications

RUGGED HEAT SINK

- Heat sink designed to perform in high ambient temperatures up to +55°C and as low as -40°C
- Thick walled castings make for a tough, rugged housing that keeps the internal driver and LED temperature down

VERSATILE DESIGN

- Can be used for outdoor or indoor applications, and for a wide range of mounting heights depending on model and light level requirement
- Replaceable drivers and LEDs for ease of maintenance and "no lights out" feature

MULTIPLE LENS OPTIONS

- Tempered and clear glass standard
- Polycarbonate and diffused glass lens options available

FULL-FRAME YOKE

- Designed to utilize the SFA6 slipfitter and SWB6 wall mount bracket, making it ideal for retrofit or new installations

PFM25L - 25,000 lumen model

Features & specifications

Champ Pro PFM Series LED Floodlights

Champ Pro Series LED Floodlights are designed to provide full-spectrum, crisp, white light. Two versions of the Champ are available, 25,000 and 50,000 lumens, providing ideal solutions for a wide range of applications.

Applications:

- High lumen output for installation in high mounting heights
- Locations requiring continuous and consistent light levels
- Areas requiring frequent on-and-off of lights
- Where extremely corrosive, wet, dusty, hot and/or cold conditions exist; indoors or outdoors
- NEMA 4X, marine, wet locations and hose-down environments
- Indoor and outdoor area lighting in plants, buildings and parking areas
- Manufacturing plants; heavy industrial, chemical, petrochemical or pharmaceutical facilities; platforms; loading docks; outdoor mounted general area lighting
- Ball mills, stackers and reclaimers, concentrators, smelters, mine roadways, outdoor processing areas, truck service shops, shovels and drag lines

LED system:

- Cool white (5000K, 67 CRI)
- Advanced heat sink design ensures LED does not exceed manufacturer's temperature ratings across all specified ambient conditions
- LM-79, LM-80 reports available upon request

Champ Pro LED benefits:

- Instant illumination and restrike
- Cold temperature operation / no warm-up required
- Redundancy in drivers with multiple series circuits connected to each driver to avoid complete loss of illumination
- Easy installation - yoke design to mount to SFA6
- Energy-efficient technology - up to 65% energy savings over HID fixtures
- Provides up to 100,000 hours of life - eliminates need for frequent lamp replacement
- Contains no mercury or other hazardous substances
- Shock- and vibration-resistant solid-state luminaires have no filaments or glass components that could break - greatly reduces the risk of premature failure
- Operating ambient -40°C to +40°C
- DesignLights® Consortium compliant for utility rebates*
- 5 year fixture warranty‡

‡Refer to page 2 of the D-0914 authorized distributor price book for Crouse-Hinds standard Terms and Conditions.

* Approved models include: PFM25LCYUNV1 76, PFM25LCYUNV34 76, PFM50LCYUNV1 76, PFM50LCYUNV34 76,

Refer to www.designlights.org Qualified Products List under family models for full listing details. Not all models are approved for all application categories.

Certifications and compliances:

- UL1598, UL1598A, cUL
- NEMA 4X; IP66
- IEC 60598; IEC 62471; IEC 62031; IEC 61347-2-13; IEC 62493
- CENELEC EN 55015; CENELEC EN 61547; CENELEC EN 61000-3-2
- SA AS/NZR CISPR 15

PFM25L

Model Number	Nominal Lumens	Wattage	Equivalent HID Luminaire	Typical Energy Savings/Lifetime
PFM25L	26,240 (7x6) 32,041 (3x3)	263	750-1000W	Up to 65% energy savings and over 100,000 hours of continuous operation!
PFM50L	53,890 (7x6) 64,082 (3x3)	531	1500W	

Effective projected area (EPA)

	PFM25L	PFM50L
Maximum EPA	2.80	6.00

Electrical ratings

	PFM25L	PFM50L
Input Power (Watts)	263	531
Input Amps at 120-277 VAC	0.70 - 2.80	1.40 - 5.60
Voltage Range, VAC	120-277V, 277-480V @ 50/60 Hz	
Voltage Range, VDC	127-250V	
Power Factor	>0.90	

Drivers

Option	25L & 50L
/UNV1	90-305 VAC, 50/60 Hz; 127-250 VDC
/UNV34	277-480 VAC, 50/60 Hz

Weights

Model Number	LBS.	KG.
PFM25L	52.00	23.59
PFM50L	106.00	48.08

PFM50L

Standard materials:

- Lamp housing and adapter - die cast aluminum with Corro-free™ epoxy powder coat
- Lens - heat- and impact-resistant glass
- Gaskets - silicone
- External hardware - stainless steel
- Factory-sealed, no external seals required

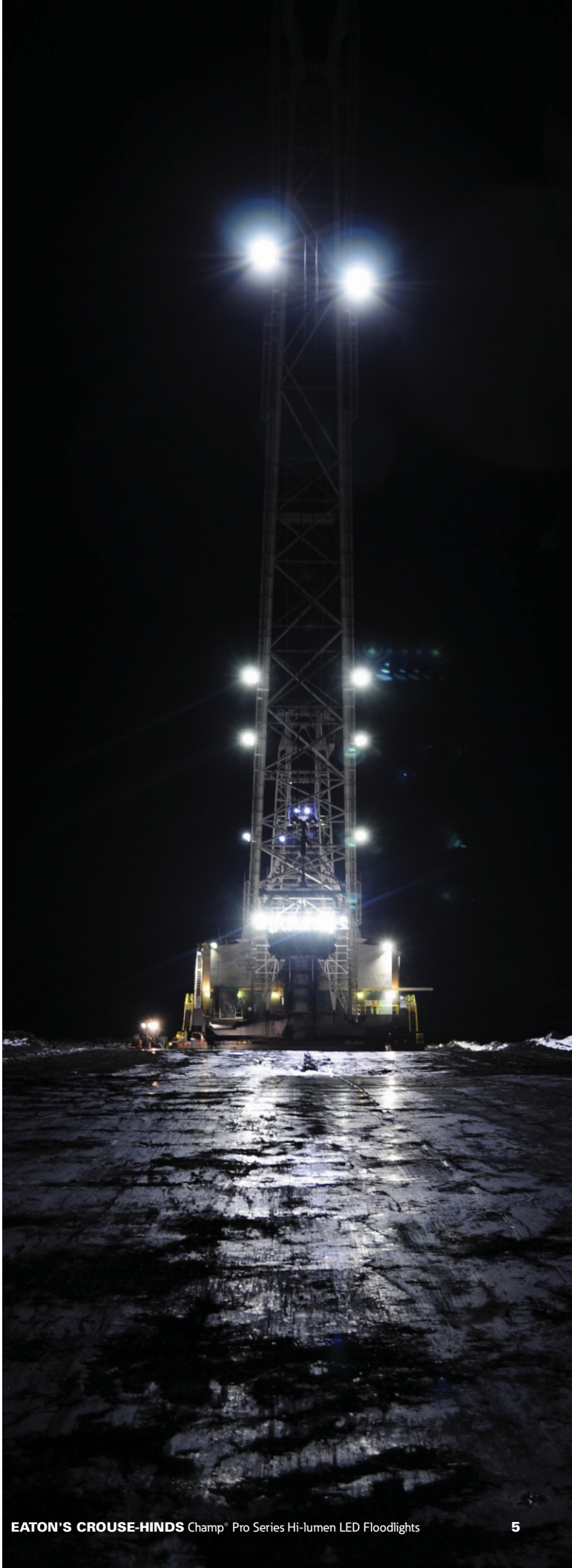
Accessories (ordered separately):

	Model Number
• Bolt-on visor	**DSV1**
• Bolt-on wire guard	**P61**
• Floodlight slipfitter	**SFA6***
• Slipfitter wall mount adapter	**SWB6***
• Safety cable	**SC30H†**

* Available with PFM25L model only.
† PFM50L requires two safety cables.

Options (add suffix to model number)

	Suffix
• Two conduit/cable glands of like thread installed	**S886**
• Diffused glass lens	**S891**
• Polycarbonate lens	**S903**



Ordering information

Part number example

PFM13LWY/UNV1 76 S886

PFM 25L C Y /UNV1 76 S886

Model

PFM	NEC model
NPFM	IEC model

Light source/intensity

25L	26,240 nominal lumens, 263 watts (7x6)
50L	53,890 nominal lumens, 531 watts (7x6)

Color temperature

C	5000K (cool white)

Mount

Y	Yoke

Options

S886	Two conduit/cable glands of like thread installed
S891	Diffused glass lens
S903	Polycarbonate lens

Entries

BLANK	3/4" NPT
M20*	20mm
M25*	25mm

* NPFM requires entry type.

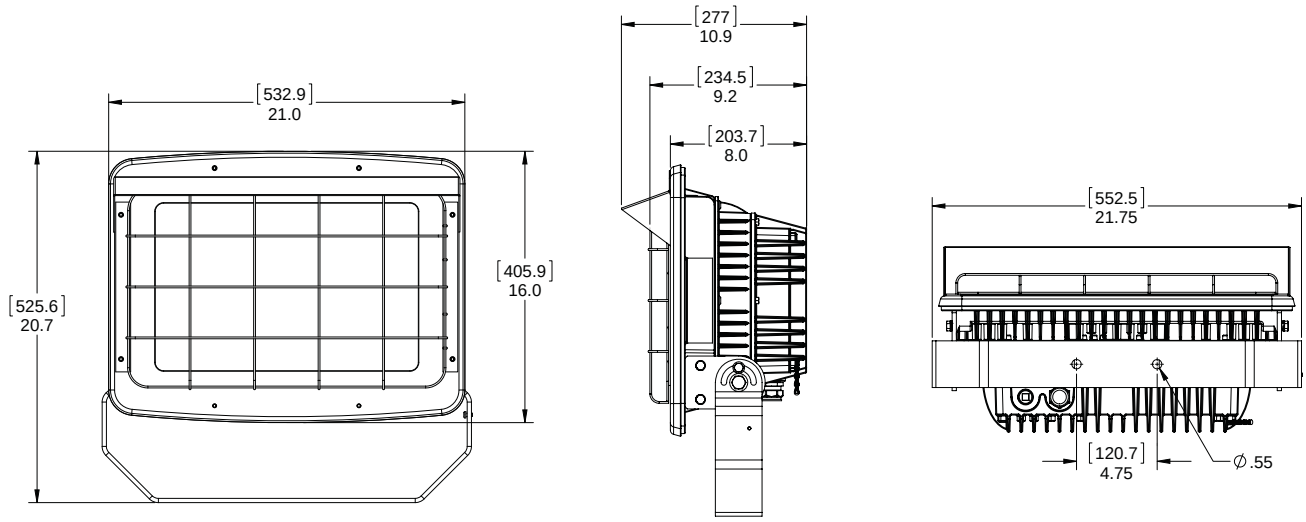
Optical distribution

76	7x6 floodlight pattern optics
33	3x3 floodlight pattern optics

Voltage

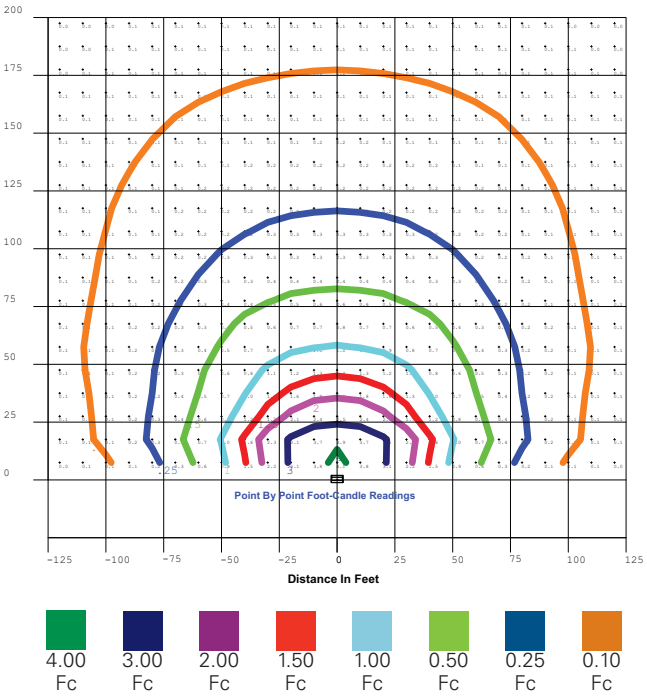
/UNV1	90 to 305 VAC 50/60 Hz; 127 to 250 VDC
/UNV34	277 to 480 VAC 50/60 Hz

Dimensions - PFM25L



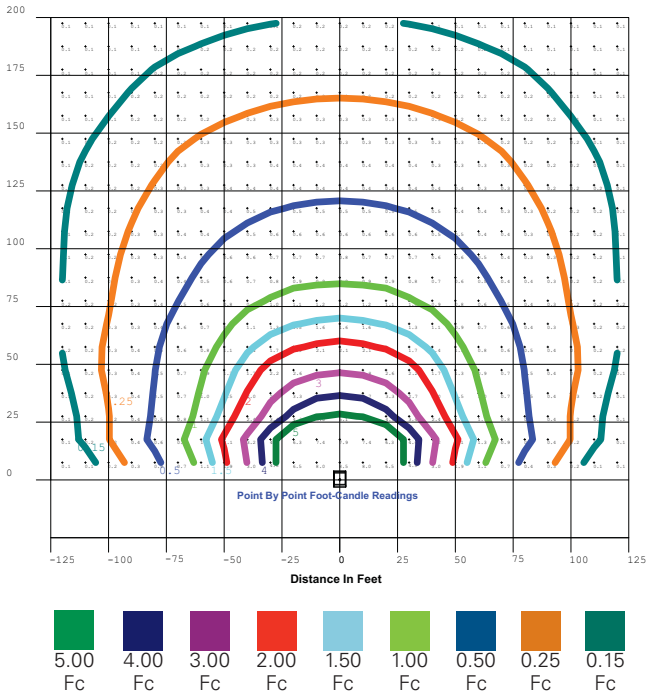
Photometric data

PFM25L Height: 50 ft.



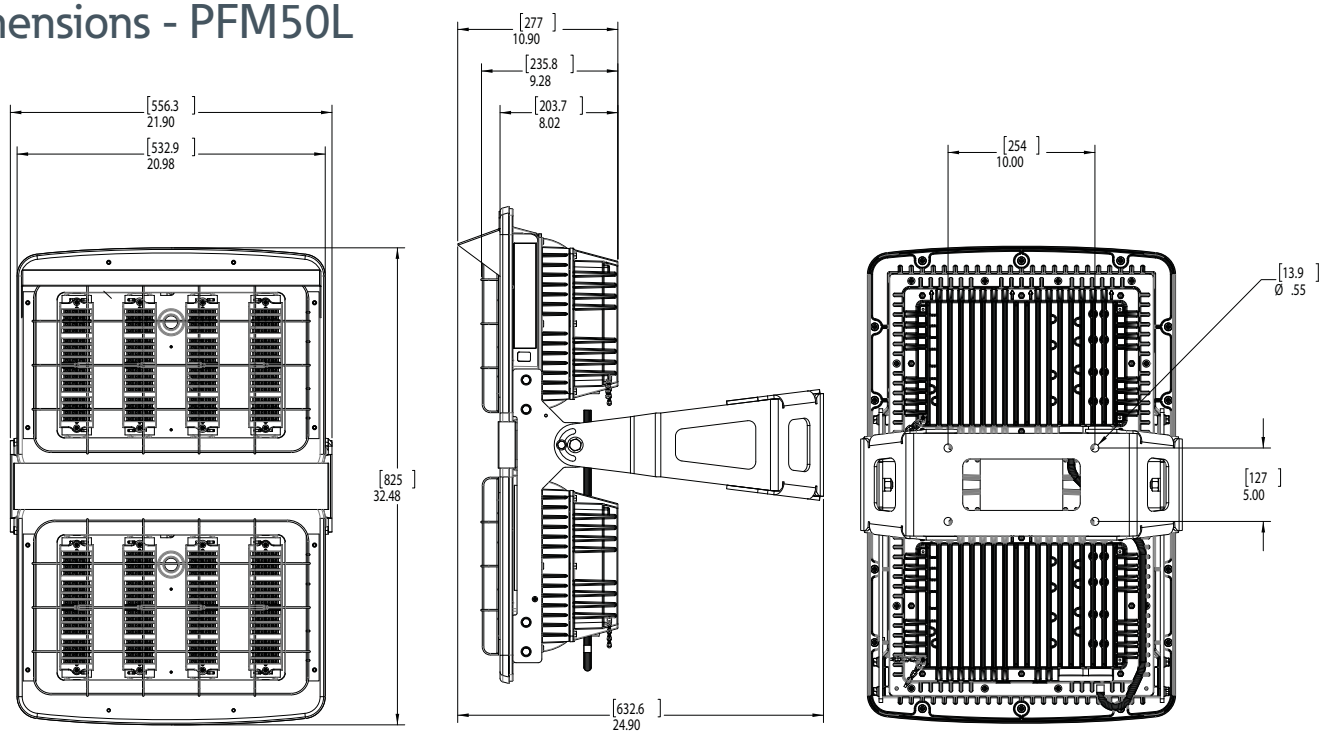
Model Number	Nominal Lumens	Wattage	Equivalent HID Luminaire
PFM25L	26,240	263	750-1000W

PFM50L Height: 50 ft.



Model Number	Nominal Lumens	Wattage	Equivalent HID Luminaire
PFM50L	53,890	531	1500W

Dimensions - PFM50L



U.S. (global headquarters): Eaton's Crouse-Hinds business

1201 Wolf Street
Syracuse, NY 13208

(866) 764-5454
FAX: (315) 477-5179
FAX Orders Only:
(866) 653-0640

crousecustomerctr@eaton.com

Canada

Toll Free: 800-265-0502
FAX: (800) 263-9504
FAX Orders only: (866) 653-0645

Middle East (Dubai)

9714-8066100
FAX: 9714-8894813

chmesales@eaton.com

Korea

82-2-3484-6783
82-2-3484-6778

CCHK-sales@
cooperindustries.com

Mexico/Latin America/Caribbean

52-555-804-4000
FAX: 52-555-804-4020

ventascentromex@eaton.com

Singapore

65-6645-9888
FAX: 65-6297-4819

chsi-sales@
cooperindustries.com

Australia

61-2-8787-2777
FAX: 61-2-9609-2342

CEASales@
cooperindustries.com

Europe (Germany)

49 (0) 6271 806-500
49 (0) 6271 806-476

sales.CCH.de@
cooperindustries.com

China

86-21-2899-3600
FAX: 86-21-2899-4055

cchsales@
cooperindustries.com

India

91-124-4683888
FAX: 91-124-4683899

cchindia@
cooperindustries.com

For more information:

If further assistance is required, please contact an authorized Eaton Distributor, Sales Office, or Customer Service Department.

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

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