



Analysis of BaySeparator Removal Efficiencies
Project Name: Crossroads Mixed Use
Location: El Paso County, CO

Project Information:

Drainage Area: 14 Acres
 2-Year Flow: 24.39 cfs
 100-Year Flow: 65.50 cfs

Treatment System Information:

BaySeparator XK Unit
 Treatment Capacity: 25.0 cfs
 Peak Bypass Capacity: 96.2 cfs

The below table demonstrates the BaySeparator system has an average removal efficiency of 74% for incoming flows below, at, and above the listed treatment capacity of the specified system. These removal efficiencies were calculated based on data collected at the University of Minnesota’s Saint Anthony Falls Laboratory and using the procedure outlined in the NJCAT verification program.

Fraction of MTR	Flow Rate (cfs)	Removal Efficiency	NJCAT Weighting Factor
25%	6.3	86%	0.25
50%	12.5	68%	0.30
75%	18.8	74%	0.20
100%	25.0	68%	0.15
125%	31.3	73%	0.10
Average Removal Efficiency		74%	

The 101 mg/L TSS incoming concentration is the “Median Event Mean Concentration for Urban Land Uses” provided by the Nationwide Urban Runoff Program (NURP).

Incoming EMC (mg/l)	Removal Efficiency (%)	Discharge EMC (mg/l)
101	74%	26.3 mg/l

As shown above, the proposed BaySeparator system for the Crossroads Mixed Use project site has an expected reduction of Effluent Mean Concentration to less than 30mg/l, thus meeting the water quality treatment requirement.

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Analysis of BaySeparator Removal Efficiencies
Project Name: Crossroads Mixed Use
Location: El Paso County, CO

Project Information:

Drainage Area: 18.2 Acres
 2-Year Flow: 31.76 cfs
 100-Year Flow: 112.1 cfs

Treatment System Information:

BaySeparator XK Unit
 Treatment Capacity: 32 cfs
 Peak Bypass Capacity: 123 cfs

The below table demonstrates the BaySeparator system has an average removal efficiency of 74% for incoming flows below, at, and above the listed treatment capacity of the specified system. These removal efficiencies were calculated based on data collected at the University of Minnesota’s Saint Anthony Falls Laboratory and using the procedure outlined in the NJCAT verification program.

Fraction of MTR	Flow Rate (cfs)	Removal Efficiency	NJCAT Weighting Factor
25%	8.0	86%	0.25
50%	16.0	68%	0.30
75%	24.0	74%	0.20
100%	32.0	68%	0.15
125%	40.0	73%	0.10
Average Removal Efficiency		74%	

The 101 mg/L TSS incoming concentration is the “Median Event Mean Concentration for Urban Land Uses” provided by the Nationwide Urban Runoff Program (NURP).

Incoming EMC (mg/l)	Removal Efficiency (%)	Discharge EMC (mg/l)
101	74%	26.3 mg/l

As shown above, the proposed BaySeparator system for the Crossroads Mixed Use project site has an expected reduction of Effluent Mean Concentration to less than 30mg/l, thus meeting the water quality treatment requirement.

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