



**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION**  
**BASED ON THE RATIONAL RAINFALL METHOD**  
**BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



<b>Project Name:</b> 891 Conservancy East	<b>Engineer:</b> DSEL
<b>Location:</b> Ottawa, ON	<b>Contact:</b> Peter Mott
<b>OGS #:</b> 1	<b>Report Date:</b> 9-Apr-24
<b>Area:</b> 5.52 ha	<b>Rainfall Station #:</b> 215
<b>Weighted C:</b> 0.58	<b>Particle Size Distribution:</b> FINE
<b>CDS Model:</b> 4040 (OFFLINE)	<b>CDS Treatment Capacity:</b> 170 l/s

<u>Rainfall Intensity<sup>1</sup></u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume<sup>1</sup></u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	8.9	8.9	5.2	97.4	10.3
1.5	9.9%	29.7%	13.4	13.4	7.9	96.6	9.6
2.0	8.4%	38.1%	17.8	17.8	10.5	95.9	8.0
2.5	7.7%	45.8%	22.3	22.3	13.1	95.1	7.3
3.0	5.9%	51.7%	26.7	26.7	15.7	94.4	5.6
3.5	4.4%	56.1%	31.2	31.2	18.3	93.6	4.1
4.0	4.7%	60.7%	35.6	35.6	21.0	92.9	4.3
4.5	3.3%	64.0%	40.1	40.1	23.6	92.1	3.1
5.0	3.0%	67.1%	44.5	44.5	26.2	91.3	2.8
6.0	5.4%	72.4%	53.4	53.4	31.4	89.8	4.8
7.0	4.4%	76.8%	62.3	62.3	36.7	88.3	3.8
8.0	3.5%	80.3%	71.2	71.2	41.9	86.8	3.1
9.0	2.8%	83.2%	80.1	80.1	47.1	85.3	2.4
10.0	2.2%	85.3%	89.0	89.0	52.4	83.8	1.8
15.0	7.0%	92.3%	133.5	133.5	78.6	76.3	5.3
20.0	4.5%	96.9%	178.0	169.9	100.0	67.0	3.0
25.0	1.4%	98.3%	222.5	169.9	100.0	53.6	0.8
30.0	0.7%	99.0%	267.0	169.9	100.0	44.7	0.3
35.0	0.5%	99.5%	311.5	169.9	100.0	38.3	0.2
40.0	0.5%	100.0%	356.0	169.9	100.0	33.5	0.2
							<b>89.9</b>

Removal Efficiency Adjustment<sup>2</sup> = 6.5%  
**Predicted Net Annual Load Removal Efficiency = 83.4%**  
**Predicted Annual Rainfall Treated = 98.7%**

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON  
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.  
 3 - CDS Efficiency based on testing conducted at the University of Central Florida  
 4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications



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<b>Project Name:</b> 891 Conservancy East	<b>Engineer:</b> DSEL
<b>Location:</b> Ottawa, ON	<b>Contact:</b> Peter Mott
<b>OGS #:</b> 5	<b>Report Date:</b> 9-Apr-24
<b>Area</b> 8.33 ha	<b>Rainfall Station #</b> 215
<b>Weighted C</b> 0.67	<b>Particle Size Distribution</b> FINE
<b>CDS Model</b> 5640 (OFFLINE)	<b>CDS Treatment Capacity</b> 255 l/s

<u>Rainfall Intensity<sup>1</sup></u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume<sup>1</sup></u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	15.5	15.5	6.1	97.1	10.3
1.5	9.9%	29.7%	23.3	23.3	9.1	96.2	9.5
2.0	8.4%	38.1%	31.0	31.0	12.2	95.4	8.0
2.5	7.7%	45.8%	38.8	38.8	15.2	94.5	7.3
3.0	5.9%	51.7%	46.5	46.5	18.3	93.6	5.6
3.5	4.4%	56.1%	54.3	54.3	21.3	92.7	4.0
4.0	4.7%	60.7%	62.1	62.1	24.3	91.9	4.3
4.5	3.3%	64.0%	69.8	69.8	27.4	91.0	3.0
5.0	3.0%	67.1%	77.6	77.6	30.4	90.1	2.7
6.0	5.4%	72.4%	93.1	93.1	36.5	88.4	4.8
7.0	4.4%	76.8%	108.6	108.6	42.6	86.6	3.8
8.0	3.5%	80.3%	124.1	124.1	48.7	84.9	3.0
9.0	2.8%	83.2%	139.6	139.6	54.8	83.2	2.3
10.0	2.2%	85.3%	155.2	155.2	60.9	81.4	1.8
15.0	7.0%	92.3%	232.7	232.7	91.3	72.7	5.1
20.0	4.5%	96.9%	310.3	254.9	100.0	57.7	2.6
25.0	1.4%	98.3%	387.9	254.9	100.0	46.1	0.7
30.0	0.7%	99.0%	465.5	254.9	100.0	38.4	0.3
35.0	0.5%	99.5%	543.0	254.9	100.0	32.9	0.2
40.0	0.5%	100.0%	620.6	254.9	100.0	28.8	0.2
							88.3

Removal Efficiency Adjustment<sup>2</sup> = 6.5%  
**Predicted Net Annual Load Removal Efficiency = 81.8%**  
**Predicted Annual Rainfall Treated = 97.8%**

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON  
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.  
 3 - CDS Efficiency based on testing conducted at the University of Central Florida  
 4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications



**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION  
BASED ON THE RATIONAL RAINFALL METHOD  
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



<b>Project Name:</b> 891 Conservancy East	<b>Engineer:</b> DSEL
<b>Location:</b> Ottawa, ON	<b>Contact:</b> Peter Mott
<b>OGS #:</b> 6	<b>Report Date:</b> 9-Apr-24
<b>Area</b> 5.31 ha	<b>Rainfall Station #</b> 215
<b>Weighted C</b> 0.51	<b>Particle Size Distribution</b> FINE
<b>CDS Model</b> 3035 (OFFLINE)	<b>CDS Treatment Capacity</b> 108 l/s

<u>Rainfall Intensity<sup>1</sup></u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume<sup>1</sup></u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	7.5	7.5	7.0	96.9	10.3
1.5	9.9%	29.7%	11.3	11.3	10.5	95.8	9.5
2.0	8.4%	38.1%	15.1	15.1	14.0	94.8	7.9
2.5	7.7%	45.8%	18.8	18.8	17.5	93.8	7.2
3.0	5.9%	51.7%	22.6	22.6	21.0	92.8	5.5
3.5	4.4%	56.1%	26.3	26.3	24.5	91.8	4.0
4.0	4.7%	60.7%	30.1	30.1	28.0	90.8	4.2
4.5	3.3%	64.0%	33.9	33.9	31.5	89.8	3.0
5.0	3.0%	67.1%	37.6	37.6	35.0	88.8	2.7
6.0	5.4%	72.4%	45.2	45.2	42.0	86.8	4.7
7.0	4.4%	76.8%	52.7	52.7	49.0	84.8	3.7
8.0	3.5%	80.3%	60.2	60.2	56.0	82.8	2.9
9.0	2.8%	83.2%	67.8	67.8	63.0	80.8	2.3
10.0	2.2%	85.3%	75.3	75.3	70.0	78.8	1.7
15.0	7.0%	92.3%	112.9	107.6	100.0	66.9	4.7
20.0	4.5%	96.9%	150.6	107.6	100.0	50.2	2.3
25.0	1.4%	98.3%	188.2	107.6	100.0	40.1	0.6
30.0	0.7%	99.0%	225.9	107.6	100.0	33.4	0.2
35.0	0.5%	99.5%	263.5	107.6	100.0	28.7	0.1
40.0	0.5%	100.0%	301.1	107.6	100.0	25.1	0.1
							86.7

Removal Efficiency Adjustment<sup>2</sup> = 6.5%  
**Predicted Net Annual Load Removal Efficiency = 80.2%**  
**Predicted Annual Rainfall Treated = 96.8%**

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON  
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.  
3 - CDS Efficiency based on testing conducted at the University of Central Florida  
4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications



**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION  
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BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



<b>Project Name:</b> 891 Conservancy East	<b>Engineer:</b> DSEL
<b>Location:</b> Ottawa, ON	<b>Contact:</b> Peter Mott
<b>OGS #:</b> 7	<b>Report Date:</b> 9-Apr-24
<b>Area</b> 5.05 ha	<b>Rainfall Station #</b> 215
<b>Weighted C</b> 0.75	<b>Particle Size Distribution</b> FINE
<b>CDS Model</b> 4040 (OFFLINE)	<b>CDS Treatment Capacity</b> 170 l/s

<u>Rainfall Intensity<sup>1</sup></u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume<sup>1</sup></u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	10.5	10.5	6.2	97.1	10.3
1.5	9.9%	29.7%	15.8	15.8	9.3	96.2	9.5
2.0	8.4%	38.1%	21.1	21.1	12.4	95.3	8.0
2.5	7.7%	45.8%	26.3	26.3	15.5	94.4	7.3
3.0	5.9%	51.7%	31.6	31.6	18.6	93.5	5.6
3.5	4.4%	56.1%	36.9	36.9	21.7	92.6	4.0
4.0	4.7%	60.7%	42.1	42.1	24.8	91.8	4.3
4.5	3.3%	64.0%	47.4	47.4	27.9	90.9	3.0
5.0	3.0%	67.1%	52.6	52.6	31.0	90.0	2.7
6.0	5.4%	72.4%	63.2	63.2	37.2	88.2	4.8
7.0	4.4%	76.8%	73.7	73.7	43.4	86.4	3.8
8.0	3.5%	80.3%	84.2	84.2	49.6	84.6	3.0
9.0	2.8%	83.2%	94.8	94.8	55.8	82.9	2.3
10.0	2.2%	85.3%	105.3	105.3	62.0	81.1	1.8
15.0	7.0%	92.3%	157.9	157.9	92.9	72.2	5.0
20.0	4.5%	96.9%	210.6	169.9	100.0	56.6	2.6
25.0	1.4%	98.3%	263.2	169.9	100.0	45.3	0.7
30.0	0.7%	99.0%	315.9	169.9	100.0	37.8	0.3
35.0	0.5%	99.5%	368.5	169.9	100.0	32.4	0.2
40.0	0.5%	100.0%	421.2	169.9	100.0	28.3	0.2
							88.1

Removal Efficiency Adjustment<sup>2</sup> = 6.5%  
**Predicted Net Annual Load Removal Efficiency = 81.6%**  
**Predicted Annual Rainfall Treated = 97.7%**

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON  
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.  
3 - CDS Efficiency based on testing conducted at the University of Central Florida  
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**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION  
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<b>Project Name:</b> 891 Conservancy East	<b>Engineer:</b> DSEL
<b>Location:</b> Ottawa, ON	<b>Contact:</b> Peter Mott
<b>OGS #:</b> 8	<b>Report Date:</b> 9-Apr-24
<b>Area</b> 4.47 ha	<b>Rainfall Station #</b> 215
<b>Weighted C</b> 0.80	<b>Particle Size Distribution</b> FINE
<b>CDS Model</b> 4040 (OFFLINE)	<b>CDS Treatment Capacity</b> 170 l/s

<u>Rainfall Intensity<sup>1</sup></u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume<sup>1</sup></u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	9.9	9.9	5.9	97.2	10.3
1.5	9.9%	29.7%	14.9	14.9	8.8	96.3	9.5
2.0	8.4%	38.1%	19.9	19.9	11.7	95.5	8.0
2.5	7.7%	45.8%	24.9	24.9	14.6	94.7	7.3
3.0	5.9%	51.7%	29.8	29.8	17.6	93.8	5.6
3.5	4.4%	56.1%	34.8	34.8	20.5	93.0	4.1
4.0	4.7%	60.7%	39.8	39.8	23.4	92.1	4.3
4.5	3.3%	64.0%	44.7	44.7	26.3	91.3	3.0
5.0	3.0%	67.1%	49.7	49.7	29.3	90.5	2.7
6.0	5.4%	72.4%	59.6	59.6	35.1	88.8	4.8
7.0	4.4%	76.8%	69.6	69.6	41.0	87.1	3.8
8.0	3.5%	80.3%	79.5	79.5	46.8	85.4	3.0
9.0	2.8%	83.2%	89.5	89.5	52.7	83.8	2.4
10.0	2.2%	85.3%	99.4	99.4	58.5	82.1	1.8
15.0	7.0%	92.3%	149.1	149.1	87.8	73.7	5.1
20.0	4.5%	96.9%	198.8	169.9	100.0	60.0	2.7
25.0	1.4%	98.3%	248.5	169.9	100.0	48.0	0.7
30.0	0.7%	99.0%	298.2	169.9	100.0	40.0	0.3
35.0	0.5%	99.5%	347.9	169.9	100.0	34.3	0.2
40.0	0.5%	100.0%	397.7	169.9	100.0	30.0	0.2
							88.7

Removal Efficiency Adjustment<sup>2</sup> = 6.5%  
**Predicted Net Annual Load Removal Efficiency = 82.2%**  
**Predicted Annual Rainfall Treated = 98.0%**

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON  
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.  
 3 - CDS Efficiency based on testing conducted at the University of Central Florida  
 4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications



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<b>Project Name:</b> 891 Conservancy East	<b>Engineer:</b> DSEL
<b>Location:</b> Ottawa, ON	<b>Contact:</b> Peter Mott
<b>OGS #:</b> 13	<b>Report Date:</b> 9-Apr-24
<b>Area</b> 1.23 ha	<b>Rainfall Station #</b> 215
<b>Weighted C</b> 0.70	<b>Particle Size Distribution</b> FINE
<b>CDS Model</b> 2025 (OFFLINE)	<b>CDS Treatment Capacity</b> 45 l/s

<u>Rainfall Intensity<sup>1</sup></u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume<sup>1</sup></u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	2.4	2.4	5.3	97.3	10.3
1.5	9.9%	29.7%	3.6	3.6	7.9	96.6	9.6
2.0	8.4%	38.1%	4.8	4.8	10.6	95.8	8.0
2.5	7.7%	45.8%	6.0	6.0	13.2	95.1	7.3
3.0	5.9%	51.7%	7.2	7.2	15.8	94.3	5.6
3.5	4.4%	56.1%	8.4	8.4	18.5	93.6	4.1
4.0	4.7%	60.7%	9.6	9.6	21.1	92.8	4.3
4.5	3.3%	64.0%	10.8	10.8	23.8	92.0	3.1
5.0	3.0%	67.1%	12.0	12.0	26.4	91.3	2.8
6.0	5.4%	72.4%	14.4	14.4	31.7	89.8	4.8
7.0	4.4%	76.8%	16.8	16.8	37.0	88.3	3.8
8.0	3.5%	80.3%	19.1	19.1	42.3	86.7	3.1
9.0	2.8%	83.2%	21.5	21.5	47.5	85.2	2.4
10.0	2.2%	85.3%	23.9	23.9	52.8	83.7	1.8
15.0	7.0%	92.3%	35.9	35.9	79.2	76.1	5.3
20.0	4.5%	96.9%	47.9	45.3	100.0	66.4	3.0
25.0	1.4%	98.3%	59.8	45.3	100.0	53.2	0.8
30.0	0.7%	99.0%	71.8	45.3	100.0	44.3	0.3
35.0	0.5%	99.5%	83.8	45.3	100.0	38.0	0.2
40.0	0.5%	100.0%	95.7	45.3	100.0	33.2	0.2
							89.8

Removal Efficiency Adjustment<sup>2</sup> = 6.5%  
**Predicted Net Annual Load Removal Efficiency = 83.3%**  
**Predicted Annual Rainfall Treated = 98.7%**

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON  
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.  
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