BaseTech Consulting Inc.

Consulting Engineers

67 ANDERSON BOULEVARD
UXBRIDGE

Stormwater Management Report
June, 2022

INTRODUCTION

It is proposed to develop the site as shown on the Site Plan prepared by Owen Design Consultants Ltd.

This Report looks at the impact the new development may have on the existing stormwater management regime and how those impacts can be mitigated.

The proposed site is located within the Uxbridge Industrial Park. The subdivision design includes the provision of a stormwater management pond which will provide quantity control for the stormwater run-off from the subdivision up to and including the 100 year storm event. Individual sites must provide quality control measures to provide Level 1 treatment.

STORM DRAINAGE REQUIREMENTS

The proposed site is included in the subdivision designs with an allowable Impermeability Factor of 67%.
The proposed development will have the following area characteristics:

Total Site Area	8,097 m^2
Building	987m^2
Asphalt/Concrete Paving	899m^2
Gravel Paving	4,128 m^2
Grass/Landscape	2,083 m^2

The post-development drainage characteristics and Impermeability Factor are as follows:

Building	987 m^2 @ 90%	=	888.3
Asphalt/Concrete Paving	899 m^2 @ 90%	=	809.1
Gravel Paving	4,128 m^2 @ 70%	=	2889.6
Grass/Landscape	2,083 m^2 @ 30%	=	624.9
	Total Impermeable Area	=	5211.9

The post-development Impermeability Factor will be $= \frac{5211.9}{8097.0} = 0.64$

The permissible Impermeable Factor is 0.67.

Therefore, the drainage areas are within the permissible parameters required for the overall subdivision stormwater management design and additional quantity and quality controls are not required.

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QUALITY CONTROL

The Subdivision design requires that all parking and access areas be provided with a facility to prevent fuel spills and sediment from entering the storm system. Therefore, an oil/grit separator (Stormceptor EFO4, see Appendix 1 for details) will be provided to control any spillages/debris in the run-off. This will provide Level 1 protection (80% TSS removal) for the developed site.

Regular maintenance of the oil/grit separator will be required to be carried out to the manufacturer's recommendations.

Sedimentation and erosion controls should be provided during construction using the following techniques depending on site development phasing and seasonal considerations:

1) Filter cloth and snow fencing along the property boundaries.
2) Mud mat at the construction entrance.
3) Rock check dams at high flow areas.
4) Catchbasin protection.
5) Grassing of all required areas on completion of grading.

All sedimentation and erosion control measures should be carried out in accordance with current Town of Town of Uxbridge and Ministry of Natural Resources guidelines. The control measures should be checked on a regular basis and after each rainfall event and repaired as necessary.

GROUNDWATER RECHARGE

The Subdivision Agreement requires that an infiltration facility is included and is to be designed to ensure post-development recharge is equal to or greater than pre-development recharge.

It has been assumed that the annual rainfall is 787.4 mm and existing infiltration rate is 175 mm per year.

<u>Pre-development Recharge</u>

Assuming the entire lot is available for recharge, the total infiltration would be:

V_{Pre} = 175 mm/ha x 0.8097 ha.
= 1416.9 m^3 per year

<u>Post-development Re-charge</u>

Assuming only the landscape areas are available for recharge then:

V_{Post} = 175 mm/ha x 0.2083ha.

= 364.5m^3 per year

This leaves an infiltration deficit of 1052.4 m^3 per year.

Based on Figure C2 of the MOE Stormwater Management Planning and Design Manual (1993), 70% of each precipitation event of 10 mm or greater is available for infiltration purposes. This would, in turn, yield 551.18 mm of precipitation available for infiltration.

Water from the roof will be 'clean' and may be infiltrated. The infiltration volume from the roof will be:

V_{Roof} = 0.0987 ha x 551.18 mm
= 544 m^3

While this does not make up the infiltration deficit, infiltration from other areas would create the potential to contaminate the groundwater.

The captured rainfall from the roof from a 10 mm event will be:

V = 0.0987 ha x 10 mm
= 9.87 m^3

Assuming a void ratio of 0.40, this will result in a stone volume of 24.7 m^3.

The area of the bed is calculated by the equation:

$$A = \frac{1000V}{Pmt}$$

Where A = Area (m^2)
V = Volume to be infiltrated (m^3)
P = Percolation rate of surrounding soils (mm/hr)
M = Porosity of the storage media
t = Retention time (hr)

The average percolation rate has been determined to be 12 mm/hr. (see details in Appendix 2)

Therefore, for infiltration,

$$A = \frac{1000 \times 9.87}{12 \times 0.4 \times 48} = 42.8\ m^2$$

The area of the bottom of the infiltration bed will be 12.0 m x 3.6 m with a depth of 0.6 m giving a stone volume of 25.92 m^3.

The boreholes for the geotechnical investigation were to a depth of 5m and no groundwater was present. Therefore, the bottom of the infiltration bed should be at least 1.0m above groundwater level.

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SUMMARY

The proposed development is within the allowable criteria for the overall stormwater management design and so additional quantity retention facilities and not required.

1. The runoff coefficient for the site is within the allowable value and so no on-site retention is required.
2. Quality control will be provided by an oil/grit separator.
3. Groundwater recharge will be provided by an infiltration trench system.

Peter Feherty, M.Sc., P.Eng.
BaseTech Consulting Inc.

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APPENDIX 1
OIL/GRIT SEPARATOR DETAILS

Stormceptor®

FORTERRA

Stormceptor® EF Sizing Report

STORMCEPTOR®
ESTIMATED NET ANNUAL SEDIMENT (TSS) LOAD REDUCTION

06/22/2022

Province:	Ontario
City:	Uxbridge
Nearest Rainfall Station:	TORONTO INTL AP
Climate Station Id:	6158731
Years of Rainfall Data:	20

Site Name:	67 Anderson Blvd.

Drainage Area (ha):	0.8097
Runoff Coefficient 'c':	0.64

Particle Size Distribution:	Fine
Target TSS Removal (%):	80.0
Required Water Quality Runoff Volume Capture (%):	90.0

Oil / Fuel Spill Risk Site?	Yes
Upstream Flow Control?	No
Peak Conveyance (maximum) Flow Rate (L/s):	

Project Name:	67 Anderson Blvd.
Project Number:	-
Designer Name:	Brandon O'Leary
Designer Company:	Forterra
Designer Email:	brandon.oleary@forterrabp.com
Designer Phone:	905-630-0359
EOR Name:	Peter Feherty
EOR Company:	BaseTech Consulting Inc.
EOR Email:	basetechconsulting@rogers.com
EOR Phone:	905-251-7720

Net Annual Sediment (TSS) Load Reduction Sizing Summary

Stormceptor Model	TSS Removal Provided (%)
EFO4	83
EFO6	92
EFO8	96
EFO10	98
EFO12	99

Recommended Stormceptor EFO Model: EFO4

Estimated Net Annual Sediment (TSS) Load Reduction (%): 83

Water Quality Runoff Volume Capture (%): > 90

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THIRD-PARTY TESTING AND VERIFICATION

►**Stormceptor® EF and Stormceptor® EFO** are the latest evolutions in the Stormceptor® oil-grit separator (OGS) technology series, and are designed to remove a wide variety of pollutants from stormwater and snowmelt runoff. These technologies have been third-party tested in accordance with the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators** and performance has been third-party verified in accordance with the **ISO 14034 Environmental Technology Verification (ETV)** protocol.

PERFORMANCE

►**Stormceptor® EF and EFO** remove stormwater pollutants through gravity separation and floatation, and feature a patent-pending design that generates positive removal of total suspended solids (TSS) throughout each storm event, including high-intensity storms. Captured pollutants include sediment, free oils, and sediment-bound pollutants such as nutrients, heavy metals, and petroleum hydrocarbons. Stormceptor is sized to remove a high level of TSS from the frequent rainfall events that contribute the vast majority of annual runoff volume and pollutant load. The technology incorporates an internal bypass to convey excessive stormwater flows from high-intensity storms through the device without resuspension and washout (scour) of previously captured pollutants. Proper routine maintenance ensures high pollutant removal performance and protection of downstream waterways.

PARTICLE SIZE DISTRIBUTION (PSD)

►The **Canadian ETV PSD** shown in the table below was used, or in part, for this sizing. This is the identical PSD that is referenced in the Canadian ETV ***Procedure for Laboratory Testing of Oil-Grit Separators*** for both sediment removal testing and scour testing. The Canadian ETV PSD contains a wide range of particle sizes in the sand and silt fractions, and is considered reasonably representative of the particle size fractions found in typical urban stormwater runoff.

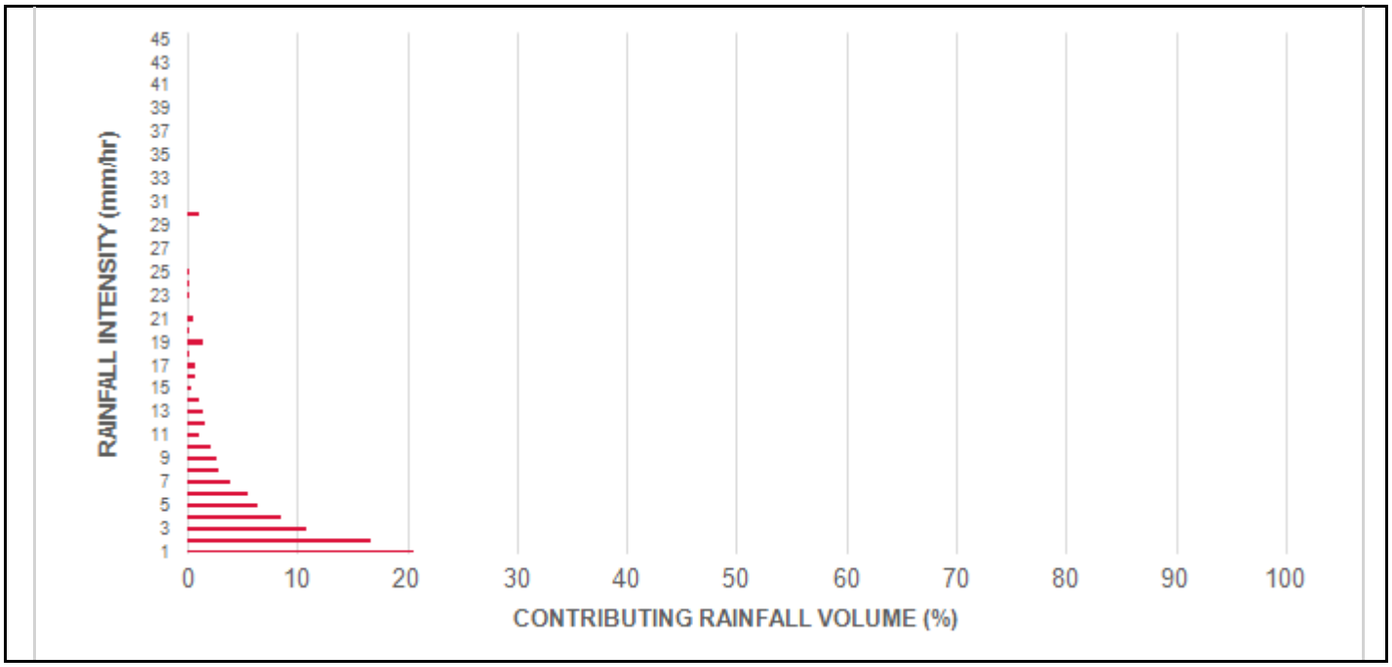
Particle Size (µm)	Percent Less Than	Particle Size Fraction (µm)	Percent
1000	100	500-1000	5
500	95	250-500	5
250	90	150-250	15
150	75	100-150	15
100	60	75-100	10
75	50	50-75	5
50	45	20-50	10
20	35	8-20	15
8	20	5-8	10
5	10	2-5	5
2	5	<2	5

Stormceptor® EF Sizing Report

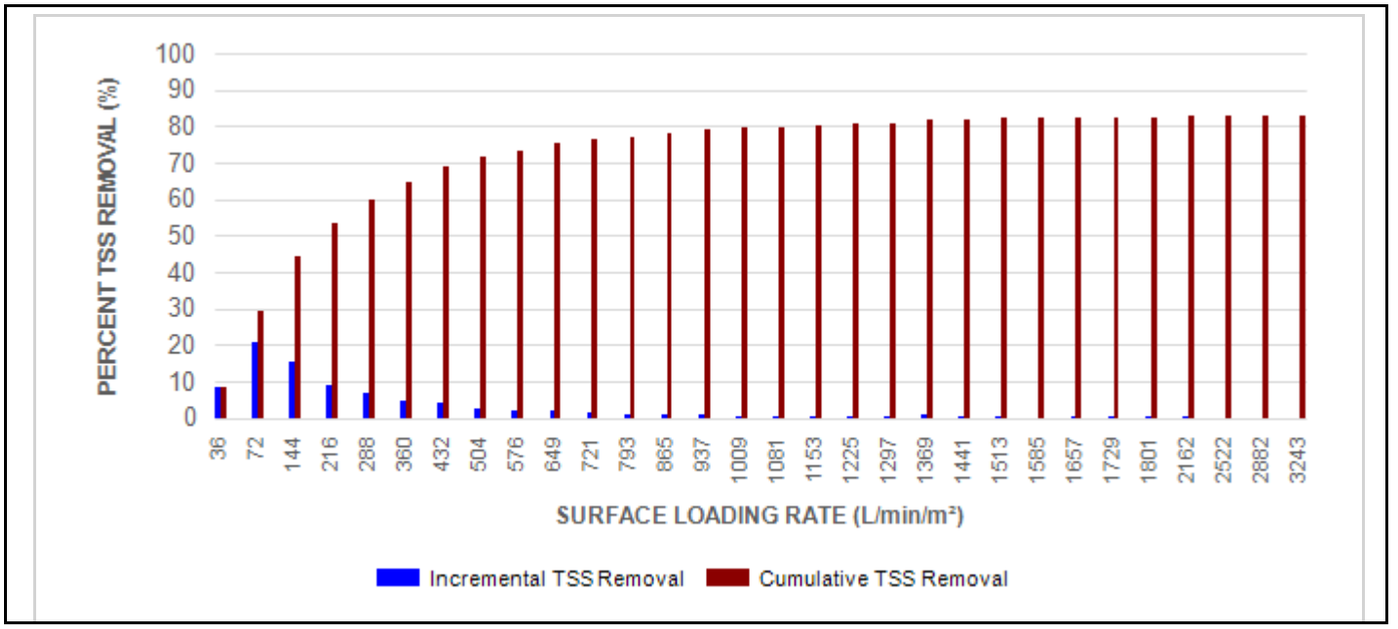
Rainfall Intensity (mm / hr)	Percent Rainfall Volume (%)	Cumulative Rainfall Volume (%)	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m²)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
0.5	8.5	8.5	0.72	43.0	36.0	100	8.5	8.5
1	20.6	29.1	1.44	86.0	72.0	100	20.6	29.1
2	16.8	45.9	2.88	173.0	144.0	91	15.3	44.4
3	10.8	56.7	4.32	259.0	216.0	83	8.9	53.3
4	8.5	65.2	5.76	346.0	288.0	79	6.7	60.0
5	6.4	71.6	7.21	432.0	360.0	76	4.9	64.8
6	5.5	77.0	8.65	519.0	432.0	72	4.0	68.8
7	3.9	81.0	10.09	605.0	504.0	69	2.7	71.5
8	2.9	83.9	11.53	692.0	576.0	66	1.9	73.4
9	2.7	86.5	12.97	778.0	649.0	64	1.7	75.2
10	2.2	88.7	14.41	865.0	721.0	64	1.4	76.5
11	1.0	89.7	15.85	951.0	793.0	63	0.6	77.2
12	1.7	91.3	17.29	1038.0	865.0	63	1.0	78.2
13	1.4	92.8	18.73	1124.0	937.0	62	0.9	79.1
14	1.0	93.7	20.18	1211.0	1009.0	62	0.6	79.7
15	0.3	94.0	21.62	1297.0	1081.0	60	0.2	79.9
16	0.8	94.8	23.06	1384.0	1153.0	58	0.5	80.3
17	0.8	95.7	24.50	1470.0	1225.0	56	0.5	80.8
18	0.2	95.8	25.94	1556.0	1297.0	55	0.1	80.9
19	1.5	97.3	27.38	1643.0	1369.0	53	0.8	81.7
20	0.2	97.5	28.82	1729.0	1441.0	51	0.1	81.8
21	0.6	98.2	30.26	1816.0	1513.0	48	0.3	82.1
22	0.0	98.2	31.71	1902.0	1585.0	46	0.0	82.1
23	0.2	98.4	33.15	1989.0	1657.0	44	0.1	82.2
24	0.2	98.6	34.59	2075.0	1729.0	42	0.1	82.3
25	0.2	98.9	36.03	2162.0	1801.0	41	0.1	82.4
30	1.1	100.0	43.23	2594.0	2162.0	34	0.4	82.8
35	0.0	100.0	50.44	3026.0	2522.0	29	0.0	82.8
40	0.0	100.0	57.65	3459.0	2882.0	26	0.0	82.8
45	0.0	100.0	64.85	3891.0	3243.0	23	0.0	82.8
						Estimated Net Annual Sediment (TSS) Load Reduction =		**83 %**

Climate Station ID: 6158731 *Years of Rainfall Data*: 20

RAINFALL DATA FROM TORONTO INTL AP RAINFALL STATION



INCREMENTAL AND CUMULATIVE TSS REMOVAL
FOR THE RECOMMENDED STORMCEPTOR® MODEL



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Maximum Pipe Diameter / Peak Conveyance

Stormceptor EF / EFO	Model Diameter		Min Angle Inlet / Outlet Pipes	Max Inlet Pipe Diameter		Max Outlet Pipe Diameter		Peak Conveyance Flow Rate	
	(m)	(ft)		(mm)	(in)	(mm)	(in)	(L/s)	(cfs)
EF4 / EFO4	1.2	4	90	609	24	609	24	425	15
EF6 / EFO6	1.8	6	90	914	36	914	36	990	35
EF8 / EFO8	2.4	8	90	1219	48	1219	48	1700	60
EF10 / EFO10	3.0	10	90	1828	72	1828	72	2830	100
EF12 / EFO12	3.6	12	90	1828	72	1828	72	2830	100

SCOUR PREVENTION AND ONLINE CONFIGURATION

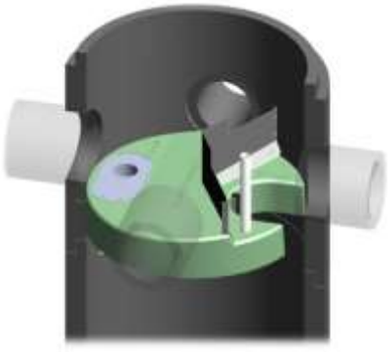
►**Stormceptor® EF and EFO** feature an internal bypass and superior scour prevention technology that have been demonstrated in third-party testing according to the scour testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**, and the exceptional scour test performance has been third-party verified in accordance with the ISO 14034 ETV protocol. As a result, Stormceptor EF and EFO are approved for online installation, eliminating the need for costly additional bypass structures, piping, and installation expense.

DESIGN FLEXIBILITY

►**Stormceptor® EF** and **EFO** offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe or multiple inlet pipes, and/or surface runoff through an inlet grate. The device can also serve as a junction structure, accommodate a 90-degree inlet-to-outlet bend angle, and can be modified to ensure performance in submerged conditions.

OIL CAPTURE AND RETENTION

►While Stormceptor® EF will capture and retain oil from dry weather spills and low intensity runoff, **Stormceptor® EFO** has demonstrated superior oil capture and greater than 99% oil retention in third-party testing according to the light liquid re-entrainment testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**. Stormceptor EFO is recommended for sites where oil capture and retention is a requirement.



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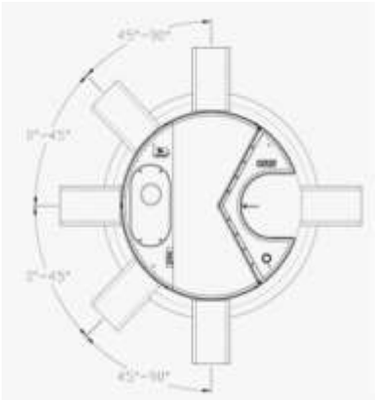

INLET-TO-OUTLET DROP

Elevation differential between inlet and outlet pipe inverts is dictated by the angle at which the inlet pipe(s) enters the unit.
0° - 45° : The inlet pipe is 1-inch (25mm) higher than the outlet pipe.
45° - 90° : The inlet pipe is 2-inches (50mm) higher than the outlet pipe.

HEAD LOSS

The head loss through Stormceptor EF is similar to that of a 60-degree bend structure. The applicable K value for calculating minor losses through the unit is 1.1. For submerged conditions the applicable K value is 3.0.

Pollutant Capacity

Stormceptor EF / EFO	Model Diameter		Depth (Outlet Pipe Invert to Sump Floor)		Oil Volume		Recommended Sediment Maintenance Depth *		Maximum Sediment Volume *		Maximum Sediment Mass **	
	(m)	(ft)	(m)	(ft)	(L)	(Gal)	(mm)	(in)	(L)	(ft^3)	(kg)	(lb)
EF4 / EFO4	1.2	4	1.52	5.0	265	70	203	8	1190	42	1904	5250
EF6 / EFO6	1.8	6	1.93	6.3	610	160	305	12	3470	123	5552	15375
EF8 / EFO8	2.4	8	2.59	8.5	1070	280	610	24	8780	310	14048	38750
EF10 / EFO10	3.0	10	3.25	10.7	1670	440	610	24	17790	628	28464	78500
EF12 / EFO12	3.6	12	3.89	12.8	2475	655	610	24	31220	1103	49952	137875

*Increased sump depth may be added to increase sediment storage capacity
** Average density of wet packed sediment in sump = 1.6 kg/L (100 lb/ft^3)

Feature	Benefit	Feature Appeals To
Patent-pending enhanced flow treatment and scour prevention technology	Superior, verified third-party performance	Regulator, Specifying & Design Engineer
Third-party verified light liquid capture and retention for EFO version	Proven performance for fuel/oil hotspot locations	Regulator, Specifying & Design Engineer, Site Owner
Functions as bend, junction or inlet structure	Design flexibility	Specifying & Design Engineer
Minimal drop between inlet and outlet	Site installation ease	Contractor
Large diameter outlet riser for inspection and maintenance	Easy maintenance access from grade	Maintenance Contractor & Site Owner

STANDARD STORMCEPTOR EF/EFO DRAWINGS

For standard details, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

STANDARD STORMCEPTOR EF/EFO SPECIFICATION

For specifications, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

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STANDARD PERFORMANCE SPECIFICATION FOR "OIL GRIT SEPARATOR" (OGS) STORMWATER QUALITY TREATMENT DEVICE

PART 1 – GENERAL

1.1 WORK INCLUDED

This section specifies requirements for selecting, sizing, and designing an underground Oil Grit Separator (OGS) device for stormwater quality treatment, with third-party testing results and a Statement of Verification in accordance with ISO 14034 Environmental Management – Environmental Technology Verification (ETV).

1.2 REFERENCE STANDARDS & PROCEDURES

ISO 14034:2016 Environmental management – Environmental technology verification (ETV)

Canadian Environmental Technology Verification (ETV) Program's **Procedure for Laboratory Testing of Oil-Grit** S**eparators**

1.3 SUBMITTALS

1.3.1 All submittals, including sizing reports & shop drawings, shall be submitted upon request with each order to the contractor then forwarded to the Engineer of Record for review and acceptance. Shop drawings shall detail all OGS components, elevations, and sequence of construction.

1.3.2 Alternative devices shall have features identical to or greater than the specified device, including: treatment chamber diameter, treatment chamber wet volume, sediment storage volume, and oil storage volume.

1.3.3 Unless directed otherwise by the Engineer of Record, OGS stormwater quality treatment product substitutions or alternatives submitted within ten days prior to project bid shall not be accepted. All alternatives or substitutions submitted shall be signed and sealed by a local registered Professional Engineer, based on the exact same criteria detailed in Section 3, in entirety, subject to review and approval by the Engineer of Record.

PART 2 – PRODUCTS

2.1 OGS POLLUTANT STORAGE

The OGS device shall include a sump for sediment storage, and a protected volume for the capture and storage of petroleum hydrocarbons and buoyant gross pollutants. The minimum sediment & petroleum hydrocarbon storage capacity shall be as follows:

2.1.1	4 ft (1219 mm) Diameter OGS Units:	1.19 m^3 sediment / 265 L oil
	6 ft (1829 mm) Diameter OGS Units:	3.48 m^3 sediment / 609 L oil
	8 ft (2438 mm) Diameter OGS Units:	8.78 m^3 sediment / 1,071 L oil
	10 ft (3048 mm) Diameter OGS Units:	17.78 m^3 sediment / 1,673 L oil
	12 ft (3657 mm) Diameter OGS Units:	31.23 m^3 sediment / 2,476 L oil

PART 3 – PERFORMANCE & DESIGN

3.1 GENERAL

The OGS stormwater quality treatment device shall be verified in accordance with ISO 14034:2016 Environmental management – Environmental technology verification (ETV). The OGS stormwater quality treatment device shall remove oil, sediment and gross pollutants from stormwater runoff during frequent wet weather events, and retain these pollutants during less frequent high flow wet weather events below the insert within the OGS for later removal during maintenance. The Manufacturer shall have at least ten (10) years of local experience, history and success in engineering design, manufacturing and production and supply of OGS stormwater quality treatment device systems, acceptable to the Engineer of Record.

3.2 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in the sizing report for the specified device. Sizing of the OGS shall be determined by use of a minimum ten (10) years of local historical rainfall data provided by Environment Canada. Sizing shall also be determined by use of the sediment removal performance data derived from the ISO 14034 ETV third-party verified laboratory testing data from testing conducted in accordance with the Canadian ETV protocol Procedure for Laboratory Testing of Oil-Grit Separators, as follows:

3.2.1 Sediment removal efficiency for a given surface loading rate and its associated flow rate shall be based on sediment removal efficiency demonstrated at the seven (7) tested surface loading rates specified in the protocol, ranging 40 L/min/m^2 to 1400 L/min/m^2, and as stated in the ISO 14034 ETV Verification Statement for the OGS device.

3.2.2 Sediment removal efficiency for surface loading rates between 40 L/min/m^2 and 1400 L/min/m^2 shall be based on linear interpolation of data between consecutive tested surface loading rates.

3.2.3 Sediment removal efficiency for surface loading rates less than the lowest tested surface loading rate of 40 L/min/m^2 shall be assumed to be identical to the sediment removal efficiency at 40 L/min/m^2. No extrapolation shall be allowed that results in a sediment removal efficiency that is greater than that demonstrated at 40 L/min/m^2.

3.2.4 Sediment removal efficiency for surface loading rates greater than the highest tested surface loading rate of 1400 L/min/m^2 shall assume zero sediment removal for the portion of flow that exceeds 1400 L/min/m^2, and shall be calculated using a simple proportioning formula, with 1400 L/min/m^2 in the numerator and the higher surface loading rate in the denominator, and multiplying the resulting fraction times the sediment removal efficiency at 1400 L/min/m^2.

The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 2.1.

3.3 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of third-party scour testing conducted in

accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.**

3.3.1 To be acceptable for on-line installation, the OGS device must demonstrate an average scour test effluent concentration less than 10 mg/L at each surface loading rate tested, up to and including 2600 L/min/m^2.

3.4 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party Light Liquid Re-entrainment Simulation Testing in accordance with the Canadian ETV **Program's Procedure for Laboratory Testing of Oil-Grit Separators,** with results reported within the Canadian ETV or ISO 14034 ETV verification. This re-entrainment testing is conducted with the device pre-loaded with low density polyethylene (LDPE) plastic beads as a surrogate for light liquids such as oil and fuel. Testing is conducted on the same OGS unit tested for sediment removal to assess whether light liquids captured after a spill are effectively retained at high flow rates.

3.4.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m^2 to 2600 L/min/m^2) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.** However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.

APPENDIX 2
SOIL PERCOLATION RATE

Fwd: 67 Anderson

From: John Owen (john@owendesign.ca)

To: basetechconsulting@rogers.com

Date: Wednesday, June 22, 2022, 04:10 p.m. EDT

Hi Peter,

Percolation and infiltration rates for your review.

Regards,
John

Begin forwarded message:

From: Damoon K. <DKasemi@haddadgeo.com>
Subject: Re: 67 Anderson
Date: June 22, 2022 at 3:01:13 PM EDT
To: John Owen <john@owendesign.ca>
Cc: Information Desk <info@haddadgeo.com>

Hi John,

Based on gradation results, an infiltration rate of 50 mm/hr and a percolation rate of 12 min/cm may be assumed for the sandy silt with some clay and trace sand, sample SS1 at BH4. An infiltration rate of 30mm/hr and a percolation rate of 20min/cm may be assumed for the silty sand with some gravels and trace clay, sample SS3 at BH2.

Best Regards,

Damoon Kasemi, P.Eng.
Principal Geotechnical Engineer
HADDAD GEOTECHNICAL INC.
151 Amber Street, Unit 17, Markham, Ontario, L3R 3B3
905-475-0951, ext. 231 fax 905-475-8338
dkasemi@haddadgeo.com www.haddadgeo.com

From: Information Desk <info@haddadgeo.com>
Sent: June 22, 2022 1:40 PM
To: John Owen <john@owendesign.ca>
Cc: Damoon K. <DKasemi@haddadgeo.com>
Subject: 67 Anderson

Hi John,

Please find our report.

Regards
Allen Bertran, B.Sc., CET
Senior Technologist
HADDAD GEOTECHNICAL INC.
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