



May 22, 2026

WJ Canada c/o Robert MacLean
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Via email: Robertmaclean@wjgl.com

Attention: Robert MacLean

**Re: Stormwater Management Brief
WJ Canada
1565 County Road 18, Lakefield, Township of Selwyn
D.M. Wills Associates Project No. 11230-01**

PARTNERS IN
ENGINEERING, PLANNING &
ENVIRONMENTAL SERVICES

1.0 Introduction

D.M. Wills Associates Limited (Wills) has been retained by WJ Canada (Client) to prepare a Stormwater Management (SWM) Brief in support of a Zoning By-law Amendment (ZBA) application for lands municipally known as 1565 County Road 18, legally described as Part Lot 21, Concession 7 in the Township of Selwyn (Township), County of Peterborough (County), hereafter referred to as the subject property. The purpose of the SWM analysis is to assess any implications to stormwater management associated with the revised site activities.

Based on our understanding of the project, discussions with the Client, and the Record of Pre-Consultation (PC-03-26) dated January 21, 2026, the proposed development consists of the repurposing of the subject property to accommodate a contractor's yard, including equipment storage and maintenance activities within the existing building, to be operated by WJ Canada staff. Minor site alterations to the outdoor parking area are proposed to facilitate outdoor storage and the introduction of an equipment wash station.

The purpose of the ZBA application is to permit the proposed use. Under the current Rural Industrial Exception Zone 217 (M1-217), the subject property is restricted to "dry industrial" uses and does not contemplate water use associated with equipment washing. The proposed development includes a warehouse, shop, and outdoor storage area (inclusive of the equipment wash station), which is anticipated to increase water demand. Accordingly, a ZBA is required to permit the use, supported by technical documentation demonstrating adequate water supply and consistency with the existing stormwater management strategy. A Hydrogeological Assessment is being



completed by Wills under separate cover to address water supply considerations.

The Stormwater Management Report prepared by M.J. Davenport & Associates (July 2022) serves as the baseline for comparison with the proposed development and to assess any implications to stormwater management associated with the revised site activities.

The site previously contained the RotoSpa Hot Tubs facility, which was destroyed by fire in 2021. The property has since been redeveloped with a new building, asphalt parking, and landscaped areas in accordance with the M.J. Davenport & Associates civil engineering design package.

2.0 Stormwater Management

Under existing conditions, as documented in the Davenport SWM Report, stormwater quantity control is achieved by directing runoff from a portion of the building roof and the asphalt parking area to orifice-controlled parking lot storage. Controlled discharge is then conveyed to an enhanced grassed swale located at the southeast corner of the site.

Stormwater quality control is provided by an oil-grit separator (OGS) and an enhanced grassed swale. The existing OGS is a Stormceptor EF-04 unit designed to provide primary treatment for runoff from a portion of the building roof, as well as the asphalt parking area and driveway. The Stormceptor EF-04 achieves approximately 60% total suspended solids (TSS) removal. Following treatment, runoff is conveyed via the storm sewer system to the enhanced grassed swale, which provides additional filtration and treatment. Collectively, the OGS and enhanced grassed swale provide an overall TSS removal efficiency of 80%, consistent with MECP stormwater management guidelines.

To assess the potential impact of the proposed use by WJ Canada, the Stormwater Management Report prepared by M.J. Davenport & Associates (July 2022) was reviewed in the context of the proposed development.

The review confirms that no additional impervious area or site grading changes are proposed that would alter existing drainage patterns. As such, the existing stormwater management system is considered adequate to support the proposed use without modification.

The primary change in site activity is the introduction of an outdoor equipment wash station within an existing impervious asphalt area. While no changes to quantity control are anticipated, the proposed wash station may increase sediment loading to the stormwater management quality system, as runoff from the wash area will be conveyed to a catch basin and discharged to the OGS via the storm sewer system.

2.1 Outdoor Washing Station

The proposed outdoor equipment wash station will be located within the existing asphalt loading area at the southeast corner of the building. During washing activities, sediment-laden runoff will flow over the asphalt surface to an existing catch basin, which conveys runoff to the Stormceptor OGS.

Runoff from equipment washing has the potential to contain elevated sediment concentrations relative to typical rainfall-generated runoff. As a result, the implementation of a pre-treatment measure at the receiving catch basin is recommended to intercept coarse sediments prior to entering the stormwater system. A sediment control device (e.g., silt sack) installed within the catch basin would provide initial capture of larger particles and debris, thereby reducing sediment loading to the downstream oil-grit separator (OGS) and improving overall treatment performance.

To assess the potential impact of the additional wash water on the OGS, in addition to runoff generated by rainfall, an analysis was completed using an estimated weekly wash water flow rate and an assumed sediment concentration. For the purposes of this assessment, the analysis conservatively assumes that no pre-treatment is provided at the catch basin (i.e. all sediment-laden runoff is conveyed directly to the OGS).

The Client has indicated an expected wash water usage of 1,500 L/week. The associated sediment load is expected to vary depending on several factors, including soil type, equipment condition, and washing intensity.

Typical guidance indicates that lightly soiled equipment may generate wash water with total suspended solids (TSS) concentrations in the range of 50 – 200 mg/L, moderately soiled equipment in the range of 200 – 1,000 mg/L, and heavily soiled equipment in the range of 1,000 – 5,000 mg/L. For the purposes of this assessment, a conservative loading rate of 2,000 mg/L TSS has been adopted.

To estimate the annual sediment load, the following calculation was used:

$$\begin{aligned} \text{Annual Sediment Load} &= (1500 \text{ L/week}) \times (2000 \text{ mg/L}) \times (52 \text{ weeks/year}) \\ &= 156,000,000 \text{ mg/year} = 156,000 \text{ g/year} = 156 \text{ kg/year} \end{aligned}$$

To express the sediment loading in volumetric terms, the sediment mass was converted using an assumed bulk density of 1,500 kg/m³, representing typical settled solids associated with equipment wash water runoff.

$$\begin{aligned}\text{Sediment Volume} &= 156 \text{ kg/year} / 1,500 \text{ kg/m}^3 \\ &= 0.104 \text{ m}^3/\text{year} = 104 \text{ L/year}\end{aligned}$$

The results were compared to the sediment storage capacity of the existing Stormceptor EF-04 unit, which provides a total sediment storage volume of approximately 1.19 m³ (1,190 L). Based on manufacturer guidance, maintenance is typically recommended when sediment accumulation reaches approximately 15% of the available storage volume, corresponding to approximately 0.18 m³ (180 L).

The estimated annual sediment loading from the proposed wash activities (approximately 104 L/year), assuming no upstream pre-treatment, is below this threshold. However, the Stormceptor unit is the primary stormwater quality treatment device for the site and will also receive sediment loading from rainfall-generated runoff. The inclusion of an upstream sediment control device at the catch basin is therefore expected to provide additional reduction in sediment loading to the OGS beyond the values calculated herein.

In addition to sediment loading, the proposed wash activities may also contribute minor oil and grease loading to the stormwater system. While the Stormceptor EF-04 unit is designed to provide oil and grit separation, this potential increase in oil loading should be considered as part of the ongoing inspection and maintenance program.

Manufacturer guidance recommends semi-annual inspections during the first year of operation to establish site-specific accumulation rates, with inspection frequency adjusted thereafter based on observed conditions, typically transitioning to an annual inspection and cleanout cycle. Given the potential increase in sediment and oil loading associated with the proposed wash activities, it is recommended that the unit be inspected on a quarterly basis, with sediment and oil removal undertaken when the 15% storage threshold is reached. The upstream sediment control device should also be inspected and maintained regularly to ensure continued effectiveness.

As wash activities will generally occur during dry weather conditions, no impact to treatment performance is expected.

3.0 Conclusion

We have reviewed the proposed site plan and proposed use with the original stormwater management design to assess any implications associated with the revised site activities. The review confirms that no additional impervious areas or site grading changes are proposed that would alter existing drainage patterns. As such, the existing stormwater management system is considered

adequate to support the proposed use without modification, in support of the ZBA application.

The proposed use will involve the external washing of equipment. Calculations were completed to determine the potential impact of sediment-laden runoff on the existing Stormceptor EF-04 oil-grit separator unit. It was concluded that increased sediment loading can be expected. In addition, the proposed wash activities may also result in increased oil loading, however, these additional loadings can be effectively managed through routine maintenance of the Stormceptor unit. The recommended implementation of a sediment control device (e.g., silt sack) within the upstream catch basin will provide pre-treatment and is expected to reduce sediment loading to the OGS.

Given the nature of the proposed use, it is recommended that the Stormceptor unit be inspected on a quarterly basis, with sediment and oil removal undertaken as required upon reaching the manufacturer recommended threshold. The upstream sediment control device should also be inspected and maintained regularly to ensure continued effectiveness.

We trust the above addresses the stormwater management requirements for the project. Should you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,



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MW/jh



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