$REPORT\_DATE

$COMPANY\_NAME

$COMPANY\_ADDRESS

$COMPANY\_CITY, $COMPANY\_PROVINCE

$COMPANY\_POSTAL\_CODE

**Attention: $CLIENT\_NAME**

**Re: Results of Sample Analysis for the Determination of Sewage Contamination**

**Safetech Project No.: $PROJECT\_NUMBER**

**$PROJECT\_ADDRESS**

1.0 BACKGROUND

On $SAMPLING\_DATE, Safetech Environmental Limited (Safetech) received NUMBER\_OF\_SAMPLES BULK/SWAB\_SAMPLES from $PROJECT\_ADDRESS. The BULK SAMPLES was/were delivered to Safetech’s Mississauga office, collected by $COMPANY\_NAME (the Client). The BULK\_SAMPLES was/were then submitted to an independent laboratory for the detection of *Bacteroides*, to serve as an indicator of sewage contamination.

2.0 ANALYTICAL METHODOLOGY

*Bacteroides* is a genus of gram-negative anaerobic bacteria that live within mammalian gastrointestinal (GI) tracts. They are present in huge quantities in human feces and are by far the most predominant bacteria found in the GI tract of humans and other mammals. For example, *Bacteroides* is 1,000 times more prevalent than coliforms and 10,000 times more prevalent than *E. coli* in fecal matter.

Analysis for *Bacteroides* was conducted using Polymerase Chain Reaction (PCR) analytical techniques. This technique uses genomic DNA standards to positively identify and quantify the presence of *Bacteroides*, reported in Cell Equivalents (CEs). This analytical method identifies all species in the genus *Bacteroides* and has a limit of detection of 1 CE.

Because of their anaerobic physiology, *Bacteroides* can only thrive in environments having no oxygen and therefore do not multiply in the environment or persist for very long outside the gut. As such, *Bacteroides* are only found in feces and are not found in uncontaminated soil, water, food or plants. This makes them a highly specific indicator of sewage contamination and eliminates false positive results that one may obtain using other methods that will also detect environmental coliforms, when present. Therefore, the detection of *Bacteroides* from sample analysis is considered to be a definitive indicator of sewage contamination, with the greater quantity of *Bacteroides* detected indicative of more extensive sewage contamination.

3.0 RESULTS

Results of analysis for the detection of *Bacteroides* are summarized in Table 1. The Laboratory Certificate of Analysis is attached.

**TABLE 1**

**Analytical Results for the Detection of *Bacteroides***

**$PROJECT\_ADDRESS**

| **Sample No.** | **Description** | ***Bacteroides* Concentration**  **(CEs)** |
| --- | --- | --- |

4.0 CONCLUSIONS

As results summarized in Table 1 indicate, $CONCLUSIONS.

5.0 LIMITATIONS

In preparing this report, Safetech relied on information supplied by others, including independent laboratories and testing services. Conclusions made in this report are based on the laboratory analytical results for the samples analyzed. Except as expressly set-out in this report, Safetech has not made any independent verification of such information.

This report has been prepared for the sole use of the person or entity to who it is addressed. No other person or entity is entitled to use or rely upon this report without the express written consent of Safetech Environmental Limited and the person or entity to who it is addressed. Any use that a third party makes of this report, or any reliance based on conclusions and recommendations made, are the responsibility of such third parties. Safetech accepts no responsibility for damages suffered by third parties as a result of actions based on this report.

Should you require any further information, please contact our office.

Sincerely,

**SAFETECH ENVIRONMENTAL LIMITED**

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**Winston Lew, P. Eng.**

Technical Advisor

*Attachment(s): Laboratory Certificate of Analysis*