Bridging the GAP: A Sustainability Reporting Analysis of Company X

by

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COMMITTEE APPROVAL

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Abstract

ISO 14001 standards are adopted worldwide and provide a framework to support effective environmental management systems. As a small to medium-sized enterprise (fewer than 250 employees), Company X has been certified to ISO 14001 since 2008. However, it has not yet formally adopted the GRI Standards. Company X has requested to remain confidential and will be referred to as "Company X" throughout this report. This study explores the potential role of the GRI 2022 Standards as a driver for sustainability reporting readiness at Company X, assessing whether alignment with GRI's environmental indicators can enhance the company's existing environmental management framework and support broader sustainable development objectives. This was determined by tracking specific sustainability indicators and measuring progress through trend analysis and opportunities for improvement. The research was conducted through data analysis and provided results concerning progression, regression, and unchanged outcomes. The final report will facilitate future decision-making regarding sustainable development and planning.

Keywords: management systems, sustainable development, indicators

Table of Contents

List of Figures

List of Tables

Acknowledgments

To my mom – thank you. I could not have imagined this for myself if you did not believe in me. I love you.

To my son Apollo – my love for you has driven me to face challenges I could never have imagined. I am so very grateful to be your mother. I love you.

To my husband Jason – your support and love throughout have been second to none. I love you.

Introduction

The Global Reporting Initiative (GRI) 2022 is a voluntary sustainability disclosure standard that is utilized worldwide as a tool to promote transparency and accountability in corporate reporting. The GRI includes three main sections: economic, social, and environmental. Unlike ISO 14001, which is a management standard focused on structured environmental performance processes, the GRI does not prescribe performance targets. Instead, it provides a framework for organizations to disclose their environmental, social and governance impacts in a consistent and comparable manner.

A wide variety of enterprises have also been using the International Organization for Standardization (ISO) 14000 as tools to manage environmental responsibilities. The ISO 14001 standards are "intended for use by an organization seeking to manage its environmental responsibilities in a systematic manner that contributes to the environmental pillar of sustainability" (International Organization for Standardization, 2017). As a small to medium-sized enterprise (fewer than 250 employees), Company X is certified to the ISO 14000 standards. Company X's current environmental policy states that it

> will manage its operations in a manner that continuously minimizes pollution, waste, and consumption of resources across the life cycle of materials, products, and services. [Company X] is committed to meeting or exceeding its compliance obligations. We will work to continually improve our environmental management system to enhance our environmental performance. We will conduct business with full transparency by

> sharing our environmental plans and performance with all interested parties (Company X, personal communication, 2022).

Sustainability regarding the GRI standards has not been utilized by Company X, and the company wanted to determine whether the GRI standards would contribute to driving for sustainability. Based on the characteristics of organizations' activities, sustainable development has become a key component of modern business practice. Voluntary performance standards required analysis on a larger scale, such as the GRI, as Company X wanted to determine the gaps in management/business imperatives and the link to environmental reassurance. The 2022 GRI standards may increase awareness to identify and address material concerns and the integration of environmental and social information with economic business and sustainable reporting (Dienes et al., 2016). This study provides insight into whether the adoption of the environmental pillar of the GRI has improved the company's performance. Key performance indicators in the environmental standard were analyzed and reported on as they applied to Company X.

This research is particularly important because it provides business insight into the decision-making process. Company X wanted to continue its commitment to sustainable development and adjust where necessary to make informed decisions in the future. The knowledge gaps the study addresses are between Company X's current environmental practices and GRI 2022 environmental standards. The report combines all electronic documents from various files and hardcopies and merges them into one document, allowing easy access to all key personnel. This will facilitate future decision-making regarding sustainable development and planning. Addressing gaps in knowledge will also contribute to determining various trends, measuring progress, and creating feedback mechanisms. This study would interest someone not

directly connected to the research setting, as it provides an applied framework for evaluating GRI 2022, environmental reporting maturity in small to medium sized enterprises. The gap-analysis method combining GRI and ISO 14001 could provide a replicable approach for SMEs and offer potential insights for SMEs to strength environmental transparency and performance. This includes how the standards can correlate with more sustainable business practices and which indicators benefit the study. This could interest practitioners considering adopting environmental management standards alongside voluntary standards and the potential benefits or significant challenges that may arise from the adoption of the standards. The potential implications of this finding include GRI standards acting as enabler for Company X. This study could also indicate GRI standards having minimal correlation with being an enabler (no value), determined by the key performance indicators.

Company X

Company X provides specialized testing and investigation services to support electrical utilities' capital assets: generation, transmission and distribution, OEMs, automotive manufacturers, government, and research organizations (Company X, personal communication, 2017). Company X is a multidisciplinary laboratory with 15 primary laboratories over an 11-acre site (Company X, personal communication, 2017). Company X currently has over 240 employees. As a small to medium-sized enterprise (SME), Company X has been certified to ISO 14001 since 2008. However, it has not yet formally adopted the GRI Standard. Alongside registration to ISO 14001 (environmental management standards), Company X is registered to

ISO 17025 (laboratory standards) and ISO 9001 (quality standards; Company X, personal communication, 2017).

Literature Review

GRI standards are volunteer standards utilized on a global scale.

GRI Standards

Environmental reports from 23 companies were analyzed by Hussey et al. (2001) for progress and evaluation against the GRI. Hussey et al. (2001) consider the GRI standards the most all-inclusive, and inclusive of all three pillars (social, economic, and environmental). Some findings in the paper indicate that an environmental management system (EMS) and other measures, such as ISO 14000 frameworks alongside the GRI, provide an organized means of sustainable development (Hussey et al., 2001). It was also determined that the element providing the most accurate report was the environmental pillar. This was due to environmental tracking being completed regardless of the GRI being initialized and regulatory requirements for the environmental pillar (Hussey et al. 2001). Finally, the report indicated the need for more sustainable goals throughout the varying companies. The importance of incorporating the GRI framework was depicted throughout the paper, with emphasis on having a framework enabling stakeholders to trust the process (Hussey et al., 2001).

EMSs

An EMS is defined as “a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency” (United States

Environmental Protection Agency, 2017). Continual improvement is a "recurring process of enhancing the environmental management system in order to achieve improvements in overall environmental performance consistent with the organization's environmental policy" (United States Environmental Protection Agency, 2017). Continual improvement is important for enterprises, as this enables the company to improve its environmental system over time. Various methodological processes have been used to correlate ISO 14001 and sustainable development. This includes Maletic et al.'s (2015) sampling method comprising six companies and using interviews and questionnaires to determine that a correlation existed between ISO 14001 and sustainable development. The findings include using other elements, such as quality and social responsibility, as inputs for the EMS (Maletic et al., 2015).

Voluntary Standards

Marks and Spencer (M&S) evaluated ISO 26000 by proposing that 10 of the largest M&S manufacturers in India, Sri Lanka, and Bangladesh integrate ISO 26000 into their business strategy. Nine of the 10 manufacturers volunteered to participate and supplied the cost associated with the application (International Organization for Standardization, 2015). The article correlates voluntary standards and sustainability by informing consumers about the social and environmental conditions and the disclosure of relevant information through sustainable reporting (Rasche, 2015). The GRI guidelines define various standard disclosures, are widely recognized, and act as a reference point for other reporting frameworks (Rasche, 2015).

Sustainable Development

Sustainable Development refers to how the company manages its environmental responsibilities while maintaining long term ecological and social well-being. According to Maharaj and Herremans (2008) in an article entitled "Shell Canada: Over a decade of sustainable development reporting experience," for sustainable development to be effective, it must be obliged with other initiatives, including management systems, performance standards, and other policies and procedures that should be established (p. 236). The article indicates that strictly abiding by the GRI standards would require other vessels to produce a full picture of sustainable development (Maharaj & Herremans, 2008).

As described by Hammond et al. (1995), "indicators communicate information about progress towards social goals such as sustainable development." Sustainable development has gained international interest at all levels of enterprises (including government bodies) working toward sustainable goals. During the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, the requirement for indicators of sustainable development was emphasized. The need for development was stated to "provide solid basis for decision-making at all levels and to contribute to a self-regulating sustainability of integrated environmental and development systems" (Hammond et al., 1995). Eccleston (2017) states that sustainable development plans should be created by the integration of an EMS and the National Environmental Policy Act (NEPA), including the execution of sustainable measures.

Indicator Selection

Indicators have two defining characteristics that include quantifying and simplifying information (Hammond et al., 1995). When determining the selection of environmental indicators, they should be reliable, easy to understand, relevant to the company's environmental aspects, and consistent with its objectives and targets (Canadian Standards Association, 1998). They further state that indicator selection is prepared through elements that can support national and international decision-making (Hammond et al., 1995). Hak et al. (2012) states that using indicators can be a subjective and specific process and can also create difficulties in determining which to use. Ambiguity in the indicators can furthermore cause a lack of preciseness in the context and reporting balance (De Villiers et al., 2022). Contributions to the existing literature comprise standards driven by sustainability and results specific to these standards in a small to medium-sized enterprise.

GRI and Corporate Sustainability

Corporate sustainability is sought after worldwide. Highly profitable firms may disclose more key performance indicators (KPI) details to provide a larger sustainability "picture" (Ikpor et al., 2022). This enables more interest from potential stakeholders and provides certainty in the company (Ikpor et al., 2022). As described by De Villiers et al. (2022), GRI guidelines help determine key sustainability indicators. The article further establishes that the GRI framework enables sustainability concerns to be incorporated into the corporate system through reporting capabilities and by combining operation needs for businesses with stakeholder requests (De Villiers et al., 2022). The GRI's continual improvement includes revising the universal standards

with standard supplementation (De Villiers et al., 2022). GRI standards, as they relate to corporate sustainability, indicate that adopting the standards makes the GRI a credible practice for sustainable reporting (De Villiers et al., 2022).

Research Question and Objectives

As Company X continues to expand and grow, further considerations, including assessing current conditions and foreshadowing future needs, are required. Company X is consistently analyzing and interpreting sustainable reporting. Sustainable development is important to Company X due to its ability to provide opportunities to incorporate strategic sustainable concepts into its decision-making process.

The research question is defined as follows: What gaps exist between Company X's environmental performance and the requirements outlined in the GRI 2022 standards? Company X is the case study for this report. The primary objective of this report is to conduct trend analysis across selected environmental indicators, identify gaps in alignment with GRI 2022 requirements and highlight opportunities for sustainability performance improvement (Gap analysis).

This thesis uses the term *sustainable development*, referred to as opportunities for incorporating sustainable concepts into the company's decision-making process. The *ISO 14001 standards* are established by the International Organization for Standardization and are specific environmental standards that apply. The *GRI standards* are voluntary standards, established by the GRI and are specific economic, social, and environmental standards that may apply. In this study, "sustainable development" is defined in alignment with the Brundtland Commission

(1987) as a development that meets present needs without compromising the ability of future generations to meet their own. While sustainability includes environmental, social and governance dimensions, this study focuses on the environmental pillar due to the organizations ISO 14001- based environmental management system and the availability of data. *Sustainability indicators* are metrics used to track, assess, and communicate progress toward sustainability goals across environment, social and governance dimensions They can be quantitative or qualitative and help inform decision making by identifying current performance, facilitate comparison against baselines, facilitate benchmarking and identify areas for improvement. *Management initiatives* is a term used to describe the company's voluntary initiatives to improve its environmental performance.

Methodology

The methodological approach used was a single case study (Bartosh, 2016). This was an appropriate approach because the established research question is a case bounded system and, as described by Bartosh (2016), case study research is "an exploration of a 'bounded system' or a case over time through detailed, in-depth data collection involving multiple sources of information rich in context." The analysis focused on data availability, accessibility, and alignment with GRI's environmental indicators.

Data Collection

At the beginning of the timeline, a desktop exercise or document analysis was completed to collect internally available information through document review including internal environmental management systems (EMS) reports, spill contingency plans, water and waste

records and ISO 14001 audit documentation. The primary focus was not to measure environmental performance outcomes, but to assess whether sufficient data exists to support GRI-aligned sustainability disclosure.

This research method was qualitative and appropriate for this study because it provided data collection in the work setting (Company X), conducted data analysis from specifics to more general themes, and interpreted the meaning of the data (Bartosh, 2016). The final report is beneficial as Company X had various data and records collected over time. The main themes to consider were the key performance indicators of each standard and communicating the results. Data collection included the last fiscal year due to availability of data and the time available for this report. The fiscal year refers to the annual period beginning April 1, 2022, to the following March 31, 2023. An additional 4 years of data was collected (where available) to compare data, analyze the indicators and report on the progress of each indicator as it applies to Company X.

Observation and Measurement

The overall framework comprised data collection to obtain accurate information for the determination of trends; it used the document analysis method to achieve this. This method was beneficial as Company X had various data and records collected over time. The main themes to consider were the key performance indicators of each standard and communicating the results. Data collection included the last fiscal year due to the availability of data and the time available for this report. The fiscal year refers to the annual period beginning April 1, 2022, to the following March 31, 2023. An additional 4 years of data were collected (where available) to compare data. The gaps in the data collection were identified through the gap analysis process

and provided opportunities for improvement, and recommendations are presented. Gaps were determined through extensive literature reviews and identified when reviewing the first draft.

Data Analysis Methods

Based on the data collected through all electronic documents, analysis involved using classical content analysis tools, including Microsoft Excel, to compare patterns and trends of each standard with Company X's suitability and availability. The gaps were analyzed to identify strengths, weaknesses, and opportunities for improvement with the integration of the environmental pillar of GRI standards in Company X's business performance.

Potential Limitations and Biases

Potential biases for the document analysis method include incomplete collection of documents. As stated by Bowen (2009), an incomplete collection is referred to as "biased selectivity," and the selected documents (or this case study indicators) may favor company policies and activities. Other biases include being unable to retrieve specific documentation or being blocked from specific documentation (Bowen, 2009). Documentation availability is key to avoiding potential biases, and the ability to observe and retrieve all documents concerning the indicators, regardless of potential outcomes, should be discussed with key personnel prior to the beginning of data collection.

Resource Requirements

Resource requirements included connecting to Company X's internal database and access to key personnel (if required). Travel requirements to and from Company X were estimated to be less than 50 km.

Results

GRI 2: General Disclosures 2021

This section includes general disclosures of the organization.

Disclosure 2-1 Organizational Details

a. Legal Name: As requested by the organization, the legal name is used. The organization is referred to as "Company X."
b. Company X is a wholly owned, unregulated subsidiary of a larger corporation (Corporation X).
c. Company X is in Surrey, British Columbia, Canada.
d. Company X primarily operates in Surrey, British Columbia; however, it has a global customer base (over 300 customers).

Disclosure 2-2 Entities Included in the Organization's Sustainability Reporting

a. As a wholly owned subsidiary, only Company X is included in its sustainability reporting.
b. This is not applicable to this report.

c. This is not applicable to this report.

Disclosure 2-3 Reporting Period, Frequency, and Contact Point

a. The reporting period for this report is fiscal year 2023, which is from April 1, 2022, to March 31, 2023. If available, data from other fiscal years are included to conduct a trend analysis.
b. Financial reporting is by fiscal year; however, it is not included in this report.
c. This is not applicable to this report.
d. This is not applicable to this report.

Disclosure 2-4 Restatement of Information

This is not applicable to this report.

Disclosure 2-5 External Assurance

This is not applicable to this report.

Environmental Performance Indicators

This section includes all environmental performance indicators.

Materials

301-1 Materials Used by Weight or Volume

a. i. Company X is primarily a consulting and testing rather than a manufacturing business; therefore, indicators for nonrenewable materials are limited due to a lack of operational tracking.

ii. Company X is primarily a consulting and testing rather than a manufacturing business; therefore, the indicator chosen to represent materials by weight or volume is paper. Paper is a commonly purchased consumable, and tracking is available for Company X. Table 1 records paper consumed over the past 5 fiscal years.

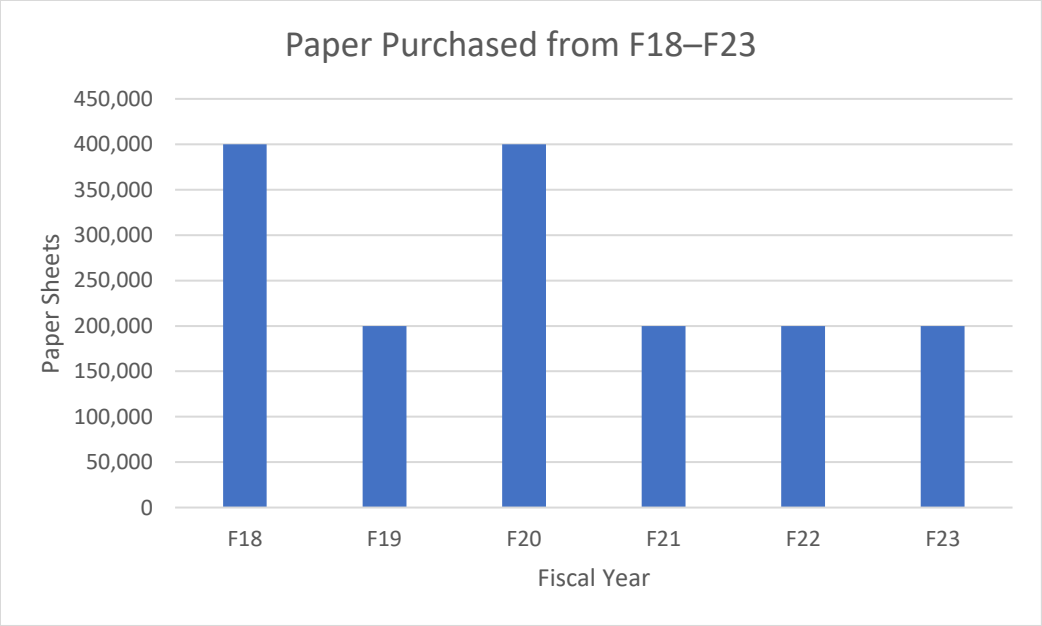
Table 1

Paper Purchased in Fiscal Years 2018–2023

Fiscal year	Paper purchased (sheets)
2018	400,000
2019	200,000
2020	400,000
2021	200,000
2022	200,000
2023	200,000

Figure 1

Paper Consumption for F18–F23



301-2 Recycled Input Materials Used

Figure 1 illustrates the percentage of postconsumer waste (PCW) content of all paper purchased in the last 5 years. The purchased paper was determined to be equivalent to the paper that was consumed in this report. Company X has been using 100% PCW since fiscal year 2008, and since 2010, all paper has been made with 100% PCW. Therefore, the percentage of recycled input materials used is 100%.

301-3 Reclaimed Products and Their Packaging Materials

Company X is primarily a consulting and testing rather than a manufacturing business; therefore, reclaimed products and their packaging materials are limited due to a lack of operational tracking.

302-1 Energy Consumption Within the Organization

a.) The total fuel consumption within the organization from nonrenewable sources is from the vehicle fleet, as detailed in Table 2. The data available were in liters and converted to joules, as per the requirement for this report.

Table 2

Fuel Consumption From Nonrenewable Sources in Fiscal Years 2018–2023

Fiscal year	Liters	Liters converted to joules
2018	N/A	N/A
2019	15,858	0.00046368421052632
2020	18,474	0.00054017543859649
2021	26,509	0.00077511695906433
2022	23,539	0.00068827485380117
2023	23,777	0.00068827485380117

Figure 2

Fuel Consumption in Joules From F19–F23

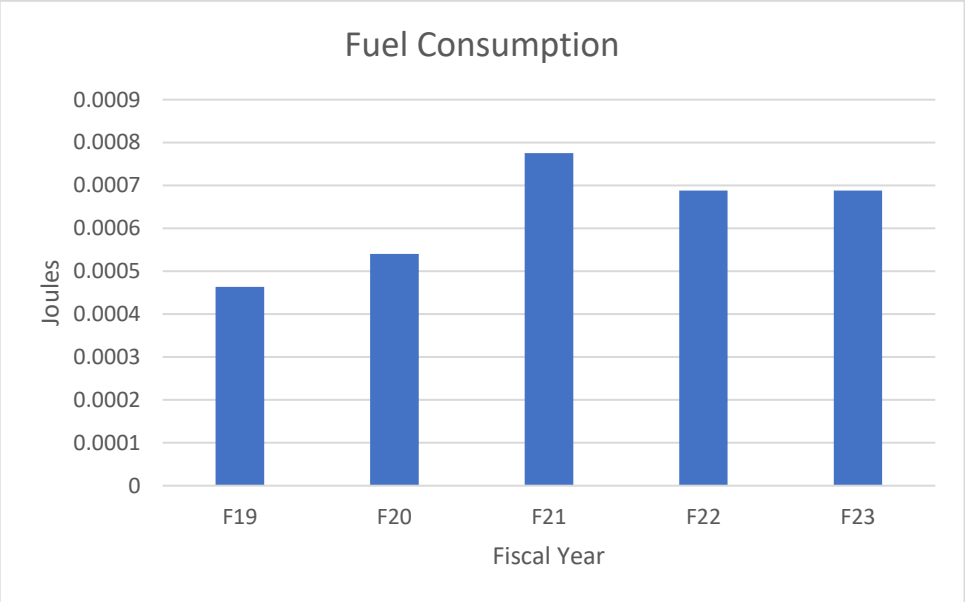
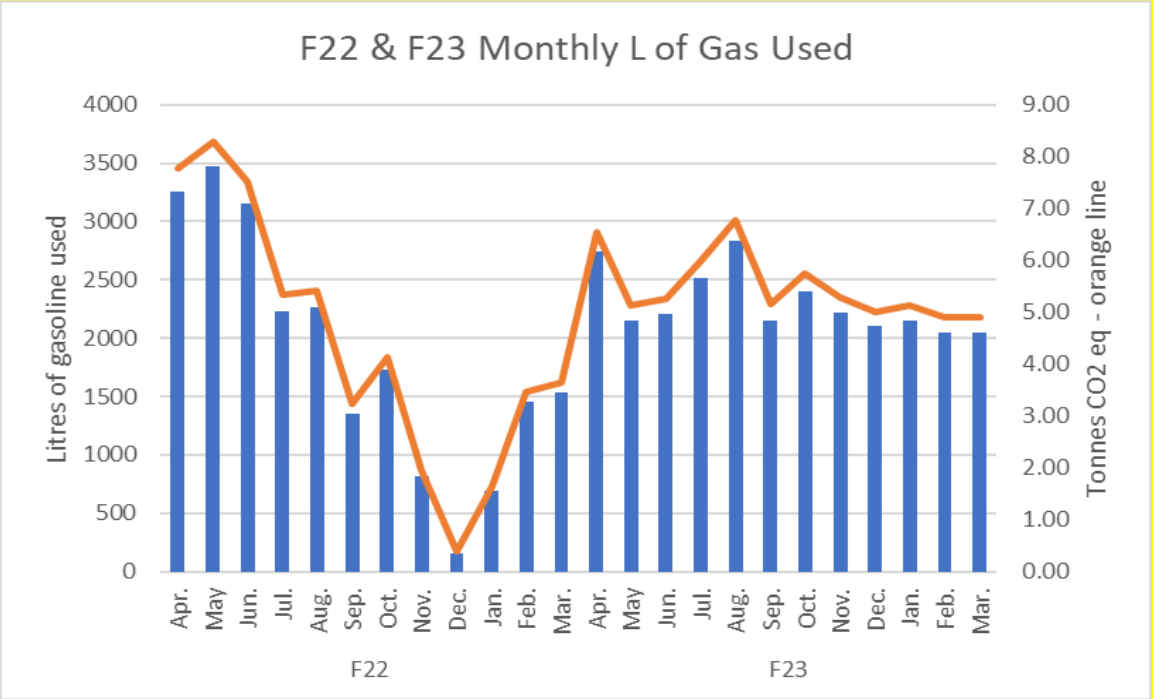


Figure 3

F22 and F23 Monthly Liters of Gas Used (As Taken From the Annual Environmental Management System Report [EMS], 2023; Appendix XIX)



b.) Company X is primarily a consulting and testing rather than a manufacturing business; therefore, fuel consumption within the organization from renewable sources is limited due to a lack of operational tracking.

c.) Electricity consumption in Watts per Hour is conveyed in Table 3.

Table 3

Electricity Consumption (Watts per Hour)

Fiscal year	**F18**	**F19**	**F20**	**F21**	**F22**	**F23**
Watts per hour	4272000000	41145000000	4757000000	5059000000	6369000000	2781000000

Figure 4

Electricity Consumption in Watts per Hour From F18–F23

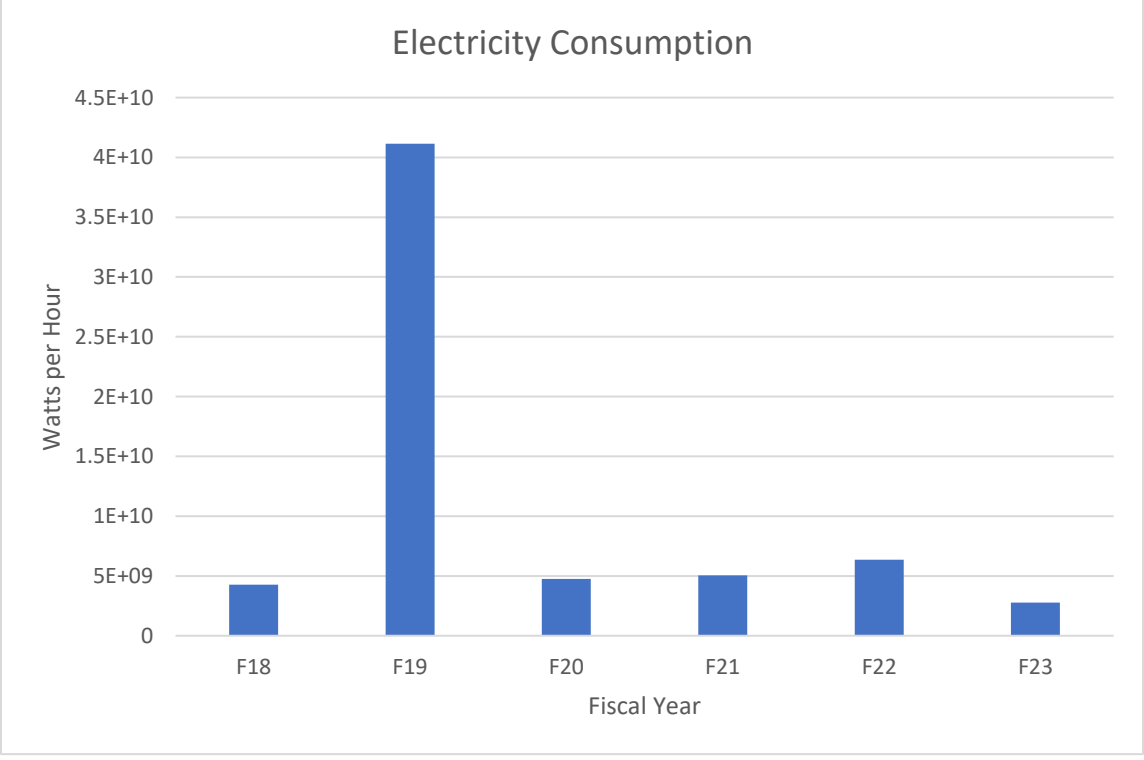
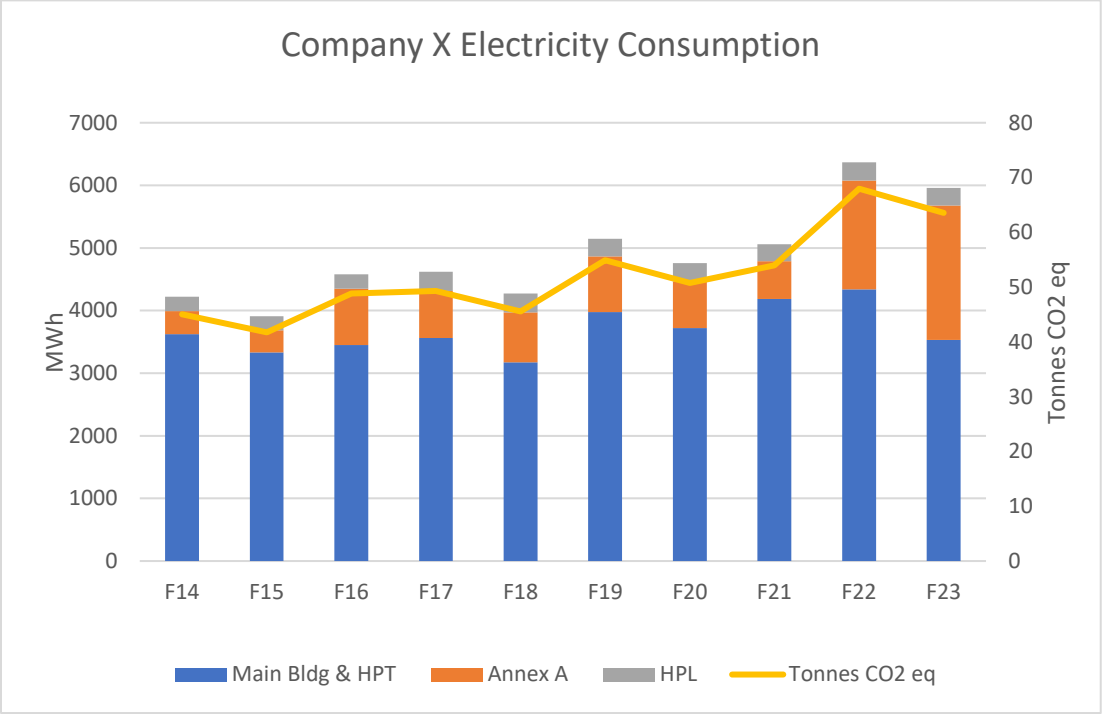


Figure 5

Electricity Consumption in MWh (As Taken From the Annual EMS Report, 2023; Appendix XIX)



ii.

Table 4

Heating Consumption (Joules)

Fiscal year	Main building	Secondary building	Joules
2018	5775	642	6416000000000

2019	5497	311	5809000000000
2020	5986	464	6450000000000
2021	7545	290	7835000000000
2022	7086	683.3	7769000000000
2023	8991	983.15	9974000000000

Figure 6

Heating Consumption in Joules From F18–F23

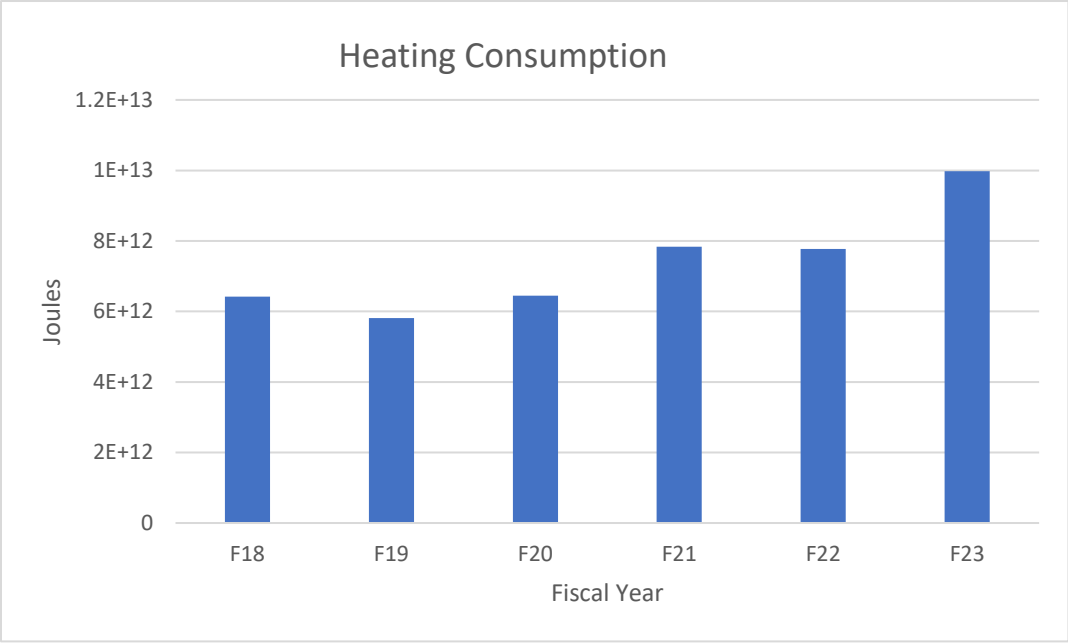
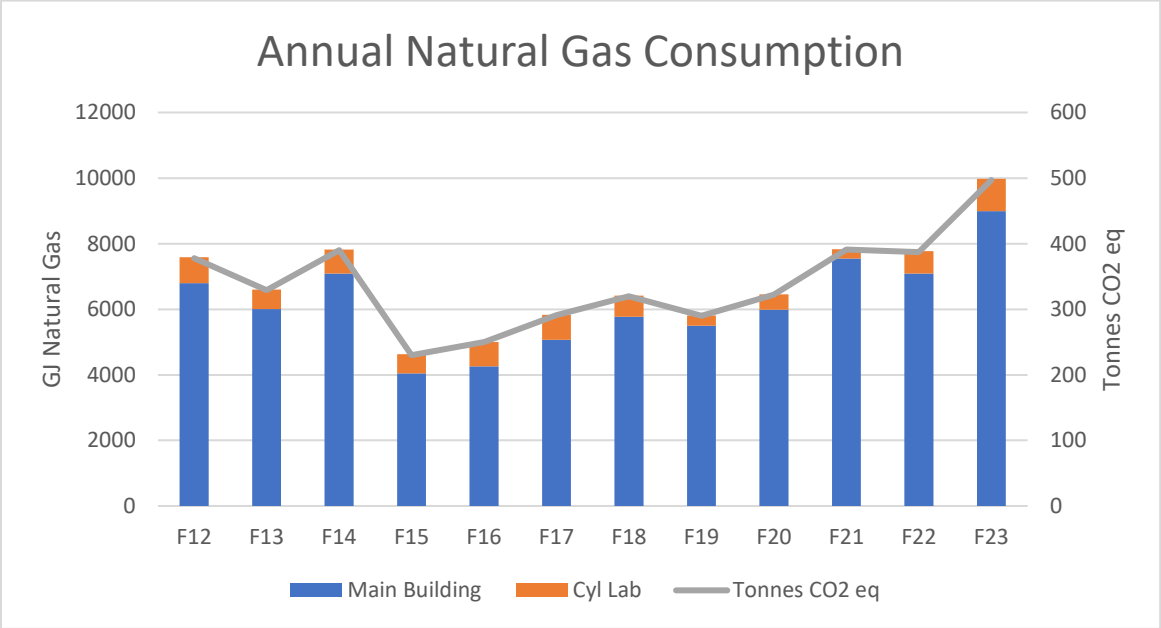


Figure 7

Annual Natural Gas Consumption (in GJ; as Taken From the EMS Report, 2023; Appendix XIX)



iii. Cooling consumption

Company X is primarily a consulting and testing rather than a manufacturing business; therefore, cooling consumption data are limited due to a lack of operational tracking.

iv. Steam consumption

Company X is primarily a consulting and testing rather than a manufacturing business; therefore, steam consumption data are limited due to a lack of operational tracking.

d.) Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data on electricity, heating, cooling, and steam are limited due to a lack of operational tracking.

e.) The total energy consumption within the organization is reported in Table 5.

Table 5

Total Energy Consumption Within the Organization

Energy type	**Joules**
Fleet vehicle gas consumption	0.00068827485380117
Natural gas (heating)	9974000000000
Electricity consumption	10011600000000
TOTAL	**1.011×10^{15} joules**

Further data are available in Appendix I.

f.) Microsoft Excel was used to summarize calculations. Methodologies used to determine fuel consumption in liters were based on monthly mileage readings collected from the fleet vehicles on campus. Fuel use for hybrids is estimated at 30% of that of conventionally fueled vehicles.

Electricity was determined using BC Hydro bills for each building. These were represented in MWh and converted to joules for reporting.

Natural gas was determined through natural gas bills from FortisBC. These were represented in gigajoules and converted to joules for reporting**.**

g.) The conversion factor used was from the BC methodological guidance for quantifying greenhouse gas emissions. The relative fuel economy (L/km) was determined based on kilometers driven and the type of fleet vehicle. Further data are available in Appendix III.

302-2 Energy Consumption Outside the Organization

a. Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data on energy consumption outside the organization are limited due to a lack of operational tracking.

302-3 Energy Intensity

a. The energy intensity ratio for the organization is

$$\frac{1.01000000000000 \text{ joules}}{240 \text{ employees}} = \textbf{0.00420833333333 joules/employee}$$

b. The denominator chosen to calculate the ratio is the number of full-time employees.

c. Types of energy included are fuel, electricity, and heating.

d. The ratio uses energy consumption within the organization, as data on energy consumption outside the organization are limited.

302-4 Reduction of Energy Consumption

No reductions in energy consumption were achieved as a direct result of conservation and efficiency initiatives.

302-5 Reductions in Energy Requirements of Products and Services

No reductions in energy requirements for sold products and services were achieved during the reporting period.

303-1 Interactions with Water as a Shared Resource

a.) The organization interacts with water by understanding the drainage system on campus. This information is directly available to all employees in the company's Spill Contingency Plan (SCP, 2023; Appendix IV). The Spill Contingency Plan is also available on Company X's internal website.

Table 6

Spill of an Environmentally Hazardous Material as written in Company X's Spill Contingency Plan (2023)

Source	Pathway	Receiving environment
Spill of an Environmentally Hazardous Material	3.5.1. Catch Basin > HPT south yard oil/water separator outfall	Drainage ditch > Mahood Creek
	3.5.2. Catch Basin > HPL oil/water separator outfall	Drainage ditch > Mahood Creek
	3.5.3. AFFF release > catch basin system	2COMP > Mahood Creek
	3.5.4. Chemical Lift Station	Sanitary Sewer > Municipal Treatment Plant
	3.5.5 Exposed soil and gravel	Soil > Groundwater

(as taken directly from p. 8, Spill Contingency Plan, 2023)

The organization interacts with water via stormwater drains (runoff from rain and snow that may carry some pollutants and return to rivers and lakes; Spill Contingency Plan, 2023). The campus also has basin/storm drains that resemble concrete chambers set into the ground with an

inlet pipe halfway from the base to the top (Spill Contingency Plan, 2023). They drain the property as a prior preparation aid so that solids and sediments settle at the bottom. These are checked visually together with annual pumping and washing (Spill Contingency Plan, 2023). Sediment traps are also placed inside specific higher risk catch basins, and maintenance is completed. The campus also has oil-water separators and interceptors providing numerous baffles that retain oil and solid particles and separate water to filter out. Further information on the oil/water separators and detention system is provided in the Spill Contingency Plan (Appendix IV).

A chemical lift station is on campus for the main building and has a capacity of 22,314 L (Spill Contingency Plan, 2023). This enables a shutoff valve to all the sinks and floor drains in the main laboratories in the main building. This acts as an emergency shutoff point before the sanitary sewer line (Spill Contingency Plan, Appendix IV).

b.) A map of Company X and the adjacent property contains surface and subsurface flow paths to Mahood Creek, as located in the Spill Contingency Plan (2023). Spill risk scenarios were determined through contractors and Corporation X, from which the property is leased. The exact scope of assessments, timeframe, and tools used are unknown, as operational tracking is lacking.

c.) Water-related impacts are discussed through the annual environmental management report. Water consumption is tracked through purchasing via utility bills, and trend analysis is conducted to determine water usage. This is discussed with the leadership team at the annual meeting, and reductions (if possible) are also discussed. Water

consumption is provided in Appendix V. The annual environmental management report is provided in Appendix VI.

Table 7

Stakeholder Involvement and Topics of Discussion (EMS, 2023)

Stakeholder Group	Level	Needs and Expectations	Compliance Obligations	Engagement Approach	Specific Topics of Discussion
Employees	Organization	• Expect to work in a safe Environment. • Expect to work for a company with a good ethical reputation	• None	• Training programs and support • Quarterly staff meetings • Emails and communication • Whistle blower mechanism • Poster and video display in common employee areas • Site base sustainability/EMS/ Green Teams	Energy, water, recycling/composting, training and education, health/wellness
Clients	Organization	• Expect to provide services and products in a professional manner • Expect to work with a company with good ethical/environmental standards.	• None	• Emails, conference calls and face-to-face meetings • Company and newsletters and marketing materials • Customer Satisfaction Survey	Energy, water, recycling/composting, training and education, transparency
Government	Organization	• Expect Demonstration of compliance with the law	• Regulatory and permit requirements	• Collaboration throughout the permitting process • Engagement with government representatives on sustainability issues	Energy
Industry Associations	Organization	• Need Collaboration to meet environmental objectives	• None	• Active participation at conferences and meetings • Participation on committees and leadership teams	Transparency, reporting framework, energy, water
Contractors, Vendors and Suppliers	Property	• Expect to safely work at the facility without impacting the environment	• None	• Attendance at conferences and other industry events • Contract development and management and interaction throughout duration of service • One-on-one meetings and calls • Supplier qualifications forms entry	Procurement practices, materials, energy, water, recycling/composing, electric vehicle (EV) charging infrastructure, transparency
Media	Organization	• Expect socially acceptable performance, honesty and integrity	• None	• Press releases. • Social media • Events around significant achievements, such as groundbreaking • Interviews with media regarding our operations and sustainability	Transparency, energy, and water
Communities	Property	• Expect socially acceptable performance, honesty and integrity	• None	• Interaction with communities throughout development process.	Smart growth, building tenant upgrades, economic development, water, and energy
[redacted]	Property	• Manage risk to prevent negative effect in their investment	• [redacted] Environmental Policy	• Monthly meetings • Energy efficient project collaboration • Recycling revitalization collaboration	Transparency, benchmarking, demand response, energy, water, recycling/composting

Based on Company X's EMS manual, water is discussed at all levels, from employees to the parent owner of the company.

Significant aspects may develop regarding the environmental objectives specific to a department's operation. For example, due to the nature of the business, water is often used in testing. Specific laboratories have targeted water and use a recycling loop to reuse water rather than allow it to drain away. The EMS is available in Appendix VII.

d.) Water is considered via regulatory requirements. Stormwater sampling is conducted biannually together with sampling from the chemical lift station, which pumps water into the sanitary sewer line. The results are compared to the City's sewer use bylaw and

Hazardous Waste Regulations. Anything above the regulatory limits is reported internally on the environmental incident reporting system and externally to the environmental emergency program. Root cause analysis is completed, and retesting is completed if necessary. The stormwater management program is provided in Appendix VIII and the nondomestic wastewater management program in Appendix IX.

303-2 Management of Water Discharge-Related Impacts

i. The minimum standards set for the quality of effluent discharge were determined through Hazardous Waste Regulation Schedule 1.2, Column 2, limits. These parameters are presented in the Hazardous Waste Regulation. The sample frequency is detailed in Appendix VIII under the Stormwater Management Program.

ii. A stormwater management program with guidelines is available internally (Appendix VIII).

iii. No sector-specific standards were noted.

iv. The profile of the receiving waterbody was considered as outlined under the Physical Environment Overview in the Spill Contingency Plan (Appendix IV).

303-3 Water Withdrawal

a. Company X is primarily a consulting and testing rather than a manufacturing business; therefore, indicators for water withdrawal are limited due to a lack of operational tracking.

b. Total water withdrawal from all areas with water stress has not been determined due to a lack of operational tracking.

c. Total water withdrawal from all areas from each of the sources has not been determined due to a lack of operational tracking.

d. No contextual information is necessary.

Disclosure 303-4 Water Discharge

a. Water discharge is conducted through oil-water separators on campus and flows into a west-east running ditch, passing through a settlement pond and discharging into Mahood Creek (Spill Contingency Plan, 2023). Water from the main building is sent to a chemical lift station and a sanitary sewer line. Further details on this are provided in Appendix IV (Spill Contingency Plan, 2023). Data on the total water discharge to all areas are limited due to a lack of operational tracking.

b. No breakdown of the total water discharge has been determined due to a lack of operational tracking.

c. The total water discharge to all areas with water stress has not been determined due to a lack of operational tracking.

d. i. All discharge results are compared to Hazardous Waste Regulation 1.2 (limits), with retesting required for areas above the hazardous waste regulatory limits**.**

ii. This is governed by the Hazardous Waste Regulatory Limits

iii.The number of incidents of non-compliance are reported in Table 8.

Table 8

Incidents of Noncompliance With Discharge Limits for Fiscal Years 2020–2023

Fiscal year	Number of incidents

2020	0
2021	0
2022	0
2023	1

e. No contextual information is necessary.

303-5 Water Consumption

a. The total water consumption from all areas in megaliters is presented in Table 9.

Table 9

Water Consumption for Fiscal Years 2018–2023

Fiscal year	Main building	Buildings 2 & 4	M^3	Megaliters
2018	14710	11802	26512	26.512
2019	22871	9198	32069	32.069
2020	23327	4465	27792	27.792
2021	25891	4332	30223	30.223
2022	20982	7690	28672	28.672
2023	13305	7103	20408	20.408

Figure 8

Annual Water Consumption in Megaliters From F18–F23

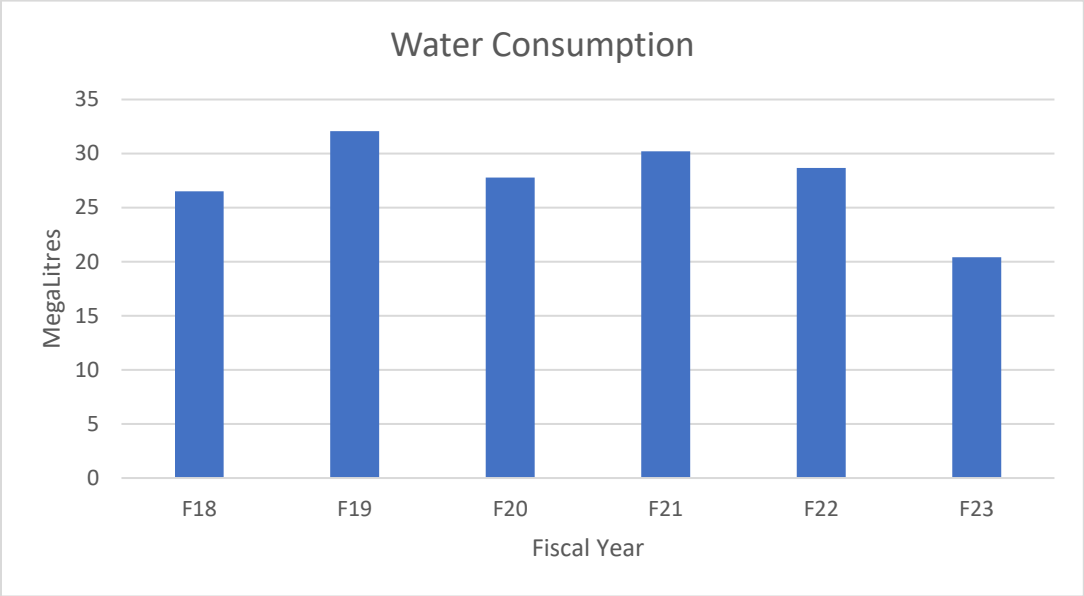
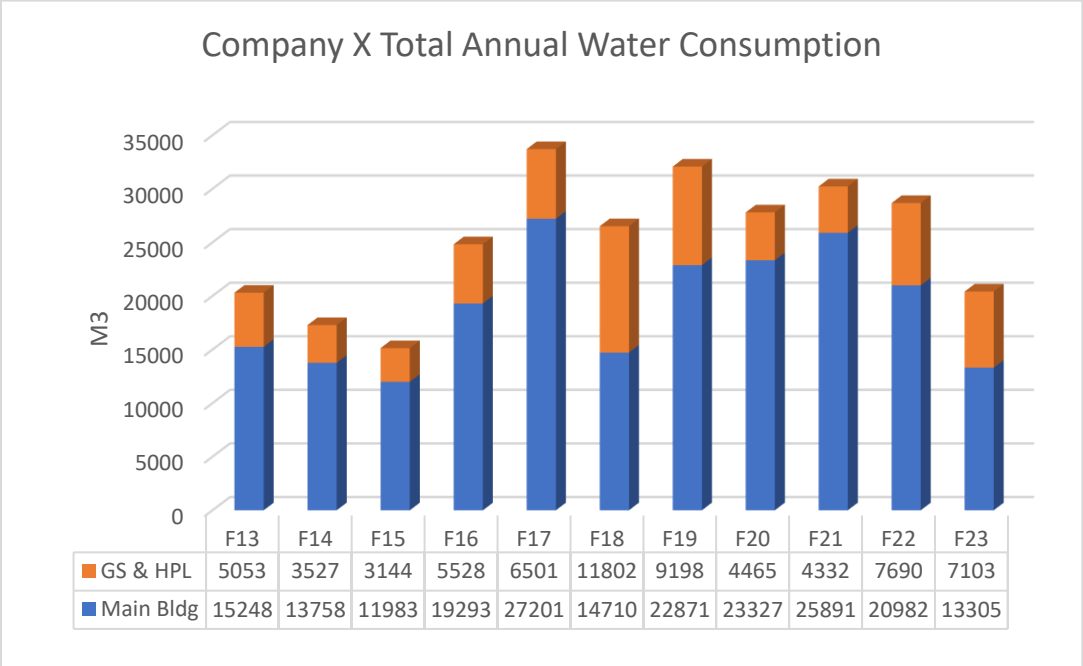


Figure 9

Annual Water Consumption in M3 (As Taken From the Annual EMS Report, 2023; Appendix XIX)



b. Various laboratories in the main building and outdoor buildings consume water. Changes in water consumption can be due to varying factors, such as water required for tests, tests running less frequently, and potential recycling of water. Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data regarding total water consumption from all areas with water stress are limited due to a lack of operational tracking.

c. Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data regarding changes in water storage are limited due to a lack of operational tracking.

d. All Company X's water is supplied by the Capilano, Seymour, and Coquitlam watersheds (reference). These water sources are managed and treated by Metro Vancouver. Water

metering and billing are completed by the City of Surrey. Water consumption is calculated using the City of Surrey utility invoices provided for the main building. The M^3 was determined from the utilities bill and converted to megaliters.

304 Biodiversity

304-1 Operational Sites Owned, Leased, Managed in, or Adjacent to Protected Areas and Areas of High Biodiversity Value Outside Protected Areas

a.) i). Company X is located on an 11-acre industrial site, comprising various infrastructure, which includes but is not limited to the Main Building, and various other buildings, as well as numerous trailers, sheds, and tents (SCP, 2023). A substation is located to the east of the property, with railway tracks to the south and Corporation X property to the west. Company X is on an industrial site and is part of a larger complex of Corporation X properties located in Surrey, BC. Site coordinates are available in the Spill Contingency Plan (Appendix IV).

ii.) Subsurface and underground land is leased through Corporation X properties.

iii.) Company X is on flat land. Drainage ditches to the east and southeast provide flowing water into Mahood Creek (SCP, 2023). Mahood Creek eventually joins Bear Creek and discharges to the Serpentine River, entering the sea near Mud Bay (SCP, 2023). Sensitive fish-bearing waterways (including rainbow trout, coho salmon, and cutthroat trout) alongside mammals, amphibians, and birds are located around the creek (SCP, 2023).

iv.) Company X is primarily a consulting and testing business. It has offices and laboratories.

v.) The operational site is roughly 11 acres (0.04451542 km^2; SCP, 2023).

vi.) The area surrounding the creek(s) near Company X is not considered biodiverse (SCP, 2023). Bear Creek is the nearest park and has park status and quality habitat for wildlife (SCP, 2023).

vii.) No listings of protected status have been determined.

Disclosure 304-2 Significant Impacts of Activities, Products, and Services on Biodiversity

i. No impact due to construction, mines, and transport infrastructure.
ii. Fish-bearing streams in the creeks may be impacted (very unlikely) by an oil spill; however, it is very unlikely the oil would travel to the creeks (SCP, 2023).
iii. No impact due to the introduction of invasive species, pests, and pathogens
iv. No impact due to the reduction of species
v. No impact due to habitat conversion
vi. No changes in ecological processes outside the natural range of variation

Disclosure 304-3 Habitats Protected or Restored

a. No habitats were restored. Mahood Creek, which contains fish-bearing waterways, is protected through drainage ditch and catch basin sampling. The results are compared biannually with the City of Surrey Regulations and Metro Vancouver Hazardous Waste Regulations.

b. No partnerships exist; however, habitat management is completed by Corporation X.

c. No habitats are affected at Company X.

d. Detailed information is retrieved from the Spill Contingency Plan (2023), available in Appendix IV.

304-4 IUCN Red List Species and National Conservation List Species with Habitats in Areas Affected by Operations

According to Environmental Canada's Network of Protected Areas, the nearest registered protected area to Company X is the Alaska Valley National Wildlife Area, located on Westham Island in Delta, approximately 28 km from Company X (Environment Canada, Network of Protected Areas, 2024). This area is a critical migrating stopover and wintering area for up to 1.4 million migratory birds traveling to the Pacific coast from Siberia to South America each year; it is home to species under Canada's Species at Risk Act (SARA), including the western painted turtle, western grebe, great blue heron, and western bumble bee among many others (Environment Canada, Network of Protected Areas, 2024). No identified species are located near Company X.

GRI 305

This section reports on emissions.

305-1 Direct (Scope 1) GHG Emissions

a.

Table 10

Gross Direct Scope in Metric Tons of Gross of CO_2 Equivalent for F23

GHG emission	CO_2 equivalent (tonnes)
Natural gas	497
Refrigerant gas	422
SF6 gas	0.00
Vehicle field	7.14
Total amount	926

b. Gases included in the calculation include CO_2, CH_4, SF, and HFCs.

c. Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data regarding biogenic CO_2 emissions are limited due to a lack of operational tracking.

d. i) The base year of the calculation is fiscal year 2023 (which runs from April 1, 2022, to March 31, 2023). This was chosen because it is the most up to date (nearest year).

ii) Emissions in the base year are equal to 926 tonnes CO_2 equivalent.

iii) No significant changes were noted that triggered recalculations of base year emissions.

e. The emission factors were retrieved from the 2018 BC Methodological Guidance for Quantifying Greenhouse Gas Emissions (see Appendix II for the guide). The global warming potential source retrieved for R507 is 3,985 for refrigerant gas leaks, with the

calculation of the carbon dioxide equivalent quantity of an F gas (Environment Agency and Department for Environment, Food and Rural Affairs, 2024).

f. The consolidation approach is a control approach and is operational.

g. The standards and methodologies used to produce these calculations were retrieved from the 2018 BC Methodological Guidance for Quantifying Greenhouse Gas Emissions. The calculation tool used was Microsoft Excel, and refrigerant leaks located within the environmental incident reporting system were used to provide spill/leak numbers. The tonnes of CO_2 equivalent leaked was determined using the following formula:

Mass (in tonnes) of gas leaked × *GWP of gas* = *CO_2 equivalent.* Note: Tonnes CO_2 equivalent are estimated for all Company X road vehicle use using the gasoline-fueled light-duty truck emission factor stated in the BC Methodological Guidance for Quantifying Greenhouse Gas Emissions. Therefore, it is a slight overappraisal, as the use of smaller vehicles, particularly rented vehicles, is not considered.

305-2 Energy Indirect (Scope 2) GHG Emissions

a.) The gross direct scope used electricity equivalent to 64 tonnes.

b.) Gases used in the calculation include CO_2, N_2, and CH_4.

c.) Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data regarding biogenic CO_2 emissions are limited due to a lack of operational tracking.

d.) The base year of the calculation is fiscal year 2023 (which runs from April 1, 2022, to March 31, 2023). This was chosen because it is the most up to date (nearest fiscal year).

e.) Emission factors and global warming potential were retrieved from the 2018 BC Methodological Guidance for Quantifying Greenhouse Gas Emissions (see Appendix II for guide).

f.) The consolidation approach is a control approach and is operational.

g.) The standards and methodologies used to produce these calculations were retrieved from the 2018 BC Methodological Guidance for Quantifying Greenhouse Gas Emissions. The calculation tool used was Microsoft Excel.

305-3 Other Indirect (Scope 3) GHG Emissions

Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data regarding Scope 3 GHG emissions are limited due to a lack of operational tracking.

305-4 GHG Emissions Intensity

a.) Total emissions = $\frac{\text{990 tonnes of } CO_2 \text{ equivalent}}{\text{240 employees}} = 4.125$

a. The organization-specific metric chosen was the number of full-time employee equivalents.

b. Direct Scope 1 and Direct Scope 2 were used to determine the intensity ratio.

c. CO_2, CH_2, N_2O, HFCs, SF_6

305-5 Reduction of GHG Emissions

Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data regarding the reduction of GHG emissions were limited due to a lack of operational tracking.

305-6 Emissions of Ozone-Depleting Substances

a.) Company X uses CFC in refrigerant units on site. The only CFC-11 used is 1 lb. Ozone-depleting substances are available in Appendix X. The refrigerant table document is provided with the Inventory of Refrigerants in Appendix X (HRAI 2019)

b.) The substance used in the calculation is R12.

c.) Company X has a list of ozone-depleting substances available to internal employees. This contains all refrigeration units on campus as well as the system capacity. See Inventory of Refrigerants in Appendix X).

d.) No calculation tools were used.

305-7 Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), and Other Significant Air Emissions

a.) i. No significant Nitrogen Oxides (O_x)emissions for F23.

ii. No significant Sulfur Oxides (SO_x) emission for F23.

iii. No significant Persistent Organic Pollutants (POP) emission for F23.

iv. No significant Volatile Organic Compounds (VOC) emissions for F23.

v. No significant Hazardous Air Pollutants (HAP) emissions for F23.

vi. No significant Particulate Matter (PM) emissions for F23.

vii. No other standard categories of air emissions were identified.

b.) This is not applicable, as no significant air emissions were noted in F23.

c.) This is not applicable, as no significant air emissions were noted in F23.

GRI 306: Waste 2020

306-1 Waste Generation and Significant Waste-Related Impacts

i.) Waste generation and significant impacts are determined through inputs and activities on campus. Environmental aspects (any activity, product, or service that can impact the environment) are listed in Appendix XII and include waste generation activities; however, data on waste generation impacts are limited due to a lack of operational tracking.

ii.) Company X is primarily a consulting and testing rather than a manufacturing business; therefore, data regarding impacts upstream or downstream in its value chain are limited due to a lack of operational tracking. Environmental aspects are available in Appendix XII and may indicate some impacts of waste generation.

Disclosure 306-2 Management of Significant Waste-Related Impacts

a.) Environmental aspects (any activity, product, or service that impacts the environment) are all allocated in Appendix XII. The actions to prevent waste generation begin when a new product, activity, or service is introduced and discussed between the manager, lead, and environmental specialist on campus. The procurement process involves completing an environmental impact assessment (Appendix XIII), in which waste generation and how to mitigate it is included in the impacts. Mitigation could include operational

controls (such as those mentioned above) and include but are not limited to testing procedures, envelope operating procedures, use of berms, waste capture, use and exploration of different products, design, end-of-life treatment, recycling when feasible, reuse, and using small volumes. These are all considered during the process; however, quantities of recycling are not tracked. Company X is also registered to ISO 14001, and the latest report is provided in Appendix XIV.

b.) Third-party contractors manage the waste in accordance with contractual and legislative obligations. This includes the removal of various miscellaneous waste chemicals from the site – usually in small volumes – by a specialist subcontractor. An environmental screening process is established for all environmental suppliers providing contractor services. Approval through the environmental screening process is required prior to conducting any work on campus. An example of this questionnaire is in Appendix XV.

c.) Waste from Company X is also transferred from Company X to its primary owner, Corporate X. Transfers are completed by completing a waste transfer form approved by the environmental specialist. An example of a waste for transfer form is available in Appendix XVI. Waste-related data are obtained through waste for transfer forms, waste for disposal (lab pack) forms, and hazardous waste manifests. These forms are used to collect and monitor the data, and most waste is weighed using a scale through the shipping department. An example of a waste for disposal (lab pack) form is available in Appendix XVII and a hazardous waste manifest in Appendix XVIII.

306-3 Waste Generation

a.) Waste generated in metric tonnes is reported in Table 11.

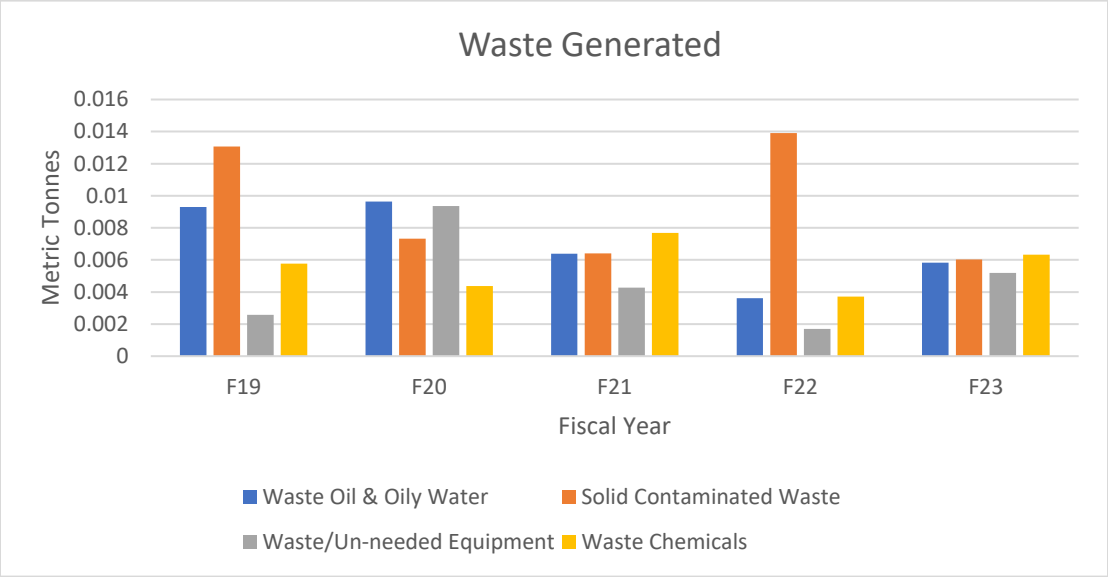
Table 11

Waste Generated in Metric Tonnes from F19–F23

Waste disposed	F19	F20	F21	F22	F23
Waste oil & oily water	0.009299	0.009636	0.006394	0.003616	0.005838
Solid contaminated waste	0.013074	0.007333	0.006410	0.013904	0.006036
Waste/unnecessary equipment	0.00258	0.009364	0.004276	0.001700	0.005181
Waste chemicals	0.005765	0.004380	0.007676	0.003716	0.006333

Figure 10

Waste Generated for Disposal in Metric Tonnes From F19–F23



b.) Definitions of the various waste streams include the following:

- Solid contaminated waste – oily rags, oily glass, oily plastic, and solid PCB oil-contaminated waste.
- Waste/unnecessary equipment – oil-filled equipment or equipment with oil residue.
- Waste chemicals – miscellaneous lab pack chemicals, waste chlorinated and nonchlorinated drums.

Disclosure 306-4 Waste Diverted From Disposal

Company X does not collect waste diverted from disposal; therefore, this information is unavailable. Plastic, cardboard, paper, and other materials are recycled; however, data are limited due to a lack of operational tracking.

Disclosure 306-5 Waste Directed to Disposal

a. Waste directed to disposal is under F23 (waste chemicals) and is estimated to be 0.006333 metric tonnes. Waste through incineration, landfill, and disposal operations is unavailable, as limited data are available.

Table 12

Waste Directed to Disposal

Waste disposed	F19	F20	F21	F22	F23
Waste oil & oily water	0.009299	0.009636	0.006394	0.003616	0.005838
Waste/unnecessary equipment	0.00258	0.009364	0.004276	0.001700	0.005181
Waste chemicals	0.005765	0.004380	0.007676	0.003716	0.006333
Solid contaminated waste	0.013074	0.007333	0.006410	0.013904	0.006036

b. The total weight of hazardous waste directed to disposal in metric tonnes is unavailable due to limited operational tracking.
c. The total weight of nonhazardous waste directed to disposal is solid contaminated waste (nonhazardous waste), estimated to be 0.006036 metric tonnes. A breakdown of disposal operations is unavailable due to limited operational tracking.
d. This information is unavailable, as data are limited due to a lack of operational tracking.
e. No contextual information is necessary.

GRI 308 – Supplier Environmental Assessment 2016

308-1 New Suppliers Screened Using Environmental Criteria

The Health, Safety, Environment and Quality (HSEQ) Qualification form was first produced in 2020. The environmental criteria are available in Appendix XV.

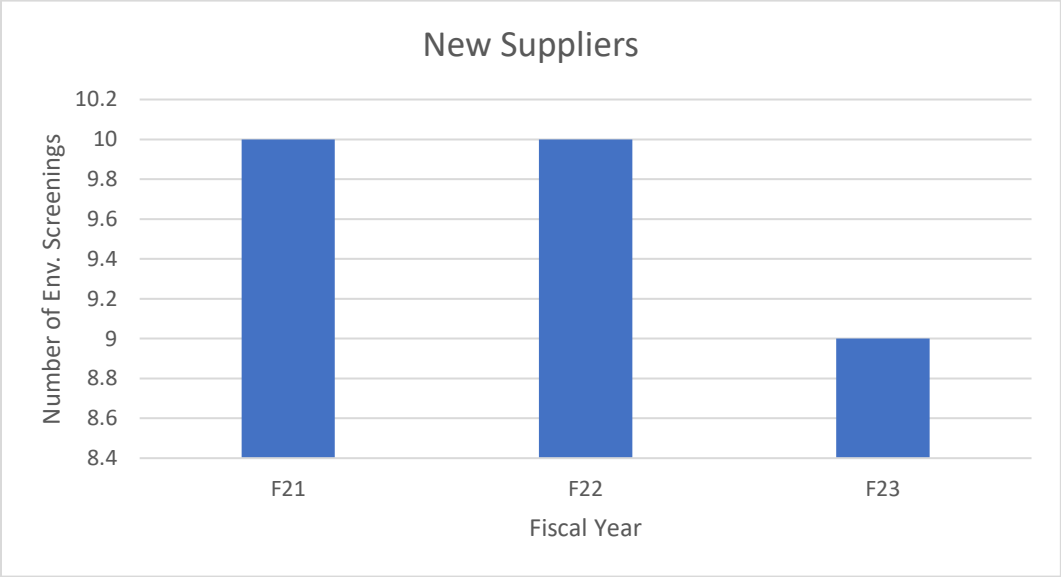
Table 13

New Suppliers Screened Using Environmental Criteria From F21–F23

Fiscal year	New suppliers' environmental screening
F21	10
F22	10
F23	9

Figure 11

Number of Environmental Screenings From F21–F23



308-2 Negative Environmental Impacts in the Supply Chain and Actions Taken

a.) Nine suppliers were assessed in F23.

b.) Zero suppliers had significant actual and potential negative environmental impacts.

c.) This is not applicable as no suppliers have significant and potential negative environmental impacts.

d.) This is not applicable as no suppliers have significant and potential negative environmental impacts.

Discussion

The data determined in the results chapter include analysis of the materials used throughout the company; energy input within and outside the organization; interactions with water, including water as a shared resource as well as water consumption and related impacts; the effects on biodiversity; GHG emissions to include Scopes 1, 2, and 3; and air emissions and

waste-related matters, including waste for disposal and diverted from disposal. The GRI environmental standard provided a range of indicators requiring calculations, data collection, and analysis. The key indicators include materials, energy, water and effluents, biodiversity, emissions, waste, and supplier environmental criteria.

What gaps exist between Company X's environmental performance and the requirements outlined in the GRI 2022 environmental standards? Data were assessed through the key indicators of the GRI standards, using Company X's current available information. The key findings include the following:

1. Materials used by weight/volume comprise simply paper consumption, which is completed by 100% paper recycling throughout the campus. The original data available were from F18, and a consistent order of 200,000 sheets has been used on a fiscal year basis.
2. Energy consumption data were available and calculated using fuel consumption, natural gas usage, and electricity consumption. Fuel consumption has remained consistent through the last 2 fiscal years. Electricity consumption peaked in F19 and subsided through F20–F23. Heating consumption indicated an increase in F23 due to the installation of three temporary rental gas boilers (previously, two were available).
3. Although paper, plastic, Styrofoam, and cardboard are recycled, a measure of volume/weight is not available, as no data exists for calculations.
4. The organization understands water by understanding the campus drainage system described through the Spill Contingency Plan (updated annually to include changes throughout the campus).

5. Water consumption is calculated using utility bills and discussed during the annual management meeting of the management team, together with potential ways to reduce consumption.
6. The campus is not particularly biodiverse; however, minor descriptions regarding biodiversity are available in the Spill Contingency Plan.
7. GHG emissions (Scope 1, Scope 2, and Scope 3) were determined using available data on campus.
8. Management of waste-related impacts, as well as any activity, product, or service that may impact the environment, is available in the environmental aspects registry and reviewed annually with each department for changes.
9. Waste directed to disposal versus waste directed from disposal is not determined, although all waste removed from the campus is tracked and weighed.
10. New suppliers are screened through a health, safety, environmental, and quality assessment. A grade of 70% is required to progress with the supplier/contractor on site.

Hussey et al. (2001) highlighted the importance of providing an organized structure for sustainable development by offering other means, such as ISO 14001, with the GRI standards. The importance of this is evident in the established ISO 14001 EMS standard by Company X. Obtaining data for the GRI's key performance indicators was a smooth process, with environmental tracking by Company X already established due to the well-established ISO 14001 standard. Previous studies indicate a correlation between sustainability and GRI standards, and the data collected coincide with this. Environment-specific questions and data calculations were analyzed, and topics from waste to air emission and diversity were covered. Reporting

using the GRI could provide transparency (as indicated through the results section of this paper); however, gaps (where present) indicate potential opportunities for improvement for Company X. The data support that the gaps determined through the GRI standards acts as an enabler for sustainability, in conjunction with the ISO 14001 standard. The analysis suggests some detailed data are available and applicable to critical factors for the GRI standard, although the lack of availability of specific data may decrease the precision of the results obtained (De Villiers et al., 2022). Maharaj and Herremans (2008) indicated GRI standards alone would be insufficient to produce a full picture of sustainable development. The differences could result from ambiguity in the GRI indicators, which could decrease the accuracy of the data provided (De Villiers et al., 2022). The 1992 United Nations Conference on Environment and Development in Rio de Janeiro provided indicators as a basis for decision-making regarding sustainability. The GRI standards in conjunction with the ISO standard provide the foundation of Company X's performance on sustainability with self-regulated data; however, this requires further research with collaboration of the other two pillars (social and economic) and potentially other frameworks to determine whether these represent a strong driver for sustainability.

Continual improvement is an essential element gradually established through environmental systems through time and the process of trend analysis (Maletic et al., 2015). By using the data retrieved through the environmental system (ISO 14001) at Company X and combining this with the GRI environmental key performance indicators, a concise relationship is evident. This includes data available from the past 5 years, in which trends can be observed in specific indicators. The data would not have been available if the ISO 14001 standard had not been implemented at Company X. Specific gaps were determined through the GRI standards and

the ISO framework, which included the lack of data on specific topics, such as a measure of the volume/weight of recyclable materials as well as waste directed/diverted to disposal. The gaps provide an opportunity for continual improvement, which is also consistent with the continual improvement clause in the ISO 14001 standard. ISO 14001 has contributed to the preparation for GRI reporting.

Although comparable in relationships, the environmental sustainability indicators of the GRI provide a baseline. Compared to other studies, the results may differ due to the gaps specifically evident in Company X as well as the size of the company. Other studies may or may not have included other frameworks in their research, whereas the ISO standard was used in conjunction with the GRI environmental pillar.

The results contribute to this field of research as they provide further evidence that a correlation exists between GRI standards and sustainability. The ease of environmental tracking while using a standard enabled simpler data gathering and determination. The results also provide sufficient evidence of the straightforwardness of determining gaps while following a standard.

As a pioneer in sustainability reporting, the GRI standards provide a wide range of Environment Social Governance (ESG) factors, providing a connected view of the sustainability performance and the transparency of the information collected. The results contribute to verifying that the GRI standards are indeed a driver for sustainability. The gaps in the reporting verify opportunities for improvement for Company X, which correlate to continual improvement opportunities for Company X. Business insight into the decision-making process and adjustment

to make informed decisions in the future could be partially determined by adopting the GRI standard with Company X's current framework. For a strong driver of sustainability, initiatives should include management systems and performance standards, as well as other policies and procedures (Maharaj & Herremans, 2008).

The study has limitations. The study was limited to the environmental pillar of the GRI standards, and only data currently available in the corporate and environmental drives and subfolders pertaining to specific information were considered. As indicated by Thompson (2023), a limitation of the GRI standards is their nature and complexity, which necessitate considerable resources and expertise for completion. This is evident with the completion of the environmental standard, as many more assets would be required to complete the economic and social standards. Moreover, the standards are not enforced, which could also potentially cause organizations to provide misleading or inaccurate results (Thompson, 2023).

Recommendations

The GRI environmental pillar framework acts as an enabler for sustainability; however, determining whether they are a strong driver requires further research. The gap analysis through the GRI environmental pillar provided strengths as well as opportunities for improvement. The implementation of the economic and social pillars of the GRI is recommended.

1. Provide a more accurate data log for vehicle consumption. The 2018 version of the GHG quantifying emissions factor was used. Consider using the most updated (2021) version.
2. Track the amount of waste, compost, and recyclables being recovered. This allows trend recognition as well as the future establishment of reduction targets. Segregation of waste,

particularly disposal and diversion, should be calculated and tracked. Styrofoam and plastics require a tracking system. Selected wastes should then be audited to ensure the streams are used properly. If misused, education and awareness concerning the use of waste streams should be provided.

3. Track the amount of water discharge and water withdrawal to better understand the negative impacts on the receiving waterbody and impact in particularly sensitive locations (GRI, 2022).
4. Use and assess all three pillars (economic, social, and environmental) of the GRI standards rather than the environment only to provide a more general framework for sustainability and enhance Company X's profile.

Implementation and potential future research in this area are recommended. Sustainability is a worldwide topic covered under varying frameworks; however, further research is required to understand the potential impact of the GRI standards on sustainability, particularly when other sustainability standards may be beneficial. Adopting varying frameworks with the addition of the GRI standards may provide a stronger enabler for sustainability in small to medium-sized companies.

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