Greenhouse Gas Verification Report

University of Ottawa:

2016 GHG Inventory

August 31, 2017

Final Verification Report

Prepared for:
University of Ottawa ('uOttawa')
75 Laurier Ave E,
Ottawa, ON
K1N 6N5

Prepared by:
Internat Energy Solutions Canada
425 Adelaide St. West, Suite 403A
Toronto, Ontario
M5V 3C1, Canada

IESC Project Number: G0710

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1 VERIFICATION SUMMARY

1.1 Fundamentals

Facility Name:	University of Ottawa
Facility Location:	75 Laurier Ave E, Ottawa, ON K1N 6N5
Reporting Period	January 1, 2016 – December 31, 2016
Verification Objective:	To verify the GHG emissions reported by the University of Ottawa facility adheres to the Verification Criteria and is within the materiality threshold required
Level of assurance:	Reasonable level of assurance
Materiality threshold:	The materiality threshold is defined as ±5% of the GHG assertion
GHG Program:	Ontario Regulation 452/09
Verification Standard:	ISO 14064-3: 2006
Verification Criteria:	► Guideline for Greenhouse Gas Emissions Reporting (December 2015, Ontario Ministry of Environment and Climate Change) ► Ontario Regulation 452/09 ► ISO 14064-1
Covered GHGs	CO_2, CH_4, N_2O, SF_6, HFCs, PFCs
Source Categories	General Stationary Combustion
GHG Assertion	15,472 t CO_2e

1.2 Project Contact Information

1.2.1 Facility Representative

Name:	Jonathan Chiasson
Position/Title:	Building Operations
Email:	Jonathan.Chiasson@uottawa.ca
Telephone Number:	613-562-5700 x 7087
Mailing Address:	75 Laurier Ave E, Ottawa, ON K1N 6N5

1.2.2 Verifier

Name:	Livio Nichilo, P.Eng
Position/Title:	Engineering Manager (Internat Energy Solutions Canada)
Email:	l.nichilo@internatenergy.com
Telephone Number:	416-628-4658 ext. 140
Mailing Address:	425 Adelaide St. West, Suite 403A Toronto, Ontario M5V 3C1, Canada

1.3 Verification Team Members

Lead Verifier	Livio Nichilo, P.Eng, M. Eng
Internal Peer Reviewer	Anureet Kaur, M.Sc, BBA
Team Member	Kevin Tse, MES
Conflict of Interest Auditor	Tra Le
Appeals/Complaints/Disputes Representative	Erick Lachapelle, B.S.Sc., PhD

2 INTRODUCTION

University of Ottawa retained Internat Energy Solutions Canada (IESC) to conduct a verification of the GHG emissions inventory submitted for the University of Ottawa campus located in Ottawa, Ontario.

University of Ottawa was responsible for the collection of data used in the calculations, data management, completion of calculations, presentation of the information within the SWIM Report submitted to the Ministry of Environment and Climate Change (MOECC), and for preparing the supporting technical documents.

IESC is a qualified third party verifier, accredited with the American National Standards Institute (ANSI), a member of the International Accreditation Forum (IAF) in accordance with ISO 14065 (Accreditation ID #1001). IESC was responsible for planning and executing the verification in order to deliver an opinion as to whether the Project Report is presented fairly and in accordance with the verification criteria.

3 PROJECT DESCRIPTION

3.1 Location

The campus is located in Ottawa and includes a number of buildings over a 42.5 hectare space in the Sandy Hill neighborhood of Ottawa. The Alta Vista campus was excluded from the inventory as it is not contiguous with the rest of the campus.

3.2 Processes and Activities

uOttawa is an institutional facility, Natural gas is combusted on-site to provide heating to campus buildings. Fuel oil is used on campus as a fuel source to power the emergency generators when needed.

3.3 GHG Assertion

The GHG assertion to be verified is the amount of emissions reported covering the period of January 1st 2016 to December 31st, 2016. The total GHG emissions asserted is 15,472 t CO2e. Table 1 below displays the emissions sources and final GHG assertion.

Table 1: Facility Emissions sources and Final GHG Assertion

Category	Emissions Source	Quantity	t CO_2	t CH_4	t N_2O	TOTAL (CO_2e)
General Stationary Combustion	Natural Gas	8,148,382 m^3 (9% reduction compared to 2015)	15,377.0	0.301	0.285	15,471.56
		TOTAL	15,377.0	0.301	0.285	15,472 (9% reduction compared to 2015)

4 VERIFICATION METHODOLOGY

4.1 Verification Objectives

To verify the GHG emissions assertion stated in the Inventory report:

- Is a fair and accurate representation of the reductions over the period covered in the report
- That the assertion has been calculated in accordance with the method of quantification specified in the inventory report
- Meets the requirements of the Verification Criteria
- Meets the requirements of Ontario Regulation 452/09

4.2 Level of Assurance

Ontario Regulation 452/09 requires that the verifier conduct the verification to a reasonable level of assurance. The verification was planned and executed accordingly.

4.3 Verification Criteria

IESC has conducted our verification in order to express a reasonable level of assurance opinion as to whether the GHG Assertion and inventory report satisfies the requirements of the:

- Ontario Regulation 452/09
- 'Guideline for Greenhouse Gas Emissions Reporting , December 2015'
- ISO 14064-1

4.4 Verification Standard

The verification was conducted in accordance with ISO 14064-3, and ISO 14065.

4.5 Verification Scope

The verification involves the period of January 1st, 2016 to December 31st, 2016.

The verification covers the following GHG's: CO_2, CH_4, N_2O, HFCs, PFCs and SF_6

4.6 Materiality

During the verification, individual errors, omissions or misrepresentations (referred to as discrepancies) will be evaluated qualitatively and quantitatively.

The materiality threshold defines the level at which discrepancies in the GHG Assertion precludes the issuance of a verification statement at a reasonable level of assurance.

The materiality threshold has been defined at 5% of the GHG assertion. Aggregate discrepancies were analyzed and determined if the materiality threshold had been breached.

4.7 Verification Plan

A copy of the final verification plan is provided in Appendix A. The activities described therein were executed during the course of the verification. The final verification findings based on this plan are found in Section 7 of this report.

5 VERIFICATION TEAM: QUALIFICATIONS, ROLES AND RESPONSIBILITIES

Role	Name	Responsibilities
Lead Verifier	Livio Nichilo, P.Eng, M. Eng,	Lead and delegate verification duties
Internal Peer Reviewer	Anureet Kaur, M.Sc, BBA	Independent review of verification deliverables and supporting documentation to confirm all verification activities have been completed and conclude whether the GHG assertion is free of material discrepancy. Also will conclude on whether the activities completed provide the required level of assurance
Team Member	Kevin Tse, MES	Complete verification duties as required by Lead Verifier. Responsibilities may include planning, preparing and conducting the site visit, preparing the verification plan under the direction of the Lead Verifier, developing the verification report.
Conflict of Interest Auditor	Tra Le	Provide an independent assessment on whether there is a potential for a conflict of interest for any members of the verification team
Appeals/Complaints/ Disputes Representative	Erick Lachapelle, B.S.Sc., PhD	Representative outside of the Project Team that will provide third party oversight for resolution of any appeals, disputes or complaints

6 VERIFICATION PROCEDURES

6.1 Review of Documents

A desktop review of the SWIM Report, GHG emissions assertion, and supporting data was completed. This involved:

- Review of the GHG assertion, and the methodologies employed and assessing them against the program criteria
- Completed an assessment of the risk associated with the GHG assertion (inherent, control and detection)
- Assessing the control environment and the corporate governance process
- Review of each of the emission sources and data for errors, omissions or misrepresentations
- Review of the data management system and assessment of the data traceability and consistency

6.2 Risk Assessment

Based on the review of documentation, controls procedures and data, the verifier should assess risks, including inherent risk, control risk, detection risk and materiality. The following tables provide a risk

assessment based on the amount of emissions (tonnes CO_2/year) from each SSR (source, sink, reservoir) included in the inventory. When an SSR represents a small percentage of the overall emission, the risk of an error being material is minor compared to a major source. The data used to calculate major sources is assessed in more detail because a potential error may cause a material discrepancy.

Table 2: Summary of SSRs for Project GHG Report

Relevant Facility SSR's	Emissions (t CO_2e/ year)	% Total	Comments	Risk (H/M/L)
Natural Gas	15,472	100%	8,148,382 m^3 of natural gas consumed	H – Main source of emissions, consumption on-site at multiple points of the site
TOTAL	15,472	100%		

IESC conducted a preliminary assessment of the potential risk associated with this verification that informed the development of the verification procedures. There are three types of risk that were assessed, which are inherent, control, and detection risk.

Inherent risk is the risk of error due to the complexity of the project or the capacity of staff involved with the project.

Control risk is the risk that the proponent's control system will not detect and rectify a discrepancy.

Detection risk is the risk that IESC will not identify a material discrepancy.

The following table describes the inherent and control risks analyzed by IESC and the corresponding verification procedure(s) outlined in the following section that have been designed to address these risks.

Table 3: Inherent, Control, and Detection Risk Analysis

ISO 14064-1 Requirements	Inherent Risk (H/M/L)	Control Risk (H/M/L)	Detection Risk (H/M/L)	Overall Risk (H/M/L)
GHG Inventory Design and Development				
Organizational Boundaries	M – The campus includes 83 different locations where natural gas is consumed	L – Organization's corporate structure is simple, boundaries are not complicated by corporate structure	L – IESC conducted a site visit last year and will conduct an additional one this year to verify the presence or absence of any SSRs	L
Operational Boundaries	M – Inventory boundaries include a single site, however the site is large and includes a large number of buildings across the campus	L – Second GHG inventory prepared by uOttawa. The University now has a firmer understanding of the operational boundaries for reporting	L – IESC will be on-site to verify the operational boundaries	M
GHG Inventory Design and	L – Responsible staff have submitted an	L – Default methodologies and	L – IESC has reviewed the GHG inventory	L

ISO 14064-1 Requirements	Inherent Risk (H/M/L)	Control Risk (H/M/L)	Detection Risk (H/M/L)	Overall Risk (H/M/L)
Development	inventory before, and through an automated process, a third party energy management firm has assisted with population of the energy data to be reported	emission factors are used that are consistent with program-specific guidelines	design and report as part of the Desktop Review	
GHG Information Management Systems	L – Data systems are organized electronically, and captured electronically. No manual data transfer.	L – The reporting spreadsheet and data management system was used last year, and is well organized	L – IESC will verify the GHG information management system in place at uOttawa	L
Source Categories				
Stationary fuel combustion (natural gas)	L – Emissions are from operation of equipment that do not require specialized knowledge. Emissions calculation depends on a small number of input parameters, requires no pre-processing and utilize default methodologies and emissions factors	L – Emissions calculations rely on data from data management systems that are well developed through the energy/financial tracking of utility consumption	L – The process is straight forward, and IESC will be able to inspect all equipment and utility bills	L

6.3 Risk Statement:

The verification and sampling plans for this facility were developed considering our assessment of the verification risk for the engagement. IESC assessed the initial verification risk as **Low** since this is the second verification engagement for IESC at this facility and is the second GHG inventory that uOttawa has prepared.

6.4 Verification Approach

With the verification risk determined to be low, IESC has designed the Verification Plan and Sampling Plan to achieve an overall low level of audit risk. The Verification Plan describes IESC's verification process that was executed

The final verification schedule was as follows:

Table 4: Verification Schedule

Verification Activity	Responsible Party	Date of Completion
IESC to receive documentation	University of Ottawa	July 27, 2017
Initial Desktop Review	IESC	August 9, 2017
Provide Verification Plan	IESC	August 9, 2017
Receive any additional documentation/clarifications	IESC / University of Ottawa	August 16, 2017
Draft Verification Report	IESC	August 29, 2017
Address Follow-up Items	IESC / University of Ottawa	August 30, 2017
Finalize Verification Report, Statement of Verification, Conflict of Interest Forms, Verification Plan	IESC	August 31, 2017

6.5 Site Visit

Livio Nichilo conducted the site visit at the Project site on August 10, 2017. The following individuals from uOttawa were interviewed during the site visit:

- Jonathan Chiasson, Building Operations

During the tour, the Verification Team performed procedures to identify project boundaries, confirm GHG sources, look for additional sources, visually confirm the presence of meters and equipment, as well as inquire about facility operations and the GHG data management system. In addition, ANSI assessor Louis Millitana was present to conduct a witness assessment of the verification activities, as part of IESC's annual accreditation requirements.

6.6 GHG Data Management and Control System Review

The verification team developed a thorough knowledge of the GHG data management and control system utilized through a review of the Project Report, observation and interviews with key Project personnel during the site visit.

IESC reviewed the following information as part of the verification process:

GHG Report:

- "ReportPreview (2).pdf", SWIM report

General:

- "2016 GHG report_V2.xlsm", Emissions calculation spreadsheet

Natural Gas:

- Natural gas invoices downloaded from the Comsatec database. Union Gas bills from January 2016 – December 2016 for a sample of the University's buildings.
- January – June and July - December HHV values from Union Gas website
- Guidance Document default natural gas emission factors for Natural Gas

Table 5: Qualitative Notes for Data Management and Controls

Emission Source	Emissions Calculations	Parameters	Data Acquisition, and Analytical Method	Data Processing and Tracking	Management and QA/QC Practices
General Stationary Combustion – Site Wide Natural Gas Consumption	ON.23(c) for CO2, and ON.24(d) for CH4 and N2O. Emissions calculations completed in a spreadsheet developed by uOttawa	Natural Gas Consumption	Natural gas flow meter controlled by gas supplier (Enbridge) Utility management database has been set up by Comsatec. System automatically pulls and reads utility bill data from Enbridge and enters it into the database accessible to uOttawa	Monthly consumption totals are exported from Comsatec database into a Consumption History report which is then used to calculate the emissions.	Portion of gas consumption records are verified by Comsatec. Any billing or consumption issues are red flagged by the Comsatec system and brought to the attention of uOttawa
		Natural Gas HHV Value	HHV value published by and obtained from natural gas supplier	HHV value transcribed manually from supplier webpage to emission calculation spreadsheet	Transcription of HHV values were executed by uOttawa personnel, including QA/QC procedures.
		Emissions Factors	Default emission factors from MOECC guidance document	Emission factors transcribed manually to emissions calculation spreadsheet	Transcription of emission factors were executed by uOttawa personnel, including QA/QC procedures.

7 VERIFICATION FINDINGS

	Item	Type of Evidence	Verification Objective	Specific Activities	Findings
1.	Demonstration of Applicability	Documentation	Completeness, Relevance	• Review calculation tool and GHG inventory for evidence of applicability for each requirement described by the regulation	• Calculation tool and inventory include all requirements as described by the regulation
2.	Review of Operating Conditions	Documentation, Observation, Inquiry	Consistency	• Obtain and evaluate historical energy trends to compare consumption over time: • Discuss operational history of the campus with uOttawa	• Emissions were 9% lower in 2016 compared to in 2015. This corresponded to 2016 having 4% less HDD then in 2015.

3.	General Stationary Combustion – Site Wide Natural Gas Consumption	Documentation	Completeness	• Conduct site visit to verify combustion equipment • Review campus map to determine if any sources have been excluded • Confirm that all relevant sources have been included	• Site visit was conducted to confirm addition of 202 Henderson and 45 Mann which are new building brought online for 2016. • 100 University Pvt had previously been included in the central heating plant (720 King Edward invoices), but was split from that bill sometime in 2016 • 102 Henderson was returned to the Facilities department when Housing no longer wanted to rent the unit out. The building previously had the utilities paid by the tenant, but is now paid for by the University. • 45 Mann came online in September 2016. Natural gas consumption was not captured in the Comsatec database for 2016. Utility bills were obtained and showed consumption of 93,081m3 of natural gas. This represents an underreporting of 176tCO2e, or 1.1% of the GHG assertion. • 8 other buildings on campus that were included in the 2015 inventory were not included in the 2016 inventory: 104 Henderson (no utility invoices in 2016), 116 Henderson (No utility invoices for 2016), 118 Henderson (No invoices for 2016), 613 King Edward (no utility invoices for 2016) are managed by the Housing department and added to the inventory in 2015. The following buildings had natural gas service cut off 192 Laurier, 544 King Edward, 541 ½ King Edward, 562 King Edward.

4.		Documentation, recalculation	Accuracy	• Obtain facility wide natural gas consumption based on primary records (utility bills) for the entire reporting period
				• Recalculate the total natural gas consumption for the facility, cross-checking against the values reported in the SWIM report
					• IESC inspected primary records for 9/84 of the natural gas meters which represent 95% of the emissions the campus:
					  ○ 1 Stewart
					  ○ 45 Louis Pasteur
					  ○ 720 King Edward
					  ○ 801 King Edward
					  ○ 200 Lees
					  ○ 200 Lees #2
					  ○ 290 Rideau Street
					  ○ 157 Laurier Ave E
					  ○ 55 Laurier Ave E
					• It was found that for the central heating plant (720 King Edward), the May utility bill had been double counted as the University had received two billing notices for that month due to a meter replacement. This was picked up in the Comsatec database and lead to an additional 537,310 m3 of natural gas. This represented an over reporting of 6.13% and was brought to the attention of the University. This was resolved in an updated calculation sheet and SWIM report.
					• The utility bills utilized in the calculations do not start at the beginning and end of each month (e.g. December 9, 2015 – January 4, 2016). For each building the 12 months of utility bills that represent the most number of days in 2016 are selected by Comsatec software for inclusion in the 2015 GHG report. IESC recalculated the 2016 calendar year emissions, adjusting for the first and final billing dates. An over reporting of 2.16% was observed. The overall discrepancy would result in an over reporting of 2.05% when considered across the whole GHG assertion.

5.		Documentation, recalculation	Accuracy, Consistency	• Check that methodology used to calculate CO2, CH4, and N2O emissions are consistent with program requirements and guidance documents • Verify the HHV values are correct and meet the requirements of the regulation in terms of the values, and sampling frequency • Recalculate CO2, CH4, and N2O emissions based on the fuel consumption and emissions factors, crosschecking with the reported emissions	• HHV values utilized in the calculation spreadsheet match those posted by Enbridge Gas. The posted HHV values correspond to 6 month periods, the facility averaged the 2 HHV values into a single HHV value and utilized this for the calculation. This was recalculated using the primary records from the 9 buildings IESC obtained utility bills for. Averaging the HHV values, resulted in an underreporting by 0.066%.The overall discrepancy would result in a 0.063% when considered across the whole GHG assertion. • Emission factors utilized match those published in the 2015 guidance documents • Methodology and formula used to calculate CO2, CH4, and N2O are consistent with ON.23(c), and ON.24(d) of the 2015 guidance document • GWP for CH4 and N2O utilized were 25, and 298 respectively. Those values match the IPCC's 2012 assessment report however does not match the GWP required to be utilized by the regulation (21, and 310 respectively). However this does not have a material effect on the emissions report (results in an over reporting by 2tCO2e).
6.	CO_2 Calculation	Recalculation	Accuracy	• Recalculate total emissions based on the records obtained and cross check with total emission reported in the SWIM report	• Recalculated total emissions do not match the results found in the updated SWIM report. The recalculated emissions was 15,376tCO2 compared to what was reported which was 15,472tCO2e. The emissions were over reported by 0.6%
7.	GHG Data Management System	Documentation	Accuracy, Transparency	• Trace data aggregation and QA/QC procedures	• Automated extraction of utility bill information via the Comatec database, combined with the QA/QC provided by the system, and period checks by Comsatec employees provides QA/QC of the natural gas consumption
8.	Record Retention	Documentation	Completeness	• Review uOttawa's record retention policies, procedures and practices	• Comsatec's database contains data back to 2012, providing a digital record of uOttawa's energy consumption.

9.	Emissions Report	Documentation	Completeness	• Assess the SWIM report for completeness relative to the requirements of Section 7 of O.Reg 452/09	• SWIM report has been completed as per the requirements of Section 7 of the regulation

7.1 Identified Discrepancies and Resolutions

Identified Misstatement	Material/Immaterial	Resolution
Natural gas consumption was over reported by 537,310 m^3 due to the May utility bill being double counted as the University had received two billing notices for that month due to a meter replacement. This represented an over reporting of 6.13% and was brought to the attention of the University. This was resolved in an updated calculation sheet and SWIM report.	Material Over reporting of 6.13%	Resolved: The SWIM Report and calculation was corrected
45 Mann came online in September 2016. Natural gas consumption was not captured in the Comsatec database for 2016 and was not included in the SWIM report. Utility bills were obtained and showed consumption of 93,081m3 of natural gas. This represents an underreporting of 176tCO2e, or 1.1% of the GHG assertion.	Immaterial Under reporting of 1.1%	N/A
The utility bills utilized in the calculations do not start at the beginning and end of each month (e.g. December 9, 2015 – January 4, 2016). For each building the 12 months of utility bills that represent the most number of days in 2016 are selected by Comsatec software for inclusion in the 2015 GHG report. IESC recalculated the 2016 calendar year emissions, adjusting for the first and final billing dates.	Immaterial Over reporting of 2.05%	N/A
HHV values utilized in the calculation spreadsheet match those posted by Enbridge Gas. The posted HHV values correspond to 6 month periods, the facility averaged the 2 HHV values into a single HHV value and utilized this for the calculation. This was recalculated using the primary records from the 9 buildings IESC obtained utility bills for.	Immaterial Averaging the HHV values, resulted in an underreporting by ~0.064%.	N/A
GWP for CH4 and N2O utilized were 25, and 298 respectively. Those values match the IPCC's 2012 assessment report however does not match the GWP required to be utilized by the regulation (21, and 310 respectively).	Immaterial Under reporting by 0.012%	N/A
Recalculated total emissions do not match the results found in the updated SWIM report. The recalculated emissions was 15,376tCO2 compared to what was reported which was 15,472tCO2e.	Immaterial Over reported by 0.6%	N/A
TOTAL	+1.47%	

7.2 Summary of Errors, Omissions, Misstatements, or Non-compliances

The sum of all unresolved discrepancies (over reporting of 1.47%) does not result in a breach of materiality (±5% of the total GHG assertion).

8 VERIFICATION STATEMENT

Ontario

Ministry of the Environment and Climate Change

Program Management Branch
40 St. Clair Avenue West
Toronto ON M4V 1M2

Verification Statement Template

Under Sections 7.6(1) and 12 of Ontario Regulation 452/09 for 2017 Report

General Information

Information in this Verification Statement Template is collected under the authority of the *Environmental Protection Act, R.S.O 1990 (EPA)* under subsection 7.6(1)(a) and section 12 of Ontario Regulation 452/09 Greenhouse Gas Emissions Reporting (O. Reg. 452/09).

Information submitted in this template is subject to the *Freedom of Information and Protection of Privacy Act* (FIPPA), *R.S.O. 1990, c. F.31.* Under this regulatory framework, the Ministry may make certain information available to the public without further notice to you. If you have questions about the collection, use and the disclosure of personal or confidential information please contact the Ministry of the Environment and Climate Change's Freedom of Information and Privacy Office at 416 314-4075.

Instructions

This template is required for use by accredited verification bodies (AVBs) to provide a written declaration that attests to whether or not there is a reasonable level of assurance that: 1) a report contains no material discrepancy; and, 2) the report was prepared in accordance with the regulation.

The completed statement must be submitted by the reporting facility or its operator through Environment and Climate Change Canada's Single Window System, by September 1, 2017. The statement can be uploaded to Single Window as a Word document or PDF file.

Regulatory Authority

7.6. (1) A person who is required to prepare a report under section 5 or subsection 6 (2) shall ensure that,

(a) an accredited verification body conducts a verification of the report and prepares a verification statement in respect of the report if the result of the calculation under paragraph 4 of subsection 7.3 (2) or the quantification under subsection 7.4 (2), as the case may be, is greater than or equal to 25,000 tonnes of CO2e for that year; and

(b) if verification of a report is required under clause (a), an accredited verification body conducts a verification of each subsequent report in respect of the same activity and prepares a verification statement in respect of each subsequent report. O. Reg. 398/15, s. 3.

12. (1) After conducting a verification of a report, the accredited verification body shall prepare and submit to the person who was required to prepare the report a verification statement that meets the requirements set out in clause 4.9 of ISO 14064-3 and that is prepared in accordance with the following rules:

1. The accredited verification body shall prepare and submit a positive verification statement, if it has determined that there is a reasonable level of assurance that the report contains no material discrepancy and that the report was prepared in accordance with this Regulation.
2. The accredited verification body shall prepare and submit a qualified positive verification statement if it has determined that there is a reasonable level of assurance that the report contains no material discrepancy and that the report was prepared substantially in accordance with this Regulation.
3. The accredited verification body shall prepare and submit an adverse verification statement if it has determined that there is a reasonable level of assurance that the report contains a material discrepancy or that the report was not prepared substantially in accordance with this Regulation, it has given notice in accordance with subsection (2) to the person who was required to prepare the report and one of the following circumstances applies:
   i. The person who received the notice has neither submitted a request under subsection (3) nor submitted a revised report to the Director and the accredited verification body.
   ii. The person who received the notice has submitted a request under subsection (3) and has not, after receiving notice of the Director's confirmation under clause 12.1 (1) (a), submitted a revised report in accordance with subsection 12.1 (3). O. Reg. 398/15, s. 5.

Section A - Administrative Information

2017 Report (i.e., a report prepared in respect of 2016 activities)

Did the AVB identified in Part I (below) submit a Compromised Impartiality Assessment Report in respect of the Facility for the 2017 report?

☐ Yes ☐ No

If a Mitigation Plan was submitted with the Compromised Impartiality Assessment Report, was it approved?

☐ Yes ☐ No

Part 1 - Accredited Verification Body (AVB) Information

AVB Name

Internat Energy Solutions Canada

Lead Verifier Name	Title
Livio Nichilo	Engineering Manager

Mailing Address

Unit Number	Street Number	Street Name	PO Box	Postal Code/Zip Code
403A	425	Adelaide St. West		M5V 3C1

Country	City	Province/State
Canada	Toronto	Ontario

Telephone Number	Fax Number	Email Address
416 628-4658	888 868-0960	l.nichilo@internatenergy.com

Part 2 - Peer Reviewer Information

Company Name
Internat Energy Solutions Canada

Contact Name	Contact Title
Anureet Kaur	

Mailing Address (if different from Section A, Part I)

Unit Number	Street Number	Street Name	PO Box	Postal Code/Zip Code

Country	City	Province/State

Telephone Number	Fax Number	Email Address

Part 3 - Facility Information

Please provide the following for the facility

Ontario GHG Identification No. (mandatory)	CITSS Entity ID (where known)
1181	ON2305

National Pollutant Release Inventory (NPRI) Identification No. (where known)	Environment and Climate Change Canada GHG Identification No. (where known)

Faculty Name or Entity Name
University of Ottawa

Contact Name	Contact Title
Jonathan Chiasson	Building Operations

Mailing Address (if different from Section A, Part I)

Unit Number	Street Number	Street Name	PO Box	Postal Code/Zip Code
	141	Louis-Pasteur		K1N 6N5

Country	City	Province/State
Canada	Ottawa	

Telephone Number	Fax Number	Email Address
613 562-5800		jonathan.chiasson@uottawa.ca

Section B - Verification Attestation and Declaration

Part 1 - Greenhouse Gas Emissions Assertion

Please indicate (in tonnes, rounded to the nearest tonne) the total greenhouse gas emissions being verified for the aforementioned facility

Total CO_2e from all sources – s.7.3(1)(a)	Total CO_2e from combustion of biomass – s.7.3(1)(b)
15472	

Total CO_2e captured – s.7.(3) para.5	Reporting Amount in CO_2e – s.7.3(1)(c)
	15472

Verification Amount in CO_2e – s.7.3(2) para. 4
15472

Date report submitted to the ministry	Please indicate whether the emissions report is
2017/08/29	☑ An initial submission ☐ A resubmission

Part 2 - Verification Opinion

Based on the verification process and procedures conducted, which were conducted in accordance with the requirements set out in O. Reg. 452/09, which include specified clauses of ISO 14064-3 and 14065, it is the determination of the Accredited Verification Body that the result of the verification of the emissions report submitted by the aforementioned facility is (check one)

☑ Positive

1. The accredited verification body has determined that there is a reasonable level of assurance that the report contains no material discrepancy and that the report was prepared in accordance with this Regulation.

☐ Qualified Positive

2. The accredited verification body has determined that there is a reasonable level of assurance that the report contains no material discrepancy and that the report was prepared substantially in accordance with this Regulation.

☐ Adverse

3. The accredited verification body has determined that there is a reasonable level of assurance that the report contains a material discrepancy or that the report was not prepared substantially in accordance with this Regulation

Required for All Statements: Please describe the key findings of the verification that led to the above conclusion, including any limitations to the findings, in accordance with guidance provided in ISO 14064-3 Annex A.2.9.2.
Additional Requirement for Qualified Positive Statements: Please provide additional details, including references to specific sections of the Regulation and the Guideline as applicable, related to the report's demonstrated or potential (due to lack of substantiating evidence obtained) departure from the requirements specified by the Regulation or by the Guideline.

The University of Ottawa contracted Internat Energy Solutions Canada. ("IESC") to review the 2016 GHG Inventory Report and supporting evidence , covering the period January 1st, 2016– December 31st, 2016 ('GHG Assertion'). The report assertion specifies the emission of 15,472 tonnes CO2e emissions over the aforementioned period.

Identified Misstatements and Resolutions:
- Natural gas consumption was over reported by 537,310 m3 due to the May utility bill for the central heating plant being double counted as the University had received two billing notices for that month due to a meter replacement. This represented an over reporting of 6.13% and was brought to the attention of the University. This was resolved in an updated SWIM report submitted on August 29, 2017
- 45 Mann came online in September 2016. Natural gas consumption was not captured in the Comsatec database for 2016 and was not included in the SWIM report. Utility bills were obtained and showed consumption of 93,081m3 of natural gas. This represents an underreporting of 176tCO2e, or 1.1% of the GHG assertion.
- The utility bills utilized in the calculations do not start at the beginning and end of each month (e.g. December 9, 2015 – January 4, 2016). For each building the 12 months of utility bills that represent the most number of days in 2016 are selected by Comsatec software for inclusion in the 2015 GHG report. IESC recalculated the 2016 calendar year emissions, adjusting for the first and final billing dates and found an over reporting of 2.05% based on our calculation.
- HHV values utilized in the calculation spreadsheet match those posted by Enbridge Gas. The posted HHV values correspond to 6 month periods, however the facility averaged the 2 HHV values into a single HHV value and utilized this for the calculation. This was recalculated using the primary records from the 9 buildings IESC obtained utility bills for. Results in an underreporting by 0.064%.
- GWP for CH4 and N2O utilized were 25, and 298 respectively. Those values match the IPCC's 2012 assessment report however does not match the GWP required to be utilized by the regulation (21, and 310 respectively). Under reporting by 0.012%
- Recalculated total emissions do not match the results found in the updated SWIM report. The recalculated emissions was 15,376tCO2 compared to what was reported which was 15,472tCO2e. Over reporting by 0.6%

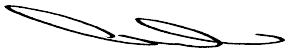
The sum of all unresolved discrepancies (over reporting of 1.47%) does not result in a breach of materiality (±5% of the total GHG assertion).

Part 3 - Lead Verifier Declaration

I, the undersigned, do hereby declare that

- At the time of verification, the Accredited Verification Body held a valid accreditation to ISO 14065 by a member of the International Accreditation Forum;
- To the best of my knowledge, the information provided in this Statement is true and complete;
- The verification was conducted in accordance with the requirements set out in O. Reg. 452/09, which includes specified clauses of ISO 14064-3 and ISO 14065 and,
- I am aware of the penalties of providing false information as per subsection 184(2) of the *Environmental Protection Act.*

Printed Name	Title
Livio Nichilo, P.Eng	Lead Verifier

Signature of Lead Verifier	Date (yyyy/mm/dd)
	2017/08/31

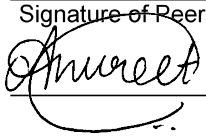
Part 4 - Peer Reviewer Declaration and Confirmation

I, the undersigned, do hereby declare that

- I was not involved in the verification documented in this Statement, other than to provide a peer review in accordance with clause 8.5 of ISO 14065, as it relates to verification activities; and
- I am aware of the penalties of providing false information as per subsection 184(2) of the *Environmental Protection Act.*

I, the undersigned, do further confirm, based on my evaluation of the verification and its outcome, that

- All verification activities required under the requirements set out in O. Reg. 452/09, which includes specified clauses of ISO 14064-3 and 14065, have been completed;
- The verification determinations and opinion presented above (Section B, Part II) are appropriate based on the activities conducted: and,
- The verification activities conducted are sufficient to provide a reasonable level of assurance as defined under O. Reg. 452/09.

Printed Name	Title
Anureet Kaur	Internal Peer Reviewer
Signature of Peer Reviewer	Date (yyyy/mm/dd)
	2017/08/31

APPENDIX A – FINAL VERIFICATION PLAN

Verification Plan for the University of Ottawa – 2016 GHG Inventory

1. INTRODUCTION

This verification plan is drafted in accordance with ISO 14064-3, and Ontario Regulation 452/09. The verification plan includes the fundamentals, the proposed verification team, the verification schedule, the risk assessment, the preliminary quantitative data testing including sensitivity analysis and data testing, the draft verification procedure, and finally the draft site visit agenda. The document is intended to provide the person responsible for the inventory with an understanding of the preliminary issues identified during the desk-top review of the information provided and to ensure that all the required personnel and information required for the site visit are prepared and available.

The person responsible can contact Internat Energy Solutions Canada (IESC) with questions or comments concerning the content of this document and the planned verification activities.

2. VERIFICATION FUNDAMENTALS

Facility Identification Information

Facility Name:	University of Ottawa ('uOttawa')
Ontario GHG ID:	1181
Location:	75 Laurier Ave E, Ottawa, ON K1N 6N5

Facility Contact Information

Name:	Jonathan Chiasson
Position/Title:	Building Operations
Email:	Jonathan.Chiasson@uottawa.ca
Telephone Number:	(613) 562-5700 xv7087
Mailing Address:	141 Louis Pasteur Street, Ottawa, ON K1N 1E3

Fundamentals

Level of assurance:	Reasonable Level of Assurance
Materiality threshold:	+/- 5%
Objectives	Verify the GHG emissions attributable to the uOttawa campus under

Ontario Regulation 452/09, as asserted in the completed SWIM Reports submitted to Environment Canada and ensure that the Ontario Ministry of the Environment and Climate Change receives a verification report and statement, which are reliable, and of sufficient quality to support determination of the GHG Emissions Report.

The main objectives of this verification will be to independently review:

- Whether the 2016 SWIM Report submitted and associated GHG emission assertions are in alignment with Ontario Regulation 452/09, and associated guidance documents
- Whether the methodologies utilized are in accordance with applicable protocols and associated regulations and guidance documents
- The data reported are accurate, complete, consistent, transparent, and free of material error or omissions

Verification Criteria:

- Ontario Regulation 452/09
- Guideline for Greenhouse Gas Emissions Reporting – December 2015:
  - ON.23(b)(1)_HHV
  - ON.24(b)_HHV
- ISO 14064-1: 2006

Verification Standard: ISO 14064-3: 2006

Intended users: uOttawa and Ontario Ministry of the Environment and Climate Change

Scope

Physical infrastructure, activities, technologies and processes:

The verification will assess the operations and equipment covered within the inventory boundaries as well as all calculations and supporting information utilized to quantify the GHG emissions presented in the Inventory Report for the Time Period covered. The major sources of emissions include the following:

Source
On-site Stationary Fuel Combustion • Natural Gas

GHG sources, sinks and/or reservoirs:

The Regulations require the quantification of all SSRs at the facility under the following source categories:

SQM	GHG Source	Details
ON.20	General Stationary Combustion	Natural Gas

Type of greenhouse gases: CO_2, CH_4, N_2O, SFN, HFCs and PFCs

Time period: January 1st, 2016 – December 31st, 2016

3. VERIFICATION TEAM

Lead Verifier	Livio Nichilo, P.Eng, M. Eng
Internal Peer Reviewer	Anureet Kaur, M.Sc, BBA
Team Member	Kevin Tse, MES
Conflict of Interest Auditor	Tra Le
Appeals/Complaints/Disputes Representative	Erick Lachapelle, B.S.Sc., PhD

4. VERIFICATION SCHEDULE AND SITE VISIT AGENDA

The tables below outlines the verification schedule and site visit schedule anticipated for the verification.

Table 1: Verification Schedule

Verification Activity	Responsible Party	Date of Completion
Kick-off Call/Meeting with uOttawa	IESC / uOttawa	N/A
IESC to receive documentation	uOttawa	May 26, 2017
Initial Desktop Review	IESC	May 26 – June 2, 2017
Provide Verification Plan to uOttawa	IESC	June 8, 2017
Site Visit	IESC	TBD
Receive any additional documentation/clarifications	IESC / uOttawa	1 week following site visit date
Draft Verification Report	IESC	1 week following receipt of additional document/clarification
Address Follow-up Items	IESC / uOttawa	1 week following draft verification report
Finalize Verification Report, Statement of Verification, Conflict of Interest Forms, Verification Plan	IESC	1 week following address of all follow-up items

Table 2: Site Visit Schedule

Item	Purpose	Time*
Date TBD		
Opening Meeting	Explanation of verification process, level of assurance, materiality, verification criteria, standards, and overall verification process.	9:00-9:30
Facility Walk Through	Tour of the facility to inspect equipment, meters, and assess the SSR's as outlined in the GHG inventory report	9:30 – 1:30
Lunch Break		1:30 – 2:00
Interviews with Site Staff, and assessment of GHG management system and controls	Review of data management systems, calibration procedures, emissions calculation procedures, QA/QC procedures. Identification of any additional records to be obtained	2:00 – 4:00
IESC to prepare for closing Meeting	IESC to prepare notes for closing meeting	4:00 – 4:30
Closing Meeting	Closing meeting to discuss results of site visit	4:30 – 5:00

	and to request any additional data or records that to be provided to IESC	

*Timing of activities may change depending on availabilities of personnel and findings throughout verification

5. RISK ASSESSMENT

Based on the review of documentation, controls procedures and data, the verifier should assess risks, including inherent risk, control risk, detection risk and materiality. The following tables provide a risk assessment based on the amount of emissions (tonnes CO_2/year) from each SSR (source, sink, reservoir) included in the inventory. When an SSR represents a small percentage of the overall emission, the risk of an error being material is minor compared to a major source. The data used to calculate major sources is assessed in more detail because a potential error may cause a material discrepancy.

Table 3: Summary of Sources, Sinks, and Reservoirs for GHG Inventory

Relevant Facility SSR's	Emissions (tonnes)			Total Emissions (t CO_2e/ year)	% Total	Risk (H/M/L)
	CO2	CH4	N2O			
Stationary fuel combustion: *Natural Gas*	16,445.40	0.306	0.324	16,553	100%	H – Main source of emissions, consumption on-site at multiple points of the site
TOTAL	16,445.40	0.306	0.324	16,553	100%	

IESC conducted a preliminary assessment of the potential risk associated with this verification that informs the development of the verification procedures. There are three types of risk that are assessed, which are inherent, control, and detection risk.

Inherent risk is the risk of error due to the complexity of the project or the capacity of staff involved with the project.

Control risk is the risk that the proponent's control system will not detect and rectify a discrepancy.

Detection risk is the risk that IESC will not identify a material discrepancy.

The following table describes the inherent and control risks analyzed by IESC and the corresponding verification procedure(s) outlined in the following section that have been designed to address these risks.

ISO 14064-1 Requirements	Inherent Risk (H/M/L)	Control Risk (H/M/L)	Detection Risk (H/M/L)	Overall Risk (H/M/L)
GHG Inventory Design and Development				
Organizational Boundaries	M – The campus includes 93 different locations where natural gas is consumed	L – Organization's corporate structure is simple, boundaries are not complicated by corporate structure	L – IESC conducted a site visit last year and will conduct an additional one this year to verify the presence or absence of any SSRs	L
Operational Boundaries	M – Inventory boundaries include a single site, however the site is large and includes a large number of buildings across the campus	L – Second GHG inventory prepared by uOttawa. The University now has a firmer understanding of the operational boundaries for reporting	L – IESC will be on-site to verify the operational boundaries	M
GHG Inventory Design and Development	L – Responsible staff have submitted an inventory before, and through an automated process, a third party energy management firm has assisted with population of the energy data to be reported	L – Default methodologies and emission factors are used that are consistent with program-specific guidelines	L – IESC has reviewed the GHG inventory design and report as part of the Desktop Review	L
GHG Information Management Systems	L – Data systems are organized electronically, and captured electronically. No manual data transfer.	L – The reporting spreadsheet and data management system was used last year, and is well organized	L – IESC will verify the GHG information management system in place at uOttawa	L
Source Categories				
Stationary fuel combustion (natural gas)	L – Emissions are from operation of equipment that do not require specialized knowledge. Emissions calculation depends on a small number of input parameters, requires no pre-processing and utilize default methodologies and emissions factors	L – Emissions calculations rely on data from data management systems that are well developed through the energy/financial tracking of utility consumption	L – The process is straight forward, and IESC will be able to inspect all equipment and utility bills	L

Risk Statement:

The verification and sampling plans for this facility were developed considering our assessment of the verification risk for the engagement. IESC assessed the initial verification risk as **Low** since this is the second verification engagement for IESC at this facility and is the second GHG inventory that uOttawa has prepared.

6. VERIFICATION PROCEDURE AND SAMPLING PLAN

	Item	Type of Evidence	Verification Objective	Specific Activities	Findings
1.	Demonstration of Applicability	Documentation	Completeness, Relevance	• Review calculation tool and GHG inventory for evidence of applicability for each requirement described by the regulation	
2.	Review of Operating Conditions	Documentation, Observation, Inquiry	Consistency	• Obtain and evaluate historical energy trends to compare consumption over time: • Discuss operational history of the campus with uOttawa	
3.	General Stationary Combustion – Site Wide Natural Gas Consumption	Documentation	Completeness	• Conduct site visit to verify combustion equipment • Review campus map to determine if any sources have been excluded • Confirm that all relevant sources have been included	
4.		Documentation, recalculation	Accuracy	• Obtain facility wide natural gas consumption based on primary records (utility bills) for the entire reporting period • Recalculate the total natural gas consumption for the facility, cross-checking against the values reported in the SWIM report	
5.		Documentation, recalculation	Accuracy, Consistency	• Check that methodology used to calculate CO2, CH4, and N2O emissions are consistent with program requirements and guidance documents • Verify the HHV values are correct and meet the requirements of the regulation in terms of the values, and sampling frequency • Recalculate CO2, CH4, and N2O	

				emissions based on the fuel consumption and emissions factors, crosschecking with the reported emissions	
6.	CO_2 Calculation	Recalculation	Accuracy	• Recalculate total emissions based on the records obtained and cross check with total emission reported in the SWIM report	
7.	Inventory Completeness			• Inspect process, site maps and existing environmental approvals and previous site visit notes to identify any emissions sources that may been excluded from the inventory.	
8.	GHG Data Management System	Documentation	Accuracy, Transparency	• Trace data aggregation and QA/QC procedures	
9.	Record Retention	Documentation	Completeness	• Review uOttawa's record retention policies, procedures and practices	
10.	Emissions Report	Documentation	Completeness	• Assess the SWIM report for completeness relative to the requirements of Section 7 of O.Reg 452/09	

7. VERIFICATION EXECUTION

Based on the Verification and Sampling Plans, the verification procedures will be implemented. This process will involve collection and review of documentation as well as a site visit to collect evidence, test controls, and conduct substantive testing. During the verification process, the Verification and Sampling Plans may change; the final Verification and Sampling Plans to be provided in the final Verification Report will updated to reflect the verification parameters and procedures that were actually executed.

Clarification and Information Requests

During the course of the verification process, additional documentation and data will be required by the verification team. To facilitate this process, a consolidated request for additional information will be developed and issued to the Project Proponent. The requests and responses will be summarized and used to document the verification team's assessment of each response to be included in the final Verification Report.

	Name / Signature	Position	Date
Prepared By:	Kevin Tse	Team Member	June 8, 2017
Approved By:	Livio Nichilo	Lead Verifier	June 8, 2017

APPENDIX B – IMPARTIALITY ASSESSMENT

Ontario

Ministry of the Environment and Climate Change

Compromised Impartiality Assessment Form

Ontario Regulation 452/09, Sections 8 - 14

Instructions

This form is to be used by all accredited verification bodies (AVBs) prior to completing the verification of an emissions report under O. Reg. 452/09 to assess the potential for compromised impartiality in respect of a facility. An organizational chart of the AVB and entities related to the AVB may be provided as an attachment to this form, if required, in Section D.

For more information about compromised impartiality for verification bodies, please refer to the greenhouse gas emissions reporting section of Ministry of the Environment and Climate Change Internet site.

The Ministry will screen each submitted Compromised Impartiality Assessment Form (CIAF) for completeness. Incomplete forms will be returned to the submitter. The Ministry may request additional information during the review of this form prior to accepting a submission as complete.

Submit your completed form including mitigation plan by:

Mail GHG Verification Program
Ministry of the Environment and Climate Change
40 St. Clair Avenue West, 4th Floor
Toronto ON M4V 1M2

OR Email ghgverification@ontario.ca

Regulatory Authority

14. (5) Before completing a verification of a report, an accredited verification body shall assess the potential for any compromised impartiality in conducting the verification and provide to the Director a written assessment report that,
    (a) identifies any potential compromised impartiality; and
    (b) if any potential compromised impartiality is identified under clause (a), proposes a mitigation plan in respect of it.

    (6) After verification of a report has begun, the accredited verification body shall, if any potential compromise of its impartiality arises, immediately undertake the assessment mentioned in subsection (5) and submit a written assessment report in accordance with that subsection to the Director.

Collection of Information

Information requested in the CIAF is collected under the authority of the *Environmental Protection Act,* R.S.O 1990 (EPA) and will be used to evaluate compromised impartiality under sections 8 - 14 of Ontario Regulation 452/09 Greenhouse Gas Emissions Reporting (O. Reg. 452/09).

Information submitted in the CIAF is subject to the *Freedom of Information and Protection of Privacy Act* (FIPPA), R.S.O. 1990, c. F.31. Under this regulatory framework, the Ministry may make certain information available to the public without further notice to you. If you have questions about the collection, use and the disclosure of personal or confidential information please contact the Ministry of the Environment's Freedom of Information and Privacy Office at 416 314-4075.

Submission Summary	
Report Year 2016	Ontario GHGID or NPRI 1181
Facility Name University of Ottawa	Accredited Verification Body (AVB) Internat Energy Solutions Canada

Section A Verification Engagement

Part A1 Administrative Information

Report Year	Provide at least one (more where known) of the following for the facility
2016	Ontario GHG Identification No.: 1181
	Environment Canada GHG Identification No.:
	National Pollutant Release Inventory (NPRI) Identification No.:

Choose the appropriate box based on the description provided

If known, indicate the submission date of the previous version (yyyy/mm/dd)

- [x] **Initial Submission**
  This is the first CIAF being submitted by any AVB in respect of the Facility and Report Year above.
- [ ] **Resubmission by Same AVB during initial verification**
  A potential for compromised impartiality has arisen since the initial CIAF submission by AVB, so the same AVB is resubmitting a revised form in respect of the Facility and Report Year above.
- [ ] **Resubmission by Different AVB during initial verification**
  Compromised impartiality which could not be mitigated has arisen since the initial CIAF submission by another AVB, so a different AVB is submitting a CIAF in respect of the Facility and Reporting Year above.
- [ ] **Submission by Same AVB for re-verification required as per section 7.8 of the Regulation**
  This is the first CIAF being submitted by same AVB in respect to the re-verification of the Facility and Report Year above.
- [ ] **Submission by Different AVB for re-verification required as per section 7.8 of the Regulation**
  This is the first CIAF being submitted by different AVB in respect to the re-verification of the Facility and Report Year above.

Part A2 Facility Information

Facility Name, Facility Owner Name: University of Ottawa

Contact Information

Last Name	First Name
deGagné	Pierre

Position Title: Director Utility and Campus Sustainability

Telephone No. (incl. area code)	Ext.	Email
613 562-5800		pdegagne@uottawa.ca

Facility Address

Unit No.	Street No.	Street Name	PO Box
	720	King Edward Street	

City/Town	Province/State	Country	Postal
Ottawa	ON	Canada	K1N 6N5

Business No. Assigned by Canada Revenue Agency	NAICS Code	Secondary NAICS Code (if necessary)
119278877	611310	

Part A3 Accredited Verification Body (AVB) Information

AVB Name

Internat Energy Solutions Canada

Contact Information

Last Name	First Name
Nichilo	Livio

Position Title

Lead Verifier

Telephone No. (incl. area code)	Email
416 628-4658 Ext. 140	l.nichilo@internatenergy.com

Mailing Address

Unit No.	Street No.	Street Name	PO Box
403A	425	Adelaide St. West	

City/Town	Province/State	Country	Postal/Zip Code
Toronto	Ontario	Canada	M5V 3C1

ISO 14065 accreditation received from

- ☐ Standards Council of Canada (SCC)
- ☑ American National Standards Institute (ANSI)
- ☐ Other International Accreditation Forum (IAF) member (specify) ▼

Accreditation Standing: In Good Standing

Accreditation No.: 1001

Expiry of Accreditation (yyyy/mm/dd): 2017/08/29

Applicable SCC Technical Scope Category Accreditation(s) (Check all that apply)

- ☐ General
- ☐ General manufacturing
- ☐ Power generation and electric power transaction
- ☐ Mining and mineral production
- ☐ Metals production
- ☐ Chemical industries
- ☐ Oil and gas extraction, production & refining including petrochemicals
- ☐ Other (specify) ▼

Applicable ANSI Organization-level Verification Categories Accreditation(s) (Check all that apply)

- ☑ General
- ☑ Manufacturing
- ☑ Power generation
- ☐ Electric power transaction
- ☑ Mining and mineral production
- ☑ Metals production
- ☑ Chemical production
- ☑ Oil and gas extraction, production and refining included petrochemicals
- ☐ Other (specify) ▼

Part A4 Verification Team

Number of people that will participate on the verification team, including the peer reviewer ► _____

For Initial Submissions	**For Resubmissions**		
Expected Verification Start Date (yyyy/mm/dd)	Actual (Previous) Verification Start Date (yyyy/mm/dd)	Expected Verification Start or Re-start Date (yyyy/mm/dd)	Date Potential Compromised Impartiality Identified (yyyy/mm/dd)
2017/06/08	Name of AVB on Initial Submission		

Lead Verifier

Company Name

Internat Energy Solutions Canada

Contact Information

Last Name	First Name
Nichilo	Livio

Position Title

Lead Verifier

Telephone No. (incl. area code)	Email
416 628-4658 Ext. 140	l.nichilo@internatenergy.com

Mailing Address ☑ Same as Part A3 above

Unit No.	Street No.	Street Name	PO Box

City/Town	Province/State	Country	Postal/Zip Code

Peer Reviewer

Contact Information

Last Name	First Name
Kaur	Anureet

Position Title
Internal Peer Reviewer

Telephone No. (incl. area code)	Email
416 628-4658 Ext. 148	a.kaur@internatenergy.com

Company Name
Internat Energy Solutions Canada

Mailing Address ☑ Same as Part A3 above

Unit No.	Street No.	Street Name	PO Box

City/Town	Province/State	Country	Postal/Zip Code

List all other verification team members (including any subcontractors)

Member

First Name	Last Name
Kevin	Tse

Position Title
Team Member

Company Name
Internat Energy Solutions Canada

Email	Role on Verification Team
k.tse@internatenergy.com	Team Member

Part A5 Compromised Impartiality Assessment Result and Declaration

The compromised impartiality assessment presented herein demonstrates the following result:

☐ **No potential compromised impartiality was identified.**

☑ **A potential for compromised impartiality exists** and a mitigation plan is proposed in Section D of this form.

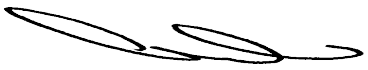
☐ **Compromised impartiality exists which cannot be effectively mitigated,** therefore verification of the facility is not permitted under O. Reg. 452/09.

I, the undersigned, do hereby declare that:

- To the best of my knowledge, the information provided in support of this assessment is true and complete and that I have complied with the Compromised Impartiality requirements as set forth in Ontario Regulation 452/09.
- I commit to monitoring, after the verification has begun, if any potential compromise of impartiality arises, and, if so, to immediately undertake this assessment again and submit a revised CIAF to the MOE.
- I am aware of the penalties of providing false information as per Section 184(2) of the *Environmental Protection Act.*

(Printed) Lead Verifier or More Senior Officer of AVB (Last, First Name)	Telephone No.
Nichilo, Livio	416 628-4658 Ext. 140

Position Title	Email
Lead Verifier	l.nichilo@internatenergy.com

Signature	Date (yyyy/mm/dd)
	2017/06/08

Section B Assessment of Non-Mitigable Compromised Impartiality

Answer all the questions in this section that **apply**, and proceed based on the instructions provided at the end of this section.

1. Is the AVB in any way **out of compliance** with clause 5.4 of ISO 14065? . . . . . ☐ Yes ☑ No

Only answer question 2 if the AVB has ever verified emissions reports in respect of the facility for six consecutive reporting periods.

2. Have three or fewer reporting periods passed since the sixth verification in the series? . . . . . ☐ Yes ☑ No

Only answer question 3 if the AVB has ever completed verifications in respect of the facility in two or more consecutive reporting periods and then ceased to conduct verifications of the facility's emissions reports for one or more reporting periods.

3. Have three or fewer reporting periods passed since the last verification of the facility by the AVB? . . . . . ☐ Yes ☑ No

If you have indicated *"Yes"* in any of these questions, your impartiality is considered compromised under O. Reg 452/09 and you may not verify the emissions report of this facility in this reporting year.
(Otherwise continue to complete Section C ▼).

Section C Assessment of Potential Compromised Impartiality

Answer all the questions in all parts of this section, and proceed based on the instructions provided at the end of this section.

Part C1 Potentially Mitigable Compromised Impartiality under O. Reg 452/09

1. Is the AVB aware of **any** potential conflict of interest that is a threat to the body's impartiality or any other threats to the body's impartiality? . . . . . ☐ Yes ☑ No

   If yes, identify any threats not otherwise identified under Part C3 in this section

2. Has the AVB provided any of the following greenhouse gas consultancy services to the facility within the previous three years?
   - 2.1 Greenhouse gas quantification; . . . . . ☐ Yes ☑ No
   - 2.2 Greenhouse gas data monitoring or recording; . . . . . ☐ Yes ☑ No
   - 2.3 Greenhouse gas information system or internal auditing services; or . . . . . ☐ Yes ☑ No
   - 2.4 Training that supports greenhouse gas emissions reporting under O. Reg 452/09 or any other greenhouse gas reporting program. . . . . ☐ Yes ☑ No

Part C2 Other Potential Sources of Compromised Impartiality

3. Has a member of the verification team, AVB, or a related entity provided any of the following non-verification services either within or outside Ontario for the facility or the facility's operator within the last three years?
   - 3.1 Designing, developing, implementing, or maintaining an inventory or information or data management system for facility greenhouse gases . . . . . ☐ Yes ☑ No
   - 3.2 Developing greenhouse gas emission factors or other greenhouse gas-related engineering analysis ☐ Yes ☑ No
   - 3.3 Designing energy efficiency, renewable power, or other projects which explicitly identify greenhouse gas reductions as a benefit . . . . . ☐ Yes ☑ No
   - 3.4 Preparing or producing greenhouse gas-related manuals, handbooks, or procedures specifically for the reporting facility . . . . . ☐ Yes ☑ No
   - 3.5 Appraisal services of carbon or greenhouse gas liabilities or assets . . . . . ☐ Yes ☑ No
   - 3.6 Brokering in, advising on, or assisting in any way in carbon or greenhouse gas-related markets . . . ☐ Yes ☑ No
   - 3.7 Managing any health, environment or safety functions which explicitly identify greenhouse gas reductions as a benefit . . . . . ☐ Yes ☑ No
   - 3.8 Bookkeeping or other services related to the accounting records or financial statements, unless those records will not be part of the verification process . . . . . ☐ Yes ☑ No
   - 3.9 Any services related to information systems, including ISO 14001 certification, unless those systems will not be part of the verification process . . . . . ☐ Yes ☑ No
   - 3.10 Appraisal and valuation services, both tangible and intangible related to GHG emissions or reductions inventories . . . . . ☐ Yes ☑ No
   - 3.11 Fairness opinions and contribution-in-kind reports in which the AVB has provided its opinion on the adequacy of consideration in a transaction, unless the resulting services shall not be part of the verification process . . . . . ☐ Yes ☑ No
   - 3.12 Any actuarially oriented advisory service involving the determination of amounts recorded in financial statements and related accounts, unless the resulting services shall not be part of the verification process . . . . . ☐ Yes ☑ No

3.13	Any internal audit service that has been outsourced by the owner or operator that relates to the owner's or operator's internal accounting controls, financial systems or financial statements, unless no consulting or advice was provided as part of the audit	☐ Yes	☑ No
3.14	Acting as a broker-dealer (registered or unregistered), promoter or underwriter on behalf of the operator	☐ Yes	☑ No
3.15	Any legal services related to GHG emissions	☐ Yes	☑ No
3.16	Expert services to the operator or its legal representative for the purpose of advocating the operator's interests in ligation or in a regulatory or administrative proceeding or investigation, unless providing factual testimony	☐ Yes	☑ No
4.	Do any of the verification team members, or does anyone within the AVB, have personal or family relationships with management or employees of the facility?	☐ Yes	☑ No
5.	Do any of the verification team members share any management of staff or board of directors memberships with the facility owner or operator, or have any of the management staff of the facility owner or operator been employed by the AVB, or vice versa, within the previous three years?	☐ Yes	☑ No
6.	Are there any current or potential threats to the independence of the verification team members or to the independence of the AVB based on the existence of any other the following?		
6.1	Incentives	☐ Yes	☑ No
6.2	Financial interest	☐ Yes	☑ No
6.3	Self-review or consulting	☐ Yes	☑ No
6.4	Familiarity of relationships	☐ Yes	☑ No
6.5	Intimidation or coercion	☐ Yes	☑ No
6.6	Other threats to independence (specify under Part C3) ▼	☑ Yes	☐ No

Part C3 Other Circumstances

If you answered "Yes" to any questions in Section C, describe the potential conflict(s) of interest that is/are a threat to the impartiality of the AVB and any other threats to the body's impartiality.

IESC has conducted energy audits for facilities that utilize Comsatec to monitor their utility data. Prior to the verification, Comsatec has provided IESC with training on it's database and platform. Comsatec is providing energy monitoring services to uOttawa and is providing consulting services to uOttawa for the preparation of the GHG inventory.

If you have indicated *"Yes"* in any questions in Section C, there is a potential compromised impartiality and a mitigation plan is required. (Continue and complete Section D ▼)

If you have indicated *"No"* in ALL questions in both Sections B and C, then the assessment has identified no current potential for compromised impartiality and no mitigation plan is required at this time.

Section D Mitigation Plan

If you answered "Yes" to any of the questions in Section C, provide details of the proposed mitigation approach.

The proposed approach must include, at a minimum, description of the following for **each** potential threat to the impartiality of the AVB:

- How any individuals with potential compromised impartiality have been removed or insulated from the project.
- Changes to the AVB or verification team to remove the potential compromised impartiality. Include organizational structure changes. For example, demonstration that a unit with potential conflicts has been divested or moved into an insulated related entity.
- Activities or processes in place for neutralizing or mitigating the real or perceived compromise to impartiality (include a description of the organization's structure to maintain impartiality).
- Description of policies and procedures related to maintaining impartiality over the course of the verification activities.
- Any other circumstance that specifically addresses other sources for potential compromised impartiality.

Accredited verification bodies can provide organizational charts, internal policies and procedures for managing compromised impartiality, or any other supporting materials with this mitigation plan as they see fit.

Question No.	Proposed Mitigation Approach
1	Disclose of the risk of the COI, as well as discussion with Paul Maurier of Comsatec and Pierre deGagné of uOttawa about the potential risk of a COI has been completed. No additional activities have been deemed as required as both IESC and Comsatec understand the importance of maintaining impartiality and both organizations are bound by its professional practices. All IESC team members have signed IESC's impartiality and conflict of interest forms and abide by IESC's policies and procedures in order to ensure impartiality is maintained

If you have identified any other circumstances that could result in compromised impartiality, or if you have any further details you would like to provide, provide it here ▼