



GHG Single Window Reporting System: Update for 2015 Reporting Cycle and Lessons Learned

February 10, 2016



Agenda

1. Global Warming Potentials (GWPs)
2. Reporting Cycle Deadlines
3. Single Window Reporting System(SWIM) / BC GHG Module Updates
4. Quantification Methodologies
5. Lessons Learned

1. Global Warming Potentials (GWPs)

- The IPCC 4th Assessment Report recommended new GWPs which have been applied to BC GHG Reporting since the 2014 reporting cycle
- The main gases' GWPs are:

Gas	New GWP	Old GWP
CO ₂	1	1
CH ₄	25	21
N ₂ O	298	310
SF ₆	22800	23900

2. 2015 Reporting Cycle Deadlines

- Emissions Report – March 31, 2016
- Verification Report – May 31, 2016
- Emission report and verification reports for the 2016 cycle May 31, 2017



3. Single Window Reporting System

The Reporting System consists of two parts:

1. SWIM
2. BC GHG Module



The screenshot shows the SWIM web application interface. At the top, there is a blue header with the text "Single Window Information Manager" on the left and the "Canada" logo on the right. Below the header is a navigation bar with links: "Home", "My Profile", "Redeem EC Key", "Request Access", "Organizations", and "ec.gc.ca". A red maple leaf is centered in the header area. Below the navigation bar, there is a sidebar on the left with a list of menu items: "Single Window Information Manager", "Home", "My Profile", "Redeem EC Key", "Request Access", "Organizations", "Guidance", and "Logout". The main content area on the right is titled "Single Window Information Manager" and contains a red "Warning" box with the text "Please note that you are in a testing environment." Below the warning, there is a welcome message: "Welcome Qinghan Bian, to Environment Canada's Single Window." and a paragraph: "The reporting program(s) listed below are reporting programs that you currently have access to. If you require others please request access through your organization administrator." At the bottom of the main content area, there is a green button with a left-pointing arrow and the text "SWIM", and a red button with a left-pointing arrow and the text "BC GHG Module". Below the "BC GHG Module" button, there is a link: "BC Greenhouse Gas" and the text "Greenhouse Gas Reporting for the province of British Columbia".

3. Single Window Reporting System

- Key things to manage the reporting process

Two access rights required to have **full** functionalities:

1. Single Window Information Manager SWIM Organization Lead – All Facilities
2. BC Greenhouse Gas Reporting Lead – All Facilities



Single Window Information Manager

Canada

Home My Profile Redeem EC Key Request Access Organizations ec.gc.ca

Home > BC MOE Inc > Manage Access

Single Window Information Manager

Home
My Profile
Redeem EC Key
Request Access
Organizations
BC MOE Inc
Contacts
Parent Organizations
Manage Access
Facilities
Guidance
Logout

Manage Access

Below are all of the users that have access to your organization. To give others access to your organization, click on the "Grant Access" button. To delete any users that should no longer have access to your organization, use the "Delete all selected" button.

[Grant Access...](#)

Show 10 entries Filter items:

	User	Role	Details
<input type="checkbox"/>	Qinghan Bian	Single Window Information Manager SWIM Organization Lead	
<input type="checkbox"/>	Qinghan Bian	BC Greenhouse Gas Reporting Lead - All Facilities	

Showing 1 to 2 of 2 entries

[Delete all selected](#)



3. Single Window Reporting System

No changes made to SWIM this reporting cycle

- The framework remains the same
- Reminders:
 1. BC GHG ID entered by the province
 - **Contact us if your facility does not have one yet**
 2. NPRI ID entered by the NPRI program
 3. Permits entered by reporters
 4. NAICS code, max 3 codes
 5. Stacks Information
 - If there are any stacks, enter the stack's information

3. Single Window Reporting System

REMINDERS

1. NPRI ID – Default not existing for selection
2. BC GHG ID appears but cannot be changed

Home My Profile Redeem EC Key Request Access Organizations ec.gc.ca

Home > TESTORG_CA-BC (20 facilities) > Test CA-BC Facility 1 > Identifiers

Single Window Information Manager

Home
My Profile
Redeem EC Key
Request Access
Organizations
TESTORG_CA-BC (20 facilities)
Contacts
Parent Organizations
Manage Access
Facilities
Test CA-BC Facility 1
Identifiers
Stacks
Guidance
Logout

Identifiers

Required fields are marked with an asterisk (*).

NAICS Code Identifiers Permits

Type of Identifier
BC GHG ID

* Identifier XXXXXXXX Add Identifier

Displayed BC GHG ID here cannot be changed

National Pollutant Release Inventory Identifier	12345
BC GHG ID	123456

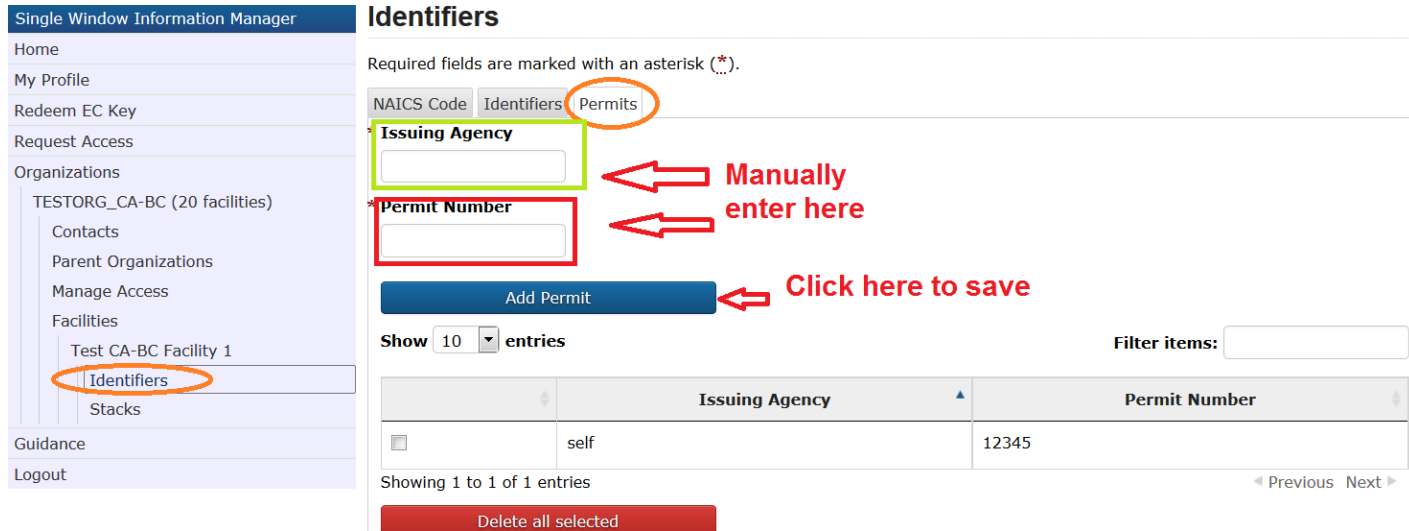
Save Identifier

3. Single Window Reporting System

REMINDERS – continued

3. Permits

-- Mandatory field, needs to be entered by reporters



Single Window Information Manager

Home
My Profile
Redeem EC Key
Request Access
Organizations
TESTORG_CA-BC (20 facilities)
Contacts
Parent Organizations
Manage Access
Facilities
Test CA-BC Facility 1
Identifiers
Stacks
Guidance
Logout

Identifiers

Required fields are marked with an asterisk (*).

NAICS Code Identifiers **Permits**

*** Issuing Agency**

*** Permit Number**

Add Permit

Show 10 entries Filter items:

	Issuing Agency	Permit Number
<input type="checkbox"/>	self	12345

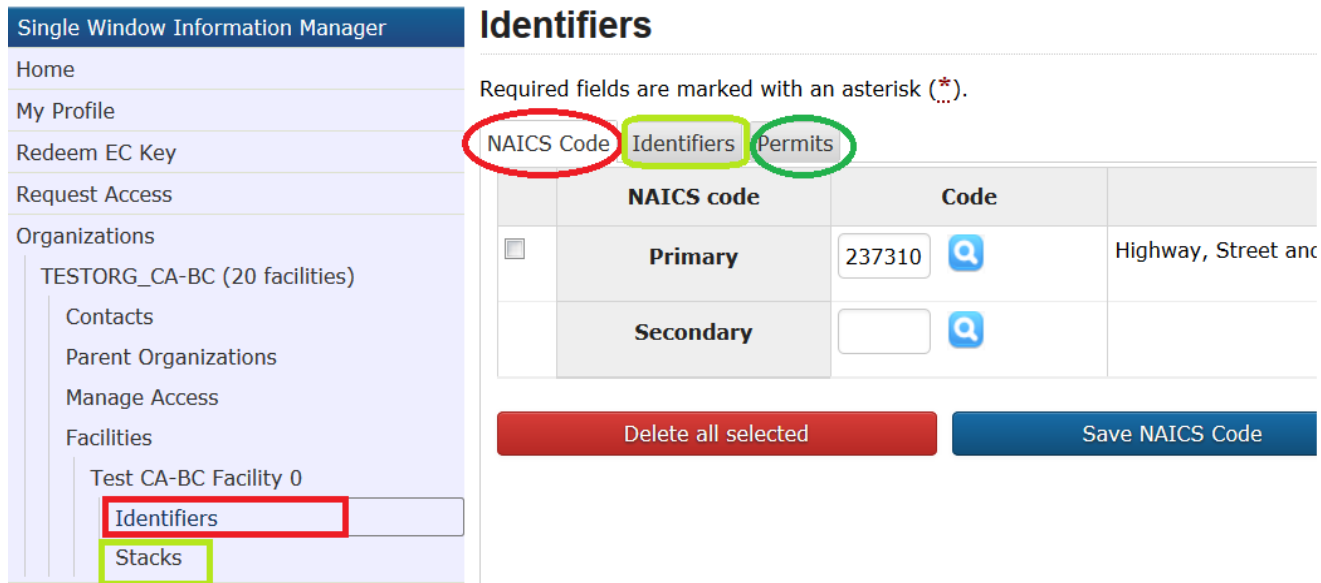
Showing 1 to 1 of 1 entries ◀ Previous Next ▶

Delete all selected

3. Single Window Reporting System

REMINDERS – continued

4. NAICS code, max 3 codes





Single Window Information Manager

Home
My Profile
Redeem EC Key
Request Access
Organizations
TESTORG_CA-BC (20 facilities)
Contacts
Parent Organizations
Manage Access
Facilities
Test CA-BC Facility 0
Identifiers
Stacks

Identifiers

Required fields are marked with an asterisk (*).

NAICS Code Identifiers Permits

	NAICS code	Code	
<input type="checkbox"/>	Primary	237310 	Highway, Street and
	Secondary	<input type="text"/> 	

Delete all selected Save NAICS Code

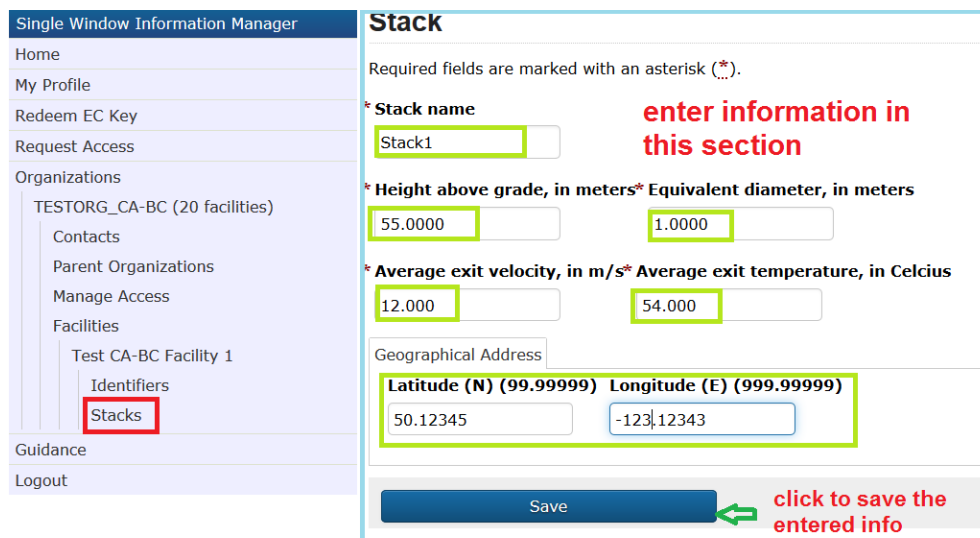
Single Window Reporting System

REMINDER - continued

5. Enter the stacks information

– Note:

- remember BC's geographical coordinate's range (Lat: 48.00000 ~ 60.00000, Long. -114.00000 ~ -134.00000)



Single Window Information Manager

Home
My Profile
Redeem EC Key
Request Access
Organizations
TESTORG_CA-BC (20 facilities)
Contacts
Parent Organizations
Manage Access
Facilities
Test CA-BC Facility 1
Identifiers
Stacks
Guidance
Logout

Stack

Required fields are marked with an asterisk (*).

* Stack name **enter information in this section**

* Height above grade, in meters* Equivalent diameter, in meters

* Average exit velocity, in m/s* Average exit temperature, in Celcius

Geographical Address
Latitude (N) (99.99999) Longitude (E) (999.99999)

click to save the entered info

Note – This is a mandatory requirement for Federal NPRI reporting

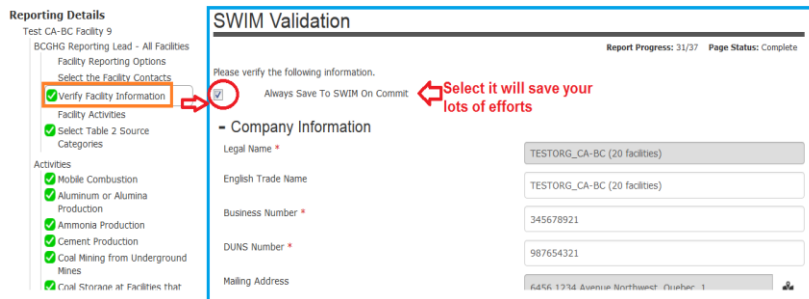
3. Single Window Reporting System

Updates to BC GHG Module

1. SWIM Validation - reminder

-- “Always Save To SWIM on Commit” (recommend)

* NPRI ID, BC GHGID – if existing, will be displayed here



Reporting Details
Test CA-BC Facility 9

BCGHG Reporting Lead - All Facilities

Facility Reporting Options

- Select the Facility Contacts
- Verify Facility Information
- Facility Activities
- Select Table 2 Source Categories

Activities

- Mobile Combustion
- Aluminum or Alumina Production
- Ammonia Production
- Cement Production
- Coal Mining from Underground Mines
- Coal Storage at Facilities that

SWIM Validation

Please verify the following information.

Always Save To SWIM on Commit *Select it will save your lots of efforts*

- Company Information

Legal Name * TESTORG_CA-BC (20 facilities)

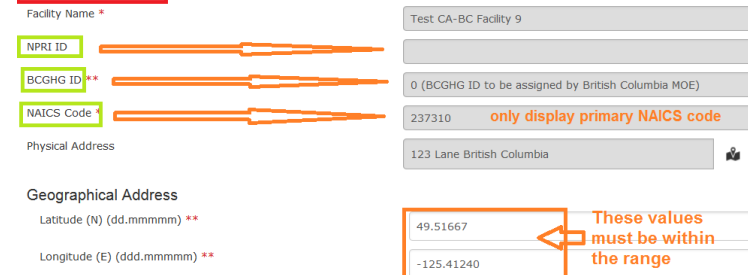
English Trade Name TESTORG_CA-BC (20 facilities)

Business Number * 345678921

DUNS Number * 987654321

Mailing Address 6456, 1234 Avenue Northwest, Quebec, 1

- Facility Details



Facility Name * Test CA-BC Facility 9

NPRI ID

BCGHG ID ** 0 (BCGHG ID to be assigned by British Columbia MOE)

NAICS Code * 237310 *only display primary NAICS code*

Physical Address 123 Lane British Columbia

Geographical Address

Latitude (N) (dd.mmmmm) ** 49.51667

Longitude (E) (ddd.mmmmm) ** -125.41240

These values must be within the range

3. Single Window Reporting System

BC GHG Module

1. SWIM Validation (continued)

- There are 5 user-friendly floating function buttons
 - Save to SWIM,
 - Refresh from SWIM,
 - Validate
 - Save/Continue
 - Back

Parent Company Information

567 No.1 Highway West, British Columbia

- Parent Company Information

- BC Govt

Legal Name * BC Govt

Ownership Percentage * 100.00

Mailing Address 99 Forever Boulevard British Columbia

Back

Save to SWIM Refresh from SWIM Validate Save/Continue

3. Single Window Reporting System

Updates to BC GHG Module

2. Pre-Population Function

- A new function allows the reporter to use a previous year's report framework to submit new report.
- For a specific report type for a facility, this function can only be used once for the current reporting cycle.

Reporting Dashboard

Welcome to the British Columbia Greenhouse Gas reporting module. We have made some changes to the Reporting Dashboard. Click "Help" then "Toggle In-Context Help" for more information.

Report(s)

Company List: TESTORG_CA-BC (20 facilities) | Year: 2014 | Report Category: Annual Report

Status	Facility Name	Report Type	Status	Actions
	Test CA-BC Facility 9	IF_a	<div style="width: 100%;"></div> (31/37)	
	Test CA-BC Facility 1	IF_a	Submitted (01/20/2016 12:58:17)	
	Test CA-BC Facility 17	IF_a	Submitted (01/18/2016 19:27:52)	
	Test CA-BC Facility 6	IF_b	Submitted (12/04/2015 12:07:53)	
	Test CA-BC Facility 2	L_c	Submitted (12/04/2015 12:06:49)	
	Test CA-BC Facility 13	SFO	Submitted (12/04/2015 12:05:58)	
	Test CA-BC Facility 7	L_c	<div style="width: 100%;"></div> (17/37)	
	Test CA-BC Facility 5	L_c	<div style="width: 100%;"></div> (1/7)	
	Test CA-BC Facility 3	LFO	Submitted (11/07/2014 11:45:15)	
	Test CA-BC Facility 4	EIO	Submitted (11/06/2014 14:10:54)	

1 2 Next Page 1 of 2

A User-friendly function button

Custom Fuel List

Prepopulation


Add New Report

!!!! ATTENTION: All the previous data still exist **!!!!**

3. Single Window Reporting System

Updates to BC GHG Module

2. Pre-Population Function - continued

- Click the “Prepopulation” button to bring all available previous reports to a new window that can be used to create a new report.
- Select appropriate report and click the Book-Plus mark  to start a new report (as shown below)

Facility Name	Facility Address	Year	Report Type	Actions
Test CA-BC Facility 11	74569 1236 AT Lane Southeast, City111617 (British Columbia)	2012	SFO	
Test CA-BC Facility 12	456 123 Lane Southeast, City111617 (British Columbia)	2015	EIO	
Test CA-BC Facility 16	123 Lane Southeast, City111617 (British Columbia)	2012	IF_a	
Test CA-BC Facility 16	55 123 Lane Southeast, City111617 (British Columbia)	2015	IF_a	 
Test CA-BC Facility 18	456 onetwothree Lane Southeast, City111617 (British Columbia)	2012	SFO	Start a new report 
Test CA-BC Facility 18	456 onetwothree Lane Southeast, Healtyn (British Columbia)	2015	SFO	



3. Single Window Reporting System

Updates to BC GHG Module

2. Pre-Population Function – continued

- Make sure data is entered properly and old data removed
 - **Verifiers** should apply extra attention
 - A tracking mechanism has been established to compare the new report and the one used to prepopulate.

3. Single Window Reporting System

Updates to BC GHG Module

2. Pre-Population Function – continued

- Pre-population – Third Party Line Hit

- If a pre-2014 report is used to prepopulate a new report, the “Third-party Line Hit” lies in the Fugitive section in a collapsed format, as the notice in the relevant activity page directs below.

Since 2014, data for "third-party line hits" has been categorized as Fugitive emissions. If you are using the prepopulation feature to copy data from a pre-2014 report, you will need to click "Validate" first to reset the page and then manually enter "third-party line hits" data under the Fugitive section.

Once clicking the “Validate” button, an error message displays as below at the top of the activity page

! • Mandatory Additional Reportable Information as per WCI.352(i)(1)-(12) (2 errors)

Before clicking “Validate”

Onshore NG Transmission Compression/Pipelines: third-party line hits

Empty

Underground NG Storage: Equipment Leaks from Valves, Connectors, etc.

N/A	Gas	Methodology **	Emissions (t) **	Emissions (t CO2e)

After clicking “Validate”

Onshore NG Transmission Compression/Pipelines: third-party line hits

N/A	Gas	Methodology **	Emissions (t) **	Emissions (t CO2e)
<input type="checkbox"/>				
<input type="checkbox"/>	CO2 nonbio			
<input type="checkbox"/>	CH4			

3. Single Window Reporting System

Updates to BC GHG Module

3. General Stationary Combustion (GSC)

- i. User friendly functions were added to expand/collapse a working section for a fuel/unit/activity, etc.

Clicking "+" will expand a working section;

Clicking "-" will collapse a section.

General Stationary Combustion

Report Progress: 32/32 Page Status: Complete

- (a) general stationary combustion, useful energy

Fuel Groups **

+ Ordinary GSC U1

- Ordinary GSC U2

GSC Unit Name * Ordinary GSC U2

Description Hot water supply

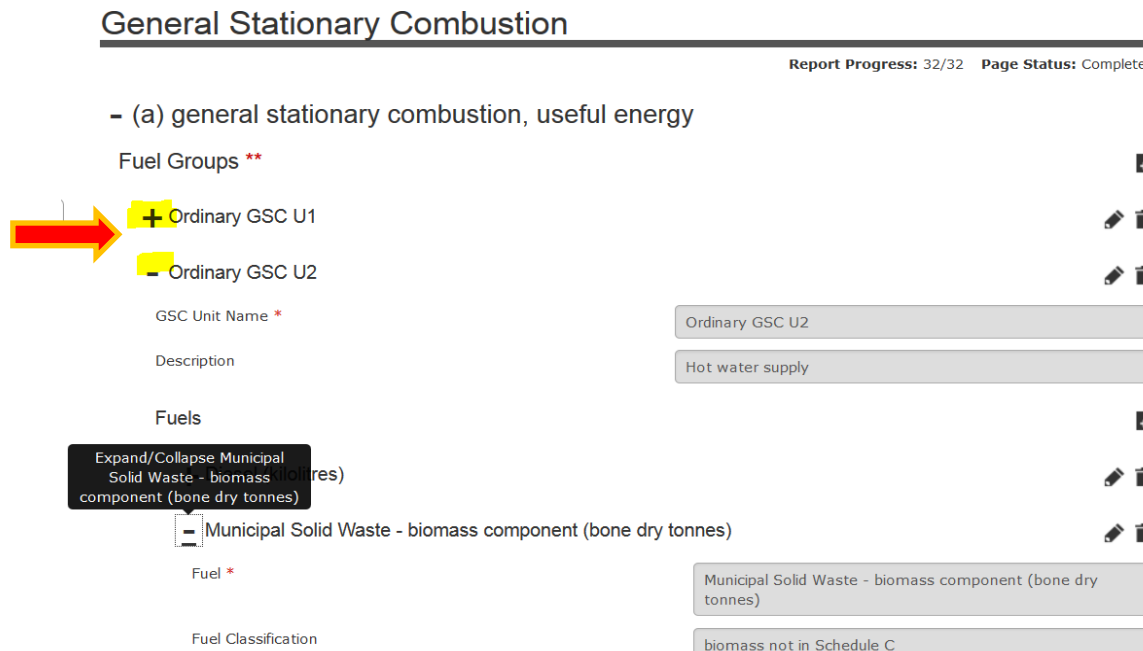
Fuels

Expand/Collapse Municipal Solid Waste - biomass component (bone dry tonnes) (res)

- Municipal Solid Waste - biomass component (bone dry tonnes)

Fuel * Municipal Solid Waste - biomass component (bone dry tonnes)

Fuel Classification biomass not in Schedule C



3. Single Window Reporting System

Updates to BC GHG Module

3. General Stationary Combustion (continued)

- i. Updated GSC rules to reflect the WCI methods
 - For Biomass and MSW fuels values for **Measured CC/Steam, Measured HHV/EFc** and/or **Measured Steam** are required, if the relevant methods are selected.
- ii. Updated GCS rules - Value of **Measured Emissions Factor** for certain fuels is required if a relevant method is selected

Updates to BC GHG Module

3. General Stationary Combustion (cont'd)

- **Municipal Solid Waste - biomass component (bone dry tonnes)**

Fuel * Municipal Solid Waste - biomass component (bone dry tonnes)

Fuel Classification biomass not in Schedule C

Fuel Description

Units bone dry tonnes

Annual Fuel Amount * 4653.41

Annual Weighted Average High Heating Value (GJ/unit fuel) **

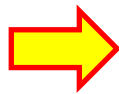
Annual Weighted Average Carbon Content (weight fraction) **

Annual Steam Generation (kg) ** 456345

Measured Emission Factor ** 2.863456

Example:

Updated GSC rules and Added requirement for Measured Emission Factor



Emissions for Fuel

N/A	Gas	Methodology **	Emissions (t) **	Emissions (t CO2e)
<input type="checkbox"/>	CO2 bio-nC	Methodology 3 (measured CC/Steam)	236.67855	236.6786
<input type="checkbox"/>	CH4	Measured HHV/EFc	5.658461	141.4615
<input type="checkbox"/>	N2O	Measured Steam	0.763453	227.5090

Replacement/Alternative Methodology Description (Mandatory if Replacement Methodology or Alternative Parameter Measurement selected as a methodology above. Otherwise, not saved.) **

Updates to BC GHG Module

4. Refinery Fuel Gas Combustion

- New parameters such as HHV and Carbon Content (CC) are added
- Quantification methods for GHGs are required

Refinery Fuel Gas Combustion

Report Progress: 32/32 Page Status: Complete

- Emissions from combustion of refinery fuel gas, still gas, flexigas or associated gas

Fuel

- Still Gas - Refineries (Sm³)

Fuel *	Still Gas - Refineries (Sm ³)
Fuel Classification	non-biomass
Fuel Description	
Units	Sm ³
Annual Fuel Amount *	4256435.64
Annual Weighted Average High Heating Value (GJ/unit fuel) **	0.045255
Annual Weighted Average Carbon Content (weight fraction) **	0.8546

Emissions for Fuel

N/A	Gas	Methodology **	Emissions (t) **	Emissions (t CO2e)
<input type="checkbox"/>	CO2 nonbio	Measured CC	4325.464	4325.464
<input type="checkbox"/>	CH4	Default HHV/EFc	4.24645	106.1613
<input type="checkbox"/>	N2O	Measured HHV/EFc	0.031534	9.3971

Updates to BC GHG Module

5. Electricity Generation

- Addition of Navigation and Titles of Units and Fuels:
 - “Navigate To” added for convenience
 - “Titles” for Units and Fuels added for clarification and ease
 - Addition of Expand/Collapse function

Electricity Generation

Report Progress: 32/32 Page Status: Complete

– (a) Emissions from fuel combustion for electricity generation

Non-Cogen Units

The dropdown 'Navigate to' can be used to navigate directly to a specific Unit/Fuel.

Navigate To ← Clicking the down-arrow and select an item will jump to the selected unit and fuel

EG-U1 ← clicking it to make the setional information collasposed or expanded

Non-Cogen Unit Name *

Nameplate Capacity (MW) *

Net Power (MWh) *

Fuel

– Natural Gas (Sm³)

Fuel *	Methodology 3 (measured CC/Steam)	Natural Gas (Sm ³)	236.67855	236.6786
<input type="checkbox"/> CH4	Measured HHV/EFc	5.658461		141.4615
<input type="checkbox"/> N2O	Measured Steam	0.763453		227.5090

Replacement/Alternative Methodology Description (Mandatory if Replacement Methodology or Alternative Parameter Measurement selected as a methodology above. Otherwise, not saved.) **

A list of Unit/Fuel activity that can be navigated to (depending on actual conditions)

Navigate To ▾

- EG-U1
- EG-U1 / Natural Gas (Sm³)
- EG-U1 / Spent Pulping Liquor (bone dry tonnes)
- EG-u2
- EG-u2 / Kerosene (kilolitres)

Updates to BC GHG Module

6. Glass Manufacturing Title Change

- The **Title** has been changed to **Glass, Glass Fibre and Mineral Wool Manufacturing**, to reflect the needs of actual production practice in BC

Activities

- General Stationary Combustion
- Mobile Combustion
- Aluminum or Alumina Production
- Ammonia Production
- Cement Production
- Coal Mining from Underground Mines
- Coal Storage at Facilities that Combust Coal
- Copper or Nickel Smelting or refining
- Electricity Generation
- Electronics Manufacturing
- Ferroalloy Production
- Glass, Glass Fibre and Mineral Wool Manufacturing
- Hydrogen Production

The dropdown 'Navigate to'

Navigate To ▾

– EG-U1

Non-Cogen Unit Name *

Nameplate Capacity (MW)

Net Power (MWh) *

Fuel

– Natural Gas (Sr

Fuel *



Updates to BC GHG Module

7. Cement Production

- Addition of an explanation on how to quantify the emissions from calcination and oxidization of organic carbon in **Cement Production** as shown below

Cement production

Report Progress: 32/32 Page Status: Complete

When a facility is equipped with CEMS, which is used in measurement, the emissions can be quantified as below from the calcination of raw materials and oxidization of organic carbon contained in the raw materials: $E_{c+o} = E_{CEMS} - E_{fuel}$, where E_{c+o} is the emissions for calcination of raw materials and oxidization of organic carbon contained in the raw materials, E_{CEMS} is the total emissions measured by CEMS and E_{fuel} is the emissions from fuels combustion in the kiln, which can be calculated following the methods in WCI.20.

- (a) calcination of raw materials / oxidization of organic carbon



Updates to BC GHG Module

8. Aluminum or Alumina Production

In the “Mandatory additional reportable information” section, “Both Prebake and SØderberg” is added to the “Type of smelter technology used” beside of individual “Prebake” and “SØderberg”.

– Mandatory additional reportable information

Attach a file here.

Annual Aluminum Production (t) *

Type of smelter technology used *

Annual anode consumption for prebake cells (t) **

Updates to BC GHG Module

9. Data Format for Entered Values

- Important parameters such as **HHV, carbon content, emission factor, percentage by weight** accept 4 decimal places
- Data in “additional reportable information” accept two decimal places, such as “Annual aluminum production (t)”

- Mandatory additional reportable information

Attach a file here.

Annual Aluminum Production (t) *

5463.06

Type of smelter technology used *

Single Window Reporting System

Facility Sale, Close or Purchase Report

- If a facility status change (sale, purchase and close) must be reported

To report such a change, go to the **Reporting Dashboard**, clicking the dropdown arrow to select **“Sale, Close or Purchase Report”** under **“Report Category”** for a specific facility.

Reporting Dashboard

Welcome to the British Columbia Greenhouse Gas reporting module. We have made some changes to the Reporting Dashboard. Click "Help" then "Toggle In-Context Help" for more information. ✕

Report(s)

Company List	Year	Report Category		
BCTestOrg1	2015	Sale, Close or Purchase Report		
Status	Facility Name	Report Type	Status	Actions
	TestFac02	Sale	Ready to Submit	

Custom Fuel List

Prepopulation

Add New Report

Single Window Reporting System

Facility Sale, Close or Purchase Report - Attention

- After entering the required information, click “**Validate**” button to make sure the information entered is correct and **saved**
- The “**Back**” button returns to the **Reporting Dashboard** page to submit the report.

- Other Company Contact Person

Given Name *

Vst hes

Email Address *

zxs@yahoo.com

Phone Number *

3495075431

Ext

Back

Validate

Version: 3.7.0

Currently there is no “Save/Continue” button, but this addition is underway.

For **submission**, going to the the “**Reporting Dashboard**”.

4. WCI Methodology Updates

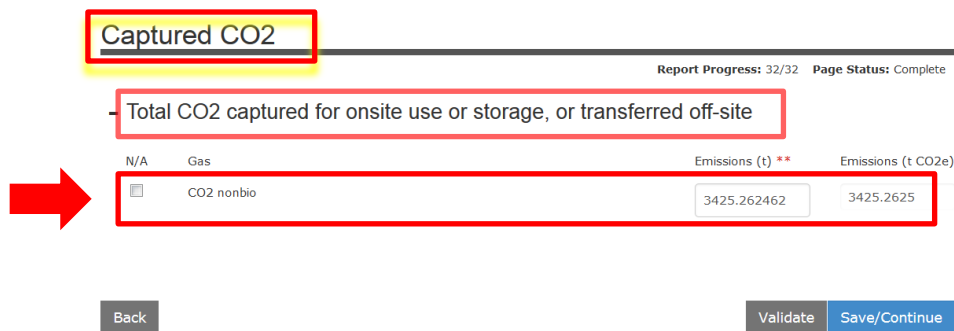
There is no methodology update for this reporting cycle

5. Lessons Learned from Previous Cycles

Captured CO2

For every report, information on **“Total CO₂ captured for onsite use or storage, or transferred off-site”** is displayed but optional.

If CO₂'s captured from any emission streams at a facility/company for storage/sequestration or any uses, provide the total quantity of captured CO₂ from all streams.



Report Progress: 32/32 Page Status: Complete

Captured CO2

Total CO2 captured for onsite use or storage, or transferred off-site

N/A	Gas	Emissions (t) **	Emissions (t CO2e)
<input type="checkbox"/>	CO2 nonbio	3425.262462	3425.2625

Back Validate Save/Continue

5. Lessons Learned from Previous Cycles

Linear facility report (LFO, IF_a, IF_b and L_c) data

- Use the same data for LFO as for IF_a, IF_b and L_c reports
- Remember rounding data will result in unmatched final results for LFO and the sum of IF_a, IF_b and L_c;
- Attach a file that provides the details
- Reporters have used the precise values for IF_a, IF_b and L_c reports, but rounded these values for LFO report.
 - As a result, the total value in LFO report did not match the sum of the individual report totals from IF_a, IF_b and L_c reports.



5. Lessons Learned from Previous Cycles

Document emission factors and methods

- Emission factors (including default) should be documented properly and in the attached files;
- Methods (including alternative and replacement methods) should be documented properly
- HHVs and carbon contents of fuels etc. used should be properly documented

5. Lessons Learned from Previous Cycles

On Site Transportation

- Emissions must be reported properly under **Mobile Combustion** for **SFO facilities**, and cannot be categorized as a **“Non Attributable Emissions”** like below:

Non-attributable emissions

Non-attributable emissions larger than 100 t CO₂e

Emissions

Activity *

Source Type *

Source Category

GHG Types That Apply *

On Site
Transportation

Gasoline

On-Site
Transportation
Emissions

CO₂, CH₄, N₂O

5. Lessons Learned from Previous Cycles

Uploading Files

- Use the right templates for the verification statement and conflict of interest report
- No password-protected files in any form
- No PDF image files. Please use readable PDF files, word or excel

REMINDER

- When distributing notices, we frequently encountered bounced-back emails from company servers – message was rejected due to safety settings.
- In order to receive our notices in a timely manner please adjust your safety settings and/or add our email address (GHGregulator@gov.bc.ca) to your contact list