

Cal e-GGRT Reporting Guidance for Onshore Petroleum and Natural Gas Production

for California's 2010 Mandatory Greenhouse Gas Reporting Regulation

Subarticle 5 of the California Air Resources Board (ARB) Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR) requires that Onshore Petroleum and Natural Gas Systems reporters report stationary and portable combustion emissions, process, vented and flared emissions, and production data. This guidance document provides reporters of onshore petroleum and natural gas production with the process needed to completely and accurately report the emissions and product data required in the MRR using the California Electronic Greenhouse Gas Reporting Tool (Cal-eGGRT). The guidance focuses on disaggregation of emission data as required in section 95156 for onshore petroleum and natural gas production.

Regulatory Citations

Subarticle 5 of the MRR outlines the specific reporting requirements for onshore petroleum and natural gas production facilities. Specifically, the onshore petroleum and natural gas production industry segment must use the methods outlined in section 95153, as applicable. In addition to section 95153, the reporter of onshore petroleum and natural gas production must follow the data reporting requirements of section 95156 to disaggregate certain data elements.

95156(a) states:

“In addition to the data required by 40 CFR §98.236(a)-(c), the operator of an onshore petroleum and natural gas production facility must report the following data disaggregated within the basin by each facility that lies within contiguous property boundaries:

- (1) CO₂e emissions, including CO₂, CH₄, and N₂O as applicable for the source types specified in section 95152(c).
- (2) For combustion sources for which emissions are reported, fuel use by fuel type;
- (3) Barrels of crude oil produced using thermal enhanced oil recovery, and the portion of CO₂e emissions associated with this production;
- (4) Barrels of crude oil produced using methods other than thermal enhanced oil recovery, and the portion of the CO₂e emissions associated with this production.”

Overview

Section 95153 identifies the calculation methods that must be used to report and section 95156 shows how to organize the reported data. For example, section 95156 indicates that both the combustion and process emissions data must be disaggregated within the basin to each facility and split between thermal and other than thermal

production within each facility. Reporters should use the “facility” definition (section 95102(a)(144)) to delineate each facility. This definition states that “*facility*” means

“any property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas.”

NOTE: In Cal-eGGRT, this facility concept (i.e., each individual, disaggregated facility within the basin) has been captured using the phrase “sub-facility.” Use of the phrase “sub-facility” in the remainder of this guidance document refers to this concept as well.

Reporting Procedures

The following steps outline the correct procedure for reporting onshore petroleum and natural gas production. This guidance assumes that a reporter has obtained an ARB identification number, understands the process for adding a module to their report, and has filled out their facility information in Subpart A. Guidance on these initial reporting steps, registration and configuring your facility reporting profile can be found at:

<http://www.arb.ca.gov/cc/reporting/ghg-rep/tool/ghg-tool.htm>.

NOTE: When configuring your facility, please add the Subpart C and W modules.

Step 1: Report Process/Venting/Flaring Emissions and Production Data in the Subpart W module in Cal-eGGRT using the Onshore Production tab in the Petroleum and Natural Gas Systems Reporting Tool.xls found at <http://www.ccdsupport.com/confluence/display/calhelp/Reporting+Form+Instructions>.

Within the Onshore Production tab, disaggregate the data by:

1) Each individual facility (shown as sub-facility in Cal-eGGRT)

As required by the MRR, Onshore Oil and Natural Gas Production emissions are reported by geologic basin as defined by EPA and based on the following publication: *AAPG-CSD Geologic Provinces Code Map, R.F. Meyer, L.G. Wallace, and F.J. Wagner, Jr., AAPG Bulletin, 75, (10), 1644-1651, 1991*. This basin definition is based on State County boundaries; however one basin may contain more than one California State County. Emissions from each Basin must be reported under a unique ARB Facility ID.

In the Petroleum and Natural Gas Systems Emissions Reporting Tool.xls spreadsheet reporters should use one line for each unique Field/Production methodology within the reporting Basin. As an Example, see Figure 1 below.

Figure 1. Reporting Onshore Petroleum and Natural Gas Systems process emissions disaggregated by sub-facility and production method.

Contiguous Property/Sub-Facility Name:	Natural gas pneumatic device venting			Natural gas driven pneumatic pump venting		
	CO ₂ Emissions (tCO ₂)	CH ₄ Emissions (tCH ₄)	Total CO ₂ e	CO ₂ Emissions (tCO ₂)	CH ₄ Emissions (tCH ₄)	Total CO ₂ e
Total	0.0	0.0	0.0	0.0	0.0	0.0
El Segundo	0.0	0.0	0.0	0.0	0.0	0.0
Fruitvale	0.0	0.0	0.0	0.0	0.0	0.0
Grizzly Bluff	0.0	0.0	0.0	0.0	0.0	0.0

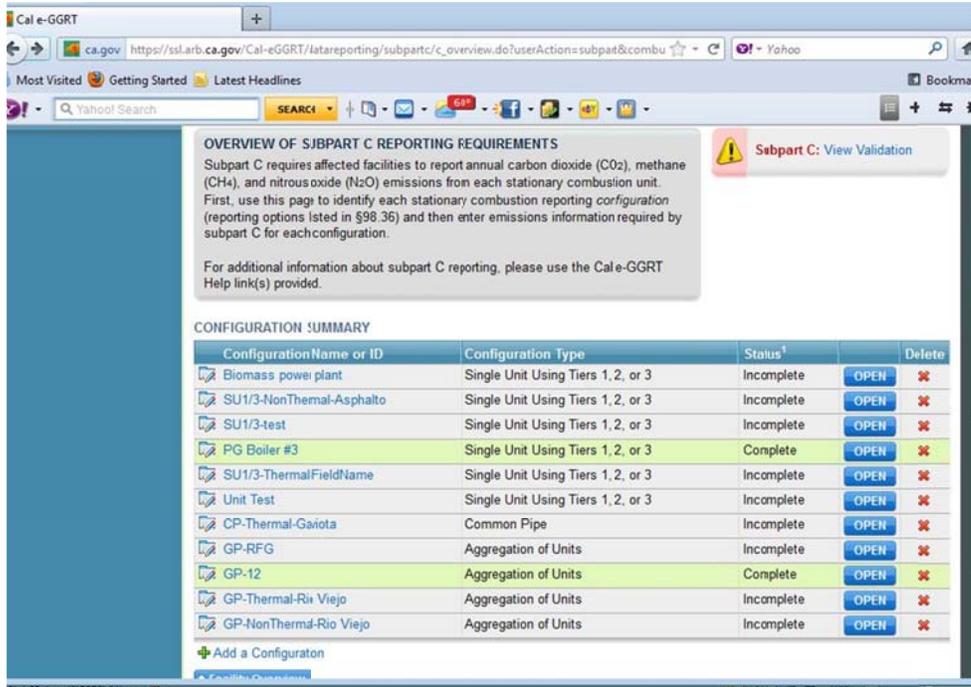
Step 2: Report Stationary and Portable Combustion emissions in the Cal-eGGRT Subpart C module.

Within the subpart C configurations, disaggregate the data by:

- 1) each individual facility (shown as sub-facility in Cal-eGGRT) and,

Subpart C reporters should calculate emissions separately for each unique, individual facility (shown as sub-facility in Cal-eGGRT)/production methodology (Thermal and Other than Thermal) within the reporting Basin. As an example, see Figure 2 below.

Figure 2. Reporting Subpart W Onshore Petroleum and Natural Gas Systems combustion emissions disaggregated by sub-facility & production method in Subpart C.



Establish an individual configuration and report stationary and portable combustion emissions for each unique facility (shown as sub-facility in Cal-eGGRT) and production method. Then, add the appropriate fuels to each unique configuration and calculate combustion emissions.

Step 3: Report production and emissions data disaggregated by sub-facility and production method in Subpart W. See the example in Figure 3 below.

Figure 3. Reporting Production and Emissions data in Subpart W.

Production Data - Pursuant to §95156(a), all operators of onshore petroleum and natural gas production facilities must report the following data by sub-facility								
Contiguous Property/Sub-facility Name:	CO ₂ e emissions associated with thermal EOR (tCO ₂ e) [Include all applicable subparts]	Crude oil produced using methods other than thermal EOR (barrels)	CO ₂ e emissions associated with methods other than thermal EOR (tCO ₂ e) [Include all applicable subparts]	Associated gas produced using thermal EOR (MMBtu) (optional)	Associated gas produced using methods other than thermal EOR (MMBtu) (optional)	Barrels of oil equivalent produced using thermal EOR (barrels) (optional)	Barrels of oil equivalent produced using methods other than thermal EOR (barrels) (optional)	Dry Gas (MMcf) (optional)
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
El Segundo						0.0	0.0	
Fruitvale						0.0	0.0	
Grizzly Bluff						0.0	0.0	

At the end of the Onshore Production worksheet in the Reporting Tool you will find data entry fields for CO₂e emissions and oil and gas production data. Here you sum and report the process/vented/flared emissions calculated in Subpart W with the Stationary and Portable combustion emissions calculated in Subpart C, and report crude oil and associated gas production associated this production. Again, this data must be disaggregated by each individual facility (shown as sub-facility in Cal-eGGRT) and production mode – thermal and other than thermal, as shown in Figure 3 and Table 1 below.

If the individual, disaggregated facility (shown as sub-facility in Cal-eGGRT) is a split field (e.g. thermal and other than thermal production methods are used), the emissions associated with each production method should be split according to best available methods.

Table 1. Data entry descriptions into the total emissions columns.

Column	Data description	Data Field
CO	CO ₂ e emissions associated with thermal EOR	For each unique facility (shown as sub-facility in Cal-eGGRT), report the sum of: 1) Thermal process/vented/flared emissions calculated in Subpart W and, 2) Stationary and portable combustion emissions calculated in Subpart C associated with thermal production.
CQ	CO ₂ e emissions associated with methods other than thermal EOR	For each unique facility (shown as sub-facility in Cal-eGGRT) production, report the sum of: 1) Other than Thermal Process/vented/flared emissions calculated in Subpart W and, 2) Stationary and portable combustion emissions calculated in Subpart C associated with other than thermal production.

Step 4: Reporting optional data fields in the Subpart W reporting tool.

Columns CR, CS, and CV in the Onshore Production tab of the Petroleum and Natural Gas Systems Reporting Tool.xls are optional production data fields. The data reported in these columns should be consistent with the disaggregation structure used above (at the individual facility (shown as sub-facility in Cal-eGGRT) level and by thermal and other than thermal production methods). The data reported in these columns will not be subject to verification because it was reported optionally.