Guidance on Common Air Monitoring Directive Questions
This document provides guidance on common Air Monitoring Directive questions. Please note that the document may be updated frequently; users should use the online version of this document rather than referencing a downloaded copy.
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General Air Monitoring Directive (AMD) Guidance

Enforcement of the AMD

The AMD is enforceable under the *Environmental Protection and Enhancement Act* (EPEA) approvals, contracts and grants with airsheds, and will also be enforceable through proposed revisions to the Substance Release Regulation. Contraventions of the AMD would be handled as any other contravention, with compliance actions used at the discretion of the Regulator.

AMD and approval conflicts

Regulations and approvals supersede the AMD if there is a direct conflict. For example, if an approval provides a date for submission of monthly reports, then that is the date the monthly report would need to be submitted.

Codes of Practice

The AMD applies to approval holders under EPEA, not specifically to Code of Practice registrations, unless the Code of Practice references the AMD. There are currently three Codes of Practice that reference the AMD for air monitoring:

- Code of Practice for Forage Drying Facilities
- Code of Practice for Sawmill Plants
- Code of Practice for Small Incinerators

Facilities registered under one of these Codes of Practice are required to monitor/sample in accordance with the AMD.

Continuous Emission Monitoring System (CEMS)

No changes were made to CEMS monitoring as part of the AMD revision. Section 6 of the CEMS Code states that quarterly reporting required in section 6.2 ceases to apply once CEMS reporting is incorporated into the AMD. Therefore, the revised AMD now supersedes section 6.2 of the CEMS Code.
Chapter 2: Ambient Air Monitoring Program Planning

Chapter 2 of the AMD was repealed as of December 10, 2019. This chapter originally applied only to airsheds and required them to develop, submit and update an ambient air monitoring plan.

Chapter 3: Ambient Monitoring Site Selection

Chapter 3 is applicable to approval holders and airsheds who conduct ambient air monitoring.

Chapter 4: Monitoring

Air monitoring requirements

AMD Chapter 4 sets out minimum requirements for how to conduct air monitoring, it does not add additional monitoring requirements. Monitoring requirements are set out in the approval, or decided on through a multi-stakeholder process for airshed monitoring. However, the AMD may require additional estimations or calculations, not specifically set out in approval requirements, in order to meet the specific reporting requirements set out by the AMD. In absence of monitoring data, a reasonable effort must be made to otherwise determine the required information.

Minimum specifications

Chapter 4 of the AMD outlines the minimum specifications that analyzers in use must be capable of meeting. If an analyzer is operated at specifications above the minimum requirement (more stringent, greater precision/accuracy), Director authorization is not required. Director authorization is only required if an analyzer is not capable of meeting the minimum specifications.
Chapter 5: Quality System

Who is responsible for drafting the QAP?
The person responsible is required to have a QAP for the monitoring, reporting and maintenance related activities that they undertake, including but not limited to the processes used to hire contractors and evaluate their performance in conducting monitoring activities.

If a contractor or airshed is used, the contractor or airshed is also required to have a QAP that meets the requirements of the AMD for the monitoring, reporting and maintenance related activities they undertake on behalf of the person responsible.

While hiring a contractor to conduct monitoring and reporting activities does not remove the responsible person’s requirement to have and follow a QAP, the responsible person’s QAP may refer to a contractor’s QAP for activities that have been contracted out.

Quality system/QAP guide or template
A guide or template has not been developed. Facilities and airsheds have a highly variable nature; therefore, a "one size fits all" approach would not satisfy the needs of the individual facility or airshed.

QAP requirements for facilities that do not monitor air
The requirements for the QAP still apply for facilities that do not monitor but report air data (for example, based on emissions estimates and calculations).

However, the complexity of the QAP and the efforts associated with documentation and record keeping may be lower, where appropriate, as compared to a facility that conducts various monitoring activities.

QAP availability
Any information and data, including the QAP, required for the technical station audit must be available onsite at the continuous monitoring station. Available includes electronic access. All documents and records must be produced during an audit upon request.

Continuous Emissions Monitoring System (CEMS) Code QAP
The Quality System Chapter (Chapter 5) does not include requirements for CEMS monitoring, however any industrial operation that conducts air monitoring or reporting is required to have a QAP that meets the requirements of Chapter 5. The CEMS Code has QAP requirements that are specific to CEMS monitoring.
If an industrial operation has a CEMS QAP, it could be expanded to meet the requirements of Chapter 5 rather than creating another QAP. An industrial operation is not required to have one QAP for CEMS and a separate QAP for AMD Chapter 5. CEMS QAP requirements are very similar to the requirements in AMD Chapter 5 and there should be no conflict between the two sets of requirements.

**Information sharing**

It is suggested that approval holders and airsheds share information (i.e. QAP) and learnings, when it comes to monitoring and reporting (i.e. monitoring data), and as appropriate. However, this would depend on the arrangement between the airshed and the approval holder.

**Records retention**

Records retention is covered in Section 3.0 of AMD Chapter 5. The format of retention is not specified. Records may include electronic, written, photographed, or otherwise recorded evidence, including data.

### Chapter 6: Ambient Data Quality

**Ambient data validation and certification**

Clause DQ 4-P requires certification that ambient data validations have been complete and refers to the Reporting Chapter of the AMD. The Ambient Data Validation and Certification Form required in AMD Chapter 9 Reporting is no longer required. Rather, certification that data has been validated according to the AMD is provided electronically when the ambient data is submitted.

**Independent assessment**

The independent assessment is not required to be conducted by a third party, it just needs to be a cursory review of validated ambient data by someone independent of field operations and the primary data validation.

### Chapter 7: Ambient Calibration

**Zero/span requirements**

If a zero/span is missed within a 23 to 25 hour period due to equipment malfunction or another issue, and if the issue can be rectified, a zero span can be completed later on in the day. In such
a case, the hour during which the zero/span is completed would need to be flagged as the calibration hour. This would be noted in the monthly report.

After one zero/span is completed in a day, any additional zero/spans would contribute to accrued downtime for maintenance. A contravention would occur if the additional zero/span accrued downtime resulted in the site not meeting the 90 per cent uptime requirement.

If in doubt on whether or not to report a potential non-compliance, it is recommended to err on the side of caution and report.

Chapter 8: Ambient Calibration

Calibration of in-situ calibration systems

Each in-situ calibration system must be verified directly to AEP Environmental Monitoring and Science Division (EMSD) reference calibrators and gases on an annual basis. If the calibration system must be removed and transported, notification should be given to any applicable approval holders that the calibration system will be out for a number of days.

It is recommended that as an alternative, a spare calibration system be verified by EMSD and used as a direct reference to the EMSD system. On-site records would need to be maintained to show the direct reference and confirm that the results of the comparison of each system meets AMD requirements.

Continuous ambient monitoring station site audits

EMSD currently audits airshed ambient stations annually and industrial ambient stations once every two to three years unless otherwise requested by Alberta Environment and Parks or the Alberta Energy Regulator.

Chapter 9: Reporting

Application of Chapter 9

The Reporting Chapter of the AMD applies to all Environmental Protection and Enhancement Act (EPEA) approved industrial operations. However, not all of the reporting requirements will apply to all industrial operations. For example the sections on ambient monitoring would only apply to those industrial operations that have ambient monitoring requirements in their approval.
Code of Practice Registrations

The Reporting Chapter of the AMD does not apply to Code of Practice registrations. The three Codes of Practice that reference the AMD (Code of Practice for Forage Drying Facilities, Code of Practice for Sawmill Plants, and Code of Practice for Small Incinerators) require the AMD be adhered to for air monitoring/sampling.

Code of Practice registered facilities are able to report electronically through ETS, however they are not required to. This would include submission of manual stack survey reports and the AMD11 Manual Stack Survey and RATA Notification Form.

Exceedances

Notification of exceedances of Ambient Air Quality Objectives or Guidelines

The person responsible for monitoring will provide notification of exceedances of Ambient Air Quality Objectives or Guidelines.

If an airshed is conducting monitoring on behalf of an industrial operation, generally the airshed would provide notification of exceedances of Ambient Air Quality Objectives or Guidelines. However, it is up to the industrial operation and airshed to determine who will call in exceedances. This should be documented in both the industrial operation’s and the airshed’s QAP.

Exceedances of Guidelines

Chapter 1 of the AMD provides a definition for Alberta Ambient Air Quality Objectives (AAAQOs) as including guidelines as well. Exceedance of both objectives and guidelines (e.g., fine particulate matter) must be reported according to Chapter 9.

Reporting exceedances for passive data

Passive data would be compared to monthly or annual objectives, as applicable, and reported in the monthly or annual report.

Immediate notification

According to A Guide to Release Reporting, immediate reporting means reporting a release, exceedance or contravention at the first available opportunity, as soon as the person responsible knows, or should know about the release, exceedance or contravention.

More information on how to provide immediate notification can be found in A Guide to Release Reporting or the Reporting Spills and Releases Fact Sheet.
Electronic submission to ETS for data, forms and reports

Electronic Transfer System (ETS) and Enterprise Data Warehouse (EDW)

Alberta Environment and Parks has developed a new system to manage air data in Alberta. Two existing systems are being utilized for intake and storage of data:

- Electronic Transfer System (ETS) is used for data intake.
- Enterprise Data Warehouse (EDW) is used for data storage and reporting.

Together the two systems make up the new air data management system, providing an enhanced ability to use and report on air data in Alberta.

When did required submission to ETS begin?

The air module of ETS became active on January 2, 2019 for approval holders. Starting with 2019 reports and data, industrial operations must submit their air data and reports online through ETS. Any reports or data emailed after January 2019 (to air.reporting@gov.ab.ca or EPEA.reports@aer.ca) will not be accepted. If 2019 reports or data are submitted by email, the industrial operation will be notified that the submission was rejected and directed to submit via ETS.

The first ambient data submission was required by February 28, 2019 based on January 2019 data.

Submission of the first annual report to ETS was required by March 31, 2019 based on the 2018 monitoring year, unless the approval specifies a different date for annual report submission.

Submission of the first monthly report to ETS was required by February 28, 2019 based on the January 2019 monitoring month, unless the approval specifies a different date for monthly report submission.

Submission of the AMD reporting forms began in January 2019, based on 2019 data. Therefore, besides the AMD11 SES and RATA Notification Form (which could have been reported in January 2019), the forms that accompany monthly reports and source testing reports were submitted by February 28, 2019 based on January 2019 data and the forms that accompany annual reports were submitted by March 31, 2019 based on 2018 data. The forms that accompany source testing must be submitted by the end of the month following the month in which the source test was conducted.
Email submissions for 2018 reports

December 2018 PDF reports (monthly reports, source testing reports) were emailed, according to previous business processes.

Industrial submissions to ETS

Starting in 2019, industrial operations must submit their air data online through ETS (the Electronic Transfer System). The Acceptable Formats for EPEA Approval and Code of Practice Records and Submission Coordinates document lists each air monitoring report and how it is to be submitted. The following air reports must be submitted to ETS:

- 12 AMD reporting forms (Excel forms or XML files)
- Ambient air data, including continuous, passive, intermittent and dustfall (XML file), accompanied by (as applicable):
  - PDF calibration report (for continuous ambient data)
  - PDF certified laboratory analysis report (for non-continuous ambient data)
- PDF air reports:
  - Monthly, quarterly and annual industrial air monitoring reports
  - CGA report
  - RATA report
  - SES report
  - SES and RATA combined report
  - Combined monthly, quarterly and annual reports (if air component is included)

Approval holders must use the naming conventions provided in the EPEA Approval Industrial Monitoring Documentation Submission Naming Guideline.

Ambient data must be submitted using XML (eXtensible Markup Language). The XML schema for ambient data submission is available through ETS Support and Online Learning. The XML schema provides the naming convention for the XML file. The most up-to-date ambient XML schema must be used for submission of ambient data.

Industrial operations will upload PDF calibration reports and certified laboratory analysis reports to ETS at the same time that ambient data is uploaded. A PDF calibration report is required to be submitted for continuous ambient data and a PDF certified laboratory analysis report is required to be submitted with intermittent or passive ambient data.

AMD Forms 1-12 can be submitted in either Excel or XML Format. The AMD Forms and XML schemas for the forms can be found through ETS Support and Online Learning. Naming conventions for the 12 AMD Excel forms and XML files are provided in the EPEA Approval Industrial Monitoring Documentation Submission Naming Guideline.

A training module on how to submit data through ETS is available through ETS Support and Online Learning.
Airshed submissions to ETS

Starting November 15, 2019, airsheds must submit their air data and reports online through ETS (the Electronic Transfer System). The Acceptable Formats for EPEA Approval and Code of Practice Records and Submission Coordinates document lists each air monitoring report to submit to ETS, including:

- Ambient air data, including continuous, passive and intermittent (XML file), accompanied by (as applicable):
  - PDF calibration report (for continuous ambient data)
  - PDF certified laboratory analysis report (for non-continuous ambient data)
- PDF air reports:
  - Airshed monthly and annual air monitoring reports
  - Airshed monitoring plan
  - Airshed ambient site documentation
  - Airshed ambient notifications

Airsheds must use the naming conventions provided in the EPEA Approval Industrial Monitoring Documentation Submission Naming Guideline.

Ambient data must be submitted using XML (eXtensible Markup Language). The XML schema for ambient data submission is available through ETS Support and Online Learning. The XML schema provides the naming convention for the XML file. The most up-to-date ambient XML schema must be used for submission of ambient data.

Airsheds will upload PDF calibration reports and certified laboratory analysis reports to ETS at the same time that ambient data is uploaded. A PDF calibration report is required to be submitted for continuous ambient data and a PDF certified laboratory analysis report is required to be submitted with intermittent or passive ambient data.

Reports excluded from ETS submission

There are some reports/documents that will continue to be emailed for the time being. These include:

- Ambient site documentation
- Ambient proposals
- CEMS monitoring plans
- Special air reports
- Some notifications (i.e., start-up, scheduled shutdown, continuous ambient monitoring)
- QAP plans or audit reports

Refer to the Acceptable Formats for EPEA Approval and Code of Practice Records and Submission Coordinates formatting manual for details on submitting these reports.
ETS accounts

An ETS account is required for submission of ambient air data, reports and AMD reporting forms. Some companies (the legal entity of an industrial operation) already have an ETS account. Companies or airsheds that do not have an ETS account will need to submit an application form and authorization letter to request an account. Completed forms and authorization letters should be emailed to ETSAccountSetup@gov.ab.ca. Note that it takes up to two weeks for a new ETS account to be processed.

Companies that already have an ETS account would use that existing ETS account and will be granted access to the air data submission component. The Site Administrator of an ETS account will need to create sub-accounts (client accounts) for the individuals at facilities or airsheds that will be reporting under AMD Chapter 9. A client account should be created for each submitter, including any contractors submitting on behalf of an industrial facility or airshed.

Details on how to manage an ETS account or how to create client accounts can be found here: ETS Support and Online Learning - Accounts (ETS) Administration

If a company or airshed does not know who their Site Administrator is, an email should be sent to ETSAccountSetup@gov.ab.ca. Due to privacy regulations, Site Administrator information cannot be released; the data submitters contact information will instead be provided to the Site Administrator and they will have to make contact directly. Should a company or airshed require changes to their Site Administrator, please contact ETSAccountSetup@gov.ab.ca for assistance.

Coordinating submission by contractors

Contractors may submit data, reports and forms on behalf of an industrial operation. The contractor would require an ETS user account under the parent company’s or airshed’s ETS account in order to submit on their behalf.

If industrial operations and contractors prepare different elements of a monthly submission (e.g., contractor prepares report and industrial operation prepares data/form), the submission to ETS will need to be made by one party. Chapter 9 of the AMD requires that forms be submitted at the same time as the accompanying report (as applicable) and that reports that accompany data (e.g., ambient calibration reports) be submitted at the same time as the data. Industrial operations and contractors will need to coordinate to have one party submitting the package of files to ETS.

The air data module of ETS is being updated with roles management to allow contractors to submit on behalf of industrial operations and the industrial operation to review the reports or forms before final submission. When this feature is available, users will be provided with training on what roles can be assigned in ETS and what actions are available for each role.
ETS submission reports

Upon successful submission to ETS, a submission report is provided. Pop-ups must be enabled in your web browser to access reports. This report is only available for 90 days on ETS once generated. The industrial operation or airshed must save this file for their records. If needed, a previous submission report may be requested up to one year after report generation from ETS@gov.ab.ca.

Submission failure or ETS outage

It is recommended that data, forms and reports be submitted well before the due date to ensure adequate time for submission, should a submission failure occur. If there is a submission failure, time would be required to correct the errors identified in the error report and resubmit.

Planned ETS maintenance or outages will be posted on the ETS site and communicated to ETS users. If an industrial operation is unable to meet reporting timelines due to an ETS outage, the industrial operation would not be penalized for late submission as long as you:

1. notify air.reporting@gov.ab.ca (for AEP-regulated facilities) or EPEA.Reports@aer.ca (for AER-regulated facilities) of your inability to submit air data, forms or reports due to ETS / the website being down; and
2. complete your air submission within 24 hours of being notified that the website is operational.

ETS web access

ETS supports Internet Explorer 11.0 or higher and Firefox 50.0 or higher. ETS does not currently support Chrome or Microsoft Edge. ETS will be updated in the future to allow Chrome and Microsoft Edge. Pop-ups must be enabled in your web browser to access reports.

ETS support

If you require support with existing ETS accounts or setting up a new account, please contact ETSAccountSetup@gov.ab.ca.

If you require technical support with ETS, please contact ETS@gov.ab.ca.

Note that technical support will only be available during business hours, so it is important to ensure the data is submitted within the business hours timeframe: 8:15 AM - 4:30 PM Monday to Friday.

Resubmission of 2018 reports

Facilities are encouraged to submit any revised/late 2018 PDF reports via ETS. Resubmissions of 2018 reports are required to meet the format specified by the 1989 AMD (Directive in place at the
time) and follow the naming convention for revisions as applicable. If reports/revisions for the time period prior to 2019 come in via air.reporting@gov.ab.ca or EPEA.reports@aer.ca they will be processed manually.

Note that any old versions of Excel reporting forms will not be accepted by ETS. If a facility had submitted their 2018 data previously using an earlier version of an Excel form, they would not be able to resubmit to ETS using that old version of the form – they would have to use the most recent form version.

**Airshed submission of monthly and annual reports**

Up until November 15, 2019, airsheds will submit monthly and annual reports, as well as PDF calibration reports and certified laboratory analysis reports, by email to air.reporting@gov.ab.ca. Beginning November 15, 2019, airsheds will submit all reports and data to ETS (the Electronic Transfer System). The [Acceptable Formats for EPEA Approval and Code of Practice Records and Submission Coordinates](#) document lists each air monitoring report and how it is to be submitted.

Airsheds must use the naming conventions provided in the [EPEA Approval Industrial Monitoring Documentation Submission Naming Guideline](#).

**Ambient data submission**

**Industry submission of ambient data**

Any industrial operation required by an approval to conduct ambient monitoring is required to electronically report ambient air data as per the requirements in Chapter 9 of the AMD beginning January 2019. This includes any ambient data from continuous, passive or intermittent monitoring (including dustfall) that the industrial operation conducts. If an airshed conducts ambient monitoring on behalf of the industrial operation, it would be the airshed that reports the ambient data. Industrial operations will begin to report ambient data using ETS (the Electronic Transfer System) beginning in January 2019.

**Airshed submission of ambient data**

Airshed and industrial operations will both submit ambient data in XML format online through ETS (the Electronic Transfer System), however airsheds will not begin submitting ambient data to ETS until November 15, 2019. Beginning November 15, 2019, airsheds will use the new ambient XML schema (V2.0) to report their ambient data to ETS.

**Ambient schema guidance**

A guidance document has been created to assist with the creation of XML data for ambient data submissions. The Ambient Schema Guidance document contains descriptions of each required
and optional data field, and Reference Tables provide the data codes that are used for creating XML files. These documents are available through ETS Support and Online Learning.

Submission of ambient XML files

Continuous, passive and intermittent data is required to be submitted in XML format, following the schema available through ETS Support and Online Learning. Continuous, passive and intermittent data can be submitted in separate XML files, however two files with exactly the same name cannot be uploaded under one request number. If required, use comments in the file name to differentiate the files (i.e. AMB-00000000-201901-Passives and AMB-00000000-201901-Continuous). Follow the naming conventions provided in the EPEA Approval Industrial Monitoring Documentation Submission Naming Guideline.

Unique ambient station identifiers for industrial operations

All industrial operations that have an approval condition requiring monitoring and reporting of ambient air need to email air.reporting@gov.ab.ca to receive unique Ambient Station Identifiers for all ambient stations (continuous, intermittent, passive, dustfall). The unique Ambient Station Identifier is one of the required fields in the ambient data XML schema. Airsheds will use the ambient station identifiers that they have already been using in data submission.

Passive reporting requirements

AMD Chapter 9 requires that passive data be reported one year following data collection. If the approval requires monthly reporting on passive data, then the approval takes precedence. Reporting passive monitoring results one year following collection is the minimum requirement; however, if an approval requires monthly reporting of passive data, the passive data needs to be submitted monthly via XML upload to ETS and the data would be summarized in monthly reports.

Reporting during time changes

AMD Chapter 9 does not specify time zone for air reporting, and we have had questions on how to report for the upcoming time change. This will be rectified when Chapter 9 is next updated.

Please report air data using Mountain Standard Time (MST) all through the year, with no change for Daylight Savings Time. By doing this there is no need to account for data loss or double reporting during the time changes each year.

Reporting Forms

Why has Alberta Environment and Parks moved to reporting using forms?

Excel forms have been used for emissions reporting in the past. They were chosen as a simple, low cost interim solution for collecting summary data in an extractable, digital format. XML
schemas have also being provided for submission of the AMD form data in XML (eXtensible Markup Language) format. Industrial operations can choose to submit the Excel forms or XML files starting in January 2019. The long-term goal is to move towards more comprehensive online reporting of environmental data.

**Submitting AMD Forms**

Starting in 2019, industrial operations must submit their air data online through ETS (the Electronic Transfer System). This includes the submission of AMD Forms 1-12, in either Excel or XML Format. The AMD Forms and XML schemas for the forms can be found through [ETS Support and Online Learning](#). Naming conventions for the 12 AMD Excel forms are provided in the [EPEA Approval Industrial Monitoring Documentation Submission Naming Guideline](#). For XML submission of the AMD form data, naming conventions are provided in the XML schemas.

Only the most recent versions of the AMD forms can be used for data submission. Users must ensure they are using an up-to-date version of the Excel forms or XML schemas prior to submitting data, or the system will reject the data submission.

**Excel versus XML version of the Forms**

Industrial operations have the option of submitting either the Excel version of AMD forms, or submitting an XML file for the emissions summary data required in AMD Chapter 9.

Alberta Environment and Parks would like to transition to XML submission in the future. If a decision is made to discontinue use of the Excel version of the forms, industrial operations would be given adequate advance notice. However, there is no timeline for a transition away from the Excel forms at this time.

The 12 AMD Excel Forms cannot be converted to XML, as the data is hierarchical, which is unsupported by Excel’s export feature. The forms are protected files, with embedded internal formulas. The XML schemas need to be used with a data acquisition system to create the XML data files; the XML schemas cannot be used with the Excel forms. Do not attempt to recreate the Excel forms for conversion to XML; the data will not be accepted by the system. If an industrial operation is not able to create XML files using the schemas provided, the Excel forms would be used.

**AMD Ambient Data Validation and Certification Form**

The AMD Ambient Data Validation and Certification Form is no longer required. AMD Chapter 9 will be amended to make this correction. Ambient data will be certified online during submission to ETS. Airsheds will continue to certify their ambient air data submission through the [airdata warehouse](#), until they are transitioned to submission through ETS.
Are there any forms required for airsheds?

No. The AMD forms 1 through 12 are only applicable to emissions reporting by approval holders. There are no AMD reporting forms that apply to airsheds.

The AMD Ambient Data Validation and Certification Form is no longer required. AMD Chapter 9 will be amended to make this correction.

Limitations to submission of the Excel AMD forms

If industrial operations choose to submit the Excel forms rather than XML, the Excel forms must be submitted as .xls (Excel format) files. Forms submitted as PDF will not be accepted. The version of Excel used to populate and save the Excel form must be 2010 or later. Earlier versions of Excel will convert the AMD forms for compatibility, which would make them unacceptable for upload into the new air data management system. Excel forms that have been converted will not be accepted. If Excel 2010 or later is not available to you, XML would be the option for AMD form submission.

What if a form or a field in a reporting form does not apply? What if summary data does not fit into the form?

Not all reporting forms will be relevant to all industrial operations and not all fields in a given form will apply. You would not submit a form if it does not apply to your operations (e.g., you would not be required to submit an AMD CEMS Summary Form if you do not conduct CEMS monitoring).

Blank forms do not need to be submitted. Similarly, a field in a form may be left blank if it does not apply to the industrial operation. Note however, some fields in the forms are mandatory – submission will not be accepted if the mandatory fields are left blank. The form XML schemas list which fields are optional and which are mandatory.

The forms have been created from the original reporting tables that were provided in the appendix of the 1989 AMD as well as current monthly, annual and source reports submitted by industrial operations. The forms have been designed to suit all industrial operations and sectors; however, it is recognized that they may not suit all equally well. Ultimately, if key pieces of data/information cannot be inserted into the forms (e.g., special reporting), the information must still be provided in monthly/annual/source reports, as is currently done. The forms do not replace monthly, annual and source PDF reports. They are considered a supplement to these reports.

Submission of AMD reporting forms does not replace submission of monthly, annual and source sampling reports

The reporting forms must be submitted in addition to monthly, annual and source sampling reports. The purpose of the forms is to pull data which were previously submitted as tables within monthly, annual and source sampling reports and provide this in a digitally extractable format.
The forms are to be submitted at the same time as the relevant monthly, annual or source sampling report. See the instructions tab on each form for directions on how to submit the Excel form or see the XML schemas for instructions on submitting the XML file for form data.

Submission of monthly reporting forms when only annual reporting is required

The approval dictates the frequency of reporting, while the AMD sets out minimum requirements for what to include in those reports. There are several clauses in the annual report requirements section of Chapter 9 (section 6.0) that require that monthly forms be submitted with the annual report if they have not already been submitted monthly. This does not mean that the forms need to be submitted on a monthly basis, but rather it means that the monthly summary data needs to be submitted collectively with the annual report. The instructions tab in the forms explains submission of monthly forms with an annual report.

For example, if you conduct sulphur recovery and only have an annual reporting requirement, you would submit 12 monthly AMD Sulphur Recovery and Removal forms with your annual report to cover each month of the year.

Submission of 2018 monthly forms

Monthly forms for 2018 data are not required with the first annual report in February 2019. The only forms that may be required with the first annual report (depending on approval requirements) is the AMD Annual Emission Summary Form (AMD5) and the Annual Production Summary Form (AMD8).

Note that the first Annual Emissions Inventory Report form does require 2018 data and is required to be submitted by September 30, 2019, if the emission thresholds in Chapter 9 of the AMD are met.

Reporting “day”

The term “day” refers to a calendar day for the purposes of the AMD forms. For consistent reporting, daily values must be reported as a calendar day. This has been added to the instructions tab of the AMD forms.

In order to provide industrial facilities with adequate time to prepare for reporting on a calendar-day basis, the following phase-in period to transition from production day to calendar day is available:

- For the 2018, Industrial Air Monitoring annual report, and associated reporting forms (or XML schema), facilities can report on either a calendar day or production day basis. If production day is reported, please use the comments field of the reporting form to indicate which time period was used for “day”.
• For 2019, monthly and annual Industrial Air Monitoring reports, and associated reporting forms (or XML schema), facilities can report on either a calendar day or production day basis. If production day is reported, please use the comments field of the reporting form to indicate what time period was used for “day”.

• Starting with 2020 reports (2020 monthly reports and 2020 annual report), day must be reported as a calendar day on all AMD forms and XML files going forward.

It is important that all air data be reported on a consistent basis so that daily data is comparable from facility to facility. At present, different facilities use varying time periods for production day, which introduces error when calculating aggregated time-series data in the database. This is why calendar day is prescribed for the AMD forms. A consistent daily timescale will allow for analysis of peak episodes, based on representative aggregated data on a local or regional scale.

Reporting continuous stack temperature or flow data

For approvals that require continuous monitoring of stack temperature or flow, regardless of whether the approval explicitly states “CEMS” or a reference to the CEMS Code, continuous stack parameters are reported on AMD2 – the CEMS Summary Form. In order to report your temperature or flow data on this form, you will require a unique station ID. Contact air.reporting@gov.ab.ca to obtain these.

AMD Contravention Form – AMD1

Ambient Air Quality Objective exceedances are not approval contraventions and do not need to be included on the AMD Contravention Form. Exceedances of Objectives and Guidelines do, however, need to be immediately reported for public safety reasons and these need to be identified in monthly and annual reports.

You do not need to fill out a separate line for each hourly exceedance of a limit, if the hourly exceedances all result from the same incident, same cause, and were dealt with by the same corrective action. The form has fields for start date/time and end date/time for incidents over an extended time period.

Separate incidents do need to be reported on separate lines. For example if there is an incident related to a sulphur surge for 4 hours in the morning, then there is a power outage 2 hours later, each of those incidents would need to have a start and end time. As well if on top of hourly exceedance, another timeframe exceedance occurs (e.g., 24-hour), that would be reported separately.

AMD CEMS Summary Form – AMD2

The AMD CEMS Summary Form (AMD2) replaces the quarterly CEMS report required in the 1998 CEMS Code. If you are required by an approval to conduct CEMS monitoring, you are required to complete and submit the AMD CEMS Summary Form along with your monthly report.
If you are not required to submit a monthly report, you are required to submit 12 monthly AMD2 forms with your annual report, to cover each month of the reporting year. See AMD Chapter 9, sections 5.4.2 and 6.4.2 for requirement to submit the AMD CEMS Summary Form.

Do not report the same values/information on multiple forms. If you report a monthly sulphur total on AMD12 (AMD Sulphur Recovery and Removal Form), you would not also report that monthly total on the AMD2 form. The monthly total emission field on the AMD2 form is optional.

**Reporting multiple sources on CGA Summary Form – AMD4**

For reporting multiple sources on the CGA Summary Form (AMD4), one form can be used. Report the additional sources using the duplicates in the form (Parameter 1, Parameter 2, etc.). The parameter could be the same, but you would indicate a new unique source identifier.

If there are multiple leads conducting CGAs reported on one form, list all applicable names in cell 8F/G and clarify in the comments sections which person led the CGA on which source.

**Stack Survey and RATA Notification Form – AMD11**

The Stack Survey and RATA Notification Form (AMD11) is used for providing a minimum 14-day advance notification of any manual stack survey or RATA. Submission of the AMD11 form to ETS replaces notification by email, therefore there is no longer email notification for manual stack surveys and RATAs.

The requirement to provide 14-day advance notification of a manual stack survey or RATA comes from the approval, a Code of Practice, the 1998 CEMS Code, and the AMD Reporting Chapter. The purpose of advance notification is to allow for the Regulator to attend and audit the test, and for industrial operation accountability (providing full disclosure of their plan to test). These tests are designed to provide a snapshot in time of emissions levels or CEMS performance.

If circumstances require an industrial operation to change source testing dates or the source being tested, and they are unable to provide the minimum 14-days notice to the Regulator, clauses RC 8-A and RC 8-C in AMD Chapter 9 give the Director discretion to authorize notification provided less than 14 days prior to testing, if deemed appropriate.

Advance notification is not required for CGAs. The AMD11 form is for manual stack surveys and RATAs only.

The AMD11 form does not need to be submitted with any report. It can be submitted alone, at any time.

**Manual Stack Survey Summary Form – AMD7**

The purpose of the Manual Stack Survey (AMD7) form is to summarize the manual stack survey report. While the manual stack survey report (PDF) will contain details on all results of the survey, the summary should only include “reportable parameters”. See section 9.1 of AMD Chapter 9 for
the requirements of the Manual Stack Survey Form. Industrial operations are only required to provide the parameters that are stated in the approval as requiring a Manual Stack Survey, in the same units as the approval limit (if applicable). The form requires “Parameter Units (same as approval limits)”, so if an approval limit applies to the reportable parameter, the parameter needs to be reported in the same units as the approval limit. However, not all reportable parameters will have an associated approval limit.

**Reporting of flaring and sulphur emissions on AMD6, AMD10 and AMD12 forms**

**Guidance on using AMD6, AMD10 and AMD12 for sulphur reporting:**

Any additional reporting required by the approval that cannot be put into a form needs to be reported in the PDF report (monthly, annual).

**AMD6** is for all non-routine flaring or incineration (e.g., emergency flare stacks or emergency gas incinerator). The requirement for this form comes from AMD Chapter 9, clauses RC 5-W and RC 6-Z. If flaring is conducted in the month, the form needs to be completed and submitted – it is a summary of flaring carried out.

- Daily emissions from multiple streams to a single source should be summed (i.e., co-mingled, combined volume of gas) and a representative or average value (i.e., concentration of H₂S, heating value of flare stream) used so equivalent daily SO₂ is reported.
- Any clarifications should be reported in the comment box at the bottom of the form.
- AMD6 might be submitted along with either AMD10 or AMD12 (for the routine flaring and sulphur balance) – AMD6 covers the non-routine flaring.
- We are looking to update this form in the coming months to allow the reporting of more than one flaring event or flared stream per day.

**AMD10** is for all routine operation of a sour gas plant with a sulphur inlet less than or equal to 1 t/d (i.e. reporting of routine flaring and sulphur balance).

- This form is simplified for routine flaring or acid gas incineration facilities.
- Note S-30, under Directive 17 (D-17), is only applicable to sour gas plants with a sulphur inlet greater than 1 t/d. S-30 under AMD10, not to be confused with the S-30 under D-17, is intended to capture sulphur emissions from sour gas plants with a sulphur inlet less than or equal to 1 t/d. Operations with a sulphur inlet greater than 1 t/d are required to submit the AMD12 form to AEP.
- Any clarifications should be reported in the comment box at the bottom of the form.
- If any non-routine/emergency flaring is conducted, AMD6 would also need to be completed.
- This form will be updated in the coming months to include columns for acid gas incineration.
AMD12 is for all routine operation with a sulphur inlet greater than 1 t/d (i.e., reporting of routine flaring and sulphur balance, and frequency distribution, if required).

- Any clarifications should be reported in the comment box at the bottom of the form.
- If any non-routine/emergency flaring is conducted, AMD6 would also need to be completed.
- This form will be updated in the coming months to include the full sulphur balance picture to allow for approval requirements to be met, as applicable (i.e., reporting of operating hours of the sulphur recovery unit, sulphur injected, sulphur otherwise disposed of, and total sulphur).
- The column for “emission rate from flare stack” on AMD12 is used for reporting any SO₂ emissions from routine flaring, which may include vapours from storage tanks, sour water strippers, soil remediation, and other streams that cannot be tied into the sulphur recovery unit. This will not be completed by every facility. It is there for those that need it. Non-routine flaring is reported on AMD6.

**Guidance for particular operations:**

**Co-mingled non-routine flaring/more than 1 stream being flared**

The AMD Flare Stack Form (AMD6) wasn’t designed for multiple materials being sent to one flare on the same day, as it was designed for reporting the substances coming from the flare. AMD6 was not designed to capture flare volumes, but rather the pollutants of interest, and reporting events on a daily basis (rather than multiple events per day).

- Report one line per day for all streams on AMD6 – average/co-mingled/representative fuel gas and H₂S for all streams (similar to S-30).
- If the approval or approvals coordinator requires a further breakdown in reporting separate streams, this would need to be provided in the PDF report.
- This form will be updated in the future to allow for the reporting of more than one flaring event per day.

**Acid gas flaring or incineration facilities**

- Acid gas flare stacks (or low pressure flare stacks) typically used for routine flaring – use either AMD10 or AMD12, depending on the sulphur inlet.
- Emergency flare stacks (or high pressure flare stacks) typically used for non-routine flaring (e.g., flaring the whole inlet stream) – use AMD6.
- Single flare stacks (or dual flare stacks) that are used for both routine and non-routine flaring should be reported in AMD6 and AMD10 or AMD12, accordingly as per above form-specific bullets.
- For acid gas incinerators (used in place of flare) – treat as a flare and report on AMD10 or AMD12 using the flare column, depending on the sulphur inlet.
- For acid gas injection and or transfer offsite with no routine flaring, and therefore no sulphur emissions, use AMD10 or AMD12 to track injection. AMD12 will be updated to add injection/offsite/other disposal fields. Until then report injection in the PDF report. If
there are no emissions, those fields will not be used. Any emergency/non-routine flaring would be reported on AMD6.

C300 facilities
These are sour gas processing plants with a sulphur inlet less than or equal to 1 t/d.

- Report routine flaring and sulphur balance using AMD10.
- Report an acid gas incinerator on AMD10 (incinerator emissions will be added back to this form in the next version).
- Report non-routine flaring on AMD6.

In-situ facilities
Combustion of sulphur compounds either routinely (used as fuel in boilers or flared) or non-routinely (flared).

- Use AMD10 for routine flaring or combustion in boilers and sulphur balance for a facility with a sulphur inlet less than or equal to 1 t/d. Use the “flared gas” column to report combustion in boilers.
- Use AMD12 for routing flaring or combustion in boilers and sulphur balance for a facility with a sulphur inlet greater than 1 t/d. Use the “flare stack” column to report combustion in boilers.
- Use AMD6 for reporting non-routine flaring.

Use of Emission Summary Form – AMD5

AMD5 is a summary of monthly or annual emissions. This is for reporting substances, not for non-substance parameters (such as flow or temperature). This form is not for reporting ambient data – source emissions only. The AMD5 form is for capturing a summary of mass emissions data only (e.g., daily totals, monthly totals – see AMD Chapter 9 clauses RC 5-CC and RC 5-DD). It is not used for reporting concentration or average volumetric emissions data (e.g., ppm). If a concentration based limit is exceeded it would still be reported on the AMD1 Contravention Form and concentration based summary data is captured on the AMD2 CEMS Summary Form.

Do not report the same values/information on multiple forms (do not double report the same sulphur totals on AMD6, AMD10/AMD12 and AMD5). If sulphur is reported on AMD10, reporting SO₂ for that same source is not necessary on AMD5, as this would be double reporting.

AMD5 may be used to report a facility/plant total for SO₂ (if required), as that value would not be on the other forms. The facility monthly total on AMD5 could sum monthly SO₂ totals from AMD6 and AMD10/AMD12 for the facility (a plant total of SO₂ from routine and non-routine flaring/incineration).

For monthly reporting, if you are reporting flaring emissions only, you may not need to report on AMD5. If you are completing AMD6 for non-routine flaring or AMD10/12 for routine flaring, use those forms not AMD5 to report monthly flare emissions, otherwise there will be double counting.
AMD5 is also used for reporting emissions other than SO$_2$ that would not otherwise fit on the other forms. AMD5 is also used to report annual emissions, if required by the approval.

**Quarterly SO$_2$ emissions limit on Emissions Summary Form – AMD5**

SO$_2$ emissions for each quarter would be reported using the monthly/quarterly tabs of the AMD Emissions Summary Form. There are fields for quarterly total and quarterly average in the "Monthly-3" tab.

**Use of Sulphur Recovery and Removal Form – AMD12**

The Sulphur Recovery and Removal Form (AMD12) is required to be submitted by industrial operations who have a requirement in their approval to recover or remove sulphur. See sections 5.4.6 and 6.4.6 in AMD Chapter 9. Not all fields in the AMD12 form may be applicable to each industrial operation however.

The only exception to submission of the AMD12 form is if the industrial operation has an approved sulphur inlet of less than or equal to 1 t/d – these industrial operations report a sulphur balance using the AMD10, AMD S-30 Form.

**Monitoring not required to be reported**

Monitoring conducted for the person responsible’s own purposes (i.e., not required by the Regulator) does not need to be reported under the AMD. However, if for any reason, monitoring data collected for the person responsible’s own purposes is being submitted or going to be submitted to the Regulator, it must meet all AMD requirements (for monitoring, reporting and equipment maintenance) in order for the Regulator to accept the data.

**Reporting incomplete source tests**

Information on incomplete source tests (manual stack surveys, RATAs, CGAs) must be submitted (see section 9.0 of AMD Chapter 9). This includes providing a brief overview of any incomplete source test as part of monthly/annual reports and submitting a source testing report for any incomplete source test.

The AMD reporting forms for source testing (AMD4 CGA Summary Form, AMD7 Manual Stack Survey Form and AMD9 RATA Summary Form) currently do not allow for reporting of incomplete tests. The forms will be updated in the future to accommodate reporting of aborted/incomplete CGAs, manual stack surveys and RATAs. Until that time, industrial operations will meet the requirements of AMD Chapter 9 by submitting the PDF source testing report for any incomplete CGA, manual stack surveys or RATA.
Reporting production or throughput prior to source tests or audits

AMD Chapter 9 provides varying terminology for reporting production rate or throughput for the time period prior to conducting a Manual Stack Survey, RATA or CGA (e.g., previous month, previous 30 days, previous 720 hours). The 1998 CEMS Code states “previous month”, which has been interpreted as either the previous calendar month or the previous 30 days. Future amendments to AMD Chapter 9 and the CEMS Code will clarify that it is the average production rate for the previous 30 days that is required to be reported. The intent is to get a snapshot of the production rate leading up to the test. The AMD9 RATA Summary Form clearly asks for “Average Production Rate for Previous 30 days”.

Continuous Emissions Monitoring System (CEMS)

1998 CEMS Code

Section 6 of the 1998 CEMS Code states that quarterly reporting required in Section 6.2 ceases to apply once CEMS reporting is incorporated into the AMD. Therefore, the revised AMD now supersedes Section 6.2 of the 1998 CEMS Code.

CEMS monitoring is still dictated by the approval and the CEMS Code. The 1998 CEMS Code is currently under revision. More information is available on the CEMS webpage.

New CEMS summary reporting

Chapter 9 of the AMD now requires monthly reporting on CEMS (in place of quarterly reporting) via the AMD CEMS Summary Form. Manual Stack Survey, Cylinder Gas Audit (CGA) and Relative Accuracy Test Audit (RATA) reporting requirements are also now within AMD Chapter 9.

Beginning with January 2019 CEMS data, a CEMS summary will be included in the monthly and annual report and the monthly CEMS Summary Form (AMD2) will be submitted via ETS with the monthly reports or annual report. The CEMS Summary Form replaces the CEMS quarterly reports formerly required by the 1998 CEMS Code.

Submission of 2018 CEMS quarterly reports

The final CEMS quarterly report for Q4 2018 will be emailed to air.reporting@gov.ab.ca. ETS is not set up to accept CEMS quarterly reports. Monthly and annual reports and the CEMS Summary Form (AMD2) will be reported to ETS beginning with 2019 data.

Submission of CEMS data

AMD Chapter 9 requires industrial operations to electronically submit all CEMS data collected by any approval-required CEMS. Submission of CEMS hourly data has not changed. CEMS data will continue to be submitted via the FTP portal.
Annual Emissions Inventory Reports

The AMD Reporting Chapter requires that, as of 2019, all EPEA approved industrial operations annually carry out an emissions inventory. If the reporting thresholds set out in the AMD Reporting Chapter are met, an EPEA approved industrial operation is also required to prepare and submit an Annual Emissions Inventory Report.

Sources covered in an Annual Emissions Inventory Report

All release points and non-point sources (and all units, processes, equipment and control technologies/equipment related to the release points and non-point sources) are required to be included in the Annual Emissions Inventory and reported via the Annual Emissions Inventory Report Form.

Reported substances

If any of the reporting thresholds are met by an EPEA approved industrial operation, then air emissions of the Schedule 1 substances are required to be reported, along with the air emissions of any applicable Schedule 2 substances.

If any of the reporting thresholds have been met, then air emissions of all Schedule 1 substances must be reported regardless of whether the individual substance’s reporting threshold has been met. However, if the industrial operation does not actually emit one of the individual Schedule 1 substances (e.g., sulphur dioxide or ammonia), the industrial operation can identify the Schedule 1 substance as negligible and exclude it from reporting.

More information on negligible Schedule 1 substances is provided in the Annual Emissions Inventory Report Standard and Guidance Document.

Reporting of Schedule 2 substances is not dependent on the Schedule 1 reporting thresholds. If an industrial facility is required to submit an Annual Emissions Inventory Report, air emissions of all non-negligible Schedule 1 substances would be reported. If any of the Schedule 2 substances are applicable to the industrial facility, then the specific applicable Schedule 2 substances would also be included in the Annual Emissions Inventory Report. An individual industrial facility could have zero or several applicable Schedule 2 substances that must be reported.

Applicable Schedule 2 substances

As stated in the AMD Reporting Chapter, applicable Schedule 2 substances are those substances (listed in Schedule 2), which the industrial operation emits to the atmosphere in amounts that can be quantified with reasonable effort, and would include, at a minimum, the:

- Substances that are part of the industrial operation’s current approval emission limits, monitoring, or reporting requirements;
• Substances whose air emissions have otherwise been quantified by the industrial operation for the same calendar year;
• Substances whose air emissions were reported by the industrial operation to another regulatory or non-regulatory reporting program, such as the National Pollutant Release Inventory, for the same calendar year.

Annual actual, normal and maximum air emission rates

“Annual actual air emissions” means the actual, measured or estimated quantity of a substance being emitted to the atmosphere from a source during a specific calendar year. The terminology of “annual actual” does not necessarily mean that the value has been measured. An estimated value can be, and is often, used to determine the annual actual air emissions. Annual actual air emissions are simply meant to capture a representative emission rate for the specific inventory year for the industrial operation (for the specific source and substance). Annual actual air emissions are to be reported in tonnes/year.

“Normal air emissions” means the rate at which a substance is emitted to the atmosphere from a source under normal operating conditions. Normal air emissions are intended to capture the usual, average or typical air emission rate for the specific source and substance, as determined during normal (usual, average or typical) operating conditions. Normal air emissions are only required for release points and are to be reported in tonnes/day.

“Maximum air emissions” means the maximum rate at which a substance is emitted to the atmosphere from a source, factoring in emission limits, equipment specifications, or other relevant information. The maximum emission rate is to be determined using the applicable emission and operating limits set out in the industrial operation’s EPEA approval terms and conditions. Maximum air emissions are intended to capture the maximum air emission rate allowed (but not upset or emergency limits) or (when no limit is specified) the maximum emission rate the source could potentially emit (based on normal maximum design or emission capability). Maximum air emissions are only required for release points and are to be reported in kilograms/hour.

Emissions inventory submission documents

Annual Emissions Inventory Reports include three components:

• The completed Annual Emissions Inventory Report Form
• The Quantification Methodology Document describing the inventory development and emission quantifications
• The signed and dated Statement of Certification

The Annual Emission Inventory Report Form and Statement of Certification are provided on the AMD resources web page along with other supporting documents.
Annual Emissions Inventory Report due date

As specified in the AMD Reporting Chapter, completed Annual Emissions Inventory Reports are required to be submitted by September 30th of the reporting year (the year following the inventory year).

Inventory year versus reporting year

The “inventory year” is the year to which the Annual Emissions Inventory is to cover. The first inventory year will cover the January 1 to December 31, 2018 calendar year and would need to be completed by September 30, 2019. The next annual inventory would cover the January 1 to December 31, 2019 calendar year and would need to be completed by September 30, 2020. Therefore, 2018 will be the first inventory year for the first Annual Emissions Inventory Report.

The “reporting year” is the year during which the Annual Emissions Inventory Report is being prepared and will be submitted (by September 30). The reporting year is the year following the inventory year. The person responsible will not typically prepare the Annual Emissions Inventory Report until after January 1 of the reporting year, as it will need to cover all of the inventory year. The first Annual Emissions Inventory Report will cover the 2018 inventory year and would therefore be prepared sometime after January 1, 2019. The first reporting year would therefore be 2019.

Emissions inventory contact

Questions on annual emissions inventory reporting can be sent to:

- emissions.inventory@gov.ab.ca

Frequently asked questions on annual emissions inventory reporting are covered in the Annual Emissions Inventory Report Standard and Guidance Document.