# Nitric Acid Production Project Protocol
# Version 2.0
## ERRATA AND CLARIFICATIONS

The Climate Action Reserve (Reserve) published its Nitric Acid Production Project Protocol Version 2.0 in September 2011. While the Reserve intends for the Nitric Acid Production Project Protocol V2.0 to be a complete, transparent document, it recognizes that correction of errors and clarifications will be necessary as the protocol is implemented and issues are identified. This document is an official record of all errata and clarifications applicable to the Nitric Acid Production Project Protocol V2.0.[1]

Per the Reserve's Program Manual, both errata and clarifications are considered effective on the date they are first posted on the Reserve website. The effective date of each erratum or clarification is clearly designated below. All listed and registered nitric acid production projects must incorporate and adhere to these errata and clarifications when they undergo verification. The Reserve will incorporate both errata and clarifications into future versions of the protocol.

All project developers and verification bodies must refer to this document to ensure that the most current guidance is adhered to in project design and verification. Verification bodies shall refer to this document immediately prior to uploading any Verification Statement to assure all issues are properly addressed and incorporated into verification activities.

If you have any questions about the updates or clarifications in this document, please contact Policy at policy@climateactionreserve.org or (213) 891-1444 x3.

[1] See Section 4.3.4 of the Climate Action Reserve Program Manual for an explanation of the Reserve's policies on protocol errata and clarifications. "Errata" are issued to correct typographical errors. "Clarifications" are issued to ensure consistent interpretation and application of the protocol. For document management and program implementation purposes, both errata and clarifications are contained in this single document.

# Errata and Clarifications (arranged by protocol section)

**Section 5**



**Section 7**

# Section 5

## 1. Calculation of $CPV_{cap}$ (CLARIFICATION – October 4, 2013)

**Section:** 5.1.3.1 Baseline Sampling Period

**Context:** Section 5.1.3.1 discusses the baseline sampling period and the required steps for adjusting the data collected during the baseline sampling period before calculating the baseline emission factor. Step 1 details the method for calculating the campaign production volume cap ($CPV_{cap}$), and eliminating baseline data beyond the $CPV_{cap}$. $CPV_{cap}$ is defined as the average campaign production volume in metric tons of $HNO_3$ for the campaigns used to define allowable operating conditions, which are generally the five previous campaigns. The $CPV_{cap}$ is meant to ensure that the baseline sampling campaign is representative of "business as usual" nitric acid production. The variables $HNO_{3max}$ and $HNO_{3max,scaled}$, which are also based on $HNO_3$ production volumes from historical data, serve a similar purpose for the project campaign, namely ensuring that the *project* campaign is representative of "business as usual" nitric acid production. For the calculation of $HNO_{3max}$, the protocol explicitly allows the project developer to exclude a justifiably anomalous campaign and instead include the next available historic campaign. The protocol is not clear that excluding a justifiably anomalous campaign when calculating $CPV_{cap}$ is similarly allowed.

**Clarification:** The $CPV_{cap}$ shall be calculated from the five consecutive historic campaigns used to define allowable operating conditions, except if one of the campaigns used to define allowable operating conditions is determined to be justifiably anomalous, in which case the project may instead use five non-consecutive historical campaigns (i.e. exclude the anomalous campaign and add another campaign from the next available historical record). If the project developer excludes an anomalous campaign, the verification body must use professional judgment to review the justification and relevant data to make a determination as to whether the anomalous campaign is in fact justifiably anomalous and should be excluded from the $CPV_{cap}$ calculations.

## 2. Definition of Operating Manual and the Determination of Allowable Operating Conditions when Historical Data Are Not Available (CLARIFICATION – March 22, 2016)

**Section:** 5.1.2 Allowable Operating Conditions

**Context:** Section 5.1.2 provides guidance for the determination of the Allowable Operating Conditions (AOCs) for the nitric acid plant (NAP). On page 21, project developers are given three tiered options for determining these AOCs. The first two are based on best available historical data, either from the previous five campaigns or from less than five campaigns. The third option, used only when no historical data are available or when a NAP undergoes an upgrade during the crediting period, allows for the range of temperature and pressure to be based on the equipment's operating manual, and for maximum ammonia-to-air ratio to be defined by the ammonia oxidation catalyst manufacturer. In practice, this third option presents two difficulties. First, operating manual is not a defined term in the protocol, and operating manuals do not exist for NAPs in the typical sense. Second, ammonia oxidation catalyst manufacturers typically do not specify a maximum ammonia-to-air ratio, instead focusing on optimal ranges for temperature and pressure. Due to these issues, it is not clear how a project

developer who lacks sufficient historical data or who implements an upgrade at the NAP during the crediting period shall determine the AOCs for the NAP.

**Clarification:** The operating manual for NAP equipment shall be defined as follows:

> "As the term is used in the context of this protocol, an operating manual for NAP equipment is defined as one or more current, detailed, engineering document(s) that establish operational constraints and optimal ranges for temperature, pressure, and ammonia-to-air ratio, developed for the NAP by either the NAP equipment manufacturer or a third-party engineering firm that manages NAP equipment use, upgrade, and replacement."

Further, the operating manual for the NAP equipment may be used to establish maximum ammonia-to-air ratio when neither historical data nor guidance from the ammonia oxidation catalyst manufacturer are available.

# Section 7

## 3. Reporting on Routine Maintenance Periods (CLARIFICATION – April 16, 2015)

**Section:** 7.4 Reporting Period and Verification Cycle

**Context:** Section 7.4 states that reporting periods must be contiguous and that there can be no time gaps in reporting during the crediting period of a project once the initial reporting period has commenced. It goes on to state that a reporting period must represent a full campaign, defined as the full length of operation of one set of primary catalyst gauzes (i.e. the time between new catalyst installations or new charges of catalyst gauze). However, the protocol does not address how routine maintenance periods shall be treated. During these maintenance periods, ammonia is not flowing to the AOR, and no nitric acid is produced.

**Clarification:** Additional text shall be added to Section 7.4 to clarify as follows:

Reporting periods must be contiguous; there can be no time gaps in reporting during the crediting period of a project once the initial reporting period has commenced. A reporting period must represent a full campaign, defined as the full length of operation of one set of primary catalyst gauzes (i.e. the time between new catalyst installations or new charges of catalyst gauze), except as otherwise allowed in Section 7.4.1. Occasionally, certain types of maintenance activities may be required at the plant that may interrupt project activities. Such maintenance periods, defined as a period during which no ammonia is flowing and no nitric acid is produced, are permissible with the following caveats to ensure continuous reporting for the project:

- Maintenance periods must be included within the dates of a reporting period to ensure continuous reporting.
- The data generated during the maintenance period (e.g. OH, F, $N_2O_{conc}$, T, P) shall be excluded when performing the calculations in Section 5.
- Monitoring equipment may be removed during these maintenance periods, as necessary, and the related QA/QC requirements may be suspended during that time.

- Once production commences following a maintenance period, daily QA/QC requirements must be met, and the schedule of quarterly, semi-annual, and annual QA/QC requirements must resume in a timely manner, so as to continue to meet the requirements of Section 6.
- The project developer must demonstrate to the verifier that no ammonia was flowing and no nitric acid was produced during a maintenance period.

## 4. Campaign Length (CLARIFICATION – January 3, 2017)

**Section:** 7.4 Reporting Period and Verification Cycle

**Context:** Section 7.4 states that reporting periods cannot exceed 12 months, and no more than 12 months of emission reductions can be verified at once, except during the project's first verification, which could include historical data. However, the protocol does not address circumstances when a campaign length exceeds a 12 month reporting period. While the protocol allows for sub-campaign verifications, it is preferable to allow for project developers to report on and verify full campaigns. Further, the provision for the first verification was only relevant for projects already underway at the time of protocol adoption and is no longer necessary.

**Clarification:** The language in Section 7.4 shall be amended as follows:

> A reporting period cannot exceed 12 months, and no more than 12 months of emission reductions can be verified at once, except when a single campaign exceeds 12 months, in which case the reporting period may be extended to match the length of the campaign.
>
> One site visit is required per verification or per year, whichever is less frequent.