

Technical Guidance for Offset Verifiers
Verification of Offset Project Data Reports:

California Air Resources Board
Stationary Source Division
Climate Change Program Evaluation Branch

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CHAPTER 1. Introduction

1.1. Overview and Purpose

This technical guidance document is intended for both Offset Project Operators (OPO) and Authorized Project Designees (APD), accredited offset verification bodies and offset verifiers, and approved Offset Project Registries to provide administrative detail and recommended practices for compliance with the offset verification provisions of the California's Air Resources Board's (ARB) Cap-and-Trade Regulation (Title 17, California Code of Regulations, §95800 – 96022). Unlike the Regulation, this technical guidance does not have the force of law, does not establish new mandatory requirements for offset verification, and in no way supplants, replaces, or amends any of the legal requirements of the Regulation. Conversely, an omission or truncation of regulatory requirements in this technical guidance does not relieve OPOs, APDs, verification bodies, offset verifiers, or approved Offset Project Registries of their legal obligation to fully comply with all requirements of the Regulation.

The technical guidance is intended to facilitate compliance with the Regulation by providing OPO/APDs, accredited offset verification bodies and offset verifiers, and Offset Project Registries explanations about the regulatory requirements, practical advice regarding steps that should be taken to ensure compliance with those requirements, and examples that illustrate how the requirements would apply in particular circumstances. Chapter 1 provides an overview of the Regulation and its requirements. Chapter 2 provides technical guidance, in a regulatory context, regarding preparing for offset verification. Chapters 3 through 5 provide specific offset verification activities and recommendations on meeting regulatory requirements. Chapter 6 provides technical guidance on monitoring and measurement issues, and Chapter 7 explains regulatory provisions related to the completion of the offset verification process and examples of Positive, Qualified Positive, and Adverse Offset Verification Statements. Chapter 8 sets forth ARB's oversight of the offset verification process.

A successful offset program requires a system to monitor, report, and verify greenhouse gas (GHG) emission reductions and removal enhancements. In addition, a credible offset program must have independent and impartial verification of the reported GHG emission reductions and removal enhancements to ensure their completeness, accuracy, and conformance with the Cap-and-Trade Regulation and applicable Compliance Offset Protocol (COP). The Regulation outlines the minimum services which must be included during offset verification. These requirements are consistent with international standards. Under the Regulation, offset verification services must be performed by qualified, trained and accredited third-party offset verification bodies and offset verifiers who meet minimum qualifications for education and experience, and

demonstrate that there is no potential or actual conflict of interest (COI) between themselves and the OPO and APD, if applicable.

OPO/APDs are required to report their GHG emission reductions and removal enhancements on a 12-month rolling basis. The Regulation provides general reporting requirements for all offset projects. In addition to general reporting requirements, each COP includes further project-type specific requirements for monitoring, reporting, and verification.

1.2. Crosswalk Between the Regulation and the Offset Verification Technical Guidance Document

CHAPTER 1: Introduction	
Use of ARB Accredited Verification Body	§95977(a); §95978
Verification Cycle	§95977(b) - (d)
Professional Judgment	§95802(a)
CHAPTER 2: Preparing for Verification	
Verification Team Roles	§95802(a)
Subcontracting	MRR §95132(e) ¹
Self-evaluation for Conflict of Interest and Notification of Verification Services (COI/NOVS)	§95977.1(b)(1) – (2); §95979(e) – (f); 95987(c)
Percentage of Fee	§95979(c); §95979(e)(3)(B)(3.) and (5.)
Monitoring Conflict of Interest	§95979(f)
Rotation of Verification Bodies	§95977.1(a)
CHAPTER 3 – Core Offset Verification Activities	
Planning – Initial Review of Systems and Processes	§95977.1(b)(3)(A)
Verification Plan	§95977.1(b)(3)(A) – (C)
Site Visits	§95977.1(b)(3)(D)
Sampling Plan and Data Checks	§95977.1(b)(3)(G) – (L)
Assessing Offset Material Misstatement	§95802(a); §95977.1(b)(3)(N) – (Q)
Conformation with the Regulation	§95977.1(b)(3)(N) - (O) and (R)(4.)
Less Intensive (or Interim) Verification	§95802(a); §95977.1(b)(3)(D); and applicable COP
Offset Project Data Report Modifications	§95977.1(b)(3)(M) and (R)(5.)
Report Drafting – Detailed Verification Report	§95977.1(b)(3)(R)(4.) (a.)
CHAPTER 4 – Monitoring and Measurement Issues	
Interim Data Collection Procedures	§95976(f)
Measurement Accuracy	§95976(a) and applicable COP
CHAPTER 5 – Completing the Offset Verification Process	
Independent Technical Review	§95977.1(b)(3)(R)(1.) – (3.)
Offset Verification Statement / Final Verification Opinion	§95977.1(b)(3)(R)(4.) (b.)
Petition Process	§95977.1(b)(3)(R)(5.) – (7.)

¹ This refers to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR), title 17, California Code of Regulations, section 95100 et seq.

1.3. Use of ARB-Accredited Verifiers

Section 95977(a) of the Regulation requires independent third-party verification of GHG reductions and removal enhancements by ARB-accredited offset verification bodies and offset verifiers. OPO/APDs are required to obtain the services of an ARB-accredited offset verification body for verifying each Offset Project Data Report that they submit to an Offset Project Registry. The requirements that must be met to become an ARB-accredited verifier can be found in the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR).

1.4. Offset Verification Cycle

The following subsections describe the verification schedule and timing for submitting all documents related to offset verification services. The Regulation does not include fixed reporting and verification deadlines, instead it allows Reporting Periods to run over any 12-month period. Reporting is required annually for every offset project; however, verification may be deferred depending on the project type and size.² All verification related activities must conclude within 9 months of the end of the Reporting Period for which the OPO/APD is required, or elects, to conduct a full or interim offset verification. These rules are described in more detail in subsection 1.4.2 of this document.

1.4.1. Verification Schedule Requirements

While the submittal of Offset Project Data Reports is required on an annual basis, verification may be deferred under certain circumstances. The schedule for submitting verified Offset Project Data Reports depends on the project type, whether it is a non-sequestration or sequestration offset project, and the size of the offset project – or how many GHG reductions or removal enhancements the project achieves in the Reporting Period. The requirements for each are described below and can be found in sections 95977(b) and (c) of the Regulation. Full verification requires that a site visit be performed at the offset project location. The Regulation also includes requirements for the periodic rotation of verification bodies for OPO/APDs. These requirements are discussed in more detail in Section 2.2.7 of this guidance document.

Schedule for Verification of Non-Sequestration Offset Projects (§95977(b))

For non-sequestration offset projects, OPO/APDs must obtain verification services for each Offset Project Data Report annually. Each verification must cover the Reporting Period for which the most recent Offset Project Data Report was submitted.

² Projects developed under Compliance Offset Protocol Ozone Depleting Substances (ODS) may have a Reporting Period of less than 12 months. No ODS project may be longer than 12 months and only one Offset Project Data Report is allowed to be submitted for each ODS project.

Exception for Smaller Offset Projects: If an offset project produces less than or equal to 25,000 metric tons of GHG reductions for a given Reporting Period, the OPO/ APD may choose to perform a verification that reviews two Offset Project Data Reports for two consecutive Reporting Periods at once. For example, if in a Reporting Period the OPO/APD reports a total of 20,000 metric tons of GHG reductions, the OPO/APD may wait to perform verification until the conclusion of the subsequent Reporting Period. In this case, the verification would cover the current year's Offset Project Data Report and the one for the next Reporting Period as well. The offset verifier would be providing offset verification services once for the period of time covering two Reporting Periods, but would issue two Offset Verification Statements and detailed verification reports – one for each Reporting Period with its own separate Offset Project Data Report. No offset credits will be issued until a Positive or Qualified Positive Offset Verification Statement is obtained for an Offset Project Data Report. While verification is not required in the first Reporting Period for projects less than or equal to 25,000 metric tons, it is beneficial to conduct offset verification services after the first Reporting Period because the first verification also includes a validation step to ensure that the project meets the requirements of the Regulation and applicable COP. The sooner the first verification is performed the more likely any errors will be discovered early and corrected to reduce the potential for loss of offset credits.

Schedule for Verification of Sequestration Offset Projects (§95977(c))

For sequestration offset projects, OPO/APDs must obtain verification services at least once every six years, with the exception of the first Reporting Period. After the first Reporting Period, all sequestration offset projects must undergo a full offset verification service (see §95977.1(b)(3)(D)). This first verification must also include validation that the project meets the requirements of the Regulation and applicable COP.

Exception for Reforestation Projects: For reforestation offset projects, after receiving an initial Positive Offset Verification Statement for the first Offset Project Data Report, the OPO/APD may defer the second verification for twelve years. After the second verification, verification returns to the six year cycle.

Less-Intensive Verification: Sequestration projects may opt to have less intensive verification performed in interim years between full verifications. Since a full verification is only required after the first Reporting Period and every six years thereafter, the OPO/APD may decide to conduct interim verifications in between full verifications in order to be issued offset credits more frequently (see Table 1-1). Less intensive verification of an Offset Project Data Report requires the verifier to make any findings with the same level of reasonable assurance as

during full offset verification services. Less intensive verification requires data checks and document reviews of an Offset Project Data Report based on the analysis and risk assessment in the most current sampling plan developed as part of the most recent full offset verification. A site visit is not required for less-intensive verification. Section 10.2.3 of Compliance Offset Protocol U.S. Forest Projects, October 20, 2011 provides specific requirements that must be met to qualify for less intensive verification. Specifically, this section of the protocol describes that less intensive verification may not be performed if there have been significant changes in methodologies or updates to the forest carbon inventory program, or there has been a change in the verification body since the previous verification.

An OPO/APD may be issued offset credits in the interim years between full verification services if they receive a Positive Offset Verification Statement. There will be a true up in the year in which full offset verification services are conducted. If more offset credits were issued in the interim years than should have been, they will be deducted from the number issued in the year of full offset verification services. If less were issued than should have been, more offsets will be issued in the year of the true up.

Table 1-1: Six Year Verification Cycle for Sequestration Projects

Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Verification Type	Full	Less Intensive (optional)	Less Intensive (optional)	Less Intensive (optional)	Less Intensive (optional)	Less Intensive (optional)	Full
Verification Body (A or B)	A	A	A	A	A	A	B

1.4.2. Verification Timing Requirements (§95977(d))

All Offset Verification Statements are due to an Offset Project Registry within nine months after the conclusion of the Reporting Period for which offset verification services were performed. If the applicable deadline for submitting the Offset Verification Statement is not met, neither registry offset credits³ nor ARB offset credits will be issued for the GHG reductions or removal enhancements achieved by the offset project during that Reporting Period. Thus, submitting the Offset Verification Statement on time to the Offset Project Registry is essential to being eligible for the issuance of registry offset

³ “Registry offset credits” refers to offset credits issued by approved Offset Project Registries for GHG reductions or removal enhancements achieved using Compliance Offset Protocols, as defined in section 95802(a) of the Regulation.

credits and ARB offset credits. When accepting a contract to perform offset verification services, the verification body needs to consider the timing of when the Offset Verification Statement must be submitted to an Offset Project Registry. There are regulatory constraints that can reduce the amount of time a verification body has to conduct the offset verification services, including when the Notice of Offset Verification Services must be submitted to an Offset Project Registry and ARB, and requirements around dispute resolutions. The verification body should consider the time available to complete the verification, before accepting the contract. In addition, OPO/APDs should also be aware of timing constraints when contracting for offset verification services. OPO/APDs should be organized and have pertinent information available for the offset verification team, such as the information required to develop an Offset Verification Plan (see section 95977.1(b)(3)(A)), to facilitate an efficient verification.

1.4.3. Verifying Multiple Offset Project Data Reports

In the event that the verification body is verifying multiple Offset Project Data Reports in one offset verification service, the verification body must produce a detailed verification report and Offset Verification Statement for each Offset Project Data Report. The verification body may create one sampling plan for all Reporting Periods verified under the same offset verification services; however, this sampling plan must be provided to ARB and the Offset Project Registry for each Reporting Period, if requested. There must be an Offset Project Data Report for each Reporting Period. The first Offset Project Data Report may cover 6 to 24 months of consecutive data. Verifying multiple reports in one offset verification services can occur if an OPO/APD elected to defer verification, and this could also occur if the verification body is conducting verification of early action projects. For more information regarding verification of early action projects, please see Chapter 6 of ARB's Instructional Guidance Document at the following web address and check ARB's website for any Frequently Asked Questions that may be developed on the topic:

<http://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>.

1.5. Offset Verification Activities

Table 1-2 is a brief outline of the kinds of activities specified in section 95977.1 that must be included in offset verification. The Regulation also requires that an offset verifier use their professional judgment in key areas. For example, the Regulation does not state how many data checks an offset verifier must conduct, but does require that an offset verifier use their professional judgment to determine how many data checks are required to assure themselves that there is reasonable assurance that no offset material misstatement exists. More detail on the core verification activities can be found in Chapter 5 of this document.

Table 1-2 Schedules of Offset Verification Regulatory Activities

1. An ARB-accredited verification body is contracted for services by an OPO/APD;
2. The verification body submits the following information:⁴
 - Notice of Offset Verification Services (NOVS) to ARB and the Offset Project Registry with which the offset project is listed
 - Conflict of Interest (COI) self-evaluation information to the Offset Project Registry with which the offset project is listed (see §95979(e))
3. Offset verification services cannot begin until 10 working days after submitting the NOVS unless agreed to by ARB;
4. The offset verification team conducts core verification activities, including:
 - Conduct verification planning meeting with OPO/APD
 - Develop Offset Verification Plan
 - Develop sampling plan
 - Conduct and document risk assessment
 - Conduct site visit
 - Evaluate and understand data management systems
 - Ensure all GHG emission sources, sinks, and reservoirs identified and reported
 - Perform interviews of appropriate OPO/APD staff
 - Perform data checks
 - Determine if the Offset Project Data Report is free of offset material misstatement, and is in conformance with all regulatory requirements
5. Based on the review by the offset verification team, the OPO/APD must make any possible improvements to the Offset Project Data Report;
6. The verification body prepares a draft detailed verification report and an Offset Verification Statement.
7. Prior to finalizing the Offset Verification Statement, the offset verification team must have a final discussion with the OPO/APD explaining its findings and any unresolved issues. If the offset verification team will propose an Adverse Offset Verification Statement, the OPO/APD must have at least 10 working days to correct any issues;
8. The lead verifier on the offset verification team attests to ARB that the offset verification team had carried out all the offset verification services as required by

⁴ The verification body may not submit an NOVS or COI for an offset project until after the project has been listed with an Offset Project Registry.

the Regulation. An ARB-accredited lead verifier from within the verification body who was not part of the offset verification services for the OPO/APD conducts an independent review and determines whether they concur with the offset verification team findings and that the regulatory requirements have been complied with; and

9. The verification body submits the final detailed verification report and Offset Verification Statement to the OPO/APD and the Offset Project Registry.

1.6. Offset Verification Standard

Offset verifiers must assess an Offset Project Data Report for accuracy and for conformance with the regulatory requirements in the Cap-and-Trade Regulation and the applicable COP. The Cap-and-Trade Regulation can be accessed at <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>. The approved Compliance Offset Protocols can also be accessed at this website.

ARB understands that the Climate Action Reserve (Reserve) and the American Carbon Registry (ACR) may have issued various types of guidance, errata, and clarification documents related to the implementation of the voluntary protocols under the Reserve's and ACR's voluntary offset programs. For the purposes of the Compliance Offset Program, only ARB-issued guidance for Compliance Offset Protocols is considered valid.

1.6.1. Regulatory Quality Standards

Offset Project Data Reports submitted to ARB and Offset Project Registries must be free from offset material misstatement, avoid bias in the selection and presentation of information, and provide a credible and balanced account of the offset project's project baseline emissions, actual project emissions, and GHG reductions and removal enhancements. The verification body must be able to state with reasonable assurance, as defined in §95802(a), that the reported GHG emission reductions and removal enhancements are no more than a 5 percent overstatement of the "true" GHG emission reductions and removal enhancements. This is applied to the total reported emission reductions and removal enhancements from all GHG emission sources, sinks, and reservoirs within the offset project boundary for that Reporting Period. To effectively implement this provision, the overstatement must be no more than 5.00 percent rounded to three significant figures. There is no limit on understatement of GHG emission reductions and removal enhancements. For example, if during verification an Offset Project Data Report was found to have a 5.004 percent overstatement error; the report could receive a Positive or Qualified Positive Offset Verification Statement because when rounding to three significant figures the error becomes 5.00 percent.

However, a 5.005 percent overstatement error, when rounded to three significant figures (5.01 percent), would be an offset material misstatement and result in an Adverse Offset Verification Statement. The verification body must also confirm that all applicable methodologies and requirements have been met in the calculation and reporting of the GHG emission reductions and removal enhancements.

It is possible that during the offset verification process, differences will arise between the GHG emission reductions and removal enhancements totals determined by the OPO/APD and those calculated by the verifier during data checks. If discrepancies, errors, and omissions occur that lead the verification body to believe the reported total GHG reductions or removal enhancements exceed the “true” GHG emission reductions and removal enhancements by greater than 5.00 percent, this is considered an offset material misstatement. If an Offset Project Data Report meets the “free of offset material misstatement” requirements of the Regulation, then it means errors found during verification would not cause a greater than 5.00 percent overstatement in total GHG emission reductions and removal enhancements reported by the OPO/APD.

1.6.1.1. Uncertainty

The verification body may find errors that may or may not lead to offset material misstatements in the Offset Project Data Report. Besides the risk of using the incorrect emission factors, models or calculation methods, there is an inherent or “design” uncertainty associated with the accuracy of monitoring equipment, modeling, emission factors, laboratory test methods, and some calculation methodologies which may cause the data to deviate from the “true” GHG reductions or removal enhancements. ARB recognizes this inherent uncertainty, and the Regulation does not require verifiers to include these inherent uncertainties when evaluating for offset material misstatement, provided that all monitoring equipment, models and calculation methodologies conform to the accuracy requirements of the Regulation and applicable COP. If a meter meets the defined accuracy requirement of the Regulation and COP, the meter readings are assumed to be true and accurate. If there is a specific accuracy requirement in the applicable COP, such as for fuel use measurements, and the measurements do not conform to a required accuracy standard, then the uncertainty will need to be included in the evaluation of potential offset material misstatement. Similarly, the output of approved growth models or allometric equations is assumed to be true and accurate as long as all inputs are correct. Unlike metering, where a nonconformance may be evaluated for uncertainty, the use of models or allometric equations that do not conform to the Regulation or applicable COP would result in an Adverse Offset Verification Statement because there would be a nonconformance with the requirements in the COP. Under the regulation and COP, forestry projects may not receive Qualified Positive Offset Verification Statements. Please see Chapters 3 and 4 of this document for further explanation.

1.6.1.2. Professional Judgment

The Regulation requires offset verifiers to use their professional judgment when performing offset verification activities.

Professional judgment, as defined in section 95802(a), is the ability to render sound decisions based on professional qualifications and relevant GHG accounting and auditing experience.

Application of an offset verifier's professional judgment is required in the following areas:

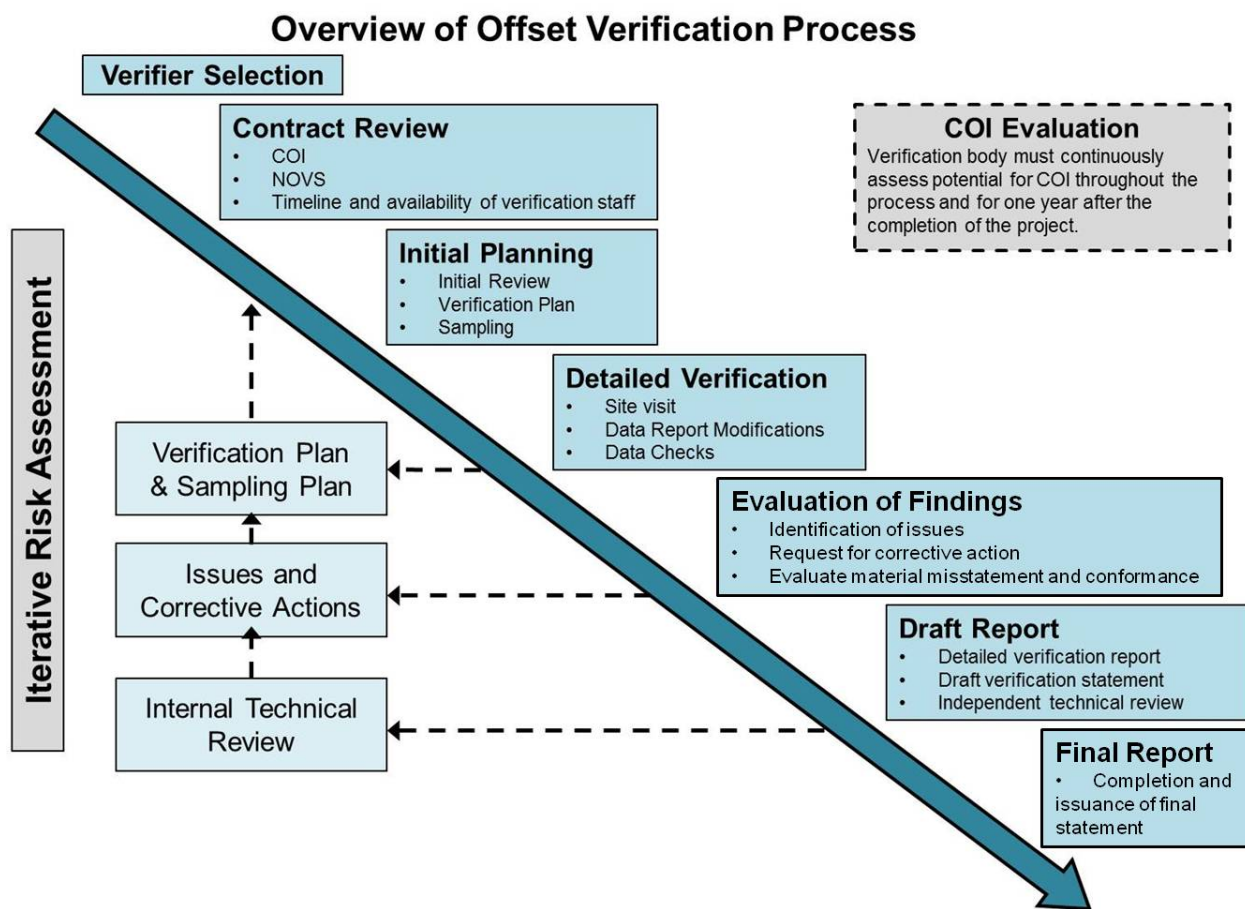
- Collection and review of information needed to conduct the offset verification activities; and
- The number of data checks required for the team to conclude with reasonable assurance whether the reported GHG reductions or removal enhancements are free of offset material misstatement and the Offset Project Data Report otherwise conforms to the requirements of the Regulation and applicable COP.

An offset verifier may not use professional judgment on whether or not to confirm that the offset project meets all of the eligibility criteria required by the COP and/or the Regulation. In addition, an offset verifier may not use professional judgment on which COP requirements must be met. All requirements in a COP must be met, unless otherwise indicated in the COP.

CHAPTER 2. Preparing for Offset Verification

The Regulation and COPs together specify practices for the quantification, reporting, and verification of project baselines and GHG reductions and removal enhancements. Prior to performing any offset verification activities, a number of procedural steps must occur to ensure that the obligations and responsibilities of the verification body and the OPO/APD are clear. Chapter 2 provides an overview of these steps for the verification body and OPO/APD. Chapter 2 also includes additional information for the offset verification team as they prepare to provide offset verification services. Figure 2-1 provides an overview of the offset verification process.

Figure 2-1



2.1. Guidance: Preparing for Offset Verification – OPO/APDs

This section includes brief explanations of the steps an OPO/APD must take in preparing for a verification of an Offset Project Data Report.

2.1.1. Summary Steps for the OPO/APD to prepare for Verification

To prepare for a verification of an Offset Project Data Report, the OPO/APD should first identify approved verification bodies from ARB's accredited list. After identifying potential verification bodies, the OPO/APD should take the following steps to continue with offset verification services:

- Negotiate a contract with a verification body accredited by ARB to verify Offset Project Data Reports;
- Assemble the complete GHG inventory, including all GHG sources, sinks and reservoirs within the offset project boundary and associated documents necessary for the verification body to verify the Offset Project Data Report.

2.1.2. Select an Offset Verifier

To initiate the offset verification process, the OPO/APD may review the list of verification bodies accredited by ARB to verify Offset Project Data Reports available on ARB's website <http://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>.

ARB staff recommends that OPO/APDs review the entire list of ARB-accredited verification bodies and evaluate each company's expertise, experience, and resources to successfully complete the offset verification, including their ability to verify the project type. The OPO/APD should also confirm that the selected verification body can meet the COI rotation of verification body requirements before contracting. After reviewing the list of potential verification bodies, ARB recommends that the OPO/APD provide as much information about the OPO/APD's Offset Project Data Report and the data management system as possible to verification bodies that are interested in bidding on the offset verification. This will assist each verification body in understanding the level of effort and managing their business risk and costs associated with providing offset verification services for the OPO/APD, resulting in the most accurate quote possible.

2.1.3. Contracts with the Verification Body

It can be difficult for offset verification bodies to accurately estimate the total number of hours required to complete an offset verification before the commencement of offset verification services. The verifier generally will not know in advance what issues may arise during the offset verification, the organization and availability of data and records, the transparency of data management systems and documentation, or other unforeseen

circumstances. When contracting with an OPO/APD, the verification body should consider contingency clauses where the total cost of the offset verification can be increased if significant issues arise that require them to expand the scope of offset verification, or the OPO/APD is not forthcoming with needed information. Verification bodies have a regulatory obligation to conduct a thorough verification in accordance with all regulatory requirements, and need to carefully consider their ability to fulfill their regulatory obligations when contracting.

If the OPO/APD chooses to undergo a competitive bidding process, they may solicit bids from several ARB-accredited verification bodies. ARB suggests the OPO/APD consider signing a non-disclosure agreement with each prospective bidder in order to share needed information but prevent confidential information from becoming compromised during the process. This agreement may require both the OPO/APD and verification body to sign the non-disclosure agreement before any confidential data is exchanged between the parties.

It is recommended that an OPO/APD consider asking for technical proposals from any potential bidders that include (but are not limited to) the following information:

- History and description of the verification body and its organization;
- Project types the verification body has staff or contractors available to perform;
- Estimate of time required to complete the offset verification service, including calendar of proposed dates, timeframe to respond to corrective action requests, and timing of submittal of Offset Verification Statement(s);
- How information will be shared, including a non-disclosure policy;
- Price for providing offset verification services and duration of the contract;
- Proposed ARB-accredited offset verifiers who will perform the services;
- Approach for completing the offset verification services and how results will be provided to the OPO/APD; and
- Contingency (“What if”) clauses to cover any other risks or issues identified by the verification body that necessitate expanding the scope and time required to complete offset verification services.

Once the OPO/APD has received competitive bids from accredited verification bodies, the OPO/APD will select a verification body and negotiate a contract. Prior to beginning any actual offset verification services, the selected verification body must submit a self-evaluation of its conflict of interest (COI) to the Offset Project Registry at which the

offset project is listed, as specified in section 95979(e). The self-evaluation of COI must be applied between the verification body, any members of the verification team, any subcontractors working on the offset verification team, and the OPO and APD, if applicable. To comply with this requirement, the verification body may use ARB's COI form available on ARB's Cap-and-Trade website and the Offset Project Registry's website.

Important - Submittal of COI self-evaluations: Verification bodies must submit COI self-evaluations to the applicable Offset Project Registry. The Offset Project Registry must approve the COI. Offset verification services may commence before the Offset Project Registry has approved the COI; however, this is at the risk of the verification body and OPO/APD, as the Offset Project Registry may determine that there is an issue with the COI and that offset verification services cannot be conducted between the two parties. ARB recommends that the verification body submit the COI in advance of commencing offset verification services, so that they may get final approval before services begin. In addition, the verification body must submit a Notice of Offset Verification Services (NOVS) to ARB and the applicable Offset Project Registry before offset verification services may commence. The verification body may begin offset verification services for an OPO/APD 10 working days after the NOVS is received by ARB and the Offset Project Registry.

The OPO/APD may choose to wait to finalize its contract with a verification body until after the verification body has submitted its COI self-evaluation. The OPO/APD may also request that bidders submit a COI self-evaluation at the time of bidding. The contract is for direct services between the OPO/APD and the verification body. ARB will not negotiate any part of the contract on behalf of either party. The section below lists some of the items to consider when negotiating the contract.

2.1.4. Contract Terms and Conditions – Items to Consider

The following provides some contract terms and conditions that the verification body could consider when drafting contracts with OPO/APDs:

- Confirmation of the Verification Process – The contract may identify the Offset Project Data Report(s) that will be verified.
- Confirmation of the Verification Body – The contract may state that the verification body is accredited by ARB to perform offset verification services.
- Verification Standard – The contract terms may include a statement that the Offset Project Data Report will be verified against the Regulation and applicable COP.

- Non-disclosure Terms – Both parties may agree on methods for identifying and protecting proprietary information.
- Project Access – Both parties may agree on the verification body's site visits to the offset project, or any other location deemed necessary by the verification body.
- Documentation and Data Requirements – Both parties may agree on how and when data, calculations, and other necessary information will be provided to the verification body.
- Duration of Contract – The contract may include timing requirements for frequency of verification such as discussed in Chapter 1 of this guidance document and requirements for rotation of verification bodies every six years.
- Schedule – Both parties may agree on a schedule to complete the offset verification services and for the delivery of the detailed verification report and the Offset Verification Statement.
- Payment – Terms and methods of payment may be determined and included in the contract. Typical payment terms include total value and schedule of payments.
- Contingency (“What if”) Clauses – The contract may include terms to cover expanding the scope and time required to complete offset verification services when issues identified by the verification team warrant this.
- Data/Misstatement Corrections – The parties may want to come to an understanding on how data issues that need correction will be handled and the schedule for these situations to be corrected.

Note: The verification body may not provide guidance or assistance regarding how to remedy issues that arise during offset verification services. This is considered consulting. The verification body must only identify the issues that arise and the corresponding regulatory requirements.

- Contacts – Both parties may identify their respective key contact(s).

2.1.5. Issues for OPO/APDs to Consider

The commercial value of the fee bid (the total cost for the OPO/APD) may vary greatly between verification bodies. OPO/APDs are urged to look closely at the reputation and experience of the verification body in the applicable project type. A firm that has experience with similar types of projects may have a better understanding of the specific

project operations, be able to provide more efficient offset verification services to the OPO/APD, and provide a more accurate cost estimate.

A well-organized project accounting system and data management system may make offset verification a more straightforward process, which translates into less work for the verification body. If the OPO/APD does not provide sufficient information to the verification body, it may not be able to accurately estimate the time necessary for providing offset verification services, which could result in higher cost verification than if more detailed information was provided at the outset.

Because offset verifiers are required to submit an Offset Verification Statement with their opinion of offset material misstatement and conformance with the Regulation and applicable COP, they will need adequate time to review the data. It is very important for both the OPO/APD and verification body to negotiate the total cost of the offset verification while understanding that the verification deadline in the Regulation is not negotiable.

2.2. Guidance: Preparing for Verification – Verification Bodies

When determining the scope of the contract with the OPO/APD, the verification body will need to determine the feasibility of providing offset verification services, and understand and manage the available resources and competencies of the verification body's staff. The verification body will also need to understand the scope and boundaries of the project and Offset Project Data Report, including applicability and complexity of the GHG emission sources, sinks and reservoirs within the offset project boundary. This includes travel costs and the geographic extent of the offset project boundary. The verification body will also want to understand, in general terms, how data is processed (i.e., in an automated system or by several people in an informal fashion).

Because the costs associated with offset verification are largely dictated by the quality and transparency of the data management system, the scale of GHG emission reductions or removal enhancements may not be a good guide to verification complexity and time required. A very large and complex project with an excellent data management system may be easier (quicker, and therefore cheaper) for the verification body to verify, than a smaller project with a poor accounting system that requires much more time to track data through the data collection and reporting system.

2.2.1. Issues for Verification Bodies to Consider

Offset verifiers have been trained to manage their business risks associated with providing offset verification services under ARB's Regulation. Therefore, verification bodies should only consider accepting contracts with OPO/APDs where they have

enough expertise and resources to complete all requirements within the timeframe of the Regulation. Verification bodies should consider their workload and schedules before agreeing to perform work.

In the event that a verification body is unable to receive needed information from an OPO/APD in a reasonable amount of time, the verifier may contact ARB or the Offset Project Registry to coordinate the gathering information.

2.2.2. Verification Team Roles

Various roles and responsibilities of the personnel providing offset verification services, as defined in section 95802(a), include:

Verification body means a firm accredited by ARB, which is able to render an Offset Verification Statement and provide offset verification services for Offset Project Operators or Authorized Project Designees subject to providing an Offset Project Data Report under this article.

Offset Verification Team means all of those working for a verification body, including all subcontractors, to provide offset verification services for an Offset Project Operator or Authorized Project Designee.

Verifier means an individual accredited by ARB to carry out offset verification services as specified in sections 95977.1 and 95977.2.

Lead Verifier means, for purposes of this article, a person that has met all of the requirements in section 95132(b)(2) of MRR and who may act as the lead verifier of an offset verification team providing offset verification services or as a lead verifier providing an independent review of offset verification services rendered.

Lead Verifier Independent Reviewer means, for purposes of this article, a lead verifier within a verification body who has not participated in conducting offset verification services for an Offset Project Developer or Authorized Project Designee for that current Offset Project Data Report and who provides an independent review of offset verifications services rendered for an Offset Project Developer or Authorized Project Designee as required in section 95977.1(b)(3)(R). This position may not be subcontracted.

Offset Project Specific Verifier means an accredited offset verifier or lead verifier who also has a specific accreditation by ARB to carry out offset verification services as a specialist in one or more of the following project types and in an ARB Compliance Offset Protocol:

- U.S. Forest Projects
- Urban Forest Projects
- Livestock Projects
- Ozone Depleting Substances

An offset project specific verifier has specific knowledge, skills, and competencies related to the project type to understand any complex issues. An offset verification team must have at least one ARB-accredited offset project specific verifier for an offset project of that type. The offset project specific verifier must be part of the team that conducts the site visit.

Accredited Subcontractor is someone accredited by ARB to perform offset verification services as a verifier, or offset project specific verifier. A verification body may use an ARB-accredited subcontractor for some offset verification services. However, they cannot be used as the lead verifier independent reviewer for the offset verification team. A verification body may subcontract with an ARB-accredited offset project specific verifier to provide offset project specific offset verification services to an OPO/APD.

Technical Staff may be a non-ARB-accredited offset verification team member, employed by the verification body (directly or by contract), and overseen by an ARB-accredited offset verifier to support the offset verification once an Offset Verification Plan and sampling plan are developed. The person in this role may provide special knowledge or expertise regarding an offset project type, or could be gaining relevant work experience by participating on the offset verification team as a trainee offset verifier. Technical staff must be under the direct supervision of an ARB accredited verifier at all times during the verification process. ARB has interpreted “direct supervision” to mean daily, close contact that allows the ARB accredited verifier to quickly respond to the needs of the technical expert. Technical staff may not independently act on an offset verification.

Administrative Personnel may provide administrative assistance to the offset verification team and the verification body. These persons may account for up to three of the total staff allowed for a verification body to meet the accreditation requirements.

Verifier In Training is someone that works for the verification body and is working to gain the relevant experience needed to become an ARB-accredited offset verifier.

Examples of Verification Related Tasks by Team RoleTasks only an ARB-accredited lead verifier or offset verifier is allowed to complete:

- Evaluate COI requirements
- Manage the planning and functions of the offset verification team
- Develop an Offset Verification Plan and sampling plan
- Interpret data checks and risk analyses as they relate to the sampling plan
- Develop an issues log and convey information about the issues to the OPO/APD
- Request revisions to the Offset Project Data Report
- Provide an Offset Verification Statement and detailed verification report
- Complete all other tasks in Regulation and applicable COP

Tasks that may be completed by the non-accredited technical staff under the direct supervision of an ARB-accredited offset verifier:

- Collect documents and other information from the OPO/APD at the request of the lead verifier
- Email documents on behalf of the verification team (recommend to cc the lead verifier)
- Assist with site visit
 - Review a subset of meters, sampling, and calibration records
 - Take notes and compile a written summary of a site visit for the lead verifier
- Technical assistance related to complicated process units or unit configurations
 - Explain chemistry/physics of process
 - Identify areas where measurement(s) may be difficult or complex
 - Interpret meter installation/calibration/maintenance procedures
 - Visually inspect fuel meters
 - Interview process engineer to better understand a technical issue
- Re-measurement of selected sample plots after they have been identified by an ARB accredited verifier
- Conduct very limited data checks of a subset of calculations for which an ARB-accredited offset verifier has already established how to perform the calculation
- Format documents and reports – ARB-accredited offset verifier must complete the assigned verification tasks, but then may send the text of each section of the detailed verification report to a non-accredited staff person to be formatted in a final detailed verification report

Tasks that may be completed by a non-technical staff person:

- Handle scheduling and organization of offset verification services for the verification body
 - Ensure deadlines are met
 - Handle logistics of site visits, including managing documents and record for each OPO/APD
 - Facilitate internal discussions and exchange of information within the verification body

2.2.3. Subcontracting

A verification body has specific requirements that it must follow if it elects to use subcontractors when providing offset verification services.

Section 95132(e) of MRR sets forth requirements which apply to any verification body using subcontractors. These include:

1. All subcontractors must be accredited by ARB to perform the offset verification services for which the subcontractor has been engaged by the verification body;
2. The verification body must assume full responsibility for offset verification services performed by subcontractor offset verifiers or verification bodies;
3. A verification body shall not use subcontractors to meet the minimum staff total or lead verifier requirements;
4. A verification body or offset verifier acting as a subcontractor to another verification body shall not further subcontract or outsource verification services for an OPO/APD;
5. A verification body that engages a subcontractor is responsible for applying COI between its subcontractor and the OPO/APD for which it will provide offset verification services; and
6. The verification body may not use a subcontractor as the independent reviewer.

Non-accredited technical experts may be hired as subcontractors to assist with specific technical questions, such as those related to metering or measurement accuracy, but may not provide offset verification services. The tasks that may be performed by non-accredited technical experts in Section 2.2.2 apply to subcontracted technical experts as well as those employed by the verification body.

Verification bodies may subcontract part of their verification services (see section 95132(e) of the Mandatory GHG Reporting Regulation) to another ARB-accredited verification body or verifier. However, the subcontracted entity may not further subcontract any offset verification services. If a verification body is subcontracting with an individual subcontractor directly as an ARB-accredited verifier to perform offset verification services, that subcontract would be with the individual verifier, and not with the subcontractor's verification body. The subcontracted individual would not be able to subcontract out any offset verification services to any other of the verification body's employees. On the other hand, an accredited verification body may subcontract with another verification body directly to perform offset verification services and only one

contract would be needed. Offset verification services are those defined in section 95977.1 of the Regulation.

2.2.4. Notification of Offset Verification Services (NOVS)

Section 95977.1(b)(1) of the Regulation requires the verification body to provide a NOVS to the applicable Offset Project Registry and ARB of its intention to initiate offset verification services. The NOVS must be submitted a minimum of **ten working days** prior to the start of offset verification services, pursuant to §95977.1(b)(1), in order to give ARB and the Offset Project Registry the opportunity to make any arrangements to accompany the offset verification team on site visits and to monitor the offset verification activities. The OPR or ARB will notify the verification body if the form is incomplete. In addition, if any information contained in the NOVS changes after it has been submitted, for example the verification team or site visit dates, the verification body is required to resubmit the NOVS with the updated information as soon as the change is made, but at least 5 days prior to the start of offset verification services. The NOVS contains the following items as required in section 95977.1(b)(1):

OPO/APD Information – The notice includes general information about the OPO/APD, including contact information, address, telephone number, and email address;

Project Information – The notice includes the location that will be subject to offset verification services, the type of offset project and the applicable COP, as well as the crediting period length;

Staff List – The notice includes a list of staff that will provide services as the offset verification team, including the names of each offset verification team member, the lead verifier, independent reviewer, and each subcontractor, if applicable;

Role of Each Team Member – The roles and responsibilities that each offset verification team member will have during the offset verification must be clearly stated in the notice;⁵

Note: The lead verifier on the offset verification team is responsible for attesting that the offset verification team has carried out all the offset verification services as required by the Regulation and applicable COP. The lead verifier independent reviewer, who conducts the independent review of the offset verification services on behalf of the verification body, cannot be involved in the verification services for the OPO/APD for the Offset Project Data Report(s) being verified.

⁵ The verification body must identify the offset verifier acting as the Offset Project Specific Verifier for the project is on the COI and NOVS. The lead verifier is allowed to act as the Offset Project Specific Verifier and this must be clearly noted in the COI and NOVS,

Skills Documentation – The notice must include documentation that the offset verification team has the skills required for the offset verification. The offset verification must also have an ARB-accredited protocol specific verifier for that project type; and

Additional Information – The notice also includes the expected date(s) of the site visits. Any change in the planned site visit(s) must be communicated to the Offset Project Registry and ARB staff before the site visit may commence.

Note: Under section 95977.1(b)(2) of the Regulation, if information regarding offset verification team members, the OPO/APD, project information, and planned dates for site visits change after submitting the NOVS to ARB and the Offset Project Registry, the verification body must submit updated NOVS information to ARB and the Offset Project Registry. If changes are made to the staffing of the offset verification team prior to starting offset verification services the verification body must submit a new COI to the Offset Project Registry and ARB as soon as the change is made, but at least five days prior to the start of offset verification services. Once offset verification services begin, monitoring for COI situations must be implemented according to §95979(f).

2.2.5. Self-Evaluation of Conflict of Interest (COI)

The verification body must also submit a COI self-evaluation to the Offset Project Registry (§95979(e)). Conflict of interest, as defined in section 95802(a), means a situation in which, because of financial or other relationships with other persons or organizations, a person or body is unable or potentially unable to render an impartial Offset Verification Statement of a potential client's Offset Project Data Report, or the person or body's objectivity in performing offset verification services is or might be otherwise compromised.

Effective management of actual or perceived COI that verification bodies may have with the OPO and APD is critical to maintaining the credibility and integrity of the offset verification process. Because the offset verifier is reviewing the accuracy of the reported GHG reductions and removal enhancements, as well as the OPO/APD conformance with the requirements of the Regulation and applicable COP, the offset verification process must be independent, transparent, and free of any external bias for or against the OPO, APD, and the Offset Project Data Report.

The purpose of the COI submittal requirement is for the verification body to show its ability to determine and manage any real or potential conflict before performing offset verification services for an OPO/APD. The relationship between the verification body, its team members, and the OPO and APD must not create or appear to create a conflict of interest. The verification body must assess the potential for conflict between themselves and the OPO(s) and APD, as well as between entities related to the

verification body and companies that share management or ownership of the offset project to be verified. All individuals within the verification body and any subcontractors must be included in the COI review. The COI submittal will list specific tasks set forth in the Regulation that are considered to create a high potential for COI. Table 2-1 provides a partial list of requirements related to assessing the potential for COI.

Table 2-1: Conflict of Interest Determinations – Partial List of Regulatory Requirements

High COI Verification may not commence §95979(b)	Low COI Verification may commence §95979(c)	Medium COI Submittal of a COI mitigation plan required §95979(d)
<ol style="list-style-type: none"> 1. Verification body and the OPO or APD share any senior management staff or board of directors' memberships, or any of the senior management staff of the OPO or APD have been previously employed by the verification body (or vice versa) in the last 3 years. 2. Within the past 5 years, any staff of the verification body or any related entity has provided the OPO or APD with services associated with GHG emissions, health and safety, accounting, financial statements, appraisals, opinions, legal services, broker-dealer (see full listing of specific high-COI tasks in §95979(b)(2)). 3. Any staff member of the verification body has provided verification services for the OPO or APD within in the last 3 years, except as allowed in the Regulation (i.e., rotation of verification bodies) 4. Any staff member of the verification body provides any type of incentive to an OPO or APD to secure an offset verification services contract. (The term incentive is used where a gift or work in-kind may compromise the objective review of an Offset Project Data Report. A discount for multi-year contracting, reducing price during bidding or negotiation or similar incentives does not jeopardize an objective review of the data report and would not be considered a conflict.) 	<p>No potential conflict of interest is found.</p> <p>Over the last 5 years, any non-verifying services provided by a member of the verification body or subcontractor to the OPO or APD are valued at less than 20 percent of the proposed verification fee, except where medium conflict of interest related to personal or family relationships is identified.</p>	<p>If the COI is not determined to be high or low, then it is deemed medium.</p> <p>Verification body submits a COI mitigation plan that includes (but is not limited to):</p> <ol style="list-style-type: none"> 1. Demonstration that conflicted staff have been removed or insulated from the offset project. 2. Explanation of the changes to the organizational structure or verification body to remove conflict of interest. 3. Other information that addresses the sources for COI. <p>Offset Project Registry will evaluate the COI mitigation plan during its review to determine if offset verification services may proceed.</p>

The Offset Project Registry will evaluate the COI and determine whether the verification body may perform offset verification services (§95987(c)). The verification body and OPO/APD may move forward with offset verification services before the Offset Project Registry approves the COI, however, this is at the risk of the verification body and OPO/APD. It is recommended that the verification body submit the COI information to the Offset Project Registry sufficiently in advance of beginning offset verification services so that the verification body can receive approval from the Offset Project Registry before moving forward with offset verification services.

After the COI information is submitted, the Offset Project Registry reviews and evaluates the information to determine whether the verification body's level of risk of COI associated with the OPO and APD meets the regulatory requirements to allow offset verification activities to proceed. ARB will also receive the COI self-evaluation submitted and will notify the verification body if there are any concerns; however the verification body does not have to wait for ARB's evaluation before moving forward with offset verification services.

The Offset Project Registry will notify the verification body if the COI information is not complete. There is no timeframe specified in the Regulation for the Offset Project Registry to evaluate the verification body's potential conflict of interest with the OPO and APD. ARB recommends that the Offset Project Registry review the COI as soon as possible so that the verification body may move forward with offset verification services at a reduced risk.

- If there is a **high** potential for COI, **verification services may not proceed.**
- If there is a **low** potential for COI, **verification services may proceed.**
- If there is a **medium** potential for COI, the verification body **must submit a plan to avoid, neutralize, or mitigate** the potential COI to the Offset Project Registry and the Offset Project Registry must approved the mitigation plan.

Once the potential for COI has been reviewed by the Offset Project Registry, it will notify the verification body in writing of its determination. If there are any changes to the offset verification team, the verification body must resubmit the COI form to the Offset Project Registry and ARB. If a conflict of interest occurs after the commencement of offset verification services, the verification body must immediately disclose this information to the Offset Project Registry and ARB (§95979(f)(1)). The verification body is required to monitor for potential conflict of interest situations for one year after the completion of offset verification services for an offset project (§95979(f)(2)). If the verification body anticipates that a conflict of interest will emerge during the offset verification services, it must notify ARB and the Offset Project Registry within 30 calendar days (§95979(f)(3)).

ARB will provide a COI form to assist in submitting the required information. This form can be found by going to the ARB Cap-and-Trade website:

<http://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>

2.2.6. Percentage of Fee

Section 95979(c) states that COI will be deemed to be low where there is no high COI, and where any non-verification services provided by any member of the verification body to the OPO or APD in the last five years are valued at less than 20 percent of the proposed fee for offset verification services, except where medium COI related to personal or family relationships is identified pursuant to §95979(d). Therefore, §95979(e)(3)(B)(3.) and (5.) require specific information regarding the cost of past services provided by the verification body to the OPO or APD.

$$\% \text{ of fee} = 100\% * (\text{sum of fees or estimated value for all services provided to OPO and APD from any member of the verification body in past five years}) / (\text{proposed fee for current offset verification})$$

If the % of fee is greater than 20%, the potential for COI cannot be low.

2.2.7. Rotation of Verification Bodies

Section 95977.1(a) of the Regulation requires that the OPO/APD not have more than six consecutive years of offset project data verified by the same verification body or verifier(s) to avoid potential COI issues from a lengthy business relationship. This is applied at both the verification body and individual verifier levels. In addition, the OPO/APD may only contract with a previous verification body or verifier(s) if at least three years of offset project data have been verified by a different verification body or verifier(s) before the previous verification body is selected again. This allows a verification body to remain impartial with each of their clients. This requirement will reduce complacency that may occur given the comfort and familiarity a verification body may develop with an OPO/APD's Offset Project Data Report Review after successive review. Verification bodies are also not allowed to use any subcontractors that have been involved with the OPO/APD for more than six years. The six year rotation requirements and the three year waiting period also apply to any subcontractors that may be on the offset verification team for an OPO/APD.

2.2.8. Examples of COI Situations

There is no way to specify every COI situation that may exist. Below are a few examples of possible COI situations, with discussions and ARB findings based on regulatory requirements.

Example 1 – High Risk COI: Verification Body Employee Previously Assisted OPO/APD Develop a GHG Inventory While Working for a Different Company

An employee of a verification body assisted in developing a GHG inventory for an OPO or APD two years ago while that employee was working for a different company. The verification body has not previously had any business relationships with the OPO or APD and wants to verify the OPO/APD's Offset Project Data Report. Is there a conflict of interest in this case, and can the offset verification services proceed?

Discussion: As stated in 95979(b)(2), there is automatically a high COI if any staff member of the verification body has provided any of the listed services within the last five years. As a result, there would be a high COI between the verification body and the OPO or APD. It does not matter by whom the staff member was employed at the time the high-risk services were provided, and isolating the staff member in question from the verification team would not be sufficient to mitigate the potential for COI in this case. The offset verification services could not proceed in this example.

Recommendations: ARB recommends that verification bodies have sufficient procedures in place to identify not only all past work the verification body has provided for a potential verification client, but also work that staff members conducted for the OPO or APD while employed by other organizations within the last five years. Not all past work with an OPO or APD constitutes a high COI, but verification bodies will need to be aware of and disclose all past work with the OPO or APD so that the potential for COI can be identified, and if possible, mitigated.

Example 2 – High Risk COI: Verification Body did prior CEQA Evaluations for the OPO or APD

Within the past three years, the verification body was responsible for reviewing an environmental analysis for a project implemented by an OPO or APD under the California Environmental Quality Act (CEQA). Members of the verification body specifically reviewed the calculations to account for GHG impacts, mitigation plans for managing GHG impacts, and suggested and reviewed alternative methods to reduce those impacts. Is there a COI? Can the offset verification services proceed?

Discussion: When a verification body has conducted a CEQA analysis that includes an evaluation of GHG emissions, impacts and/or mitigation, this would result in a high COI under §95979(b)(2)(B) of the Regulation. CEQA climate change impacts analysis is considered greenhouse gas related engineering analysis, and creates a high COI. The offset verification services could not proceed in this example.

Recommendations: Since no offset verification services can take place between an OPO or APD and a verification body where there is a potential for high COI, ARB

recommends verification bodies be aware of their entire company's prior consulting work as well as the consulting work of any subcontractors hired on this job and avoid verification in any instance where CEQA analysis or other potentially high COI work has taken place.

Example 3 – Medium Risk COI

In the past five years, a verification body has conducted non-greenhouse gas related consulting services for an OPO or APD for a total fee of \$7,000. The services were not any of the specified high-risk activities listed in §95797(b)(2). The verification body is now proposing to verify the OPO/APD's Offset Project Data Report for \$10,000. Is there a conflict of interest in this situation, and what actions may be taken for the offset verification to proceed?

Discussion: As long as the consulting services provided to the OPO or APD do not include any activities designated in the Regulation as high risk, the potential for COI would generally be medium. The potential for COI would only be low if the past services were valued at less than 20% of the proposed offset verification fee. In this case, they constitute 70% of the proposed fee (\$7,000 / \$10,000), so the COI would be medium.

A medium potential for COI requires a mitigation plan for the offset verification to proceed. This would include isolating any individuals who have provided consulting services to the OPO or APD in the past from the offset verification team.

Recommendations: ARB recommends that verification bodies develop procedures for isolating individuals with medium potential for COI from an offset verification team. In general, no offset verification team members, including subcontractors, can have provided any services to the OPO or APD within the last five years. Individuals that have provided non-high risk services must be isolated from the offset verification team (§95979(d)).

Example 4 – ISO Management System Development

A verifier works for a verification body that has conducted ISO management system development. Would this create a high, medium, or low conflict of interest?

Discussion: This will depend on the scope of the ISO management system development. If it does not encompass any of the specifically identified high COI tasks in section 95979 of the Regulation, including ISO 14001 certification, it would be likely be medium. If the development includes any of the identified high COI tasks, the COI would be high and the verification body would be precluded from performing the verification.

Recommendations: The verification body should disclose the relationship on the conflict of interest self-evaluation form and describe the services provided. Unlike with a medium conflict of interest, high risk services cannot be mitigated and all employees of the verification body are prohibited from doing any offset verification work a high conflict of interest. The verification body may consult ARB and the Offset Project Registry to help determine how to classify the services that were provided under ISO.

Example 5 – OPOs or APDs who Hire a Company to Prepare their Offset Project Data Report

An OPO or APD contracts a consulting company to prepare and submit their Offset Project Data Report to an Offset Project Registry. The OPO or APD then contracts a verification body to perform offset verification services. Additionally, the consulting company and the verification body have a previous business relationship. Is there a conflict between any of the parties?

Discussion: ARB's COI policy stipulates that there is not to be any conflict or potential COI between the OPO or APD and the verification body. As long as the verification body's prior business relationship with the consultant has nothing to do with this offset verification, there is no obvious conflict for these purposes.

Recommendations: If the verification body and the consultant have an ongoing business relationship, it is recommended they take precautions to insulate the overlapping portions of their businesses and these situations where they are associated with different parties involved in an offset verification.

Example 6 – OPOs or APDs who Contract a Company to Facilitate their Contracts

An OPO or APD hires a company for the sole purpose of acquiring and facilitating contractual relationships for them. The contracting company hires both a consultant to prepare the Offset Project Data Report for the OPO/APD and a verification body to carry out verification services for them. Is there any potential for conflict between the verification body and either the contracting company or consulting company?

Discussion: Assuming that the verification body has assessed a low risk with the OPO and APD, offset verification services may occur. However, because the contracting company is acting as an agent of the OPO/APD, the verification body must evaluate conflict with the contracting company, in addition to the OPO and APD, and maintain a conflict-free status with the contracting company as well.

Recommendations: If the verification body has any prior or ongoing relationships with either the contracting company or the consulting company, they should take steps to

insulate those business obligations from the offset verification services for this OPO/APD.

Example 7 – Previously Undisclosed Conflict is Discovered During a Verification

A verification body provides its COI information to an Offset Project Registry stating that they have low conflict with the OPO and APD for which they are performing offset verification services. The Offset Project Registry reviewed the information and concurred with the self-evaluation. During the offset verification process, a high conflict is discovered between the OPO or APD and verification body.

Discussion: When filing COI information with an Offset Project Registry, the verification body is always expected to perform its due diligence thoroughly. However, there may be times when new information is discovered during the offset verification. Under §95979(f)(1), the verification body is required to monitor its COI. If the verification body determines that there is a potential COI, it is the obligation of the verification body to make full disclosure to the Offset Project Registry in writing. The disclosure must include a description of actions taken or proposed to be taken to avoid, neutralize or mitigate the potential COI. When emerging potential conflicts arise during offset verification services according to §95979(f)(3), it is the obligation of the verification body to notify ARB and the Offset Project Registry within 30 days. This provision applies if during offset verification services an emerging COI is found. If the Offset Project Registry determines that the potential COI is high or medium, and if medium the conflict cannot be mitigated, the verification body will be unable to continue providing offset verification services for that OPO and APD. The verification body may also be subject to suspension or revocation of accreditation by ARB. If the Offset Project Registry determines that the potential conflict is low or medium, and if medium the conflict can be mitigated, the verification body can continue to provide offset verification services for that OPO/APD.

Verification bodies that fail to disclose conflicts are in violation of the Regulation and may be subject to enforcement action, including rescinding accreditation of the verification body, its verification staff, and its subcontractor(s) (§95979(f)(6)).

Recommendations: Late discovery of conflict is troublesome and potentially costly to both the verification body and the OPO/APD, and this example underscores the importance of thorough COI self-evaluations by the verification body. There may be serious consequences for failing to identify and disclose a potential COI, but ARB understands that mistakes can sometimes be made and the consequences will be minimized when verification bodies follow their legal obligation to disclose any new potential conflicts that emerge.

Example 8 – Emerging Conflict after Offset Verification Services are Complete

What obligation does a verification body have to monitor potential COI after the Offset Verification Statement has been issued? For example, what would happen if a verification body enters into a consulting contract with the OPO or APD? What if a member of the offset verification team leaves and is hired by the OPO or APD?

Discussion: The verification body has an obligation to monitor emerging COI for a period of one year after completing offset verification services (§95979(f)(2)). The verification body must notify ARB and the Offset Project Registry within 30 days of entering into any new contract with an OPO or APD for which it provided offset verification services within the previous year (§95979(f)(2)).

Depending on the nature of the conflict, ARB may void a verification finding, and the accreditation of the verifier and the verification body may be rescinded (§95979(f)(6)). For instance, entering into any contract for an activity that constitutes a high risk for COI under §95979(b) may result in the Offset Verification Statement being voided. Entering into a contract for any activities not designated as high risk would require a detailed disclosure submitted to ARB and the Offset Project Registry (§95979(f)(2)).

A member of the offset verification team being hired by the OPO or APD within a year would constitute a high risk that may necessitate voiding the offset verification finding and the individual's accreditation. ARB recognizes that the verification body would have little control over such a situation, but the OPO or APD may then be required to have their Offset Project Data Report re-verified by a different verification body.

Recommendations: The verification body should be very cautious about entering into any kind of consulting arrangement with the OPO or APD. If a conflict is found, the Offset Verification Statement may be voided and the verification body and any verifiers involved may be at risk of having their accreditations revoked.

2.3. Offset Verification Timeline

The Regulation provides a flexible timeline for offset verification. The Regulation includes rolling reporting and verification deadlines, as opposed to the fixed deadlines of the MRR. The annual Offset Project Data Report must be submitted within 4 months of the end of the Reporting Period. Offset verification must be finished within 9 months of the end of the Reporting Period for which offset verification services are being performed. Offset verification services conclude when the verification body has submitted the detailed verification report and the Offset Verification Statement to the Offset Project Registry. The Offset Project Registry may request changes to these documents based on their review; however, those may be addressed after the conclusion of the 9 months, if necessary. The verification body should work to address

any issues or provide clarification to the Offset Project Registry as quickly as possible so that the Offset Project Registry may make a determination on crediting. Although the deadlines in the Regulation are designed to provide flexibility, the logistics of procuring an offset verification body, providing COI and NOVS information, and working through possible correctable conformance issues place a time constraint on both the OPO/APD and the offset verification team.

To more fully understand all of the elements that affect this timeline, consider an example of an offset project in which the Reporting Period ends February 1. Technically, under the Regulation the OPO/APD of this project has until June 1 to submit its annual Offset Project Data Report. For our example, the OPO/APD submits its Offset Project Data Report early on April 1. Assuming the OPO/APD begins the verifier selection process in January, it will take several weeks to research verification bodies, solicit bids, and choose a verification body and finalize contracts. If the verification body is chosen by March 1, they will take a number of days to file the COI and NOVS information. While the COI does not need to be approved before beginning offset verification services, ARB recommends it be submitted to the Offset Project Registry far enough in advance of beginning offset verification services to ensure that the Offset Project Registry has time to approve the COI before activities begin. The NOVS must be submitted at least 10 working days prior to start of verification services (§95977.1(b)(1)). For this example it is possible that offset verification services could begin as early as mid-March (some verification activities can begin prior to Offset Project Data Report submissions; however, the verifier must be careful not to consult). In this case the verification team has slightly over 7 months, or until November 1 to conduct offset verification services. Because the OPO/APD began the verification body contracting process early and had compiled the data required for the Offset Project Data Report early, the offset verification team has 2 extra months to conduct its verification (7 months instead of 5 months).

If the OPO/APD has waited the full four months (i.e., until June 1) to submit the Offset Project Data Report and contract with a verification body, the offset verification timeframe could be even more condensed while the verification body plans activities and submits the necessary COI and NOVS information.

Because verification is an iterative process, all parties are urged to consider the amount of time that will be spent gathering information and fixing correctable issues. To avoid missing the verification deadlines, ARB strongly recommends that OPO/APDs plan ahead by securing their verification body well in advance of their reporting deadlines. It is recommended that verification bodies submit their COI information as soon as possible, upon commencing their contract with the OPO/APD or before, ensuring they update them as often as needed, to avoid further delay in performing offset verification services.

CHAPTER 3. Verifying Offset Project Eligibility

Offset projects must meet both the requirements in the Regulation and applicable COP. The Regulation includes specific criteria that must be met to be an eligible offset project. Many of these criteria can be found in §95973 of the Regulation, while others can be found in the remainder of Subarticle 13 and in the applicable COP. Each COP is approved based on general criteria in the Regulation (section 95972) and contains specific requirements that offset projects of that type must meet. The COPs expand on general requirements in the Regulation.

Some aspects of eligibility of the offset project will be looked at by the Offset Project Registry at the time of listing; however, the offset verification team must also check these requirements at the time of the first offset verification, or for any offset project seeking a renewed crediting period. These eligibility criteria are best evaluated at the beginning of the process to ensure that the verification body is not wasting time and money on verification activities for a non-eligible offset project.

3.1. Validation

In many offset systems, the check on the eligibility requirements is often a separate validation step. ARB has combined this step into the first year of verification to streamline the compliance offset program. The first verification performed provides assurance that the offset project has been set up to conform to the requirements of the Regulation and the applicable COP. All of the eligibility criteria must be confirmed and are not subject to sampling; each of the criteria must be checked by the offset verification team.

There are specific things that offset verifiers will need to check during the first verification to ensure that the offset project meets the requirements of the Regulation and applicable COP. These include all the requirements listed in §95977.1(b)(3)(D)(1.) and (2.) of the Regulation. These requirements are discussed in more detail in Section 5.3.1 of this guidance document.

3.2. Identifying the OPO and APD

An *Offset Project Operator* is the entity, or entities, with the legal authority to implement the offset project. This can be applied in the following manner, which is not meant to be an exclusive list. If there is any question about who has the legal authority to implement the offset project, contact ARB.

- Livestock Projects – The OPO may be:
 - The actual owner of the property; and/or
 - The owner of the digester control technology.

If there are other owners or parties that have interest in the offset project or activities associated with the offset project, the OPO may wish to have external third-party contracts with these parties to establish ownership associated with the offset project and/or the offset credits. If the OPO is an owner of the control technology as opposed to the landowner, the verification body may verify ownership through contracts established between entities.

- ODS Projects – The OPO may be:
 - The owner (can be the purchasing party) of the ODS material; or
 - A party arranging for the destruction of ODS gas on behalf of ODS gas owner(s).

No matter who the OPO is, that person must have, or be able to provide, point of origin documentation, even if they are not the party that owns the ODS gas. If the OPO is the party arranging for the destruction of the ODS gas there may be multiple sources and owners of the ODS gas that will be lumped into one destruction event. The party arranging for the destruction of the ODS gas may have external third-party contracts with the owners of the ODS gas to establish ownership associated with the offset project and/or the offset credits.

- Urban Forestry Projects – The OPO may be the municipality, utility or educational campus.
- Forest Offset Projects – For forest offset projects there may be multiple forest owners. For instance, aspects of a forest offset project, such as soil carbon, which is included as a required pool in the case of intensive site preparation, may extend beyond the scope of timber rights. Entities that have ownership of non-timber rights within the project area likely will have some control over activities that may affect forest management or carbon sequestration. Given all the potential variables and entities that may share ownership or an interest in the property, a single forest owner must be designated as the Offset Project Operator, and that forest owner will have the primary responsibility for managing the forest project in conformance with the protocol and the Regulation, while all forest owner(s) will still share responsibility for all commitments associated with the forest offset project.

The definition of “forest owner” designates owners of “real” property in the forest as forest owners. In some cases, this could be the fee holder or timber rights holder. When designating one forest owner for purposes of the Offset Project Operator, the forest owner(s) may define in private contracts any specific roles and responsibilities for implementing a forest offset project, including which party(ies) will assume liability for certain parts of the project implementation.

However, the Regulation does not specify the roles and responsibilities of specific private parties with interest in the forest project, land, or rights, except to note that all forest owners are ultimately responsible for compliance with the Regulation and COP. As such, the specific designation of roles and responsibilities is left up to the private parties with interests in the forest project, land, or rights. Depending on the circumstance, ARB has the ability to assess liability against all forest owners associated with a forest offset project.

Offset Project Operators are required to register with ARB, list offset projects, monitor and report, contract for verification services, and provide information, documentation, and attestations to ARB. Some of these duties may be delegated to an Authorized Project Designee.

3.3. Project Definition

An offset project is a specific activity or a set of activities that reduce GHG emissions or sequester additional carbon (remove carbon from the atmosphere). Every COP clearly defines the type of activity (or activities) that constitute an offset project for that project type. The offset verification team will want to look at the “Offset Project Definition” section in the applicable COP to confirm this information.

3.4. Compliance Offset Protocols

New offset projects must be developed according to approved COPs. A list of approved COPs can be found on ARB’s website:

<http://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>.

3.5. Offset Project Location

Each COP establishes where offset projects using the protocol can be located. Some COPs may have a limited geographic scope due to lack of available data for establishing accurate emission factors or quantifying GHG reductions or removal enhancements in a particular geographic area. Section 95973(a)(3) of the Regulation establishes that offset projects must be located in the United States and its Territories, Canada, or Mexico, although the COPs may further limit this location requirement. For

example, Compliance Offset Protocol Livestock Projects, October 20, 2011 is only applicable in the United States and may not be used in Canada or Mexico.

3.6. Offset Project Commencement Date

The Regulation requires that the Offset Project Commencement date for offset projects be after December 31, 2006, unless otherwise specified in the applicable COP. For example, a COP may specify a later Offset Project Commencement cut-off date. Offset verifiers should look at the requirements in Section 3 of the applicable COP for rules regarding Offset Project Commencement for the offset project type.

Note: There is one exception in the Regulation for allowing an Offset Project Commencement date before December 31, 2006. If the project came into the compliance offset program as an early action offset project and later transitions to a COP that offset project may have an Offset Project Commencement date before December 31, 2006 (see section 95973(c) of the Regulation). For more information on early action projects please see Chapter 6 of the Instructional Guidance Document, which can be found here:

<http://www.arb.ca.gov/cc/capandtrade/guidance/chapter6.pdf>.

CHAPTER 4. Quantifying GHG Reductions and GHG Removal Enhancements

Chapter 4 focuses on important information for offset verifiers related to quantifying GHG reductions and removal enhancements achieved by an offset project. This chapter deals with establishing project baseline emissions and actual project emissions (or sequestration). Both of these are needed in order to determine the number of GHG reductions and removal enhancements that are achieved by the offset project.

GHG reductions and removal enhancements are quantified by comparing actual project emissions (or sequestration) to a project baseline. Project baseline emissions (or sequestration) are those that would have occurred in the absence of the offset project. Actual project emissions (or sequestration) are the actual emissions (or sequestration) that occurs within the offset project boundary after the implementation of the offset project or activities. Simplistically, for non-sequestration projects, actual project emissions must be subtracted from the project baseline emissions in each Reporting Period to quantify the net GHG reductions from the offset project. For sequestration projects, the initial carbon stocks present in the project baseline scenario must be subtracted from the actual amount of carbon that the offset project sequestered in each Reporting Period to quantify GHG removal enhancements for each Reporting Period.

4.1. Project Baseline Emissions

ARB uses standardized methods to calculate project baselines. Each COP provides requirements for how to calculate project baseline emissions (or sequestration) for that offset project type.

The verification of the first Offset Project Data Report is extremely important because it serves as a validation step in the offset project crediting process. During the first verification, the offset verification team will want to closely assess project baseline emissions (or sequestration) to ensure the baseline is set accurately and conforms to the requirements of the Regulation and COP. Depending on the project type, project baseline emission (or sequestration) estimates may either be fixed at the outset of a project, or they may be regularly updated using actual data collected during the offset project's operation (used to infer baseline conditions). Therefore, it is extremely important that the offset verification team assess these inputs and calculations with great care. It is also important for the offset verification team to review the baseline emissions (or sequestration) for each year that it performs offset verification services, to ensure that no errors, omissions, or discrepancies were previously overlooked. It is even more important for any new verification body to fully review the baseline emissions (or sequestration) for an offset project during that verification body's first verification of

the project. This will ensure that the new verification body has a full understanding of the inputs and calculations used to estimate baseline emissions (or sequestration).

4.2. Actual Project Emissions

Actual project emissions are quantified based on as much actual measurement as possible. In the case of some project types, such as forestry, modeling and sampling must be used to calculate actual project emissions (or sequestration). Each COP specifies how to calculate actual project emissions (or sequestration) for an offset project of that type. Offset verifiers will want to make sure that these methods are used.

4.3. Calculating GHG Reductions and Removals

GHG reductions and removal enhancements are calculated by periodically comparing project baseline emissions (or carbon stocks) to actual project emissions (or sequestration) over a specified period of time.

4.3.1. Non-sequestration Projects

In general, for non-sequestration projects the GHG reductions are equal to the project baseline emissions minus actual project emissions.

GHG reductions are achieved when the actual project emissions are lower than the calculated project baseline emissions over that period of time.

4.3.2. Sequestration Projects

In general, for sequestration projects the GHG removal enhancements are equal to the incremental amount of carbon actually sequestered (actual project sequestration) minus the incremental amount of carbon expected to be sequestered under the baseline scenario (project baseline sequestration).

GHG removal enhancements are achieved when the offset project results in carbon sequestration that exceeds the amount of carbon that was determined to be stored in the baseline scenario.

CHAPTER 5. Core Offset Verification Activities

Chapter 5 provides the offset verification team members with information regarding the Regulation's requirements for conducting the core offset verification activities, including developing an Offset Verification Plan, developing a sampling plan, conducting site visits, and conducting data checks. Chapter 3 also contains a discussion of potential issues that could lead to offset material misstatement. More information about specific project types can be found in the Frequently Asked Questions documents by project type on ARB's webpage.

5.1. Planning – Initial Review of Systems and Processes

The first step in the development of an Offset Verification Plan is to obtain some basic information from the OPO/APD. An information review provides the offset verification team the initial opportunity to review the offset project related data and assess where to focus offset verification efforts.

Table 5-1 provides a list of information and documents that, at a minimum, could be reviewed both in the initial planning and during the detailed offset verification activities by the offset verification team to assess potential risks for errors and omissions when developing an Offset Verification Plan.

Table 5-1: Items to Consider about Data Management Systems

Topic	Activity/Document Review
Data Management Systems	Gather sufficient evidence/documentation <ul style="list-style-type: none"> • Written procedures – Data collection, data entry, information management, QA/QC, etc. • Inventory plans, sampling plans, modeling plans. project plans, layout maps, plot maps, site plans • Identify point of data aggregation (field office, headquarters, consultant, OPO/APD) • Evaluate the management system and parameters that are tracked • Inspect data acquisition and handling system (calculation spreadsheets, imbedded algorithms and equations, modeling) • Information process flows (traceability of data) • Conduct interviews and examine documents and records (relevant correspondence)

	<ul style="list-style-type: none"> Observe staff and systems during daily operations where possible
Responsibilities for Developing and Implementing the Offset Project Data Report	<p>Each COP specifies what needs to be done for developing and implementing the Offset Project Data Report:</p> <ul style="list-style-type: none"> GHG sources, sinks, and reservoirs to include Documentation requirements Plans Calculations, equations, models
Training	<p>Training manuals and records and training course materials</p> <p>Standard operating procedures manual</p> <p>Consultant qualifications statement</p> <p>Monitoring plan/protocols</p>
Methodologies	<p>Evaluate calculation methodologies for conformance with the Regulation and applicable COP</p> <p>Equations and emissions factors used</p> <p>Sampling</p> <p>Models</p> <p>QA/AC plans for data collection systems</p>

5.2. Offset Verification Plan

The Offset Verification Plan will provide a roadmap for conducting offset verification activities by outlining the specific activities to be conducted during offset verification services and identifying the expected timeline for completion of each activity.

Developing an Offset Verification Plan is a required element of every verification, and specific requirements are addressed in sections 95977.1(b)(3)(B)(1.)-(4.). Offset Verification Plans may vary according to the approach of a verification body, the offset project type, the size and complexity of the offset project, and the GHG sources, sinks, and reservoirs within the offset project boundary. This guidance contains some key elements that must be included in every Offset Verification Plan.

Before developing the Offset Verification Plan, the offset verification team is required to obtain and review the following information:

- Information to allow the offset verification team to develop a general understanding of offset project boundaries, project baseline emissions, and annual GHG reductions and removal enhancements;

- Information regarding the training or qualifications of personnel involved in developing the Offset Project Data Report;
- The name and date of the COP used to quantify and report project baselines, GHG reductions and removal enhancements, and other data required in the COP; and
- Information about any data management systems, offset project monitoring systems, sampling, and models used to track project baselines, GHG reductions and removal enhancements, and other required data as applicable in the COP.

A review of the preceding information will enable the offset verification team to develop a sufficient understanding of an offset project so that they are able to effectively scope out the offset verification activities. The Offset Verification Plan itself will identify expected dates of meetings, site visits, completion of offset verification services, and other relevant dates at the verifier's discretion. The plan must also include a description of the types of document and data reviews to be conducted during the verification. (section 95977.1(b)(3)(A)(1.)–(4.)). The description of these reviews in the Offset Verification Plan may involve a “high level” discussion; the detailed descriptions of specific document and data reviews will be included in the sampling plan and addressed through the data checks. At a minimum, sections 95977.1(b)(3)(A)(1.)–(4.) require the Offset Verification Plan to contain the following information:

- Dates of proposed meetings and interviews with personnel related to the offset project;
- Dates of proposed site visits;
- Types of proposed document and data reviews; and
- Expected date for completion of the offset verification services.

In order to fulfill the verification requirements of the Regulation, ARB recommends the offset verification team also discuss the scope of the offset verification services with the OPO/APD and request any information and documents needed for initial offset verification services. This may be conducted during an initial kick-off meeting or phone call with the OPO/APD. The Offset Verification Plan can be adjusted once the OPO/APD has provided the necessary preliminary information. *The Offset Verification Plan is a living document and should be modified or updated as the verification progresses, such as if a date of a meeting or site visits changes.*

5.3. Site Visits

The Regulation requires a site visit for an offset project following a Reporting Period in which full verification services are required or the OPO/APD elects to complete a full verification. A site visit is optional during less-intensive verification. For each project type the expertise of the project specific specialist will be essential for conducting a successful site visit. The offset verification team may decide that more than one site visit is needed to gain access to the personnel, to review original documents, to sample plots, or to evaluate conformance of monitoring equipment involved in developing the Offset Project Data Report. It is important to note that offset verifiers should always confirm information given to them by the OPO/APD by reviewing original documents and triangulating the information with a third source of information such as a regulatory agency or website. Offset verifiers may not solely rely on attestations and statements made or provided by the OPO/APD to verify information. The offset verifiers should always seek additional sources of information that will confirm the information and statements provided by the OPO/APD.

5.3.1. Site Visit Planning

A successful site visit begins with effective planning. Time onsite may be limited, and the offset verification team will want to maximize use of its time so that it is able to complete all of the required verification tasks and gather other relevant information. In preparation before the site visit, the offset verification team should begin with a background review of the offset project's operations and GHG sources, sinks, and reservoirs. To do this the offset verification team may want to focus on the Offset Project Data Report(s) to be verified and any past reports, but also look at other relevant documents (see Table 5-2). For example, inspecting water or building permits can aid in determining regulatory requirements that the OPO/APD must meet. Making an inventory list of GHG sources, sinks, and reservoirs, measurement devices, equations, models, or other checklists that could aid in verification while on site is also recommended. This type of review may be conducted as part of the Offset Verification Plan and sampling plan preparation.

The size and complexity of offset projects will vary, and ARB does not specify a minimum amount of time that the offset verification team should spend on site. Professional judgment will be required to ensure a thorough offset verification is completed and that the verification body can issue a verification opinion based on reasonable assurance. The preparedness of the OPO/APD and offset verification team, the number of offset verification staff onsite, and the amount of work the offset verification team chooses to do onsite as opposed to in the office, will also affect the length of the site visit. ARB expects that site visits for more complex project types such as forestry may take longer than site visits for project types such as ODS, with more

than one offset verifier and the required project type specific expert present. When planning a site visit, the offset verification team must allow enough time on site to complete required activities such as reviewing the offset project boundary, project baseline calculations and modeling, inventory of GHG sources, sinks, and reservoirs, data measurement and management systems review, interviews, and data collection. The forestry protocol has the additional requirements for sampling that specify when sampling is completed. This may be hard to determine in advance due to the fact that it will be influenced by the accuracy of the original sampling.

Before the site visit, the offset verification team is strongly encouraged to discuss the scope of the onsite activities with the OPO/APD, including any proposed meetings and interviews with the offset project related personnel. If data is housed separately or part of the offset project operations is located at a separate location, the offset verification team may find it necessary to visit multiple sites to review offset project operations and data management systems. Effective communication between the offset verification team and OPO/APD in advance will help to ensure the site visit goes smoothly. It is strongly recommended that the offset verification team provide the OPO/APD with a detailed agenda and list of expectations in advance, including data and documentation that the team will want to review while onsite, plots to be sampled to speed identification, and personnel to be interviewed. This will enable OPO/APDs to make the preparations necessary to ensure that the offset verification team is able to meet with all appropriate offset project related staff and have access to all necessary data, documents, facilities, and sites in order to conduct the required offset verification activities. This will also improve the efficiency of how time is spent onsite because time at the offset project is generally limited, and many records can take a significant amount of time to retrieve if the OPO/APD does not have advanced notice of the types of data that will need to be available. If the offset verification team wants to have access to staff with expertise in particular areas relevant to the offset verification, it will need to coordinate with the OPO/APD to ensure the staff is available during the site visits.

While the sampling plan does not need to be completed before the site visit, it is highly recommended that the offset verification team conduct a preliminary risk assessment (based on the quantity of GHG reductions or removal enhancements and degree of uncertainty) to the extent possible so that the offset verification team has a plan for what GHG sources, sinks, and reservoirs to investigate in more detail while onsite. The offset verification team is also strongly encouraged to review project baseline, GHG reduction and removal enhancement calculation methods, and measurement techniques for conformance with the Regulation to the extent possible before going onsite to help inform investigations while on site. Preparation of a sampling schedule in advance can allow for better optimization of the limited time onsite.

In section 95977.1(b)(3)(D)(1.), the offset verification team is required to conduct the following activities during the initial site visit:

- Assess offset project eligibility and ensure the offset project meets the eligibility requirements in section 95973 and the applicable COP;
- Review the information submitted for listing as specified in §95975;
- Confirm that the offset project boundary is appropriately defined;
- Review project baseline calculations and modeling;
- Assess the operations, functionality, data control systems, and review GHG measurement and monitoring techniques; and
- Confirm that all applicable eligibility criteria to design, measure, and monitor the offset project conform to the requirements of the Regulation and applicable COP.

In section 95977.1(b)(3)(D)(2.), the offset verification team is required to conduct the following activities during the initial and each subsequent site visit:

- Check that all offset project boundaries and GHG sources, sinks, and reservoirs in the applicable COP are identified appropriately;
- Review and understand the data management systems used by the OPO/APD to track, quantify, and report project baselines, GHG reductions and removal enhancements, or other data required as applicable in the applicable COP. This includes reviewing data collection processes and procedures, sampling techniques and metering accuracy, quality assurance/quality control procedures and processes, and missing data procedures. The offset verification team member(s) must evaluate the uncertainty and effectiveness of these systems;
- Interview key personnel involved in collecting offset project data and preparing the Offset Project Data Report;
- Make direct observations of equipment for data sources and equipment supplying data for GHG emission sources in the sampling plan determined to be high risk;
- Collect and review other information that, in the professional judgment of the team, is needed in the verification process;
- Confirm the offset project complies with all local, state, and federal regulatory requirements as specified in the applicable COP, including health and safety regulations; and

Note: The review of compliance with laws and regulations performed by the offset verification team is only limited to those activities, equipment, or practices that are directly related to the offset project activities for all project types except ODS projects. The offset verification team is not responsible for enforcing any requirements or independently making a determination about whether the project is in violation of any requirements. The offset verification team should conduct a review to see which local, state, and national laws and regulations are applicable to the offset project activities in the jurisdiction in which the project is located and ensure that there have been no violations issued by a government body for non-compliance with the carrying out of the offset project activities. If, for example, at a digester project, a flaring device which is used for the destruction of the methane that is being credited under the COP has received a violation for not being properly permitted, the team would note in the issues log that there is a noncompliance with those regulatory requirements. However, if a violation has been received for dairy equipment related to processing milk, that violation would be outside the scope of the offset project activities and would not be relevant to assessing noncompliance or nonconformance under the Regulation because the dairy operations do not directly affect the operation of the offset project and the destruction of the methane that could ultimately be issued credit by ARB.

- Review all chain of custody documents required by the COP.

Note: The last two items of this list may also be conducted as part of a desk review (section 95977.1(b)(3)(D)(2.)(i.)).

5.3.2. GHG Sources, Sinks, and Reservoirs Inventory Review

Each COP has a list of GHG sources, sinks, and reservoirs and identifies them as included or excluded in the offset project boundary. To verify that all applicable GHG sources, sinks, and reservoirs have been correctly reported, the offset verification team will likely need to conduct a walk-around of the offset project, interview staff, and review project diagrams, maps, and documentation. The offset verification team will also want to look for situations where the OPO/APD may have reported GHG sources, sinks, or reservoirs not required by the Regulation or applicable COP, incorrectly classified GHG sources, sinks, or reservoirs, or for potential double counting of reported GHG emission reductions and removal enhancements (such as an OPO/APD including GHG reductions or removal enhancements that occur outside the offset project boundary). When evaluating whether any GHG sources, sinks, or reservoirs have been omitted (or misreported), it will be helpful to review relevant documents such as process diagrams, air permits, maps, shipping documents, sales receipts, fuel invoices, log books, etc., and to conduct interviews with key staff on the offset project. Table 5-2 lists some

documents that will assist the offset verification team in determining if all GHG sources, sinks, and reservoirs have been correctly identified.

5.3.3. Data Management System Review

Data management systems consist of everything from how the raw data is collected to developing the project baseline and calculating the GHG reductions and removal enhancements achieved by the offset project. When reviewing an OPO/APD's data management systems, the offset verification team may consider:

- How is the raw data collected? How does it enter the data management system (automated or manually)?
- Is it sampled data from a logbook and typed in or is it electronically generated in the field?
- Is the original data available if it is not an automated system?
- How centralized is data management and processing at the offset project? Is data from different GHG sources, sinks, and reservoirs managed on different systems or is all required data tracked in the same system?
- Is one individual responsible for managing and reporting GHG reductions and removal enhancements? Is the individual qualified to perform this function?
- Who has access to and analyzes the data? Is there security to prevent it from being changed?
- Is appropriate training provided to personnel assigned to GHG reductions and removal enhancements reporting duties? Are the personnel responsible for data collection qualified?
- Have the appropriate reviews occurred? For example, an urban forest project requires review by a professional urban forester.
- If the OPO/APD relies on external staff to perform required activities, are the contractors qualified to undertake such work? Is there internal oversight to assure the quality of the contractor's work?
- What data security mechanisms are in place?
- What are the calculation methodologies, sampling techniques, or models used to calculate project baselines, and GHG reductions and removal enhancements at the project level?

- Are the emission factors and equations used to calculate project baselines and GHG reductions and removal enhancements found in the applicable COP? Does the data management system correctly capture data from different testing and sampling requirements? If the OPO/APD uses emission factors are they documented and appropriately used pursuant to the applicable COP?
- Does the system capture all the required GHGs from each source, sink, and reservoir category?
- Are procedures for data collection, modeling, processing, project baseline calculation and GHG reductions and removal enhancements calculation well documented? Are appropriate documents created to support and/or substantiate activities related to GHG emission reductions and removal enhancements reporting activities, and is such documentation retained appropriately?
- How transparent is the data management system?
- Are the models and equations used to estimate the project baseline and GHG emission reductions and removal enhancements appropriate for this purpose and allowed under the applicable COP?
- What parts of the system create the highest risk of introducing error or uncertainty into the project baseline and GHG reduction and removal enhancement calculations?

In evaluating the data management systems, the offset verification team needs to understand how data enters the system, understand where transformations or calculations are embedded within the systems, and assess the effectiveness and stability of these systems. Review of the data management system will inform the sampling plan and data checks. As part of the risk assessment for calculation uncertainty (section 95977.1(b)(3)(G)(3.)), offset verifiers should identify weaknesses in the systems that could lead to offset material misstatements or nonconformance in the Offset Project Data Report and document them in the issues log. Weaknesses in the data management system is not a nonconformance in itself, but shortcomings in the data management systems increase the likelihood that a nonconformance or offset material misstatement may be found in the Offset Project Data Report.

When reviewing the OPO/APD's data management systems, it is also pertinent to review the plans required by the relevant COP, such as sampling or modeling plans. Any concerns about the GHG inventory or procedures related to internal audit and review should be noted in the issues log. A weak or poorly documented inventory program or internal audit procedure would not directly result in a nonconformance;

however, weaknesses in these systems create a higher risk of nonconformance or offset material misstatement in the Offset Project Data Report.

Another issue relates to how complex it can become to track data from the OPO/APD's final GHG emission reductions and removal enhancements calculation spreadsheets back to the raw data. Not only may there be numerous GHG sources, sinks, and reservoirs involved, but there also may be multiple data layers associated with each GHG source, sink, or reservoir such that the final spreadsheet may have built upon multiple underlying spreadsheets and databases.

5.3.4. Review of Other Relevant Information

The offset verification team has discretion to gather any other information relevant to the offset verification while on the site visit. Table 5-2 lists some documents that will assist the offset verification team to determine if all GHG sources, sinks, and reservoirs have been correctly identified.

Table 5-2: Examples of Supporting Documents Relevant to Verification⁶

Information/Data Required	Possible Supporting Documentation
Review of GHG Reduction and Removal Enhancement Inventory	
General Documents	<ul style="list-style-type: none"> • Offset Project Data Report • Other relevant reports to local, state, or federal government, or other programs • Website of relevant local, state, and national environmental regulatory agencies to confirm regulatory compliance • List of permits related to the offset project • Offset project site maps, project plans, layout maps, plot maps • Listing documents submitted to the Offset Project Registry • Prior Offset Project Data Reports or verification documents • Corporate reports
U.S. Forest Projects	<ul style="list-style-type: none"> • Model documentation (modeling Plan, user's manual) • Sampling plan • Logbooks • Easements • Contracts • Governing jurisdiction's relevant laws, statutes, regulations and legally binding mandates may be identified in building, air, or water permits • Certifications – with description of process • Photos (ground, air, satellite) • Appraisals • Leakage risk assessment

⁶ Documentation reviewed while onsite should be original documentation.

	<ul style="list-style-type: none"> • US Forest Protocol Resources on ARB website • Sales contracts, receipts
Ozone Depleting Substances (ODS) Projects	<ul style="list-style-type: none"> • Lab tests, chemical analysis results • Point of origin and chain of custody documents • Destruction facility permits • Weigh tickets • Recovery Efficiency data • Fuel usage • Electric utility bills • Building foam documents • Appliance foam documents
Livestock Projects	<ul style="list-style-type: none"> • Livestock population counts • Purchase sales data • Weight data • Weather data • CEMS data extraction records • Meter logs (maintenance, calibration) • Meter readings • Digester logs • Lab tests, composition analysis results • Process flow/piping and instrumentation diagrams
Urban Forestry Projects	<ul style="list-style-type: none"> • GPS or GIS mapping • Tree Maintenance Plan • Municipality or utility budgets • Tree Monitoring Plan • Fuel usage • Equipment logs • Vehicle logs

These documents should all be original documentation, as required under the Regulation. Examples of other relevant information or activities to undertake while onsite might include:

- Interview the appropriate personnel, such as engineers or modeling experts, as well as staff involved in compiling data and preparing the Offset Project Data Report;
- Review contracts, and other **original** documents such as fuel bills, utility bills, log books, invoices, laboratory test results, to substantiate reported data and ensure that data sampling and monitoring are conducted as described in the Regulation and applicable COP;
- Make direct observations of equipment (meters, scales, and calibration equipment, etc.);
- Review calibration records for metering devices; and

- Assess conformance with metering requirements (metering records, installation location, operating conditions, calibration records and frequency, etc.).

Verifiers will need to use their professional judgment when determining both the quantity and nature of additional information to evaluate on their site visit, taking into account that the verification body must ultimately issue an Offset Verification Statement assessing for both offset material misstatement and conformance with the Regulation and applicable COP.

5.4. Sampling Plan

The offset verification team does not have to assess every piece of data that was used by the OPO/APD to generate the Offset Project Data Report; rather, the offset verification team will take a risk-based approach in verifying the report. This involves a targeted sample of the project baseline emissions, GHG reductions and removal enhancements calculations, data acquisition, data processing, and data management systems to check for offset material misstatement and conformance with the Regulation and applicable COP. The sampling plan will identify those GHG sources, sinks, and reservoirs, data systems, and processes that pose the greatest risks of potential offset material misstatement or nonconformance. The sampling plan should guide the offset verification team during the offset verification in selecting which data requires further evaluation. For example, the US Forest Protocol is prescriptive about how to determine reasonable assurance of certain carbon pools. The offset verification team must keep this in mind when creating the sampling plan. Because of this, some parts of this section may not be applicable for forest offset projects. Also, please note that the eligibility criteria assessed in the first year of verification of an offset project are not subject to sampling. Please see section 3.1 of this guidance document for more information on eligibility criteria.

The sampling is developed based on a strategic analysis of the inputs to the Offset Project Data Report, rigor of the relevant data management systems, detail and rigor of required plans, and the level of coordination within an OPO/APD's organization to manage the data and systems used to develop the Offset Project Data Report.

Fundamental to the process is the concept of risk. In the context of offset verification, the two factors that contribute to risk of offset material misstatement for a GHG source, sink, or reservoir are: 1) magnitude of GHG reductions and removal enhancements, and 2) calculation uncertainty. The latter category can be interpreted broadly to include uncertainties that measurements or modeling is accurate, that data management systems will produce an accurate result for the GHG source, sink, or reservoir and that the calculations were conducted accurately and using a method in conformance with the Regulation and COP. Calculation uncertainty can take into account anything that may

lead to the offset material misstatement of reported GHG reductions and removal enhancements.

Each sampling plan is required by sections 95977.1(b)(3)(G)(1.)-(3.) to include the following four items:

1. A strategic analysis developed from document reviews and interviews to assess the likely nature, scale, and complexity of the offset verification services, which includes a review of the inputs used for the development of the Offset Project Data Report, the rigor and appropriateness of data management systems, and coordination within the organization to manage systems to develop the report;
2. A ranking of GHG sources, sinks, and reservoirs by the amount of contribution of total CO₂e emissions, GHG reductions and removal enhancements;
3. A ranking of calculation uncertainty for GHG sources, sinks, and reservoirs; and
4. A qualitative narrative describing the uncertainty risk assessment, as applicable for the COP.

The second item requires the offset verification team to list every emitting activity or sequestration with the CO₂ emissions from highest to lowest. The third item will require both preliminary review and professional judgment. ARB does not expect that offset verifiers will be able to rank all the GHG sources, sinks, and reservoirs by uncertainty numerically for every offset project. Rather, offset verifiers should be able to rank in a relative sense what GHG sources, sinks, and reservoirs have relatively higher or lower risk of offset material misstatement for each offset project. This could be accomplished, for example, by ranking the risk as high, medium or low, or on a one to five scale. The purpose of this step is to ensure that GHG sources, sinks, and reservoirs with higher uncertainty are not neglected from subsequent sampling.

The **qualitative narrative** of the uncertainty risk assessment is an expanded synthesis of the information contained in the rankings, and includes more detail on specific risks. As stated previously, risk is based on the emissions or sequestration contribution of different GHG sources, sinks, and reservoirs, and the potential risks of offset material misstatement in the data acquisition equipment, data acquisition methods, data sampling and frequency, data processing, project baseline calculations, GHG reductions and removal enhancements calculations, data reporting, and management policies or practices. For example, in evaluating the uncertainty of the data acquisition equipment, a verifier may consider the type, age, and availability of maintenance records. For data processing, the verifier may consider how the data management system records and tracks data that supports GHG reductions and removal enhancements calculations (i.e. does it involve a simple spreadsheet with data entered

by hand, or direct readings from a data logger?). For data sampling, the verifier should consider the appropriateness of the methods used. The risk assessment in the sampling plan evaluates how much confidence rests with the underlying infrastructure that generates GHG reductions and removal enhancements data in order to target the sampling that will follow.

Pursuant to section 95977.1(b)(3)(G)(3.), the verifier must consider the following areas of risk when developing the risk narrative:

- Data acquisition equipment;
- Data sampling and frequency;
- Data processing and tracking;
- Project baseline and actual project GHG emissions, GHG reductions, and GHG removal enhancements calculations, including sampling and modeling;
- Data reporting;
- Calibration records of metering devices;
- Chain of custody requirements; and
- Management policies or practices in developing the Offset Project Data Report.

Sampling plans are dynamic; as relevant information becomes available and potential issues emerge relating to offset material misstatement or nonconformance with the Regulation and COP, the offset verification team may make changes to the sampling plan. Developing most of the sampling plan prior to conducting the site visit will be helpful to inform onsite reviews, such as determining which sampling methods, meters, data and systems to evaluate in greater detail. However, the site visit will provide the offset verification team with considerably more information, so it becomes an iterative process, and revisions to the sampling plan following the site visit will be necessary in order to describe how the result of the evaluation of the systems and items in the risk narrative, and if/how the sampling will need to be expanded. *The risk narrative should be updated at the end of the offset verification process to identify how each risk was addressed. The risk narrative must be provided in the detailed verification report.*

The focus on risk in the sampling plan requirements is designed to help target the offset verification team's efforts in a way that will maximize both the effectiveness and the efficiency of the offset verification process. Spending extra time on planning will pay dividends later by targeting the offset verification team's efforts to focus on GHG sources, sink, and reservoirs with the greatest potential to contribute to an offset

material misstatement or result in a nonconformance with the Regulation and COP. Pursuant to section 95977.1(b)(3)(H), after all of the risk assessments have been completed, the sampling plan should identify:

- A list of targeted GHG sources, sinks and reservoirs and an explanation of why they were chosen;
- A list of methods used for data checks for each GHG source, sink, and reservoir; and
- A summary of data checks and document reviews conducted for each GHG source, sink, and reservoir.

In the context of risk, it is important that high risk GHG sources, sinks, and reservoirs are targeted for data checks, and that offset verification teams do not neglect to review data acquisition and data processing (especially for conformance with the Regulation and COP), as well as checking project baseline and GHG reductions and removal enhancements calculations. For example, for a high-risk source identified in the sampling plan, a verifier may review the meter for conformance with accuracy requirements in the Regulation and COP, and review analytical data capture rates in addition to independently calculating all or a subset of the emissions from that source. For forestry projects, where sampling is assumed to be high risk, the verifier must follow the procedures in the COP to determine the number of plots to sample.

The sampling plan must be updated and finalized prior to the completion of offset verification services. The final sampling plan must describe in detail how the GHG sources, sinks, and reservoirs with identified risk and subject to data checks, were reviewed for accuracy (section 95977.1(b)(3)(I)). The offset verification team must revise the sampling plan to describe tasks completed or needed to be completed by the offset verification team as relevant information becomes available and potential issues of offset material misstatement or nonconformance with the requirements of the Regulation and COP (section 95977.1(b)(3)(J)) emerge.

The sampling plan must be retained, as specified in section 95977.1(b)(3)(K), either in paper, electronic, or other format, for a period of not less than 15 years. Pursuant to section 95977.1(b)(3)(V), ARB or the Offset Project Registry may request a copy of the sampling plan at any time.

5.5. Data Checks

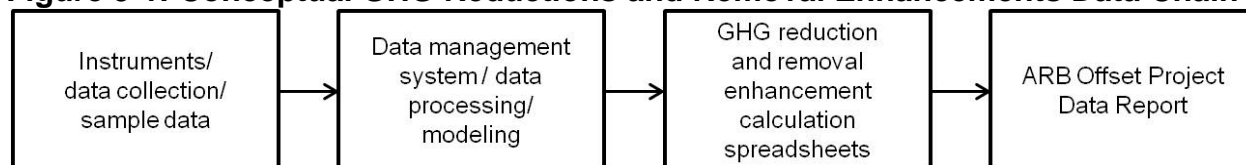
To determine the reliability of the submitted Offset Project Data Report, the offset verification team will use data checks following the requirements of section 95977.1(b)(3)(L). This is not a duplication of all GHG reductions and removal

enhancements calculations, but rather checking of specific subsets of the reported data based on areas of highest contribution of GHG reductions and removal enhancements or risk of uncertainty as identified in the sampling plan.

Selection of data subsets for checking involves a review of the largest contributions to overall GHG reductions and removal enhancements, as well as those associated with the greatest potential for offset material misstatement (highest uncertainty) in calculations of GHG reductions and removal enhancements. Data checks will establish if any of the GHG sources, sinks, and reservoirs identified in the sampling plan contributes to an offset material misstatement or nonconformance. Data checks may include retracing data from spreadsheets to the data sources, recalculating GHG reductions and removal enhancements estimates to check original calculations, or reviewing how/when calibrations were completed, etc. Again, the US Forest protocol is prescriptive of the number of plots to be sampled.

Figure 5-1 illustrates the steps that GHG reductions and removal enhancements data goes through before it is entered into the Offset Project Data Report, from metering data or sampling methods, to the final input into the Offset Project Data Report. A single box in the diagram, like data processing, may actually involve multiple steps and data transformations in spreadsheets before the data is compiled into the final report.

Figure 5-1: Conceptual GHG Reductions and Removal Enhancements Data Chain



The figure is meant to draw attention to the fact that data checks that focus exclusively on one part of the chain, such as the OPO/APD's final GHG reductions and removal enhancements calculation spreadsheets or the Offset Project Data Report, will neglect key components of the data chain (and consequently may miss significant errors or nonconformances). Human or technical errors can enter into any part of the chain, from instrumentation and sampling (accuracy, calibration, etc.), to data management/processing (unit conversions, incorrect sampling methods, modeling errors, appropriate equations/methods, temperature/pressure corrections, etc.), to final spreadsheet calculations and ultimate entry into any internal or external reporting programs or systems. The more stages there are in a data chain, the higher the risk for errors. In addition, systematic errors somewhere in the chain may go undetected if the results of the data output are plausible. For these reasons, it is recommended that the offset verification team's sampling and data checks address all aspects of the data chain, and for high-risk GHG sources, sinks, and reservoirs, be able to trace and recalculate data throughout the chain.

Section 95977.1(b)(3)(L) requires the offset verification team to include the following when conducting data checks:

- Focus on the largest and most uncertain estimates of project baseline emissions and GHG reductions and removal enhancements;
- Ensure appropriate methodologies and emission factors are applied in calculating the project baseline and actual project GHG emissions, project emissions, GHG reductions and GHG removal enhancements in the COP;
- Choose GHG sources, sinks, and reservoirs for data checks based on relative sizes and risks of offset material misstatement or nonconformance as indicated in sampling plan; and
- Use professional judgment in the number of data checks required.

The Regulation also requires that at a minimum the data check must include (section 95977.1(b)(3)(L)(3.)):

- Tracing data to origin;
- Examining the process for data compilation and collection;
- Reviewing inventory plans for GHG sources, sinks and reservoirs;
- Recalculation to check original estimates (this is a recalculation of sample data to ensure that the data check is correct. This does not require the verifier to recalculate the entire project's GHG reductions and removal enhancements);
- Review of calculation methods;
- Review instrument calculation, if applicable; and
- Review models.

When conducting data checks by recalculating a sample of data as described in the sampling plan, it is necessary to choose representative data, with a reasonable scale of sampling to be able to provide a reasonable level of assurance as to the quality of the data. While the US Forest protocol is prescriptive of many of the data checks that must be conducted, it is not inclusive of all GHG sources, sinks, and reservoirs, and offset verification teams may still need to evaluate additional GHG sources, sinks, and reservoirs. The offset verification team will compare their own calculated results of the sample of data with the reported data in order to confirm the extent and impact of any omissions and errors. The team may need to investigate any source of discrepancies (i.e., are the errors systematic or random). When including data checks in the detailed

verification report, transparency is critical. The offset verification team should adequately explain what each data check represents. Additionally, each step in the data check should be listed independently. For example, check modeling method used, and then confirm the GHG reductions and removal enhancements calculations as two separate line items rather than combining into one. If calculation mistakes are identified, the sampling plan may be amended to reflect this, and the tests and results of data checks should be documented in the issues log and the detailed verification report.

A good offset verifier will look at data with a skeptical eye and ask questions of multiple people in order to determine if the relevant information is widely known in the organization. Such questions may help the offset verification team determine if the GHG reduction and removal enhancement accounting process is important enough to the OPO/APD to have that information known by employees involved with the data.

Some offset projects may produce a large amount of raw data for the offset verification teams to review. Trending the data, comparing similar GHG sources, sinks, and reservoirs, and triangulating data are critical tools for the offset verification team. Trending data for a GHG source, sink, or reservoir over the year or several years (if possible) will allow the offset verification team to identify potential issues. Data from similar types of GHG sources, sinks, and reservoirs should be compared and examined for inconsistencies. Comparing the output to input or other parameters may provide a useful metric in determining the validity of data. Inconsistencies in the data do not necessarily indicate a problem; however, they do indicate the need for further examination. In order to do these comparisons, the offset verification team will have to obtain more than just the minimum data for calculating project baselines, project emissions and GHG reductions and removal enhancements; the team may need to obtain data on other process parameters for evaluation.

The offset verification team will follow data trails via documentation, people, and processes, and may need to ask for more information. If the team has trouble compiling information and documentation that supports project baseline emissions, project emissions, and GHG reductions and removal enhancements calculations and conformance requirements because the OPO/APD is not forthcoming, the team should contact ARB staff at ghgoffsetverification@arb.ca.gov.

Each Offset Project Registry will have its own system for allowing offset verifiers to access OPO/APD reporting data. Please consult with the Offset Project Registry to learn how to use any tools or online databases for accessing this information.

5.6. Assessing Offset Material Misstatement

The following equation (section 95977.1(b)(3)(Q)) must be used to determine the percent accuracy of the OPO/APD's total reported GHG reductions and removal enhancements after all of the data checks have been completed.

$$\text{Percent error} = \sum \frac{[\text{Discrepancies} + \text{Omissions} + \text{Misreporting}] \times 100\%}{\text{Total reported emissions}}$$

The numerator consists of the sum of errors, omissions, or misreporting found by the offset verification team for the subset of data that was included in the data checks. If the team determines with reasonable assurance that the percent overstatement of the OPO/APD's total reported GHG reductions and removal enhancements are less than 5.00 percent of the "true value," the offset verification team can conclude that the Offset Project Data Report is free of offset material misstatement.

The inherent accuracy of measurement systems is not included in the calculation of percent accuracy (offset material misstatement threshold). If a meter conforms to the accuracy rate specified in the applicable COP and has been calibrated and maintained to the manufacturer specifications, the assumption is that the meter readings are the true value, and any uncertainty associated with that meter is not included for the purposes of assessing offset material misstatement. Similarly, for forest projects, for equipment used to determine tree diameter at breast height (dbh) and height or counting trees, the uncertainty of measurement is ignored for calculating offset material misstatement as long as it is used correctly. For other analytic data, such as methane content or ODS gas composition where a method is specified in the applicable COP, or using an approved forest model, the team should evaluate conformance with the method or model. However, uncertainties associated with the approved method or model would not be included in an assessment of offset material misstatement.

During the course of the data checks, the offset verification team may find that some GHG sources, sinks, and reservoirs may have been underestimated (resulting in a negative error) or some GHG sources, sinks and reservoirs have been overestimated (resulting in a positive error). When assessing for offset material misstatement, the equation accounts for the offsetting of positive and negative errors. Offset material misstatement is different from the Mandatory Reporting Regulation's material misstatement in two respects: First, it is based on the GHG emissions reductions and GHG removal enhancements, which are the difference between the project's baseline emissions (or sequestration) and the project's actual emissions (or sequestration). Second, there is no regulatory consequence for underreporting (i.e., any errors, omission, or misreporting that will result in understating the project's GHG reductions or removal enhancements is not an offset material misstatement). The following examples

illustrate how to assess for offset material misstatement using the offset material misstatement equation in the Regulation. In all cases where a fixable error is identified the OPO or APD must fix the error and resubmit the Offset Project Data Report to the Offset Project Registry.

Example 1 – Offset material misstatement assessed based on total reported GHG reductions and removal enhancements

Before moving into the example, it is important to note that emissions sources result in negative accounting towards total GHG reduction and removal enhancement totals. The emissions from sources must be netted out of the total GHG reduction and removal enhancement calculations. Sinks and reservoirs result in positive accounting towards total GHG reductions and removal enhancements. After all GHG sources, sinks, and reservoirs are reported there will be positives and negatives that will need to be accounted for in the overall total of GHG reductions and removal enhancements from the project. For the final calculation of offset material misstatement, the number is always an absolute value; however, it is qualified by being an overstatement or an understatement of total GHG reductions or removal enhancements. Only an overstatement of GHG reductions or removal enhancements of +5.00% would result in an offset material misstatement. Understatements of GHG reductions and removal enhancements do not constitute an offset material misstatement.

Consider a hypothetical ODS offset project where the offset verification team noted discrepancies in four GHG sources, sinks, and reservoirs contributing to its total reported GHG reductions and removal enhancements. After the offset verification team completes all of the data checks, a number of misstatements have been identified (summarized below). The team noted a discrepancy in the project emissions from transporting the ODS to the destruction facility due to an error in the ton-miles-traveled. Another discrepancy was noted in the refrigerant quantities used in the refrigerant baseline calculations for one of the 500 pound tanks. The team noted a third discrepancy in the substitute refrigerant calculation where the emissions factor for CFC-11 was used for CFC-12. All other refrigerants were correct. And finally the team noted that the OPO/APD had decided to report site specific transportation and destruction emissions rather than default values, but only entered a value for the transportation emissions, omitting the destruction emissions.

Is there an offset material misstatement in this example?

	Baseline or Project?	Total Reported Emissions (MTCO ₂ e)	Verifier Calculation (MTCO ₂ e)	Discrepancy (MTCO ₂ e)	% Difference	Impact on Emission Reductions
Transport to Destruction Facility	Project	5,000	4,000	-1,000	-20.00%	Under-estimate
Tank 43265 Baseline	Baseline	30,000	28,495	1,505	5.02%	Over-estimate
Substitute Refrigerants	Project	5,000	6,000	1,000	20.00%	Over-estimate
Destruction Emissions	Project	0	11,000	11,000	100.00%	Over-estimate
Emission Reductions Calculated for all other Sources ⁷ Related to the Baseline and Project Emissions	NA	210,000	NA	NA	NA	NA
TOTAL	NA	250,000	NA	12,505	5.002%	NA

It is important to characterize the data checked GHG sources, sinks, and reservoirs correctly as either part of the baseline or project emissions. This will help identify if any discrepancy has an overstatement or understatement impact on the total reported emission reductions. The following basic emission reduction equation will help in understanding the impact of an identified discrepancy:

$$\text{Emissions Reductions} = \text{Total Baseline Emissions} - \text{Total Project Emissions}$$

The following equation applies the offset material misstatement equation to the project information in the table above:

$$\text{Percent error} = 100\% * (\text{discrepancy in emissions reductions} / \text{total reported emission reductions})$$

$$\text{Percent error} = 100\% * ((-1,000 + 1,505 + 1,000 + 11,000) / 250,000)$$

$$\text{Percent error} = 100 * (12,505 / 250,000)$$

$$\text{Percent error} = 5.002\% \text{ (rounds to 5.00\% at three significant figures)}$$

⁷ This comprises all other sources, sinks, and reservoirs for which data checks showed no discrepancy or data was not sampled.

In this case, the Offset Project Data Report is free of offset material misstatement because the reported emission reductions were only overestimated by less than or equal to 5.00%.

If we had a situation where the error was a negative value, even exceeding 5.00%, there would not be an offset material misstatement because it would be the result of underreporting of GHG reductions and removal enhancements. Underreporting does not lead to an offset material misstatement under the Regulation. Also, one can note that even though individual GHG sources, sinks, and reservoirs may have an error greater than 5.00%, it does not result in an offset material misstatement. Offset material misstatement is evaluated based on total reported GHG reductions and removal enhancements, not based on individual GHG sources, sink, and reservoirs. *However, ARB wants the most accurate data possible and requires that all fixable errors be corrected whether or not they result in an offset material misstatement. In this example all errors are fixable, and therefore, must be corrected.*

Example 2 – Systematic errors

Consider a different offset project with four GHG sources, sinks, and reservoirs (SSRs). In this case, the offset verification team has decided to review all of the records for the largest source, sink, or reservoir (SSR1). For the two moderately sized source, sink, or reservoirs (SSR2 and SSR3) the team felt it was sufficient to sample several months of data from them. The smallest source, sink, or reservoir (SSR4) was identified as low risk and not included in the sampling plan.

Note: This description of data sampled in this hypothetical situation is for illustrative purposes only, and should not be used as guidance when determining how much sampling to do for any particular offset project.

	Total Reported (MTCO ₂ e)	Data Reviewed
SSR 1	40,000	all data reviewed
SSR 2	10,000	3 month sample
SSR 3	5,000	1 month sample
SSR 4	1,000	not sampled

During the data checks, the verifier identified a systematic error in the emission calculations of SSR 2 and SSR3 that led to a systematic understatement of emissions, reductions, and removal enhancements. However, because the verifier has only reviewed several months of the data, does the verifier now have to expand the sampling plan so that they can calculate the total discrepancy?

Not necessarily, and if there is a strong indication that the error is systematic and has occurred throughout the Reporting Period, the most appropriate step could be to extrapolate the results for the Reporting Period based on the percent discrepancy calculated for the source, sink, or reservoir. For example, if several months of data are analyzed and the offset verification team's calculated total is 10% higher due to a systematic error, the verifier would then multiply the total emissions for that source, or total emission reductions or removal enhancements by 10% to estimate the actual emissions or GHG reductions and removal enhancements (see below). However, it would **not** be correct to extrapolate on the basis of time alone (i.e., multiplying by 365/90 if 90 days were sampled). This would imply that emissions or removals were constant throughout the year, which is unlikely to be a valid assumption. Rather, if there is a systematic under- or overestimation, that percentage difference should be applied to the total reported GHG reductions and removal enhancements for the GHG source, sink, or reservoir for the Reporting Period.

	Total Reported (MTCO₂e)	Verifier Calculation (MTCO₂e)	Discrepancy (MTCO₂e)	% difference
SSR 1	40,000	40,000	0	0.00%
SSR 2	10,000	9,000	1,000	10.00%
SSR 3	5,000	4,500	500	10.00%
SSR 4	1,000	not sampled	N/A	N/A

For the purposes of this example we are not going to consider whether the resulting error would have a positive or negative effect on the offset material misstatement evaluation.

Also, note that if a source, sink, or reservoir is identified as low risk (such as SSR 4) and has not been evaluated in the data checks it would not contribute any error, omission, or misreporting to the offset material misstatement evaluation. In this example, however, it may be appropriate for the offset verification team to expand their sampling to determine if the systematic errors identified in SSR 2 and SSR 3 also affected the calculations of SSR 4. The team could review a small sample of data from SSR 4 as part of additional data checks.

Remember, it is not necessary for the offset verification team to recalculate all of an Offset Project Data Report's GHG reductions and removal enhancements to assess for offset material misstatements. Rather, ARB recommends that the verifier focus on GHG sources, sinks, and reservoirs identified in the sampling plan and targeted in the data checks.

Example 3 – Meter Accuracy

During the site visit for a livestock project that has a Reporting Period that runs from May 1 to April 30, you discover that the meter for the flare failed its quarterly field check on March 1, showing a drift which does not meet the accuracy requirements as specified in the COP. The OPO/APD voluntarily decided to conduct field checks at a frequency higher than required by the protocol to ensure maximum crediting. The OPO/APD had the meter recalibrated by a certified service provider on March 10, and has documentation to prove that. A review of the January 6 and June 12 field check indicates the meter was in calibration at both field checks. The OPO/APD has used the temperature and pressure corrected readings from the meter without correcting for it being out of calibration. Using the prescribed method in the protocol you calculate a value of 15,000 MTCO_{2e} for two months (January 6 – March 10, the date of calibration) the meter is not in calibration.

Source	Total Reported (MTCO _{2e})	Verifier Calculation (MTCO _{2e})	Discrepancy (MTCO _{2e})	% difference
Flare (2 months)	20,500	15,000	5,500	26.83%
Flare (10 months)	70,000	70,000	0,000	0.00%
TOTAL	90,500	85,000	5500	6.08%

In the issues log you identify a corrective action request citing section 6.1 of the COP that requires the metered value to be the lower of the uncorrected value or the drift-adjusted value. And you inform the OPO/APD they will get an Adverse Offset Verification Statement based on an offset material misstatement using the OPO/APD's reported value of 90,500 MTCO_{2e} for total GHG reductions (a 6.08% offset material misstatement). The OPO/APD asked for your help in correcting the error. What do you do?

As a verifier, you may not help the OPO/APD correct the report. In the issues log you can explicitly say what part of the Regulation or COP the OPO/APD needs to follow in this case, but the OPO/APD must correct the report themselves; otherwise you would be providing consulting services. As the verifier, you can always refer the OPO/APD to ARB or the OPR for further assistance.

Example 4 – Forestry

During the site visit to a 3,000 acre avoided conversion forestry project the verifier determined the OPO/APD did not calculate the Avoided Conversion Discount (ACD) factor and used a value of 0 percent for the ACD factor. Based on a land use conversion only 75 percent greater than the current forested land the calculated ACD factor for the project should have been 12.5 percent.

Source	Total Reported (MTCO ₂ e)	Verifier Calculation (MTCO ₂ e)	Discrepancy (MTCO ₂ e)	% difference
Avoided Conversion Discount factor	300,000	262,500	37,500	12.5%

As can be seen the verification would result in an Adverse Offset Verification Statement because:

$$\begin{aligned} \text{Percent error} &= ([37,500]/300,000) \times 100\% \\ &= 12.5\% \end{aligned}$$

5.7. Conformance with the Regulation and the Applicable Compliance Offset Protocol

In order to receive a Positive Offset Verification Statement, an Offset Project Data Report must conform to the requirements of the Regulation and applicable COP and be free of offset material misstatement. A nonconformance that is not corrected before the verification deadline may result in either a Qualified Positive Offset Verification Statement or an Adverse Offset Verification Statement. A Qualified Positive Offset Verification Statement may still be issued if the project had one or more nonconformances with the quantification, monitoring, and metering requirements of the Regulation and applicable COP. In any case where there is an offset material misstatement, an Adverse Offset Verification Statement will be issued. An Adverse Offset Verification Statement may also be issued if there are one or more nonconformances with other requirements of the Regulation not dealing with quantification, metering, or monitoring, such as non-compliance with all laws and regulations applicable to the offset project activity, or non-continuous reporting. An Adverse Offset Verification Statement would also be issued if a Qualified Positive Offset Verification Statement is not allowed by the applicable COP, because in this case any nonconformance would result in an adverse Offset Verification Statement. It is therefore critical for the offset verification team to evaluate conformance with the

Regulation and the applicable COP in their risk assessments, site visits, sampling, and data checks. Examples of non-conformances include:

- Required GHG sources, sinks, and reservoirs not reported;
- GHG sources, sinks, and reservoirs not within the offset project boundary or allowed within the COP included in the Offset Project Data Report and not identified as optional;
- Use of calculation methods, models, or emission factors not specified in Regulation or applicable COP;
- Required data collection or sampling methods not followed when specified or sampled less than the frequency required by the Regulation or applicable COP;
- Missing data, if missing data methods were not supplied and followed in the applicable COP, or an interim data collection procedure was not approved by ARB;
- Non-continuous reporting, as reporting activities are required to be continuous after they commence;
- The project was not in conformance with a local, regional, and federal laws and regulations, as required by the Regulation and applicable COP;
- Inaccurate meters (accuracy outside of allowed ranges as determined by the applicable COP when collecting data used in GHG emissions, and emission reductions calculations); and
- Administrative requirements such as following the record keeping requirements, having plans required by the COP or correctly filling out information.

Calculation errors will generally be addressed during the offset material misstatement assessment activities, though provisions related to data collection and capture and use of approved calculation methods will be subject to conformance requirements.

Some nonconformances, such as the incorrect calculation methods or the omission of required GHG sources, sinks, and reservoirs, can be corrected provided that the data is available. However, other nonconformances may not be capable of being corrected, such as when data was not sampled in accordance with the Regulation (inaccurate meters or less frequently than required) or not sampled at all. In these cases, a Qualified Positive Offset Verification Statement or an Adverse Offset Verification Statement may be unavoidable for the current offset verification. The OPO/APD will

need to address any underlying issues to avoid a Qualified Positive Offset Verification Statement or an Adverse Offset Verification Statement in subsequent years.

5.8. Less Intensive (or, Interim) Verification (Only Applies to Forestry Projects) (§95977.1(b)(3)(D))

The Regulation allows OPO/APDs of forest offset projects to opt for less-intensive verification during the years between full offset verifications following a Positive Offset Verification Statement. The rules around less intensive verification are described in the applicable COP. This option is allowed because the offset verification team will have done a very thorough risk assessment during the previous full offset verification, and as long as operations and GHG sources, sinks, and reservoirs at the offset project have not changed significantly (by adding GHG sources or reducing sinks or reservoirs within the offset project boundary, for example), the risks of offset material misstatement in the data should be very similar to the previous year's data, and a risk assessment conducted as part of the last full verification would still be considered valid. Therefore, the offset verifier may use the previous full verification as a basis for conducting less intensive verification.

Less-intensive verification requires the same level of reasonable assurance from the offset verification team that the Offset Project Data Report conforms to the Regulation and applicable COP and contains no offset material misstatement. Less-intensive verification does not require a site visit, but the team *may* still need to visit the site if offset project modifications have occurred in the past year resulting in new GHG sources, sinks, or reservoirs. An offset verifier's ability to provide reasonable assurance is a regulatory requirement and supersedes an OPO/APD's regulatory flexibility to have a less-intensive verification.

Less-intensive verification principally focuses on data checks, and is based on the risk assessment in the sampling plan developed for the last full verification. Relying on a prior sampling plan during less intensive verification does not imply only rechecking the same GHG sources, sinks, and reservoirs and documents targeted for data checks in prior years. The risk assessment conducted in the prior sampling plan along with the past issues logs inform the offset verification team what sources to target for data checks and what documents to review during interim years.

Some verification bodies may choose not to conduct interim verifications to ensure that they fully understand the offset project's GHG sources, sinks, and reservoirs. If the verification body does not perform less-intensive verification, the OPO/APD will need to either have that verification body conduct a full verification, or contract with a different verification body that will be able to conduct a less-intensive verification after first conducting a full verification that results in a Positive Offset Verification Statement.

Offset Project Registries may issue registry offset credits and ARB may issue ARB offset credits based on a less-intensive verification. If there are any discrepancies found for those data years when a full offset verification is performed, there may need to be a debit or credit of offset credits from that issuance. This will be determined by the Offset Project Registry and ARB and is outside the purview of offset verifiers when performing any offset verification activities.

5.9. Offset Project Data Report Modification

When OPO/APDs submit their Offset Project Data Reports, they are certifying that the information in the report is true, accurate, and complete. However, ARB recognizes that mistakes can occur, and section 95977.1(b)(3)(M) allows the Offset Project Data Report to be modified to address issues prior to the verification deadline. In order to receive a Positive Offset Verification Statement, the Regulation requires that the OPO/APD correct issues that would otherwise result in an offset material misstatement or non-conformance, if possible, prior to the verification deadline. ARB expects that most, but not all, issues that would result in a Qualified Positive or Adverse Offset Verification Statement can be corrected if OPO/APDs work to address them in a timely manner.

After an Offset Project Data Report has been certified by an OPO/APD, it can no longer be modified by the OPO/APD, unless requested to do so by its verification body. After revisions are complete, the data is once again certified by the OPO/APD and made available to the lead verifier. This is an iterative process and may take more than one round of revisions by the OPO/APD for a verification body to render its final verification Offset Verification Statement.

It is good practice for offset verifiers to limit the number of requests for revisions. It is best practice for offset verifiers to compile a list of any issues in their issues log prior to requesting revisions so that OPO/APDs may address all relevant issues during a single modification. Offset verifiers may also indicate to OPO/APDs which issues, if not addressed, would result in a Qualified Positive or Adverse Offset Verification Statement either individually or cumulatively. However, in some cases more than one revision may be necessary, especially if new issues are identified after the initial revision.

5.10. Report Drafting – Detailed Verification Report

After the core offset verification activities have been completed, the offset verification team must draft a detailed verification report to deliver to the OPO/APD and the Offset Project Registry as required by section 95977.1(b)(3)(R)(4.)(a.). The verification body must also make the detailed verification report available to ARB within 10 calendar days of receiving a request by ARB.

The detailed verification report serves a tool for ARB and the Offset Project Registry to understand the work that was conducted by the offset verification team and ensure that all the requirements of the Regulation are met; therefore, the report should be detailed and transparent. The detailed verification report summarizes the activities conducted by the offset verification team and relevant findings. Offset verification teams have some discretion in how to prepare detailed verification reports; however, pursuant to section 95977.1(b)(3)(R)(4.) (a.), the following information must be included in every detailed verification report:

- The Offset Verification Plan;
- The detailed comparison of the data checks conducted during offset verification services;
- The issues log identified in the course of offset verification activities and the issue resolutions;
- Any qualifying comments on the findings during offset verification services; and
- The calculation of offset material misstatement performed in section 95977.1(b)(3)(Q).

The detailed verification report therefore provides an overview of the work conducted by the offset verification team, and provides evidence to support the final offset verification opinion rendered in the Offset Verification Statement. In addition to the OPO/APD, the audience of the detailed verification report is the Offset Project Registry and ARB. The detailed verification report is a critical document that the Offset Project Registry and ARB will look at when conducting audits of verification bodies and when resolving issues that arise during offset verification. Even if the Offset Project Registry and ARB auditors have accompanied the offset verification team on the site visit, they may not have been privy to follow-up discussions or requests and are not as familiar with the site as the verification team or the OPO/APD. Therefore, it will be useful for the offset verification team to include the following information in the detailed verification report:

1. A detailed description of the offset project or OPO/APD operations, including all GHG sources, sinks, and reservoirs in the offset project boundary;
2. A detailed description of data acquisition, tracking and calculation systems, and how these systems were evaluated;
3. An acknowledgement that the offset verification team has ensured every applicable GHG source, sink, and reservoir has been reported and that missing data has been evaluated; and

4. A detailed narrative summary of documents and data reviewed during the data checks, as well as a description of activities conducted on the site visit.

Other information may be included at the discretion of the offset verification team. The sampling plan is not required to be included in the detailed verification report, though it may be included at the discretion of the lead verifier. ARB or the Offset Project Registry may also request that the verification body submit the sampling plan within 10 working days of such a request (section 95977.1(b)(3)(V)).

When providing the detailed comparison of data checks, it is recommended that the offset verification team provide enough detail to indicate which GHG sources, sinks, and reservoirs were checked, the types and quantity of data that were evaluated for each GHG source, sink, and reservoir, and any discrepancies that were identified. *Offset verification teams are strongly encouraged to include narrative texts and lists to make the summary of data checks transparent.* While the Offset Verification Statement is required to be made public, detailed verification reports are not made public by ARB or the Offset Project Registry. For example, Table 5-3 includes an example summary table of the data checks conducted for both a non-sequestration and a sequestration offset project.

Table 5-3: Example Summary of Data Checks***Non-sequestration offset project***

Source / Sink	Data Reviewed	Units	Verifier Calculated Value	OPO/APD Calculated Value	Identified Discrepancy	Comments	Corrected by OPO/APD?	Impact on Misstatement/Conformance
ODS Tank 43765	Lab analysis, Weight slips	Lbs. CFC-12	500	500	0	Tank was pure CFC-12	NA	None
ODS Tank 7650997	Lab Analysis	Mole fraction CFC-11	.53	.35	.18	Possible data entry error	Yes, fixed with data from original source	None
ODS Tank 7650997	Weigh slips	Lbs. CFC-11	265	175	90	Due to error in lab analysis entry	No	None, understatement
Miles traveled	Vehicle log books	miles	7543	7554	11	Error summing miles	Yes	None

Sequestration offset project

Source / Sink / Reservoir	Data Reviewed	Units	Verifier Calculated Value	OPO/APD Calculated Value	Identified Discrepancy	Comments	Corrected by OPO/APD?	Impact on Misstatement/Conformance
Standing carbon stocks	Paired sampling	MTCO _{2e}	175,000	175,000	0	Sampling criteria met after 12 plots	NA	None
Risk reversal rating	Wildfire risk and easement	%	12.3	12.3	0	Qualified Easement present	NA	None
Confidence deduction	Sampling Data	%	11.2	11.2	0		NA	None
Doug Fir Harvested	Shipping invoices	Green wt. (lbs)	11,256	12,156	900	Date entry error	Yes, fixed with data from original source	None

The issues log is where the offset verification team identifies issues and their resolution (if any). Issues can include individual misstatements that by themselves would not be an offset material misstatement but could be in aggregate, as well as qualitative issues like weaknesses in data management systems that could ultimately affect the Offset Project Data Report. The issues log is an important part of the “evidence trail,” which supports the offset verification findings, increases transparency for the independent reviewer, the Offset Project Registry, and ARB, and will be relied upon if there are disputes with OPO/APDs over the offset verification findings. Every identified issue must be entered into the issues log. *Issues remain in the issues log even after resolution.*

In the example in Table 5-3 the issues log would include a summary of the discrepancies identified in the ODS Tank 7650997 for CFC-11 and miles traveled calculations, and indicate if these issues were corrected by the OPO/APD prior to completing the offset verification. ARB suggests the issues log indicate whether the issues could impact offset material misstatement or conformance. For sequestration offset projects, once the sampling criteria have been met, the values reported by the OPO/APD are assumed to be accurate.

The detailed verification report may include any other qualifying comments or findings during offset verification activities such as any requests for clarifications or additional information. It is important that the offset verification team does not provide consulting services to the OPO/APD in the detailed verification report; however, identifying issues does not constitute consulting. For example, it is appropriate for the offset verification team to identify high-risk areas in the OPO/APD’s GHG inventory program, but it is not appropriate for the team to make specific recommendations on how to improve the inventory program. Recommending improvements is considered a medium or high conflict of interest, and must be disclosed to ARB as an emerging conflict of interest, as required in section 95979(f)(3).

CHAPTER 6. Monitoring and Measurement Issues

Chapter 6 provides offset verification guidance on common issues related to the monitoring and measurement requirements of the Regulation and applicable COPs. It is not possible to address all issues an offset verifier may encounter; consequently, for issues not addressed in this chapter or other ARB guidance, offset verifiers should direct questions to ARB staff. ARB staff will also be maintaining a Frequently Asked Questions document for each COP on its Cap-and-Trade Webpage.

6.1. Missing Data

When evaluating missing data, the offset verification team should initially determine if the data is actually missing (i.e., not captured) or if it is stored in another location in the data management system or recoverable from another source. If the data is truly missing, the team may need to assess both the data capture rate, and the methods used to substitute missing data as part of conformance checks with the Regulation and applicable COP. It is recommended that the team adopt a risk-based approach that focuses on GHG sources, sinks, and reservoirs identified in the sampling plan, GHG sources, sinks, and reservoirs that emerge during the offset verification process as potentially having missing data, and representative missing data substitution procedures to assess conformance with the Regulation and COP and consistency among GHG sources, sinks, and reservoirs.

The offset program relies on standardized methodologies and does not allow the issuance of variances for missing data. Therefore, if the OPO/APD deviates from the requirements and if data collection and sampling techniques are not followed in the applicable COP, this may result in missing data. The Regulation provides a limited opportunity for alternative data collection in the event of unforeseen monitoring equipment breakdown (see section 95976(f)). These provisions apply only to fuel analytical data if at least 20% or more of the data is missing and the OPO/APD receives approval from ARB of an interim procedure within 30 calendar days of the breakdown in monitoring equipment. If data is not captured or collected, and the methods in the applicable COP are not followed for missing data, and/or the OPO/APD does not qualify or does not receive approval of an interim data collection procedure in the applicable timeframe to capture missing data, the data cannot be recovered and is considered missing. This would result in a nonconformance with the Regulation and would result in a Qualified Positive Offset Verification Statement, and potentially an Adverse Offset Verification Statement, if a Qualified Positive Offset Verification Statement is not allowed under the applicable COP. If, in the verifier's professional judgment, this missing data may also lead to an overall offset material misstatement based on the total

reported GHG reductions and removal enhancements, this missing data may also result in an Adverse Offset Verification Statement.

Issues with data management systems: ARB staff recommends that verifiers also be aware of data management systems that automatically substitute values when a measurement is not taken; for example, by averaging related values or repeating the last captured value. Automatic data substitution using methods not described in the Regulation is not captured data and is considered missing data under the Regulation. Captured data must involve actual measured values or sampling, not default values recorded by the data management system, such as repeating the last captured value. Verifiers will need to look very closely at underlying data because having a value present in a spreadsheet does not automatically imply that it is captured data. Data substituted using methods other than those allowed in the applicable COP and section 95976(f) is a regulatory nonconformance that would need to be corrected in order to obtain a Positive Offset Verification Statement.

6.2. Measurement Accuracy

Each COP includes requirements that data measurements must meet when used in GHG emissions and GHG reductions and removal enhancements calculations. The Regulation (section 95976(a)) requires that all monitoring equipment be maintained and calibrated in a manner and frequency required by the equipment manufacturer, unless otherwise specified in the applicable COP. All modeling, monitoring, sampling, or testing procedures must be conducted in a manner consistent with the applicable procedure.

CHAPTER 7. Completing the Offset Verification Process

7.1. Finalization

To complete offset verification services, a final meeting may be held with the OPO/APD to review the findings and the detailed verification report. Because the independent technical reviewer may request that the offset verification team conduct further investigations, the team may wait to have the final exit meeting until after the independent reviewer has concurred with the findings and conclusions in the detailed verification report. If a dispute arises between the OPO/APD and the offset verification team regarding the Offset Verification Statement, there is a process for ARB to arbitrate. The final Offset Verification Statement must be submitted to the Offset Project Registry and the OPO/APD by the verification deadline. Good communication between the OPO/APD and the offset verification team can prevent many disputes from arising. If difficulties arise, contact ARB early to aid in resolving issues before a formal dispute resolution process is initiated.

7.2. Independent Technical Review

Before an Offset Verification Statement can be issued, section 95977.1(b)(3)(R)(1.) indicates that an ARB-accredited lead verifier that has not been involved in the verification of the offset project must independently review the work of the offset verification team. The independent technical review serves as a final check on the offset verification team's work to identify any significant concerns related to the draft Offset Verification Statement, and as a way to manage the verification body's business risk associated with providing offset verification services. The independent reviewer must be employed by the verification body responsible for the offset verification.

The independent reviewer is the final check on identifying errors in planning, data sampling, and judgments by the offset verification team. The independent reviewer will need to review documents relevant to the offset verification services provided, and identify any failure to comply with the Regulation or COP or with the verification body's internal policies and procedures for providing offset verification services. The independent reviewer must concur with the verification findings before the Offset Verification Statement can be issued according to section 95977.1(b)(3)(R)(3.).

If the independent reviewer does not feel that some aspects of the verification have been conducted adequately or completely, or has unresolved questions about some of the findings, the reviewer cannot sign off on the Offset Verification Statement until these issues are resolved to his or her satisfaction. The level of response needed by the offset verification team will depend on the type of issue identified. The lead verifier may be able to address minor issues through further discussions with the independent

reviewer or by providing more detailed documentation or explanations in the detailed verification report. On the other hand, if significant gaps in the offset verification services are identified, such as insufficient sampling or data checks, the offset verification team will need to conduct further technical work.

The independent reviewer is allowed to be involved in drafting a proposal or contract to conduct offset verification services, the initial project scoping, and the contract negotiating. However, the independent reviewer must not take part in any of the offset verification activities such as developing the sampling plan, conducting data checks, or conducting the site visit. The independent reviewer may choose to conduct a site visit independent of the offset verification team if that is deemed necessary.

The lead verifier may also request to have the independent reviewer evaluate the sampling plan and proposed data checks early in the verification process. An intermediate technical review step could save the offset verification team time and resources by identifying critical issues such as gaps in the proposed offset services or an insufficient sample size before the end of the verification. The independent reviewer must still maintain independence from the verification by not making specific recommendations about how the verification services should be conducted. It is not appropriate for the independent reviewer to suggest a sampling size is too large, or to interfere with the way the lead verifier manages offset verification services. The independent reviewer must still conduct a full review of all the offset verification services including reviews of all of the offset verifier calculations prior to the issuance of the final Offset Verification Statement.

7.3. Offset Verification Statement (Offset Verification Opinion)

Section 95977.1(b)(3)(R)(4.) (b.) requires that the verification body provide an Offset Verification Statement to the OPO/APD and the Offset Project Registry that includes a determination by the verification body (the lead verifier and the independent reviewer) on whether the Offset Project Data Report submitted by the OPO/APD conforms to the requirements of the Regulation and applicable COP, and whether the data is free of offset material misstatement. A verification body must make both determinations, even if an Adverse Offset Verification Statement is inevitable. If an Adverse Offset Verification Statement is issued based on only a subset of data checks, the offset verification team may want to conduct additional checks in order to ensure that all issues are identified. This allows the verification body to track issues from year to year and ensure they are resolved in subsequent years.

For a Positive Offset Verification Statement:

- The offset verification team has reasonable assurance that the Offset Project Data Report is free of offset material misstatement; and

- The offset verification team has reasonable assurance that the Offset Project Data Report conforms to all the requirements of the Regulation and applicable COP.

An Offset Project Data Report will receive a Qualified Positive Offset Verification Statement if:

- The offset verification team has reasonable assurance the Offset Project Data Report is free of offset material misstatement; and
- The offset verification team has found one or more nonconformances with the quantification, monitoring, or metering requirements of the Regulation and applicable COP.

Note: The COP may restrict the use of a Qualified Positive Offset Verification Statement for certain project types; for example, they cannot be issued for forest offset projects. See section 95977.1(b)(3)(R)(4.)(c.) of the Regulation.

An Offset Project Data Report will receive an Adverse Offset Verification Statement if:

- The offset verification team cannot say with reasonable assurance the Offset Project Data Report is free of offset material misstatement; and/or
- The offset verification team cannot say with reasonable assurance that the Offset Project Data Report conforms to the requirements in the Regulation and applicable COP.⁸

Note: The phrasing of the Offset Verification Statement and the requirements of the Regulation are important in terms of where the burden of proof lies. An offset verification team must have reasonable assurance that an Offset Project Data Report is *free* of material misstatement, not that the report contains an offset material misstatement. In other words, if there is uncertainty as to whether or not there is an offset material misstatement in GHG reductions and removal enhancements, the verifier's default assumption must be that the report is *not* free of material misstatement. The lead verifier would be attesting that based on their investigations, they do not have sufficient evidence to be reasonably assured that the report is *free* of offset material misstatement.

⁸ For projects developed under the U.S. Forest Protocol, any nonconformance, if not corrected or non-correctable, would result in an Adverse Offset Verification Statement. For the other types of offset projects, the offset verification team may give a Qualified Positive Offset Verification Statement instead of an Adverse, but only if the nonconformance is related to the quantification, monitoring, or metering requirements of the Regulation and applicable COP. Please contact ARB with any questions.

Situations that will result in a Positive, Qualified Positive, or Adverse Offset Verification Statement are summarized in Table 7-1 by project type.

Table 7-1: Offset Verification Statements
Projects developed under the Livestock, ODS, or Urban Forestry COPs

	Free of Offset Material Misstatement?	Conforms to All Quantification, Monitoring and Metering Requirements?	Conforms to All Other Regulatory Requirements and Complies with Local, Regional and National Requirements?	Offset Verification Statement
Case 1	Yes	Yes	Yes	Positive
Case 2	Yes	No	Yes	Qualified Positive
Case 3	Yes	Yes	No	Adverse
Case 4	Yes	No	No	Adverse
Case 5	No	Yes	Yes	Adverse
Case 6	No	No	Yes	Adverse
Case 7	No	Yes	No	Adverse
Case 8	No	No	No	Adverse

Projects developed under U.S. Forest Projects COP

	Free of Offset Material Misstatement?	Conforms to All Quantification, Monitoring and Metering Requirements?	Conforms to All Other Regulatory Requirements and Complies with Local, Regional and National Requirements?	Offset Verification Statement
Case 1	Yes	Yes	Yes	Positive
Case 2	Yes	No	Yes	Adverse
Case 3	Yes	Yes	No	Adverse
Case 4	Yes	No	No	Adverse
Case 5	No	Yes	Yes	Adverse
Case 6	No	No	Yes	Adverse
Case 7	No	Yes	No	Adverse
Case 8	No	No	No	Adverse

ARB has developed an Offset Verification Statement form that verification bodies may use when providing an Offset Verification Statement to the OPO/APD and the Offset Project Registry. The Offset Project Registry will also make this form available. The verification body must also make any qualifying comments in the Offset Verification Statement. For example, the lead verifier could describe any problems associated with the verification that may help Offset Project Registry and ARB staff understand the issues, and could document the cause of any nonconformance. Because of the range of seriousness regarding Adverse Offset Verification Statements, the lead verifier is encouraged to include as much relevant information as deemed necessary for purposes of explaining an Adverse Offset Verification Statement. In the case of a Qualified Positive Offset Verification Statement, the verification body must identify any nonconformance and why they do not result in an offset material misstatement.

7.4. Petition Process

If the offset verification team finds that an Offset Verification Statement will be adverse, section 95977.1(b)(3)(R)(5.) requires that they formally provide the OPO/APD with at least 10 working days to modify the Offset Project Data Report. Most, but not all, issues that would result in an Adverse Offset Verification Statement can be corrected if the OPO/APD works proactively to address them. Verifiers and OPO/APDs will need to keep the 10-day window in mind when planning their offset verification services as the verification deadlines are fixed and no extensions are possible. The final Offset Project Data Report and Offset Verification Statement must still be submitted by the verification deadline.

In the event that the verification body and the OPO/APD disagree about an Adverse Offset Verification Statement, the OPO/APD may petition ARB to make a final decision, as allowed by section 95977.1(b)(3)(R)(6.). This petition must be made to ARB before the final Offset Verification Statement is submitted. ARB will then objectively evaluate the situation and relevant evidence, and make a final determination regarding the Offset Verification Statement. Both the verification body and the OPO/APD need to cooperate with ARB to arrive at a final decision. If ARB finds that the Offset Project Data Report does not meet the requirements of the Regulation, section 95977.1(b)(3)(R)(7.) provides the OPO/APD with 30 calendar days to submit any additional information as to the verifiability of the Offset Project Data Report. The report must then be re-verified, subject to the same provisions regarding verification in the Regulation. If ARB finds that the Offset Project Data Report does not meet the standards and requirements specified in the Regulation, it might not always be possible to correct the underlying problems. In this case, the OPO/APD may choose not to take the extra 30 days to correct the report, and the final opinion can be submitted as adverse.

However, when there are situations when assistance is needed before the end of the verification process, verifiers and OPO/APDs should not hesitate to contact ARB and Offset Project Registry Staff. This may help address situations early on to avoid the need for formal dispute resolution. Neither the OPO/APD nor the offset verification team should wait until the last minute to seek guidance or assistance from ARB or Offset Project Registry staff. *ARB staff believe all issues should be able to be addressed without the petition process, if open communication between ARB, the Offset Project Registry, the OPO/APD, and verification staff is established and maintained.*

7.5. Completion and Issuance of Offset Verification Statement

The lead verifier and independent reviewer must attest to their findings and provide their signature for the Offset Verification Statement. On the form that ARB will make available for submitting Offset Verification Statement information, there will be fields for filling in this information. The information must not be submitted to the Offset Project Registry until after the completion of all offset verification services, after any final meetings with the OPO/APD, and if applicable, after the OPO/APD has had at least 10 working days to address any issues that will result in an adverse opinion. In addition, the verification body will separately indicate if there is an offset material misstatement and nonconformance, as well as the opinion (positive, qualified positive, or adverse).

After submitting the Offset Verification Statement to the Offset Project Registry, it is good practice for verification bodies to inform the OPO/APD that offset verification services have been completed. ARB staff recommends that OPO/APDs that intend to rehire their verification body for the next year should renew the contract with that verification body as soon as practicable. This allows the staff of the verification body to plan an itinerary of offset verification services for the following year, which helps the verification body to manage its time and resources, and may reduce costs for both the verification body and the OPO/APD.

CHAPTER 8. ARB Oversight

One of ARB's primary roles in the offset program is as the offset program administrator. The Regulation includes provisions for existing voluntary offset registries that meet ARB standards to be approved as Offset Project Registries. Approved Offset Project Registries will perform some of the administrative responsibilities in the registry offset credit creation process. ARB plans to utilize the resources and expertise of Offset Project Registries to help administer the offset program. The functions of Offset Project Registries include: listing offset projects, general project guidance, collecting monitoring and reporting information, support for verification activities, and issuance of registry offset credits. These services are collectively referred to as registry services.

Although the Regulation refers to both ARB and Offset Project Registries for performing registry services, they will be performed by the Offset Project Registries at this time, unless there are specific roles within each process that only ARB may perform, such as appeal processes. ARB will not set up and operate most of the administrative functions within the offset program at this point in time. The way the Regulation is written, however, allows ARB to determine whether it will operate such functions in the future. For more information on Offset Project Registries, see Offset Project Registry Guidance on ARB's Cap-and-Trade Program webpage.

ARB oversight of the conduct of Offset Project Registries and ARB-accredited verifiers is critical to the overall integrity of the program. ARB does not delegate any of its legal authority to review and enforce the offset program to any entity, including approved Offset Project Registries. ARB assumes full responsibility for the enforcement of the Regulation. Therefore, ARB will have full oversight of all facets of the program, including OPO/APDs, offset verification bodies and verifiers, and Offset Project Registries. This oversight spans dispute resolutions and audits of both the OPO/APD and the verification body. In addition, as the regulatory agency responsible for the implementation and oversight of the Cap-and-Trade Program, only ARB can issue compliance offset credits for use in the Program.

8.1. Conflict of Interest

ARB will track relationships between verification bodies and individual verifiers with OPO/APDs. While COI information is initially provided to the Offset Project Registries, the registries will be providing these forms to ARB for review and audit purposes.

In the case where a verification body, verifier, or OPO/APD knowingly or accidentally holds back information that could potentially create a conflict, and this information is discovered at a later date, ARB may choose to set aside the Offset Verification Statement (section 95979(f)(5)). This would also require the OPO/APD to get a new

verification for that Offset Project Data Report. Additionally, depending on the scope of the conflict, the accreditation of the verification body and the individual verifier may be revoked (section 95979(f)(6)).

8.2. Audits

ARB and the Offset Project Registry can choose to audit any offset verification at any time during the offset verification process, including all site visits, and relevant verification materials. Audits associated with the offset verification program should not be viewed as adversarial; the purpose of auditing is for ARB to monitor and oversee functioning of the offset program and offset verification program, and to ensure quality, rigor, and consistency across verification bodies.

Any time ARB or the Offset Project Registry chooses to audit a verification, both the OPO/APD and verifier will be notified by the ARB or Offset Project Registry staff leading the audit. An initial statement will be provided to both parties, detailing the level of the audit, as well as any requests for information. During an audit, ARB or the Offset Project Registry will participate in all phases of the audit, including the planning and closing meetings/calls and site visits. Following the completion of an audit, ARB and Offset Project Registry staff will provide the verification body with written feedback concerning any areas for improvement or nonconformance identified during the audit.

8.3. Issues

Often, issues arise on which the OPO/APD and verifier do not agree. Both parties are encouraged to work together to find a solution. Alternately, both parties can approach ARB for guidance in finding a solution in a collaborative effort. In the absence of this, ARB will act as arbiter, and will make the final decision. For more information regarding the petition process for disagreements regarding adverse offset verification statements, see section 7.4 of this Guidance and see sections 95977.1(b)(3)(R)(5.) – (7.) of the Regulation.