Appendix E

Purpose and Rationale for Proposed Regulation and Amendments to Title 17 Regulation Order

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A. Section 95700. Purpose.

Purpose

Section 95700 describes the purpose of the proposed sections 95700-95706, which establish the California Carbon Capture, Removal, Utilization, and Storage Program (CCUS Program), as required by Senate Bill (SB) 905 (Caballero, Chapter 359, Statutes of 2022). SB 905 requires the California Air Resources Board (CARB or the Board) to create a statewide regulatory program to oversee carbon dioxide (CO_2) capture, removal, utilization, and storage activities. The Legislature found that achieving carbon neutrality no later than 2045 requires the deployment of carbon management technologies that reduce greenhouse gas (GHG) emissions and remove CO_2 from the atmosphere. As specified in SB 905, the purpose is to prioritize, among other priorities, reducing GHG emissions and reduce fossil fuel production in the state. To support this statutory direction, section 95700 sets forth the foundational purpose of the CCUS Program: to establish a regulatory framework that complements existing state, local, and federal permitting programs; does not duplicate regulations already in place; and ensures the safe, effective, and viable deployment of carbon management technologies in California, to facilitate deployment of these projects, ensure they are financially responsible, and that there is transparency.

Rationale

Section 95700 is necessary to implement the mandates of SB 905 and more specific, CARB's requirements under Health and Safety Code section 39741.1, which mandates that CARB develop a program governing carbon capture, removal, utilization, and storage that is safe, effective, and viable. This section is necessary to provide clarity, enforceability, and transparency.

This purpose and rationale is incorporated into each section of this document below.

B. Section 95701. Definitions.

"Abandoned Well" Definition

Purpose

To add a definition of "abandoned well" as a well whose use has been permanently discontinued.

Rationale

This definition is necessary to ensure operators are able to identify wells where surface CO_2 monitoring must occur pursuant to the requirements established under section 95704.1. Staff

chose to rely on U.S. Environmental Protection Agency's (U.S. EPA) definition in 40 CFR section 146.3 for abandoned well because U.S. EPA currently maintains permitting authority for Class VI injection wells in California. Incorporating this established definition that is understood by industry helps maintain consistency with recognized Federal Class VI well terminology and will minimize potential regulatory duplication or conflicts, if any, for California GCS operators operating under both SB 905 regulations and Class VI permitting.

"Additional" Definition

Purpose

The proposed rulemaking includes the definition for the term "additional" that matches the definition used in the Cap-and-Invest Program. This definition specifies that removals must go beyond any legally binding mandates (e.g. laws, regulations) and what would reasonably occur under a conservative business-as-usual scenario.

Rationale

This definition is necessary to ensure that any carbon management projects evaluated under the CCUS Program result in only additional GHG reductions or removals. This definition is also established to be in alignment with the Cap-and-Invest Program and to specify that removals must go beyond any legally binding mandates (e.g. laws, regulations) and what would reasonably occur under a conservative business-as-usual scenario.

"Background Seismicity Rate" Definition

Purpose

To add a definition of "Background Seismicity Rate" as the stable and long-term rate of earthquakes, excluding foreshock and aftershock events, occurring in a specific area prior to beginning of the injection of CO2 into a storage complex.

Rationale

The Proposed Regulation would require operators to monitor and evaluate seismic activity throughout GCS operations. This definition is necessary to establish the natural, pre-injection rate of seismic events that excludes foreshock and aftershock events (White and Nakata, 2025) and serves as the baseline for comparison. This baseline enables staff and operators to distinguish normal seismic fluctuations from injection-related changes that could indicate elevated risk.

"Bandwidth" Definition

Purpose

To add definition of "Bandwidth" as, in relation to the physical property of the seismic sensor (seismometer), the range of frequencies that the sensor can accurately measure and reproduce a signal, measured in the unit of hertz (Hz).

Rationale

This definition is necessary to set forth the range of frequencies a seismic sensor can reliably measure and reproduce. The Proposed Regulation would require GCS project operators to select and use seismic sensors capable of accurately detecting seismic activity across frequencies relevant to induced seismicity. Defining “bandwidth” helps ensure operators understand the performance characteristics of different sensor types, such as broadband and short-period seismometers, which operate within defined bandwidths suitable for monitoring induced seismicity. The California Geologic Survey consulted with CARB staff to develop the definition along with additional information which was used to describe typical bandwidth ranges for different types of seismic sensors (EarthScope Primary Instrument Center, n.d.a.).

“Bioenergy” Definition

Purpose

To add a definition of “Bioenergy” as converting carbon from biomass and waste streams into alternative fuels, chemicals, and other products.

Rationale

This definition is necessary to clearly and consistently identify entities subject to the Proposed Regulation under section 95702.

“Bioenergy with Carbon Capture” Definition

Purpose

To add a definition of "Bioenergy with Carbon Capture" as carbon dioxide is captured from bioenergy emissions and permanently stored.

Rationale

This definition is necessary to clearly and consistently identify entities subject to the Proposed Regulation under section 95702.

“Biomass” Definition

Purpose

To add a definition of “Biomass,” as non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms, including: products, by-products, residues and waste from agriculture, forestry, and related industries; the non-fossilized and biodegradable organic fractions of industrial and municipal wastes; and gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material.

Rationale

This definition is necessary to identify entities subject to the proposed regulation under section 95702 and make the definition consistent with the definition of “Biomass” in the Cap-and-Invest Regulation.

“Carbon Capture Utilization” or “CCU” Definition

Purpose

The proposed rulemaking defines "Carbon Capture Utilization" to identify carbon dioxide capture and utilization projects that are covered by the Proposed Regulation. Carbon Capture Utilization means the use of captured carbon dioxide in product or materials that results in either long-term chemical or physical storage, or the displacement of fossil-derived resources or mined carbon dioxide.

Rationale

This definition is necessary to accurately and consistently identify entities subject to the proposed regulation under section 95702.

“Carbon Dioxide” or “CO_2” Definition

Purpose

To add a definition of “Carbon Dioxide” or “CO_2” as the most common of the primary greenhouse gases, consisting on a molecular level of a single carbon atom and two oxygen atoms.

Rationale

This definition is necessary to set forth the specific molecule regulated under the proposed rule and to establish the substance that is captured, removed, utilized, or stored by entities subject to the Proposed Regulation.

“Carbon Dioxide Capture” or “Carbon Capture” Definition

Purpose

The proposed rulemaking defines "Carbon Dioxide Capture" to identify carbon dioxide capture projects that are considered covered entities by the Proposed Regulation. Carbon Capture is defined as the process of concentrating carbon dioxide present in flue or exhaust gases, or air, via chemical or physical separation methods.

Rationale

This definition is necessary to clearly and consistently identify covered entities subject to the Proposed Regulation under section 95702.

“Carbon Dioxide Flux” or “CO_2 Flux” Definition

Purpose

To add a definition of “Carbon Dioxide Flux” or “CO_2 Flux” as the rate of transfer of CO_2 across a unit area.

Rationale

This definition is necessary to establish parameters GCS operators may monitor to meet the surface CO_2 monitoring requirements specified in section 95704.1.

“Carbon Dioxide Leakage” or “CO_2 Leakage” Definition

Purpose

To add a definition of “Carbon Dioxide Leakage” or “CO_2 Leakage” as any movement of stored carbon dioxide out of the storage complex, or any point down-stream of the injection site, to the atmosphere or surrounding subsurface.

Rationale

This definition is necessary to establish what constitutes leakage under the Proposed Regulation. Establishing this definition ensures that operators, regulators, and stakeholders interpret and apply the associated requirements consistently across geologic carbon storage projects. It also supports alignment in reporting, monitoring, and enforcement.

“Carbon Dioxide Plume” or “CO_2 Plume” Definition

Purpose

To add a definition of “Carbon Dioxide Plume” or “CO_2 Plume” as the physical extent underground, in three dimensions, of all phases of the injected carbon dioxide.

Rationale

This definition is necessary to establish what constitutes the term “carbon dioxide plume” uniformly and apply the associated requirements consistently across geologic carbon storage projects. The definition is broad and accounts for all phases including the free-phase and dissolved phases that CO_2 may be in. The CO_2 plume must account for all the CO_2 underground, regardless of phase.

“Combustion Emissions” Definition

Purpose

The proposed rulemaking defines “combustion emissions” in order to identify carbon capture projects that are considered covered by the Proposed Regulation. Combustion emissions are defined as greenhouse gas emissions occurring during the exothermic reaction of a fuel with oxygen.

Rationale

This definition is necessary to accurately and consistently identify entities subject to the proposed regulation under section 95702.

“Continuous” Definition

Purpose

To add a definition of “Continuous” as the temporal frequency that statistically demonstrates the accurate representation of a variable taking into account any variability over a period of time.

Rationale

This definition is necessary to ensure that operators interpret and apply the criteria for continuous measurement consistently within the associated requirements. It also supports alignment in reporting, monitoring, and enforcement.

“Criteria Air Pollutants” Definition

Purpose

To add a definition of “Criteria Air Pollutants” as those pollutants for which there is an established California Ambient Air Quality Standard or National Ambient Air Quality Standard, including their precursors, except as otherwise specified herein. These pollutants and precursors include total volatile organic compounds (VOCs) or total reactive organic gases (ROG), nitrogen oxides (NOx), sulfur oxides (SOx), carbon monoxide (CO), particulate matter (PM), lead (Pb), and ammonia (NH3). For the purposes of this article, vinyl chloride, hydrogen sulfide, and sulfates are considered toxic air contaminants, and must be reported as such.

Rationale

This definition is necessary to identify potential pollutant species for which operators must disclose relevant air monitoring and mitigation activities pursuant to section 95703.1.

“Data Logger” Definition

Purpose

To add a definition of “Data Logger” as, in the context of seismic monitoring, a piece of electronic equipment which records signals from ground sensors and converts them into digital format.

Rationale

This definition is necessary to establish the meaning of this term used under the Proposed Regulation. Because accurate seismic assessment depends on consistent data acquisition and digital recording (EarthScope Primary Instrument Center, n.d.b.), the term must be defined to avoid misunderstanding of the equipment specifications needed for regulatory compliance. Including this definition also streamlines the regulatory language and supports consistent interpretation of seismic monitoring requirements across different GCS project operators.

“Direct Air Capture” Definition

Purpose

To add a definition of "Direct Air Capture" as any technology which implements carbon dioxide capture directly from the ambient air.

Rationale

This definition is necessary to identify entities subject to the proposed regulation under section 95702.

“Earthquake” Definition

Purpose

To add a definition of “Earthquake” as the sudden slip on a fault and the ground shaking that occurs from the radiated seismic energy during the slipping event. The sudden slip can be caused by stress changes in the earth or volcanic/magmatic activity, or by injection activities.

Rationale

This definition is necessary to establish what constitutes an earthquake for the purposes of seismic monitoring and evaluation under the Proposed Regulation. Staff chose to rely on the definition provided by the U.S. Geological Survey because it is widely accepted, scientifically authoritative, and commonly used in seismic monitoring (U.S.G.S., n.d.a.). Incorporating this established definition helps maintain consistency with recognized geophysical terminology and avoids misunderstanding of the seismic events subject to GCS regulatory requirements which the sudden slip on a fault and the resulting ground shaking caused by radiated seismic energy that can be triggered by CO_2 injection activities.

“Earthquake Catalog” Definition

Purpose

To add a definition for “Earthquake Catalog” as the database that contains earthquake source parameter information such as seismic event locations (i.e., latitude, longitude, and depth relative to Mean Sea Level) and magnitudes determined from seismic monitoring system.

Rationale

This definition is necessary to establish the type of database required to support seismic monitoring and evaluation under the Proposed Regulation. An earthquake catalog contains earthquake source parameter information, including event hypocenter locations and magnitudes, generated from the seismic monitoring system. Cataloging of the project specific earthquakes is developed during the baseline monitoring period and is maintained throughout injection operations and the post-injection site care (PISC). Defining this term helps streamline the regulatory language, ensures consistent interpretation of data management requirements, and avoids misunderstanding regarding the essential dataset needed to assess seismicity trends and injection-related impacts.

“Earthquake Magnitude” or “Magnitude” Definition

Purpose

To add a definition for “Earthquake Magnitude” as a number that characterizes the relative size of an earthquake. Common earthquake magnitude scales include local magnitude (ML) and moment magnitude (Mw).

Rationale

This definition is necessary to establish what the metric used to characterize the relative size of an earthquake for the purposes of seismic monitoring under the Proposed Regulation. Earthquake magnitude refers to a numerical value that represents the size of an earthquake,

commonly determined using scales such as local magnitude (ML) and moment magnitude (Mw). Staff chose to rely on the definition provided by the U.S. Geological Survey (U.S.G.S., n.d.b.) because it is scientifically authoritative, widely used in seismic monitoring, and broadly understood within the geophysical community. Including this definition helps streamline the regulatory language, ensures consistent interpretation of seismic event size, and avoids misunderstanding of the magnitude scales relevant to GCS-related seismic evaluation.

“Enforceable” Definition

Purpose

To add a definition of “Enforceable” as the authority for CARB to hold a particular party liable and to take appropriate action if any of the provisions of this article are violated.

Rationale

This definition is necessary to set forth that any carbon management projects evaluated under the CCUS Program result in only enforceable GHG reductions or removals, and to be in alignment with the Cap-and-Invest Program.

“Executive Officer” Definition

Purpose

To add a definition of “Executive Officer” as the Executive Officer of the California Air Resources Board or their delegate.

Rationale

This definition is necessary to establish that the “Executive Officer” would refer to the Executive Officer of CARB or their delegate.

“Fault” Definition

Purpose

To add a definition of “Fault” as a surface or zone of rock fracture along which there has been displacement.”

Rationale

This definition is necessary to establish the geologic feature relevant to seismic monitoring and evaluation under the Proposed Regulation. Staff chose to rely on the federal definition provided in 40 CFR § 146.3 to maintain consistency with existing federal Underground Injection Control terminology. Using this established definition helps streamline the regulatory language, supports alignment with related federal requirements for subsurface injection activities, and avoids misunderstanding of the geologic structures pertinent to assessing seismic risks associated with GCS projects.

“First Responders” Definition

Purpose

To add a definition of “First Responder” as an employee of the state or a local public agency who provides emergency response services, including any of the following:

(A) A peace officer, as defined in section 830 of the Penal Code.

(B) A firefighter, as defined in section 50925 of the Government Code.

(C) A paramedic, as defined in section 1797.84 of the Health and Safety Code.

(D) An emergency medical technician, as defined in sections 1797.80 and 1797.82 of the Health and Safety Code.

(E) A public safety dispatcher or public safety telecommunicator, meaning an individual employed by a public safety agency, as the initial first responder, whose primary responsibility is to receive, process, transmit, or dispatch emergency and nonemergency calls for law enforcement, fire, emergency medical, and other public safety services by telephone, radio, or other communication device, and includes an individual who promotes from this position and supervises individuals who perform these functions.

Rationale

This definition is necessary to establish what encompasses under the term “first responders” when referred to in the Proposed Regulations that should be notified during an incident. Staff chose to rely on the definition provided in the California Government Code section 8562.

“Formation Fluid” Definition

Purpose

To add a definition of “formation fluid” as any fluid that occupies pore space within a rock formation. Formation fluids occur as various saturations of oil, gas, and water, and are encountered in the process of drilling oil, gas, and injection wells.

Rationale

This definition is necessary to establish the types of fluids present in subsurface formations that may interact with injected CO_2 during drilling and injection operations. Because formation fluids - oil, gas, and water - occupy pore space and directly influence reservoir pressure, fluid displacement, CO_2 plume migration, and overall injectivity, defining this term helps operators accurately anticipate how injected CO_2 will behave within the reservoir. CARB staff chose to slightly modify the definition provided by SLB and consider it scientifically accurate as it is a widely used term within the energy industry (SLB, n.d.). Establishing this definition supports consistent interpretation across projects, avoids ambiguity regarding reservoir conditions that control injection performance, and ensures that proposed regulation requirements are grounded in a clear understanding of the native fluids present during CO_2 storage operations.

“Geologic Carbon Storage” or “GCS” Definition

Purpose

To add a definition of “Geologic Carbon Storage” ” or “GCS” as the permanent containment of CO_2 deep underground within porous rock formations.

Rationale

This definition is necessary to ensure consistent interpretation of what constitutes geologic carbon storage across regulated entities and stakeholders.

“Geologic Carbon Storage Site”, “GCS site”, or “storage site” Definition

Purpose

To add a definition of “Geologic Carbon Storage Site”, “GCS site”, or “storage site” as the storage complex, all injection, monitoring, and observation wells and plugged and abandoned wells that penetrate the storage complex, and any facilities or infrastructure inclusive of and downstream of the injection meter or wellhead of the injection well (whichever is further upstream from injection) and any other location that is identified as requiring in-situ monitoring to ensure permanent storage of injected CO_2.

Rationale

This definition is necessary to establish the full extent of, and what encompasses, the physical area of the site of interest, which includes the subsurface geologic storage complex, all injection, monitoring, and observation wells and plugged and abandoned wells that penetrate the storage complex, any facilities or infrastructure inclusive of and downstream of the injection meter or wellhead of the injection well (whichever is further upstream from injection), and other locations where in-situ monitoring is required to ensure permanent storage of injected CO_2. Establishing this definition supports consistent application of monitoring, reporting, and compliance obligations across GCS projects and ensures that all components relevant to verifying containment and permanence are appropriately identified and managed.

“Geologic Storage Complex” or “Storage Complex” Definition

Purpose

To add a definition of “Geologic Storage Complex” or “Storage Complex” as the three-dimensional subsurface volume comprised of a storage zone used for the injection and permanent storage of CO_2, the primary confining layer, and may include other formations that dissipate pressure or impede CO_2 plume migration vertically or laterally. CO_2 within the storage complex can be monitored for leakage.

Rationale

This is necessary to establish which layers or formations make up the storage complex where GCS operators are required to perform monitoring activities. GCS operators are responsible for monitoring for CO_2 across the storage complex to detect potential CO_2 leakage.

“Ground Motion” Definition

Purpose

To add a definition of “Ground Motion” as the movement of the earth’s surface from earthquakes or man-made seismic sources. Ground motion is produced by waves that are generated by sudden slip on a fault or sudden pressure at the seismic source and travel through the earth and along its surface.

Rationale

This definition is necessary to establish the seismic parameter that must be evaluated during GCS site monitoring. Ground motion represents a fundamental measurement used to assess seismic wave behavior generated by natural or induced events. Because GCS operators must analyze ground motion to determine whether injection activities influence seismic conditions, defining this term helps avoid misunderstanding of the physical phenomenon being measured. Staff chose to rely on the definition provided by the U.S. Geological Survey (U.S.G.S., n.d.b.) because it is scientifically authoritative, widely used in seismic monitoring, and broadly understood within the geophysical community. Including this definition also streamlines the regulatory language and supports consistent interpretation of seismic monitoring requirements across GCS sites.

“Incidental Reductions” Definition

Purpose

To add a definition of “Incidental Reductions” as decreases in air pollutant emissions that result from an industrial process whose primary function is unrelated to emissions control.

Rationale

This definition is necessary to identify mitigation measures related to air quality and air pollutant emissions that operators have the opportunity disclose pursuant to section 95703(b)(2).

“Independent Third-Party Verifier” Definition

Purpose

The purpose of adopting this definition of “Independent Third-Party Verifier” is to establish clear and enforceable qualification criteria for individuals performing verification activities under the program. This definition ensures that verification services are conducted by individuals who possess appropriate accreditation, sector-specific competence, and demonstrated capability to produce accurate, consistent, and unbiased verification determinations. The definition addresses the need for clarity regarding verifier eligibility by specifying two distinct accreditation pathways: individuals accredited under ISO 14065, and individuals accredited by CARB pursuant to sections 95977.1 and 95977.2 of Title 17 for offset verification activities. This structure resolves the problem of inconsistent verifier qualification standards and ensures alignment with both internationally recognized verification frameworks and the specific regulatory requirements governing offset verification in California.

Rationale

This definition is reasonably necessary to ensure that verification activities meet the quality, competence, and integrity standards required to support the goals of the program. Individuals performing verification for non-offset activities must be accredited under ISO 14065 because that accreditation pathway provides a comprehensive, internationally recognized set of competence and quality requirements appropriate for project-level validation and verification across sectors (ANAB, n.d.). Conversely, individuals performing offset verification must be accredited by CARB, as CARB accreditation is specifically tailored to the Compliance Offset Program and ensures that verifiers meet all training, examination, and regulatory requirements in sections 95977.1 and 95977.2 of Title 17. Establishing these two pathways—ISO accreditation for all non-offset verification and CARB accreditation for offset verification—ensures that verifiers possess the qualifications reasonably necessary to uphold verification rigor, maintain program credibility, and address the identified need for consistent and appropriately specialized verification standards.

"Induced Seismic Events" Definition

Purpose

To add a definition of "Induced Seismic Events" as the occurrence of earthquakes attributable to human activities.

Rationale

This definition is necessary to establish the type of seismic events that must be evaluated in relation to carbon storage project operations. Because the Proposed Regulation requires operators to monitor, assess, and respond to changes in seismic activity potentially influenced by injection operations, defining this term helps avoid misunderstanding of which seismic events fall under regulatory oversight. Staff chose to rely on the definition provided by the U.S. Geological Survey (U.S.G.S., 2016) because it is scientifically authoritative, widely used in seismic monitoring, and broadly understood within the geophysical community. Including this definition also streamlines the regulatory language, supports consistent interpretation of seismic monitoring requirements, and aligns with terminology commonly used in geoscience and regulatory frameworks.

"Local Air Districts" Definition

Purpose

To add a definition of "Local Air Districts" as any district created or continued in existence pursuant to the provisions of Part 3 (commencing with section 40000) of Division 26 of the Health and Safety Code.

Rationale

This definition is necessary to provide clarity as to the meaning of Local Air Districts in this regulation.

“Magnitude of Completeness (Mc)” Definition

Purpose

To add a definition of “Magnitude of Completeness (Mc)” as the minimum magnitude above which we are reliably locating all earthquakes in a certain area.

Rationale

This definition is necessary to establish the minimum earthquake magnitude above which seismic monitoring systems reliably detect and locate all events within a given area (Gardine, 2020). Because the Proposed Regulation requires accurate evaluation of seismicity during both baseline and injection periods, defining this term helps establish a consistent threshold for assessing the quality and completeness of earthquake catalogs. Including this definition streamlines the regulatory language, supports consistent interpretation of seismic monitoring performance, and avoids misunderstanding regarding the minimum magnitude at which seismic detection is considered reliable for GCS site evaluation.

“Metadata” Definition

Purpose

To add a definition of “Metadata” as the known information about seismic stations and seismometers, such as geographic location, orientation, local site effects, and instrument type.

Rationale

This definition is necessary to establish the information required to fully characterize seismic stations and seismometers used for GCS project monitoring. Metadata includes essential details about each station and instrument, such as geographic location, orientation, local site conditions, and instrument type, which are critical for interpreting seismic data and ensuring accurate event detection and analysis (Davis & Hunt, 2024). Defining this term helps streamline the regulatory language, supports consistent documentation practices, and avoids misunderstanding regarding the information that must be maintained to verify seismic monitoring system performance throughout baseline and injection operations.

“Microseismicity” Definition

Purpose

To add a definition of “Microseismicity” as an earthquake that is typically not “felt” by the public and has a low magnitude ($M<2$).

Rationale

This definition is necessary because GCS operators must monitor very small seismic events that can indicate early subsurface stress changes related to injection activities. Although these events are too small to be detected by the public, they are critical for understanding how injected CO_2 affects fault systems and reservoir behavior (IEAGHG, 2022). Defining this term ensures operators consistently identify and classify low magnitude seismic activity across projects, streamlines the regulatory language, and avoids misunderstanding of the seismic events that must be included in baseline, operational, and postinjection monitoring

requirements. For monitoring and risk-management purposes, the more important issue is not whether an event is generally described as microseismic, but whether the seismic network is capable of detecting and locating very small events reliably enough to characterize background seismicity, identify changes in activity, and support proactive operational decisions.

“Monitoring Well” Definition

Purpose

To add a definition of “Monitoring Well” as a well dedicated for the use of monitoring physical reservoir properties (e.g., pressure, fluid levels, etc,) related to CO2 injection. Monitoring wells are designed to extract fluid samples to measure fluid compositions. "Above-zone monitoring well" means a well screened across a dissipation zone above the storage zone and below the lowest underground source of drinking water (USDW). "Shallow monitoring well" means a well drilled to a depth of several to a few hundred feet, typically screened across shallow groundwater aquifers and USDWs.

Rationale

This term was used previously in the GCS Protocol but was not defined. Defining “monitoring well” establishes the expectations for the GCS operator with regards to actions that must be taken for monitoring wells. It is necessary for clarity and enforceability.

“Natural Lands” Definition

Purpose

To add a definition of “Natural Lands” as lands consisting of forests, grasslands, deserts, freshwater and riparian systems, wetlands, coastal and estuarine areas, watersheds, wildlands, or wildlife habitat, or lands used for recreational purposes such as parks, urban and community forests, trails, greenbelts, and other similar open-space land. For purposes of this paragraph, “parks” includes, but is not limited to, areas that provide public green space.

Rationale

This definition is necessary to clearly and consistently identify entities subject to the Proposed Regulation under section 95705. It is necessary for clarity and enforceability.

“Nature-Based Carbon Removal” Definition

Purpose

To add a definition of “Nature-Based Carbon Removal” as activities, such as restoration, conservation, and land management actions, that increase net carbon sequestration or reduce greenhouse gas emissions in natural and working lands.

Rationale

This definition is necessary to clearly and consistently identify entities subject to the Proposed Regulation under section 95705. It is necessary for clarity and enforceability.

“Observation Well” Definition

Purpose

To add a definition of “Observation Well” as a well used to measure reservoir pressure and fluid levels and movement. An observation well is typically designed without the capability to extract fluid samples.

Rationale

This term was used previously in the GCS Protocol but was not defined. Defining “observation well” establishes the expectations for the GCS operator with regards to actions that must be taken for observation wells. It is necessary for clarity and enforceability.

“Operating Condition” Definition

Purpose

To add a definition of “Operating Condition” as a specific requirement developed by CARB that dictates operational changes and conditions, and how operational data/other information must be gathered, kept, reported, or calculated for a carbon management project under section 95705.

Rationale

This definition is necessary to specify the conditions to which the Executive Officer may require specific conditions for projects applying for certification under section 95705. It is necessary for clarity and enforceability.

“Operator” Definition

Purpose

To add a definition of “Operator” as a person or entity owning or operating project subject to this regulation pursuant to section 95702.

Rationale

This definition is necessary to identify the entities subject to the Proposed Regulation under section 95702. It is necessary for clarity and enforceability.

“Permanent” Definition

Purpose

To add a definition of “Permanent” as GHG removals are not reversible within a specified timeframe, or when GHG removals may be reversible, that mechanisms are in place to replace any reversed GHG removal.

Rationale

This definition is necessary to ensure that any carbon management projects evaluated under the CCUS Program result in only permanent GHG reductions or removals.

“Pressure front” Definition

Purpose

To add a definition of “Pressure Front” as the zone of elevated pressure that is created by the injection of carbon dioxide into the subsurface. For the purpose of this article, the pressure front of a carbon dioxide plume refers to a zone where there is a pressure differential sufficient to cause the movement of injected fluids or formation fluids into a USDW.

Rationale

This definition is necessary because GCS operators must evaluate how injected CO_2 affects subsurface pressures and whether those pressure changes could influence the movement of fluids toward underground sources of drinking water (USDWs). Identifying and consistently defining the pressure front is essential for assessing potential migration pathways, determining compliance with protective operating limits, and ensuring that monitoring systems can detect pressure changes that may indicate risk to USDWs. Staff chose to rely on the federal definition in 40 CFR § 146.81 to maintain alignment with existing Underground Injection Control (UIC) requirements and to promote consistency across regulatory frameworks governing geologic sequestration. Defining this term streamlines the regulatory language and avoids misunderstanding of the subsurface pressure behavior that must be evaluated during GCS injection and post-injection monitoring.

“Process Emissions” Definition

Purpose

To add a definition of “Process Emissions” as the emissions from industrial processes (e.g., cement production, ammonia production) involving chemical or physical transformations other than combustion emissions. For example, the calcination of carbonates in a kiln during cement production or the oxidation of methane in an ammonia process results in the release of process CO_2 emissions to the atmosphere. Combustion emissions from generating process heat are not part of process emissions, whether the combustion is internal or external to the process equipment.

Rationale

This definition is necessary to accurately and consistently identify that projects that capture process emissions are subject to the Proposed Regulation under section 95702. It is necessary for clarity and enforceability.

“Quantifiable” Definition

Purpose

To add a definition of “Quantifiable” as, in the context of carbon management projects, the ability to accurately measure and calculate GHG removal enhancements relative to a project baseline in a reliable and replicable manner for all GHG emission sources, GHG sinks, or GHG reservoirs included within the project boundary, while accounting for uncertainty and activity-shifting leakage and market-shifting leakage.

Rationale

This definition is necessary to set forth that any carbon management projects evaluated under the CCUS Program result in only quantifiable GHG reductions or removals.

"Quantification Assessment Methodology" or "QAM" definition

Purpose

To add a definition of "Quantification Assessment Methodology" or "QAM" as a methodology that defines the quantification, monitoring, reporting, permanence, and verification requirements and procedures necessary to determine the net climate impact of a carbon management project.

Rationale

This definition is necessary to establish the scope of methodologies that carbon management projects will be assessed against and to demonstrate what the project must be in conformance with to ensure rigorous procedures for quantification, monitoring, reporting, and verification to be reviewed under section 95705.

"Real" Definition

Purpose

To add a definition of "Real" as greenhouse gas (GHG) removals result from a demonstrable action or set of actions, and are quantified using appropriate, accurate, and conservative methodologies that account for all GHG emissions sources, GHG sinks, and GHG reservoirs within the crediting project boundary and account for uncertainty and the potential for activity-shifting leakage and market-shifting leakage.

Rationale

This definition is necessary to ensure that any carbon management projects evaluated under this section result in only real GHG reductions or removals.

"Relevant Interest Holder" Definition

Purpose

To add a definition of "Relevant Interest Holder" as any person or entity holding an interest in real property wholly or partially within, overlapping, abutting, underlying, or overlaying the GCS site.

Rationale

This definition is necessary because the GCS site may include surface estates or infrastructure outside direct ownership of the GCS Operator. As a result, more than one property owner or interest holder may have some legal claim to land connected to the site, whether above, below, or adjacent to it. For any legally binding agreements concerning permissible activities or actions on the GCS site, it is crucial to clearly define all parties requiring consent to such an agreement.

“Reversal” Definition

Purpose

To add a definition of “Reversal” as a GHG removal that is subsequently released or emitted back into the atmosphere, or that is later determined to have never occurred.

Rationale

This definition is necessary to establish for operators, verification bodies, and related crediting systems regarding when action must be taken to address potential reversals.

“Seismic Risk” Definition

Purpose

To add a definition of “Seismic Risk” as the likelihood of occurrence of an earthquake and the associated severity of shaking that could result in CO_2 leakage or adverse impacts on public health or safety and the environment. Seismic risk is a function of three elements: (1) the seismic hazard or likelihood of occurrence of an earthquake and the associated severity of shaking, (2) the seismic vulnerability or expected nuisance to people and damage to buildings and other structures given the occurrence of an earthquake, and (3) the expected consequences including public nuisance and losses resulting from the predicted damage.

Rationale

This definition is necessary because GCS operators must evaluate not only the likelihood of seismic events but also their potential impacts on people, structures, and project operations (FEMA, 2004). Understanding seismic risk requires integrating information about earthquake occurrence, the vulnerability of nearby receptors, and the potential consequences of shaking. Defining this term ensures operators use a consistent framework for assessing how injection-related seismicity could affect surrounding communities and infrastructure. Including this definition streamlines the regulatory language, supports alignment with established risk-assessment practices, and avoids misunderstanding regarding the elements that must be considered when determining whether GCS operations pose a risk that requires mitigation or operational adjustments.

“Seismic Sensors” Definition

Purpose

To add a definition of “Seismic Sensors” as instruments that measure and record motions of the ground, including those of seismic waves generated by earthquakes, nuclear explosions, and other seismic sources. for “seismic sensors.”

Rationale

This definition is necessary because GCS operators must rely on specialized instruments to detect and record ground motions that inform seismic monitoring and risk assessment (EarthScope Primary Instrument Center, n.d.a.). Clearly defining seismic sensors ensures operators understand the type of equipment required to capture accurate and reliable measurements of seismic activity associated with both natural and injection related events.

Establishing this definition also supports consistency in monitoring system design, data collection expectations, and performance standards across GCS projects. Including this term streamlines the regulatory language and avoids misunderstanding regarding the instruments that must be deployed to meet seismic monitoring requirements throughout baseline, operational, and post injection phases.

"Seismic Station" Definition

Purpose

To add a definition of "Seismic Station" as the location where specialized equipment has been installed to monitor and record seismic activity. It consists of a seismometer, data acquisition system, and communication equipment buried in a sealed, thermally insulated chamber, or vault, about six feet below the surface. The seismic station also includes a solar panel to power the batteries and a freestanding communications module to transmit real-time data via satellite, phone, or Internet.

Rationale

This definition is necessary for GCS operators and stakeholders to establish a consistent term to refer to monitoring locations where seismic sensors and associated equipment are installed to detect and record seismic activity. Establishing this term ensures operators understand that a seismic station represents both the physical site and the instrumentation needed to generate reliable seismic data. USArray (IRIS, n.d.) provides supporting information that was utilized by CGS in developing this definition. Defining this term supports consistent planning and deployment of monitoring networks, establishes the minimum components required at each station, and avoids misunderstanding regarding how seismic monitoring infrastructure must be organized to meet regulatory requirements during baseline, operational, and post-injection phases.

"Seismicity" Definition

Purpose

To add a definition of "Seismicity" as the geographic and historical distribution of earthquakes.

Rationale

This definition is necessary because GCS operators must evaluate both the historical and geographic patterns of earthquake occurrence to establish a meaningful baseline and assess potential changes during injection operations (U.S.G.S., n.d.b.). Understanding seismicity provides the broader context needed to distinguish natural variations from injection-related effects. Defining this term ensures operators consistently apply it when characterizing regional earthquake activity, streamlines the regulatory language, and avoids misunderstanding regarding the seismic information that must be considered when assessing and managing seismic impacts associated with GCS projects.

"Seismicity Rate" Definition

Purpose

To add a definition of “Seismicity Rate” as the rate of earthquakes that can be characterized by the empirical relationship of the Gutenberg-Richter (GR) law, $\log N = a - bM$, where over a given time period, N is the number of earthquakes ≥ M, a is the number of M ≥ 0, and b is a parameter that determines the ratio of larger to smaller earthquakes. Thus, seismicity rate is characterized by solving for both a and b.

Rationale

This definition is necessary because GCS operators must quantify how frequently earthquakes occur in order to establish a meaningful baseline and evaluate changes during injection operations. Seismicity rate provides a standardized, scientifically recognized method for describing earthquake magnitude frequency using established relationships widely applied in seismology (Felzer, 2008). Defining this term ensures operators consistently calculate and interpret seismicity trends, which is essential for detecting deviations that may indicate injection-related impacts. Including this definition streamlines the regulatory language, aligns monitoring expectations across projects, and avoids misunderstanding of the analytical method required to assess seismic activity throughout GCS site development and operation.

“Sensitive Receptors” Definition

Purpose

To add a definition of “Sensitive Receptors” as any of the following:

(A) An education facility, including a preschool, school with transitional kindergarten, kindergarten, or any of grades 1 to 12, inclusive, daycare center, park, playground, college, or university.

(B) A community resource center, including a youth center.

(C) A health care facility, including a hospital, retirement home, or nursing home.

(D) Live-in housing, including a long-term care hospital, hospice, prison, detention center, or dormitory.

(E) A residence, including a private home, condominium, apartment, and living quarter.

(F) A building that is a business that is open to the public.

(G) A sensitive receptor does not include a facility or building set forth in (a) through (f) that is not certified for occupancy or has been abandoned.

Rationale

This definition is necessary to identify the people and infrastructure that must be described by GCS operators pursuant to the requirements established under section 95704.1(1)(5). GCS operators must conduct surface monitoring for CO_2 across the surface projection and develop a CO_2 monitoring plan, and this definition ensures consistent identification of locations that must be included in monitoring plans. The definition is consistent with definitions included in

the CO_2 Pipeline Regulation established by the Office of the State Fire Marshall, California Code of Regulations, Division 1, Chapter 14, Title 19, section 2170.

“Storage Zone” Definition

Purpose

To add a definition of "Storage Zone" as the reservoir into which CO_2 is injected for geologic storage.

Rationale

This definition is necessary to identify wells where surface CO_2 monitoring must occur pursuant to the requirements established under section 95704.1. GCS operators must monitor CO_2 at specific wells that penetrate the storage zone, and the definition ensures a consistent basis for determining which wells fall within those requirements. It is necessary for clarity and enforceability.

“Strong Ground Motion” Definition

Purpose

To add a definition of “Strong Ground Motion” or “Strong Motion” as ground motion of sufficient amplitude and duration to be potentially damaging to a building or other structure.

Rationale

This definition is necessary because GCS operators must assess not only the occurrence of seismic events but also whether ground shaking could cause damage to surrounding buildings or infrastructure. Identifying strong ground motion is critical for evaluating potential risks to public safety and for determining whether injection operations may be contributing to hazardous levels of shaking. Defining this term establishes a consistent threshold for interpreting seismic data, supports clear regulatory expectations for monitoring and response actions, and avoids misunderstanding regarding the level of ground motion that requires evaluation or mitigation during GCS project operations. Staff chose to rely on the definition provided by the U.S. Geological Survey (U.S.G.S., n.d.b.) because it is scientifically authoritative, widely used in seismic monitoring, and broadly understood within the geophysical community.

“Strong Motion Recorder” Definition

Purpose

To add a definition of “Strong Motion Recorder” as accelerometers that are designed to measure the large amplitude, high frequency seismic waves typical of large local earthquakes, and operate in the frequency band 0 Hz to 100+ Hz.

Rationale

This definition is necessary because GCS operators must use instrumentation capable of capturing high-amplitude, high-frequency seismic waves that may occur during larger seismic events (EarthScope Primary Instrument Center, n.d.a.). Strong motion recorders provide critical data for evaluating whether ground shaking associated with natural or induced earthquakes could pose risks to nearby infrastructure or public safety. Defining this term ensures operators understand the specific type of accelerometer required to measure strong ground motion, supports consistent monitoring system design across carbon storage projects, and avoids misunderstanding regarding the equipment needed to meet seismic monitoring and risk-assessment requirements during injection and post-injection operations.

“Third-party carbon market registry” or “Established Registry” or “Registry”

Purpose

To add a definition of “Third-party carbon market registry” or “registry” as a registry that has been approved by the Executive Officer pursuant to Title 17, California Code of Regulations section 95986 and 95987.

Rationale

This definition is necessary to align CARB’s standards for reviewing third-party carbon market registries with the Cap-and-Invest Program’s existing registry review process.

“Toxic Air Contaminants” Definition

Purpose

To add a definition of “Toxic Air Contaminants” (TAC) as an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health (Health & Saf. Code § 39655a). Toxic air contaminants refers to the substances which have been listed as federal hazardous air pollutants pursuant to section 7412 of Title 42 of the United States Code and substances identified as TACs under Title 17, California Code of Regulations (CCR) section 93000.

Rationale

This definition is necessary to establish potential pollutant species for which operators must disclose relevant air monitoring and mitigation activities pursuant to section 95703.1.

“Traffic Light System” or “TLS” Definition

Purpose

To add a definition of “Traffic Light System” as a framework to support a plan of control that guides actions toward risk mitigation for managing induced seismic events commonly using earthquake magnitude thresholds based on risks. Traffic Light System may have static or adaptive thresholds and may be supplemented by probabilistic forecasting methods.

Rationale

This definition is necessary because GCS operators must implement a structured and transparent approach for managing induced seismicity in the proposed regulation. A traffic light system provides operators with a clear framework for adjusting operations in response to seismic activity, typically using predefined magnitude thresholds that correspond to levels of action (Templeton et al., 2021). Defining this term ensures consistent application of seismic risk-mitigation protocols across projects, establishes the operational decision-making process during elevated seismic conditions, and aligns GCS monitoring practices with widely used methods in other subsurface injection industries. Including this definition streamlines the regulatory language and avoids misunderstanding regarding the control system that must be used to guide operational responses to induced seismicity.

“Velocity Structure” Definition

Purpose

To add a definition of “Velocity Structure” as a generalized regional model of the earth's crust that represents crustal structure using layers having different seismic velocities.

Rationale

This definition is necessary because GCS operators must use subsurface models that accurately represent how seismic waves travel through different geologic layers. Confirmation that the operators will utilize a site-specific velocity model will ensure that best practices for locating earthquakes are followed. Understanding the velocity structure is essential for locating earthquakes, assessing seismicity associated with injection activities, and interpreting seismic monitoring data. Defining this term ensures operators use a consistent conceptual framework when developing or applying regional crustal models, supports accurate event characterization, and helps avoid misunderstanding regarding the geologic information required to evaluate seismic behavior during GCS project operations. Including this definition also streamlines regulatory language and aligns seismic monitoring expectations across GCS projects. Staff chose to rely on the definition provided by the U.S. Geological Survey (U.S.G.S., n.d.b.) because it is scientifically authoritative, widely used in seismic monitoring, and broadly understood within the geophysical community. “Vertical Seismic Profiling” or “VSP” Definition

“Verifiable” Definition

Purpose

To add a definition of “Verifiable” as meaning that a project report assertion is well documented and transparent such that it lends itself to an objective review by an accredited verification body.

Rationale

This definition is necessary to establish a standard for determining whether documents submitted under this regulation contain sufficient completeness and accuracy to enable an accredited body to objectively assess the reported information. It is necessary for clarity and enforceability.

“Verification” Definition

Purpose

To add a definition of “Verification” as a systematic, independent, and documented process for the evaluation of reported data against the requirements specified in the QAM. Verification occurs after a project operator submits reports for crediting.

Rationale

This definition is necessary to establish a consistent meaning for the independent evaluation process required to review and confirm that reported project data meets all requirements specified in the applicable QAM. This definition also establishes that verification that would occur before any credits are issued.

“Vertical Seismic Profiling” Definition

Purpose

To add a definition of “Vertical Seismic Profiling” as a seismic-reflection method that records seismic arrivals from surface-activated sources with one or more receivers at depth in a borehole to determine in situ formation properties such as seismic-wave velocity, acoustic impedance, seismic anisotropy, and seismic attenuation.

Rationale

This definition is necessary because GCS operators will often have to rely on downhole seismic methods to characterize subsurface conditions that influence CO_2 injection, plume movement, and reservoir behavior. VSP provides detailed information about formation properties that cannot be obtained from surface seismic methods alone and is widely used to improve velocity models, identify geologic layering, and assess changes in the subsurface over time (E.P.A, n.d.a.). Defining this term ensures operators understand the type of seismic data acquisition method required to meet regulatory expectations for site characterization and monitoring. Including this definition streamlines the regulatory language, supports consistent application of advanced seismic techniques across GCS projects, and avoids misunderstanding regarding the role of VSP in evaluating geologic conditions relevant to safe CO_2 sequestration**.**

“Wastewater Treatment Process” Definition

Purpose

To add a definition of “Wastewater Treatment Process” as the processes used to treat fluids, so they meet the required quality standards for use, reuse, discharge, and disposal.

Rationale

This definition is necessary to identify mitigation measures related to water use and water quality that operators must disclose pursuant to section 95703.1(a)(4).

“Wave Pattern Data” Definition

Purpose

To add a definition of “Wave Pattern Data” as also referred to as waveform data which means the type of data derived from the monitoring of seismic and acoustic waves that move through the Earth that are recorded by the seismic stations of an array. Typically, they are displayed as traces across a computer screen, with the x-axis showing time and the y-axis representing the movement of the medium that is monitored, i.e. ground, water or air.

Rationale

This definition is necessary because GCS operators must rely on detailed seismic recordings to analyze how waves move through the subsurface and to accurately identify and characterize seismic events (CTBTO, n.d.). Wave pattern data provide the foundational measurements needed to determine event timing, location, and amplitude, making them critical for evaluating changes in seismicity that may be associated with CO_2 injection. Defining this term ensures operators understand the specific type of seismic data that must be collected and maintained as part of the monitoring system. Including this definition streamlines the regulatory language, supports consistent data-recording expectations across projects, and avoids misunderstanding regarding the seismic information required to assess subsurface behavior during GCS operations.

“Working Lands” Definition

Purpose

To add a definition of “Working Lands” as lands used for farming, grazing, or the production of forest products.

Rationale

This definition is necessary to clearly and consistently identify entities subject to the Proposed Regulation under section 95705. It is necessary for clarity and enforceability.

C. Section 95702. Applicability.

Purpose

The purpose of this section is to identify the entities and project types that are subject to the CCUS Program. Specifically, the CCUS Program would apply to any carbon capture, CDR, or GCS project and the requirements fall on Operators. Each subsection provides a category of projects to which the CCUS Program applies:

- Subsection (a) includes CO_2 capture projects, including projects capturing emissions from combustion (e.g., power plants), process sources (e.g., cement, steel), and bioenergy with carbon capture.
- Subsection (b) encompasses Direct Air Capture (DAC).
- Subsection (c) covers GCS sites, which are facilities that inject and store CO_2 in subsurface geologic formations for long-term sequestration.
- Subsection (d) addresses nature-based, marine, biomass and other carbon removal and storage.

- Subsection (e) includes carbon utilization projects, which are projects which involve the use of CO_2 in products.

Rationale

This section is necessary to ensure consistent interpretation and application of the Proposed Regulation's requirements across all applicable carbon management activities. By clearly delineating these applicable entities, section 95702 establishes the regulated community's boundaries, which is essential to implementing SB 905's directive that the CCUS Program "[evaluate] the efficacy, safety, and viability of CCUS and CDR technologies and facilitate [their] deployment" under comprehensive oversight.

This section applies only to projects involving carbon capture, CO_2 removal, utilization, and storage, in line with CARB's regulatory authority under SB 905. The Proposed Regulation requires all applicable entities to disclose project information on a public webpage and establishes monitoring, financial responsibility, emergency and remedial response, and community communication requirements for GCS sites. Establishing clear regulatory expectations regarding which projects will be subject to these requirements is essential to support both responsible development and effective emissions reductions and carbon removal.

CARB's 2022 Scoping Plan recognizes greenhouse gas emissions reductions, carbon capture and sequestration, nature-based solutions and CO_2 utilization as critical to California's climate strategy. Sections 95702(d)–(e) ensure these approaches are acknowledged, thus aligning regulatory scope with both statutory authority and strategic policy priorities. Including nature-based removal and CO_2 utilization allows such projects to be developed pursuant to section 95705.

D. Section 95703. Public Disclosure.

95703(a)

Purpose

The purpose of this subsection is to establish requirements for project operators to develop, maintain, and continuously update a publicly accessible project webpage beginning at the start of the CEQA process—either a Notice of Exemption or Notice of Preparation. This subsection specifies that webpages for carbon capture projects (i.e., those identified under section 95702(a)) and carbon management projects (i.e., those identified under section 95702(b)) must be maintained and updated for the duration of carbon capture or CDR activities. It also specifies that webpages for GCS sites must be maintained and updated through injection operations and for at least 100 years after the last date of injection. This subsection also states that operators must notify CARB and provide a link to the webpage when it is made public.

Rationale

This subsection is necessary to ensure key project information, including information showing that projects include all required elements under Health and Safety Code section 39741.1(a)(3)(A)-(F), is accessible to the public as carbon management projects applicable under section 95702(a)-(c) reach important planning, permitting, construction, operation, and closure phases. Requiring operators to publish this information to the project webpage

concurrently with publishing the Notice of Preparation or the Notice of Exemption under CEQA ensures that this information will be available to the public, regulatory agencies, and other stakeholders in a timely manner. Maintaining the webpage through the project life ensures all interested parties, including any adjacent communities, have continuous access to evolving project information across all phases to support public transparency. Requiring operators to notify CARB allows CARB to verify compliance. Excluding operators under Sections 95702(d)–(e) is necessary because requiring webpages for projects with minimal or no air or water permitting obligations would impose unnecessary burdens and would not address the problem described in Chapter II. Overall, this subsection ensures that project-level information is consistently accessible during the injection and 100-year post injection site care in support of CARB's statutory obligations to ensure projects facilitate meaningful public engagement throughout the all phases of the project. This obligation is on the project operators to reduce administrative burden and costs on the state collecting, organizing, storing, and posting and updating the information using public resources.

95703(a)(1)

Purpose

The purpose of this subsection is to establish the specific project information that operators must disclose on the publicly project webpage. This subsection sets forth the required elements of general project information, including project name, operator identity, project type, project and operator contact address, assigned air district, location, use of public funding, description of CO_2 capture, removal, or storage activities, and project development status. It also requires additional disclosures specific to carbon capture projects and GCS sites, including descriptions of capture technologies, emission sources, reservoir type, and issuance date of Class VI permits to construct or convert and to operate. These requirements provide a structured framework for the information that must be made available so that communities can understand the nature, scope, technological design, and operational characteristics of proposed projects.

Rationale

This subsection is necessary because members of the public, regulatory agencies, and stakeholders will benefit from having access to standardized, complete, and comprehensible project information to understand potential risks, benefits, and operational implications of applicable carbon management projects, especially if projects are subject to actions by multiple regulatory agencies. Requiring disclosure of project name, operator information, site characteristics, use of public grants, and project status ensures baseline transparency and allows affected communities to track project development. Requiring detailed descriptions of carbon capture technologies is necessary because operators exercise discretion in selecting technology types and processes. For GCS sites, disclosure of CO_2 sources, reservoir type, Class VI well approval date, and injection volumes are necessary because these factors directly inform long-term containment integrity, seismic risk, and monitoring needs. Without these disclosures, communities may be unable to evaluate the scale or nature of injection activities or assess environmental safeguards. This subsection supports the problem-solving objectives identified in Chapter II by ensuring critical project information is available consistently, early, and in a readily accessible format.

95703(a)(2)

Purpose

The purpose of this subsection is to establish requirements for operators to provide direct public access to approved permits, authorizations, and environmental review documents associated with their projects on the project webpage. This subsection requires operators to post California Environmental Quality Act (CEQA) documents at the time of public release and approved permits within 30 days to the project webpage. It also requires posting all operator-prepared documents needed to satisfy permit conditions.

Rationale

This subsection is necessary to set forth regulatory obligations that apply to carbon capture projects, DAC projects, and GCS sites. Requiring operators to provide access to permitting and regulatory materials online, either as downloadable documents or through links to existing public postings, ensures that stakeholders can readily obtain approved permits, regulatory actions, and environmental review documents throughout the project lifecycle without navigating multiple agency systems. Posting CEQA documents at the time of their public release and posting permit information within 30 days of approval supports transparency and allows communities to track project development in a timely manner.

Requiring operators to provide federal, State, and local permits related to air resources and quality, water use and management, wastewater handling and discharge, and injection wells on the project webpage provides stakeholders with a clear understanding of the full scope of regulatory oversight governing project activities. Operators must also provide access to all documents prepared to satisfy permit conditions, including those related to land use, construction, operations, closure, and site care. Clearly associating each document with its corresponding permit allows stakeholders to easily understand how regulatory requirements are applied and monitored over the course of the project. This subsection is necessary to support public and regulatory transparency in furtherance of Health and Safety Code section 39741.1(a)(3).

The timeframe of 30 days was chosen as a reasonable timeframe to balance public access while providing sufficient time for the operator.

95703(a)(3)

Purpose

The purpose of this subsection is to require operators to maintain up-to-date public information about the project's permit compliance status, including annual updates and updates within 30 days of any notice of violation, non-compliance, or permitting action.

Rationale

This subsection is necessary to provide ongoing transparency regarding the compliance status of carbon management projects with environmental and operational requirements. Carbon capture projects, DAC projects, and GCS sites can pose operational and environmental risks if

permit conditions are not followed. Requiring project operators to update permit compliance information at least annually, and within 30 days of any notice of non-compliance, violation, or other regulatory action, ensures that stakeholders have timely access to important oversight information. Providing links to publicly available compliance or non-compliance documents further supports accountability by allowing communities, regulatory agencies, and other stakeholders to verify current compliance status. Consolidating this information on the project webpage allows stakeholders to track compliance without navigating multiple agency websites or submitting separate document requests, promoting guidance and ease of access. This level of transparency is necessary to uphold accountability and is aligned with CARB's statutory responsibility to ensure safe and effective deployment of CCUS and CDR technologies.

The timeframe of 30 days was chosen as a reasonable timeframe to balance public access while providing sufficient time for the operator.

95703(a)(4)

Purpose

The purpose of this subsection is to provide public access to information required under this regulation, including the surface CO_2 monitoring plan, biennial summaries for surface CO_2 monitoring, the air monitoring plan, the air mitigation plan, the subsurface plume monitoring plan, seismic monitoring plans, the baseline seismic monitoring summary, the emergency and remedial response (ERRP) plan, and required notifications related to financial responsibility.

Rationale

This subsection is necessary because Health & Safety Code section 39741.1(a)(3) requires CCUS and CDR projects incorporate strategies to minimize environmental and public health impacts, including monitoring for CO_2 leakage, seismic risks, and water or air quality impacts. Making these monitoring plans, the air mitigation plan, and emergency preparedness materials publicly accessible ensures transparency regarding project safeguards and helps communities understand how risks are detected, mitigated, and managed. Requiring disclosure of financial responsibility notifications is necessary to demonstrate that operators have secured adequate resources to perform long-term monitoring, corrective actions, and site care for at least 100 years post-injection, as required under statute. Centralizing this information on the project webpage ensures that stakeholders can easily access it without needing to locate separate permitting records across multiple agencies.

95703(b)

Purpose

The purpose of this subsection is to set forth the requirement that operators covered under sections 95702(a)-(c) provide a consolidated, publicly accessible summary of all air and water monitoring and mitigation obligations imposed by local, state, and federal permitting authorities. The information must be posted to the project webpage within 30 days of permit approval. This subsection ensures that project-specific emissions monitoring, air pollutant mitigation measures, community-based mitigation, and water resource protection requirements are presented in a single, clear location for public review.

Rationale

This subsection is necessary because Health and Safety Code section 39741.1(a)(3) requires CCUS and CDR projects incorporate strategies to minimize environmental and public health impacts. Additionally, Public Resources Code section 71464(c) requires CCUS and CDR project operators to create an air monitoring and mitigation plan and to ensure transparent disclosure of project-related monitoring and mitigation information. Communities and stakeholders often face challenges accessing and interpreting monitoring requirements distributed across multiple permitting agencies. Consolidating these requirements into a uniform, accessible summary directly addresses this problem by improving public understanding of how air and water impacts are evaluated, monitored, mitigated, or avoided. Requiring operators to summarize monitoring activities, mitigation strategies, and any justification for the absence of monitoring ensures that members of the public and any adjacent communities have the information needed to assess environmental protections and engage meaningfully in project review. Each subsection within section 95703 functions collectively to ensure that information critical to public health and environmental protection is disclosed comprehensively and in an accessible format.

95703(b)(1)

Purpose

The purpose of this subsection is to establish the specific emissions-related information operators must disclose, including project purpose, emissions sources, the scope and techniques of air monitoring, justification for when monitoring is not required, and any voluntary monitoring activities performed in addition to required permit conditions.

Rationale

This subsection is necessary to fulfill statutory requirements under Public Resources Code section 71464(c), which requires CCUS and CDR project operators to create an air monitoring and mitigation plan. Members of the public and adjacent communities must be able to understand where emissions originate, how they are monitored, and whether monitoring activities in practice meet the standards and description of monitoring activities as permitted. Requiring operators to justify the absence of TAC, criteria air pollutant, volatile organic compounds (VOC), or reactive organic compound monitoring ensures operators demonstrate why monitoring is not needed based on permit requirements or site conditions. Identifying voluntary monitoring supports transparency and highlights protective actions operators take beyond minimum regulatory obligations.

95703(b)(2)

Purpose

The purpose of this subsection is to set forth the requirement that operators summarize all air pollutant mitigation measures imposed by permitting authorities, including best available

control technology (BACT) requirements, emissions control technologies, incidental reductions from carbon capture processes, and temporary construction-related mitigation measures.

Rationale

This subsection is necessary to carry out the requirements under Public Resources Code sections 71464(c)-(d). Various permitting authorities may impose a range of air pollutant control measures to address construction emissions, operational emissions, and emissions from carbon capture systems. A consolidated summary improves public understanding of how air impacts are minimized and allows CARB and the public to assess whether mitigation measures are adequate. Requiring tabular summaries and descriptions of operational parameters ensures information is presented in a clear, comprehensible manner. Including incidental reductions acknowledges that some carbon capture processes may reduce co-pollutant emissions, which is essential for evaluating broader environmental benefits of carbon capture technologies.

95703(b)(3)

Purpose

The purpose of this subsection is to establish requirements for operators to disclose additional mitigation measures implemented when on-site mitigation is not feasible.

Rationale

This subsection is necessary because some carbon capture projects, DAC projects, or GCS sites may have air quality impacts that require mitigation. Requiring disclosure of mitigation ensures the public and affected communities understand what protections or investments are being provided to address potential environmental or health burdens. This provision also creates public transparency regarding operators' compliance with Public Resources Code section 71464(f), which directs operators to implement mitigation measures when on-site impacts cannot be avoided, further reinforcing regulatory compliance and accountability.

95703(b)(4)

Purpose

The purpose of this subsection is to set forth requirements for operators to summarize mitigation measures imposed by permitting authorities to protect water resources, including wastewater treatment processes and measures to reduce water use or water quality impacts.

Rationale

This subsection is necessary to ensure operators meet requirements of Health and Safety Code section 39741.1(a)(3) and Public Resources Code section 71464(d). Carbon capture projects, DAC projects, and GCS sites could impact water quality or water supply through construction activities, operational wastewater generation, or transportation-related discharges. Requiring a summary of wastewater treatment processes and water mitigation measures on

the project webpage enables stakeholders to understand how water impacts are addressed and which permits impose those requirements.

E. Section 95704. Geologic Carbon Storage.

95704(a)

Purpose

The purpose of this subsection is to establish who is subject to the requirements in sections 95704-95704.7 by specifying that all geologic carbon storage covered entities identified under section 95702(c) must comply with these provisions. It also formally defines operators of geologic CO_2 storage sites as geologic carbon storage (GCS) operators for the purposes of this section, ensuring consistent terminology and establishing regulatory applicability.

Rationale

This section is necessary to establish that only GCS sites under section 95702(c) are required to comply with the provisions in sections 95704-95704.7. Carbon capture projects under section 95702(a), DAC projects under section 95702(b), nature-based and other biomass carbon removal and storage projects under section 95702(d), and carbon utilization projects under section 95702(e) are not subject to the requirements of sections 95704-95704.7.

95704(b)

Purpose

The purpose of this subsection is to require that no GCS operator may begin injecting a CO_2 stream into a storage complex until they have obtained a U.S. EPA Class VI permit and submitted proof of that permit to CARB. The operator must also post the permit on the project webpage in accordance with section 95703. This requirement ensures that all injection operations begin only after federal approval confirming appropriate well construction, monitoring systems, and geologic storage safety measures.

Rationale

This subsection is necessary because many regulatory obligations in section 95704 are designed to function only when a geologic carbon storage project is operating under a valid U.S. EPA Class VI permit. Federal law requires that any operator injecting CO_2 into a geologic storage reservoir must obtain a Class VI permit, which establishes the foundational technical requirements for well construction, injection operations, CO_2 plume tracking, seismic monitoring, leakage detection, corrective action, and long-term post-injection site care. By requiring GCS operators to submit proof of this permit to CARB and post it publicly prior to injection, this subsection ensures that the monitoring and reporting framework described in section 95704 begins only after the operator has met all federal prerequisites necessary for safe long-term geologic sequestration.

95704(c)

Purpose

The purpose of this subsection is to incorporates by reference 40 CFR Part 146 Subparts A and H which are those requirements promulgated by U.S. EPA and published in the Federal Register on July 24, 1980, July 26, 1988, Sept. 26, 1988, and Dec. 10, 2010.

Rationale

This section is necessary to incorporate by reference 40 CFR Part 146 Subparts A and H to ensure that Geologic Carbon Storage (GCS) operators continue to follow federal standards and SB 905 requirements for CO_2 plume tracking and financial responsibility throughout the 100-year post-injection period, pursuant to the statutory mandate set forth in Health and Safety Code sections 39741.1(a)(3)(D) and 39741.5. Incorporating these provisions ensures that financial responsibility does not terminate earlier than 100 years after the last injection of carbon dioxide and that any potential CO_2 leakage does not pose a material threat to public health, safety, or the environment.

F. Section 95704.1 Air Pollutant and Surface CO_2 Monitoring and Associated Requirements.

95704.1(a)

Purpose

The purpose of this subsection is to establish a comprehensive requirement for GCS operators to conduct surface CO_2 monitoring across the surface projection of the storage complex beginning at the start of injection and continuing through the full duration of the applicable post-injection site care and site closure period under 40 CFR section 146.93. This subsection sets forth the obligation for GCS operators to prepare, maintain, and implement a written monitoring plan, and to post that monitoring plan on the project webpage at least 90 days before injection begins pursuant to section 95703.

Rationale

This subsection is necessary to implement Health and Safety Code section 39741.1(a)(3)(E), and would require GCS sites to monitor CO_2 concentrations over the geologic storage complex to facilitate leak detection for a period of time that terminates no earlier than the completion of the applicable postinjection site care and site closure plan pursuant to 40 CFR section 146.93. Early detection of surface leakage is essential for triggering emergency response requirements, minimizing impacts, and preventing escalation of surface emissions. Requiring monitoring to begin at injection and continue through the full post-injection site care period aligns with federal Class VI requirements and is necessary because CO_2 plume migration can occur after injection ends. Surface CO_2 monitoring also supports safety for workers and first responders in the case of a surface leak. Requiring a written monitoring plan, posted publicly before injection begins, ensures consistency in implementation and allows communities and regulators to understand monitoring strategies before project operations commence. Each required element of the plan addresses specific risks identified in Chapter II of the Staff Report, The Problem the Proposal is Intended to Address, including induced seismicity, subsurface migration pathways, and risks to sensitive receptors.

95704.1(a)(1)

Purpose

The purpose of this subsection is to establish requirements for the CO_2 monitoring network design, including the locations and coverage needed to detect concentrations or fluxes in areas with elevated leakage risk. This subsection sets forth that monitoring must occur near injection wells, abandoned wells, monitoring wells, and observation wells intersecting the storage zone, and geologic features identified as potential migration pathways during the seismic risk assessment. It also requires GCS operators to demonstrate that spatial coverage is adequate to account for local meteorology, topography, and monitoring technology.

Rationale

This subsection is necessary to ensure that GCS operators create and maintain a CO_2 monitoring network sufficient to determine whether the risk of carbon dioxide leakage from the storage complex poses a material threat to public health, safety, as required by Health & Safety Code section 39741.1(a)(3)(E). CO_2 leakage risks are influenced by site-specific geology, well infrastructure, and geographic conditions. Wells, fractures, and faults have elevated leakage potential, and GCS operators need to evaluate site-specific considerations when deciding where monitoring equipment is placed. Studies evaluating leakage signals from different monitoring methods suggest that using point measurements to monitor CO_2 concentrations close to the ground surface within 5 m of high-risk areas can be an effective strategy for detecting surface leakage (Lewicki et al., 2009). Locations where heighted risk of surface leakage could occur were identified from reviewing scientific literature. Injection well heads and abandoned and sealed wells are recognized as potential leakage pathways at geologic storage projects (Baek et al., 2023). Additionally, faults and fractures can create permeable pathways for CO_2 to migrate outside of a reservoir (Rizzo et al., 2024). Requiring GCS operators to demonstrate spatial coverage ensures monitoring is robust enough to detect both localized and diffuse leakage signals under varying environmental conditions. This subsection addresses Chapter II of the Staff Report, the Problem the Proposal is Intended to Address. Insufficient monitoring coverage could result in undetected leakage, undermining long-term containment.

95704.1(a)(2)

Purpose

The purpose of this subsection is to require GCS operators to develop and document a scientifically justified methodology for distinguishing leakage signals from natural background CO_2 concentration variability. This subsection also establishes the requirement that leakage indicators be scientifically justified and tied to the Emergency Remedial Response Plan (ERRP) under section 95704.4 or Class VI ERRP requirements pursuant to 40 CFR section 146.94.

Rationale

This subsection is necessary to ensure that any determination of a potential surface leakage event is scientifically defensible and not confounded by naturally occurring processes. Near-

surface CO_2 concentrations and fluxes can vary substantially due to soil respiration, microbial activity, and other environmental factors. Peer-reviewed research has demonstrated that such natural variability can obscure surface leakage events in monitoring data, underscoring the need for analytical methods capable of differentiating between surface leakage and background variability (Lewicki et al., 2005; IEAGHG, 2012).

Requiring GCS operators to develop an analytical strategy and associated thresholds that are scientifically justified and grounded in both literature and site-specific observations ensures that activation of ERRP requirements under section 95704.4 or, as relevant, ERRP requirements under Class VI are based on reliable evidence of leakage. This requirement minimizes the likelihood that naturally occurring CO_2 concentration variability is misinterpreted as a CO_2 leakage signal and likewise reduces the potential for an actual CO_2 leakage signal to be misinterpreted as natural variability, thereby supporting timely mitigation actions when warranted.

95704.1(a)(3)

Purpose

The purpose of this subsection is to establish the minimum technical performance requirements for CO_2 monitoring equipment used by GCS operators. This subsection states that monitoring equipment must be suitable for performing quantitative measurements, calibrated to manufacturer's specifications, capable of collecting continuous measurements, and able to measure the full span of potential CO_2 concentrations or fluxes expected across the surface projection of the storage complex.

Rationale

This subsection is necessary to ensure GCS operators utilize monitoring technologies sufficient to detect leaks. Since atmospheric CO_2 is present at relatively high background concentrations, leakage signals from geologic storage sites are expected to be small perturbations rather than distinct peaks. Equipment that lacks adequate sensitivity or calibration could fail to detect leakage or misrepresent conditions near the surface. The requirement for continuous measurement is essential because leakage can occur episodically or under changing meteorological conditions. Intermittent monitoring techniques may miss CO_2 leakage because it cannot reliably distinguish a leakage signal from normal background variability. Establishing these performance criteria across the entire surface projection of the storage complex ensures monitoring equipment can detect small changes above background levels over the entire area of interest which includes all potential risk locations, preventing missed detection and protecting nearby populations.

95704.1(a)(4)

Purpose

The purpose of this subsection is to establish the requirement for meteorological monitoring across the surface projection of the storage complex to support CO_2 monitoring activities.

Rationale

This subsection is necessary to ensure that the GCS operators' monitoring equipment can accurately detect leaks notwithstanding various potential meteorological conditions the equipment may experience. Wind speed, wind direction, humidity, pressure, and temperature significantly influence CO_2 dispersion, accumulation, and measurement accuracy. Without meteorological data, GCS operators could misinterpret CO_2 monitoring results, resulting in either false alarms or undetected leakage. Requiring sufficient spatial coverage ensures that GCS operators account for meaningful atmospheric variation across the surface projection of the storage complex.

95704.1(a)(5)

Purpose

The purpose of this subsection is to require GCS operators to identify and describe the proximity of sensitive receptors near the storage complex surface projection. The subsection also provides a list of sensitive receptors.

Rationale

This subsection is necessary to ensure that GCS operators are identifying communities that could be impacted by CO_2 leaks due to prolonged exposure, limited mobility, or vulnerability to respiratory impacts. Requiring the GCS operators to identify sensitive receptors also supports emergency preparedness and informs ERRP activation thresholds that GCS operators would incorporate under section 95704.1(a)(2).

95704.1(b)

Purpose

The purpose of this subsection is to establish continuous data coverage requirements for all monitoring equipment associated with the CO_2 monitoring network. This subsection requires GCS operators to ensure that all monitoring equipment collects valid data for at least 90% of the calendar year. It also states that GCS operators must note any data corruption in their reports, if equipment maintenance will lead to data loss due to repair-related delays.

Rationale

This subsection is necessary to ensure that monitoring equipment operates continuously to support leak detection, consistent with the statutory direction in Health and Safety Code section 39741.1(a)(3)(E). Requiring valid data for at least 90% of the calendar year ensures that CO_2 monitoring activities can identify emerging conditions that may indicate surface leakage and provides incentive for project operators to monitor and maintain their instruments. Events outside of operator's control do occur, such as weather event, crime, and or faulty equipment with unresponsive technical support, which may lead to legitimate cause for not meeting this threshold. Requiring GCS operators to specify any data corruption in their reports, if equipment maintenance or repairs will result in data loss and allowing GCS operators to exclude repair time from the cumulative data loss calculation provides necessary operational flexibility so operators are not penalized for performing necessary instrument maintenance and repairs.

95704.1(c)

Purpose

The purpose of this subsection is to establish requirements for GCS operators to review and update the surface CO_2 monitoring plan within 60 days following changes to site conditions, infrastructure, or identified leakage pathways. This subsection also requires GCS operators to post their active monitoring plan to the project webpage within 60 days of implementation.

Rationale

This subsection is necessary to ensure the CO_2 monitoring networks remain capable, on an ongoing basis, of detecting leaks that may pose a threat to public health, safety, or the environment. Surface leakage risks can change over time due to CO_2 plume migration that will trigger update to the storage complex extent, seismic activity that may lead to faults or fractures resulting in new potential leakage pathways thus compromising storage integrity, installation or decommission of new wells, or upgrade or removal of other GCS site infrastructure. Without required reassessment, monitoring plans could become outdated and unable to detect leakage from new surface leakage pathways. Requiring GCS operators to update their monitoring plan within 60 days ensures that necessary changes to the CO_2 monitoring network are made promptly to respond to new surface leakage risks. Requiring GCS operators to post the active monitoring plan to the project webpage in a timely manner ensures that the public has access to up-to-date information on an ongoing basis.

95704.1(d)

Purpose

The purpose of this subsection is to establish requirements for biennial summaries of CO_2 monitoring activities, ensuring that GCS operators report monitoring results, data interpretation, instrument maintenance, ERRP activation events, plan changes, and quality assurance practices on the project webpage.

Rationale

This subsection is necessary because continuous monitoring produces large volumes of data that must be condensed, interpreted, and reported for CARB and the public to evaluate performance. Biennial summaries ensure transparency, allow CARB to verify compliance, and enable interested stakeholders and communities to understand whether monitoring operations. Requiring GIS-compatible improves accessibility and supports spatial interpretation of leakage risks. Posting the biennial summaries to the project webpage ensures that stakeholders, regulatory agencies, and members of the public have access to important monitoring information on an ongoing basis.

95704.1(e)

Purpose

The purpose of this subsection is to establish requirements for GCS operators to conduct air pollutant monitoring at one or more locations at the GCS site. These requirements specify that at least one monitoring station must be installed in the upwind direction of any potentially

impacted sensitive receptors. This subsection specifies that air pollutant monitoring must begin at the start of construction and continue through the full duration of the applicable post-injection site care and site closure period under 40 CFR section 146.93.

Rationale

This subsection is necessary to implement Health and Safety Code section 39741.1(a)(3)(E) and would require GCS operators to monitor criteria air pollutants and toxic air contaminants at GCS sites. Specifying that monitoring stations must be installed upwind of potentially impacted sensitive receptors is necessary provide data on potential air quality impacts to downwind receptors. Requiring monitoring to begin at the start of construction and continue through the full post-injection site care period aligns with statutory direction and is necessary because construction activities can lead to fugitive dust and combustion of fuels that impact air quality.

95704.1(f)

Purpose

The purpose of this subsection is to establish requirements for GCS operators to prepare, maintain, and implement a written air monitoring plan, and to post that monitoring plan on the project webpage at least 60 days before construction begins pursuant to section 95703. This subsection requires the monitoring plan to describe the monitoring equipment, siting and equipment specifications, and the installation, operation, maintenance, and quality assurance procedures for the air monitoring system.

Rationale

Requiring a written air monitoring plan that must be posted publicly before construction begins is necessary to ensure consistency in implementation and allows the public and regulators to understand monitoring strategies before project construction commences. Including a description of the monitoring equipment, siting, and equipment specifications is important for interpreting data and ensuring the equipment is capable of continuously monitoring ambient concentrations of all relevant air pollutants. Information about equipment installation, operation, maintenance, and quality assurance procedures is important for understanding how the air monitoring system will be maintained to ensure monitoring data are accurate and reliable.

The timeframe of 60 days was chosen as a reasonable timeframe to balance the need for the information while providing sufficient time for the operator.

95704.1(g)

Purpose

The purpose of this subsection is to establish requirements for GCS operators to review and update the air monitoring plan within 60 days following any unplanned equipment or process modification that could affect operational emissions. This subsection also requires GCS operators to post their active monitoring plan to the project webpage within 60 days of implementation.

Rationale

This subsection is necessary to ensure the air monitoring system remains capable, on an ongoing basis, of monitoring ambient concentrations of criteria air pollutants and relevant toxic air contaminants. Operational emissions could change over time due to upgraded equipment or changes in operations. Without reassessment, monitoring plans could become outdated and unable to detect relevant air pollutants. Requiring GCS operators to update their monitoring plan within 60 days ensures that necessary changes to the air monitoring system are made promptly to respond to new or modified emissions sources. Requiring GCS operators to post the active air monitoring plan to the project webpage in a timely manner ensures that the public has access to up-to-date information on an ongoing basis.

95704.1(h)

Purpose

The purpose of this subsection is to establish requirements for GCS operators to identify and minimize any potential impacts to air quality in adjacent communities that could occur from project activities. Under this subsection, GCS operators must implement minimization strategies to the maximum extent technologically feasible if air pollutant emissions are identified. Operators are required to describe these minimization strategies as well as approaches for evaluating their effectiveness in an Air Mitigation Plan. This subsection also states that GCS operators are allowed to refer to plans prepared for other federal, state, or local government agencies to support compliance with these requirements.

Rationale

This subsection is necessary to implement Health and Safety Code section 39741.1(a)(3), which requires CCUS and CDR projects to incorporate strategies to minimize environmental and public health impacts, including strategies to minimize copollutant emissions to the maximum extent technologically feasible. This subsection is also necessary to implement Public Resources Code section 71464(c), which requires CCUS and CDR project operators to create an air monitoring and mitigation plan. Allowing GCS operators to refer to plans prepared for other agencies prevents duplicative requirements. These requirements pertain specifically to GCS sites because industrial facilities implementing carbon capture will be subject to BACT requirements determined by local air districts, which will be disclosed under subsection 95703.

95704.1(g)

Purpose

The purpose of this subsection is to establish data retention requirements for all air pollutant monitoring and CO_2 monitoring records. This subsection states that all monitoring data, surface CO_2 monitoring plans, air monitoring plans, the air mitigation plan, and biennial summaries must be retained for at least 100 years after injection ends and made available to CARB upon request.

Rationale

This subsection is necessary because air quality, leakage risks, plume movement, and subsurface changes may evolve over decades. Long-term retention allows CARB to verify compliance, reconstruct monitoring history, and confirm that GCS operators have maintained required monitoring. The 100-year retention aligns with statutory post-injection financial responsibility and seismic monitoring obligations.

G. Section 95704.2. Subsurface CO_2 Plume and Pressure Front Monitoring

95704.2(a)

Purpose

The purpose of this subsection is to require GCS operators to prepare a subsurface CO_2 plume and pressure front monitoring plan that describes the methods used to monitor the CO_2 plume and pressure front, as required under 40 CFR sections 146.90(g) and 146.90(i). Under 40 CFR section 146.90(g), GCS operators must track plume extent and pressure conditions using direct measurements within the injection zone and indirect geophysical methods, such as seismic, electrical, gravity, or electromagnetic surveys, unless site-specific geology renders such tools inappropriate. Under 40 CFR section 146.90(i), GCS operators must also conduct any additional monitoring needed to refine computational modeling of the U.S. EPA-defined area of review. Under 40 CFR section 146.90(j), GCS operators must periodically review the testing and monitoring plan to incorporate newly collected monitoring data from this subpart, operational data obtained under 40 CFR section 146.88, and the most recent U.S. EPA-defined area of review reevaluation performed under 40 CFR section 146.84(e). These reviews must occur at intervals no longer than five years. All monitoring methods must be described in the subsurface CO_2 plume and pressure front monitoring plan at least 90 days prior to the start of injection and posted to the project webpage pursuant to section 95703. Updates to the plan must be disclosed within 60 days of implementation.

Rationale

This subsection is necessary because long-term containment of injected CO_2 depends on the ability to accurately track CO_2 plume migration and pressure front, and the requirements of 40 CFR sections 146.90(g) and 146.90(i) provide the federal technical foundation for such monitoring. (U.S. EPA, 2013a). Direct zone-specific measurements ensure GCS operators can detect changes where plume movement or pressure buildup first occurs, while indirect geophysical surveys provide critical, spatially extensive information on subsurface conditions, allowing GCS operators to detect shifts in plume geometry, pressure fronts, or developing anomalies that may signal leakage risk. These methods enable detection of plume migration and pressure fronts that could indicate potential loss of containment. Additional monitoring required under 40 CFR section 146.90(i) ensures that computational models of U.S. EPA-defined area of review remain up-to-date, improving predictions of plume evolution and supporting compliance with Underground Source of Drinking Water (USDW) protection standards. This provision ensures that GCS operators have a monitoring plan that is sufficient to detect CO_2 containment issues for the entirety of the injection period to prevent environmental or public health impacts. This subsection ensures GCS operators establish

clear, scientifically grounded strategies for tracking plume behavior, confirming containment for 100 years after injection ends. Requirements under 40 CFR section 146.90(j) ensure that monitoring strategies reflect current understanding of reservoir performance and continue to provide accurate, reliable information needed to protect public health, safety, and the environment. This requirement ensures that monitoring approaches remain accurate, responsive to changing subsurface conditions, and aligned with regulatory expectations throughout the project lifecycle. An outdated monitoring plan could lead to ineffective detection of plume movement or pressure changes that pose risks to containment. Regular updates every five years reinforce accountability and support timely identification and mitigation of any emerging risks associated with CO_2 storage and ensure that monitoring approaches remain accurate and responsive to changing subsurface conditions throughout the life of the project. Posting the full monitoring plan at least 90 days before injection ensures that regulators, nearby communities, and other stakeholders have sufficient time to review the planned monitoring activities, understand how plume movement and pressure changes will be detected, and understand how the GCS operator's approach aligns with federal requirements under 40 CFR section 146.90. Requiring updated plans to be posted within 60 days of implementation ensures that changes in monitoring methods, technologies, or evaluation procedures remain visible and accessible, supporting continuous public awareness and enabling regulators to track how monitoring evolves in response to new data or changing site conditions.

95704.2(b)

Purpose

The purpose of this subsection is to establish the conditions under which GCS operators may reduce or retire subsurface CO_2 plume and elevated-pressure monitoring at the end of U.S. EPA-approved PISC timeframe pursuant to 40 CFR section 146.93. Under 40 section 146.93(b), GCS operators must continue monitoring after injection ceases to verify the position of the CO_2 plume and pressure front and demonstrate non-endangerment to USDWs for at least 50 years or for the duration of an U.S. EPA-approved PISC timeframe. Monitoring must continue until the GCS operator can demonstrate to the Director that the site does not endanger USDWs, using site-specific monitoring and operational data. 40 CFR section 146.93(c) allows GCS operators to obtain an alternative PISC timeframe based on substantial, site-specific evidence including computational modeling, predicted pressure decline, plume migration characteristics, trapping mechanisms, confining zone integrity, well construction evaluations, and other geological and operational factors. This subsection requires GCS operators to disclose U.S. EPA approval of an alternative PISC timeframe (U.S. EPA, 2016) that will verify that any reduction or retirement of monitoring aligns with federal criteria demonstrating secure long-term containment.

Rationale

This subsection is necessary for CARB to ensure that any reduction or retirement of subsurface monitoring is based on rigorous, federally validated evidence that the geologic sequestration project poses no risk to USDWs over the long term and is consistent with Health and Safety Code section 39741.1(a)(3)(D) which requires that monitoring demonstrates the risk of carbon dioxide leakage poses no material threat to public health, safety, and the

environment. The requirements of 40 CFR section 146.93(b) ensure that monitoring continues until plume movement and pressure decline confirm stability and non-endangerment, while section 146.93(c) provides detailed criteria for approving an alternative PISC timeframe, including modeling outcomes, trapping processes, confining zone integrity, well evaluations, distances to USDWs, and uncertainty analyses. The disclosure of U.S. EPA approval of an alternative PISC provides the public with the comprehensive site-specific data and robust scientific analysis underlying the decision to reduce monitoring. This provision also helps maintain regulatory continuity as monitoring requirements transitions beyond the U.S. EPA PISC period to the SB 905 requirements. Disclosing the approval and supporting demonstration within 30 days provides clear documentation that any reduction in post-injection monitoring is grounded in federally verified evidence showing non-endangerment to USDWs.

95704.2(c)

Purpose

The purpose of this subsection is to require GCS operators to take immediate actions according to the emergency remedial and response plan (ERRP) pursuant to section 95704.4 and, within 60 days follow provisions listed under this subsection, when they detect either a seismic event that triggers a yellow-light TLS threshold or CO_2 or formation fluid leakage after the U.S. EPA-approved PISC timeframe has ended.

Rationale

This subsection is necessary to provide a clear, enforceable response framework for situations in which a GCS site exhibits indicators of potential or actual loss of containment after the U.S. EPA-approved PISC timeframe has ended. By requiring operators to immediately follow their emergency remedial and response plan (ERRP) under section 95704.4, the regulation ensures a structured, rapid, and enforceable action plan that is tailored to site-specific conditions. Implementing the ERRP promptly helps to limit the extent of any migration, prevent further risks public, health, and environment and stabilize subsurface conditions by activating predefined actions, mitigation measures, notification procedures, and following other actions listed below this subsection within 60 days. Seismic events that trigger a yellow-light TLS threshold or leakage detected after the U.S. EPA-approved PISC period indicate that storage-complex conditions may be at elevated risk of CO_2 confinement loss. Seismicity during the post-injection site care can alter subsurface stresses, activate faults, or open new migration pathways that compromise containment. Similarly, any confirmed leakage after the PISC timeframe signals that long-term stability assumptions are no longer valid, and that continued oversight is required and following provisions listed below this subsection must be followed to prevent risks of further CO_2 loss.

The timeframe of 60 days was chosen as a reasonable timeframe to balance safety while providing sufficient time for the operator.

95704.2(c)(1)

Purpose

The purpose of this subsection is to require GCS operators to reinstate the subsurface CO_2 plume and pressure front monitoring plan and associated monitoring methods required under section 95704.2(a) whenever a seismic event or CO_2 or formation fluid leakage indicates that subsurface conditions may have changed after the EPA-approved PISC timeframe. This regulation also requires the plan to be posted on the project webpage as per 95703.

Rationale

This subsection is necessary because seismic activity or evidence of potential leakage occurring after the U.S. EPA-approved PISC timeframe signals that long-term stability assumptions may no longer be valid and that subsurface conditions could pose an increased risk of CO_2 or formation fluid migration. Reinstating the subsurface CO_2 plume and pressure front monitoring plan provides direct measurements, geophysical data, and computational modeling needed to assess CO_2 plume behavior and pressure changes. This ensures shifts in CO_2 plume geometry, pressure front, or migration pathways, such as faults or wells, that may contribute to leakage risk are accurately detected. This approach also ensures that monitoring remains sufficiently robust to prevent endangerment of public, health and the environment and aligns with CARB's statutory obligations under Health and Safety Code section 39741.1(a)(3)(D). This provision ensures that operators promptly return to full monitoring capacity, using the federally aligned requirements described in section 95704.2(a) to track plume extent, pressure conditions, and any anomalies that may signal migration or loss of containment. By requiring immediate leakage evaluation and reinstatement of the established monitoring plan, this provision ensures that GCS operators apply comprehensive, site-specific monitoring requirements to verify storage complex integrity and maintain protection of USDWs, public health, safety, and the environment. Requiring this new plan to be posted on the project webpage ensures that changes in monitoring methods, technologies, or evaluation procedures remain visible and accessible, supporting continuous public awareness and enabling regulators to track how monitoring evolves in response to new data or changing site conditions.

95704.2(c)(2)

Purpose

The purpose of this subsection is to require GCS operators to review the storage complex extent whenever a seismic event or CO_2 or formation fluid leakage occurs after the U.S. EPA-approved PISC timeframe. GCS operators must use existing site characterization from the approved Class VI permit, updated subsurface CO_2 plume and pressure-front monitoring data, and computational modeling to evaluate the projected lateral and vertical migration of injected CO_2 and formation fluids until all plume movement ceases and pressure differentials no longer create conditions for fluid migration that could pose risks to public health, safety, or the environment. This review must incorporate detailed geologic data used to characterize the storage and confining zones, as well as total injected volumes projected through 100 years after the last injection date; account for geologic heterogeneities, discontinuities, and data-quality limitations that may influence model outputs, and evaluate potential migration through faults, fractures, and artificial penetrations to ensure a complete and scientifically robust assessment of storage complex behavior following a seismic event or leakage.

Rationale

This subsection is necessary because seismic activity or leakage after the U.S. EPA-approved PISC timeframe indicates that long-term assumptions about CO_2 plume stability and pressure dissipation may no longer be valid, requiring a renewed, comprehensive evaluation of the storage complex using updated monitoring and modeling. (A) Reviewing CO_2 plume and pressure migration with detailed geologic characterization and 100-year injection-volume projections ensures that models accurately reflect the physical conditions controlling fluid movement. (B) Accounting heterogeneities and discontinuities reduce uncertainty and improve prediction reliability. (C) Considering potential migration through faults, fractures, and artificial penetrations is essential because these pathways can become activated by seismic stress or pressure changes and could facilitate unintended CO_2 or formation fluid movement. This requirement provides the necessary technical information needed to confirm continued containment, protect USDWs, and maintain public health and environmental safety when indicators suggest elevated risk after the U.S. EPA-approved PISC timeframe.

95704.2(d)

Purpose

The purpose of this subsection is to require GCS operators, following reinstatement, to conduct a periodic five-year reviews and must include reevaluation of the storage complex extent using updated data and modeling, and updating the monitoring plan to incorporate the latest monitoring results, storage extent review, and any necessary adjustments to cover new potential leakage pathways or adopt improved monitoring technologies, maintaining alignment with the standards established in section 95704.2(a).

Rationale

This subsection is necessary because subsurface conditions, monitoring technologies, and leakage risks may evolve significantly over time, and a static post-reinstatement subsurface CO_2 plume and pressure front monitoring plan could fail to detect emerging threats. A structured five-year review ensures that updated data on CO_2 plume behavior and storage extent are integrated into the monitoring plan, while requiring updates when technologies change or new leakage pathways are identified maintain comprehensive coverage. Evaluating the storage-complex extent every five years ensures that operators reassess plume migration, pressure behavior, confining-zone performance, and any changes within the subsurface that could influence containment, using updated monitoring results and modeling consistent with Class VI requirements. This is critical because subsurface behavior can evolve over time, particularly after seismic events or other disturbances that require reinstatement. Updating the subsurface CO_2 plume and pressure-front monitoring plan every five years ensure that newly collected monitoring data, revised understanding of the storage complex, and improvements in monitoring technology are incorporated, and that the plan continues to cover all potential leakage pathways. This prevents reliance on outdated methods, enhances early detection of anomalies, and maintains alignment with regulatory standards designed to protect public health, safety, and the environment. By requiring this ongoing reassessment and transparency via webpage postings after the U.S. EPA-approved timeframe, the regulation supports

continuous improvement, accountability, and effective protection of USDWs, public health, safety, and the environment.

95704.2(e)

Purpose

The purpose of this subsection is to require GCS operators to evaluate and summarize the results of subsurface CO_2 plume and pressure-front monitoring activities and retain those results pursuant to section 95704.2(g).

Rationale

This subsection is necessary because evaluating and summarizing subsurface monitoring results provides a clear, consolidated record of CO_2 plume behavior, pressure-front movement, and storage complex performance following reinstatement, ensuring that operators maintain an accurate understanding of containment conditions. This summary must synthesize all monitoring information collected following reinstatement, ensuring that operators document changes in CO2 plume behavior, pressure front, monitoring coverage, and potential leakage pathways. Summarizing the storage complex extent evaluation with subsurface CO_2 and pressure front monitoring data supports verification that CO_2 and formation-fluid migration remain within predicted boundaries. Retaining these results pursuant to section 95704.2(g) ensures continuity of information across the project lifecycle, supports regulatory oversight, and enables operators and regulators to identify trends or emerging risks that may require further action to protect USDWs, public health, safety, and the environment. It ensures the availability of complete, long-term monitoring records that support regulatory review, verification of containment, and continued assessment of the site's geologic stability.

95704.2(f)

Purpose

The purpose of this subsection is to provide a pathway for GCS operators to demonstrate again, no sooner than five years of reinstated monitoring, that site conditions no longer pose an endangerment under 40 CFR section 146.93(c), ensuring that any future reduction or retirement of monitoring requires scientific evidence and regulatory approval for long-term security.

Rationale

This subsection is necessary to allow GCS operators to seek approval of a new alternative PISC timeframe after demonstrating non-endangerment under 40 CFR section 146.93(c). This provides a structured and evidence-based mechanism for eventually reducing monitoring obligations, ensuring that decisions to scale back monitoring are justified, transparent, and protective of long-term storage integrity.

95704.2(g)

Purpose

The purpose of this subsection is to ensure that GCS operators maintain comprehensive, long-term documentation of all subsurface CO_2 plume and pressure monitoring activities for at least 100 years after injection ends. This provision requires GCS operators to retain raw data, monitoring plans**,** storage complex reviews**,** updates, and five-year summaries, and make these records available to CARB upon request.

Rationale

This subsection is necessary because long-term CO_2 storage requires sustained confidence in CO_2 plume containment and pressure dissipation, and such confidence depends on the availability of complete, high-quality monitoring records over extended timescales. Retaining all subsurface monitoring documentation for 100 years ensures that regulators can review historical data to evaluate site performance, identify emerging risks, and verify compliance with state and federal requirements. Access to raw data and monitoring plan updates also enables CARB to conduct independent assessments, audit operator practices, and ensure that any issues, such as leakage, pressure anomalies, or changes in reservoir behavior, can be thoroughly investigated. This provision guarantees that critical information needed to assess containment performance, investigate anomalies, and verify compliance remains preserved throughout the full duration of post-injection period oversight. This long-term recordkeeping framework supports continuity, transparency, and the ability to conduct retrospective analyses essential for confirming plume stability and long-term environmental protection.

H. Section 95704.3. Seismic Monitoring Requirements.

95704.3(a)

Purpose

The purpose of this subsection is to establish requirements for GCS operators to prepare a site-specific seismic risk assessment evaluating the seismic hazard or likelihood of occurrence of an earthquake and the associated severity of shaking, the seismic vulnerability or expected nuisance to people and damage to buildings and other structures given the occurrence of an earthquake, and the expected consequences including public nuisance and losses resulting from the predicted damage.

Rationale

This subsection is necessary to ensure that GCS operators develop and maintain a site-specific seismic risk assessment that supports strategies to minimize seismic impacts to and from geologic storage projects, including the risk of gas leakage caused by seismic activity, as required by Health and Safety Code section 39741.1(a)(3)(C). Statewide or generic seismic maps cannot adequately capture the unique faults, subsurface conditions, or well configurations at individual GCS sites. Without a site-specific assessment, GCS operators may overlook seismic vulnerabilities that could result in CO_2 leakage and fail to meet SB 905's requirement to minimize seismic risks.

95704.3(a)(1)

Purpose

The purpose of this subsection is to require GCS operators to conduct a seismic risk assessment evaluating potential impacts from seismic shaking hazards and earthquake risks that could result in loss of CO_2-containment. These include damage to planned or existing GCS site infrastructure within the surface projection of the storage complex that is essential to injection operations and monitoring; harm to nearby populations at risk of property damage or disturbance; damage to public structures; public nuisance (such as sleep disturbance, creaking walls, or reduced enjoyment of recreation or entertainment); compromised well bores and the confining system, which can lead to loss of CO_2 and reservoir fluid containment; and seismic events indicating the activation of nearby faults that may present seismic risk or serve as leakage pathways.

Rational

This subsection is necessary because it ensures that sequestration projects perform a seismic risk assessment to develop Traffic Light System (TLS) thresholds for mitigation actions in the ERRP, reflecting potential impacts such as structural damage, public nuisance, or USDW contamination, thereby supporting effective monitoring and seismic risk management (Templeton et al., 2021) strategies that minimize seismic risks to and from geologic storage activities, consistent with Health and Safety Code section 39741.1(a)(3)(C). Establishing a risk assessment requirement creates flexibility for the GCS operator given the differences in sequestration technologies utilized, geographic location, and risk exposure. Each site will have its own seismic risk characteristics, and therefore not one single magnitude threshold is appropriate statewide for monitoring and mitigation.

Additionally, this requirement is necessary to ensure GCS operators evaluate the potential for damage to project infrastructure, nearby populations, and public structures, in order to determine whether monitoring and mitigation measures adequately protect public health and safety. It also ensures evaluation of negative impacts from induced seismicity resulting from lower-magnitude induced events (nuisance earthquakes), such as interference with human activity (e.g., sleep disturbance, creaking walls, reduced enjoyment of recreation or entertainment), minor cosmetic damage, or psychological effects (e.g., anxiety due to the frequent occurrence of felt earthquakes) (Schultz et al., 2001). Assessing seismic risks related to compromise of the well bores and the geologic reservoir's confining system, such as formation of new fractures or faults that may act as leakage pathways, provides essential information for understanding environmental impacts and ensuring the long-term integrity of the storage complex. Evaluating the potential activation of nearby faults is critical for understanding how injection-related stresses may influence local geologic features and whether additional monitoring or control measures are warranted. Together, evaluating these scenarios supports comprehensive identification of conditions that may elevate seismic risk and ensures that appropriate monitoring, operational controls, and contingency measures are in place to minimize such risks during and after fluid injection, consistent with Health and Safety Code section 39741.1(a)(3)(D).

95704.3(a)(2)

Purpose

The purpose of this subsection is to require the GCS operator to ensure that the results of the seismic risk assessment directly inform the development and implementation of all seismic monitoring plans required under section 95704.3, as well as the Traffic Light System (TLS) within the Emergency and Remedial Response Plan (ERRP) as required by section 95704.4.

Rationale

This subsection is necessary to ensure that monitoring thresholds and mitigation actions described in the TLS and ERRP are grounded in site-specific evaluation of induced seismicity hazards and risks, such as damage to property and public nuisance from earthquake ground shaking, and loss of well bore integrity and storage reservoir confinement. The TLS defines thresholds for remedial actions within the ERRP taken solely in response to the occurrence of a seismic event above a certain magnitude or a level of surface ground shaking above a certain threshold (Templeton et al., 2021).

This subsection ensures that the red-light threshold in the TLS is set using the determinations from the seismic risk assessment. These determinations guide the use of nuisance and damage fragility functions to convert anticipated ground motions into the likelihood of specific impacts. Both nuisance and damage fragility functions provide estimates of the likelihood of felt or damaging seismicity of varying degrees. Nuisance impacts can be quantified through Community Decimal Intensity (CDI), and damage impacts through damage state (DS) (Schultz et al., 2021; Lallemant et al., 2015; Wald et al., 2011). Additionally, this subsection guides the establishment of the yellow-light threshold, which must be set two magnitude steps below the red-light value (section 95704.4(a)(1)). This approach is based on statistics showing that a magnitude jump of two is unlikely, meaning a direct jump from green to red would have a very low likelihood (Schultz et al., 2020). Setting the yellow-light threshold in this way allows GCS operators to implement mitigation actions during yellow-light conditions with the goal of reducing the potential for a red-light event.

95704.3(a)(3)

Purpose

The purpose of this subsection is to require the GCS operator to submit the seismic risk assessment as an electronic file to the California Geologic Survey (CGS) to be independently evaluated to ensure the risk assessment is accurate, complete, and suitable to inform the GCS site specific Traffic Light System and Emergency and Remedial Response Plan. The seismic risk assessment must be submitted prior to the baseline seismic monitoring phase of the project.

Rational

This subsection is necessary to ensure that the GCS operator's seismic risk assessment has been independently reviewed by the State Geologist, CGS, and evaluated to determine the adequacy of the hazard and risk assessment as recommended in best practices for managing induced seismicity risks (Templeton et al., 2021). This provision also supports the State

Geologist in fulfilling their responsibility under Public Resources Code section 71463 to evaluate and report seismic activity or leakage by ensuring that the risk assessment used to set Traffic Light thresholds and notification responses is accurate so that those thresholds and resulting mitigation and notification actions are appropriately calibrated to protect public health, safety, the environment, and CO_2 containment.

95704.3(b)

Purpose

The purpose of this subsection is to require GCS operators to install and maintain surface or downhole seismic sensors and strong-motion recorders. This subsection provides the option for GCS operators to incorporate seismic sensors and strong motion recorders within the CISN network in their seismic monitoring system.

Rationale

This subsection is necessary because it ensures GCS operators develop a dependable seismic monitoring system, capturing both microseismic activity and strong ground-motion data needed to evaluate induced seismicity, assess ground shaking impacts, and support prompt decision-making under the TLS and ERRP, and is a foundational element for monitoring and mitigating seismic risks associated with CO_2 injection activities, consistent with Health and Safety Code section 39741.1(a)(3)(D) requirements to protect public health, safety, and the environment. Continuous monitoring provides data to allow GCS operators to distinguish natural from induced seismicity, recognize early indicators of increased subsurface stress, and detect events that may threaten infrastructure, cause public nuisance impacts, or compromise reservoir confinement and well-bore integrity. Strong-motion measurements (CGS, n.d.; U.S.G. S, 2024) collected near structures ensures GCS operators can evaluate the potential for shaking-related damage and determine whether operational responses are needed under the TLS and ERRP. Ensuring that GCS operators implement a robust monitoring system supports comprehensive seismic risk management, enhances situational awareness, and provides the information necessary to prevent, control, and mitigate adverse impacts from induced seismicity.

95704.3(b)(1)

Purpose

The purpose of this subsection is to require GCS operators to demonstrate that the seismic monitoring array is capable of monitoring microseismicity with a magnitude of completeness between –0.5 and 0.5 within the storage complex and the pressure front. This demonstration must be a part of the seismic monitoring plan.

Rationale

This subsection is necessary to ensure the monitoring system can detect small-magnitude events that may indicate changes in subsurface conditions, precursor events, or potential leakage pathways. Early detection of microseismicity supports timely identification of seismic risks and helps ensure compliance with Health and Safety Code section 39741.1(a)(3)(C), which requires strategies to minimize seismic impacts. Detecting microseismicity supports

effective seismic monitoring and risk minimization during geologic storage operations. (Mandler et al., 2025).

Furthermore, requiring an Mc between –0.5 to 0.5 confirms that the seismic network is sufficiently sensitive to detect small-magnitude events (Majer et al., 2012), which is essential for early detection of subsurface changes and supports effective seismic risk management. Early detection of microseismic event clusters through well bores or reservoir confinement can be a precursor for larger earthquakes that may compromise confinement integrity and lead to nuisance and damage (Park et al., 2022). A low magnitude of completeness indicates a high-quality, comprehensive earthquake catalog (Alaska Earthquake Center, 2020), improving accuracy in seismic hazard assessment and catalog analysis for proactive safety measures.

95704.3(b)(2)

Purpose

The purpose of this subsection is to require GCS operators to demonstrate that the seismic monitoring system can achieve approximate earthquake location accuracy of approximately 100 meters horizontally and 500 meters vertically.

Rationale

This subsection is necessary to confirm that the seismic monitoring system provides sufficient spatial resolution to distinguish event locations and their changes and trends within the storage complex and the pressure front. This requirement supports the accurate location and magnitude of seismicity associated with injection operations (De Santis et al., 2023; Templeton et al., 2023). This level of accuracy is needed to characterize the location and timing of microseismicity, including changes and trends, that provide an indication of fluid and pressure migration, potential leakage pathways, and risk of larger earthquakes to support TLS and EERP implementation. Achieving this level of accuracy enhances the GCS operator's ability to identify meaningful patterns in seismicity and to detect changes that may indicate evolving subsurface conditions relevant to risk minimization, supporting effective seismic monitoring and compliance with Health and Safety Code section 39741.1(a)(3)(D).

95704.3(b)(3)

Purpose

The purpose of this subsection is to require GCS operators to calibrate their seismic monitoring system using either check-shots at depth, or vertical seismic profiling.

Rationale

This subsection is necessary because calibration ensures accurate detection and characterization of seismic event location and magnitude by aligning sensor data with identified subsurface seismic velocities. Check-shot surveys or vertical seismic profiles, are velocity surveys conducted in wellbores and are a well-established technology in the geophysical industry (Brewer, 2024; U.S. EPA, n.d.b.). These tests provide an accurate measurement of the seismic wave travel time and depth location, in combination with a knowledge of travel path. Check-shots at depth provide reliable reference points that enhance

the precision of the seismic velocity model required in section 95704.3(d)(2), which is essential for interpreting seismicity associated with geologic storage operations and meeting the location accuracy requirements in section 95704.3(b)(2).

95704.3(b)(4)

Purpose

The purpose of this subsection is to require the GCS operator to connect the seismic monitoring system and transmit continuous wave-pattern data and metadata to the CISN, as needed to support public disclosure and enable direct communication of seismic monitoring data to CGS.

Rationale

This subsection is necessary to confirm that the seismic data generated by the GCS site is transmitted through an established public seismic network, supporting the State with timely access to information. Connectivity to CISN (CISN, 2026) enhances situational awareness for CGS and the public by ensuring that seismicity associated with the GCS operations is integrated into the statewide monitoring framework, thereby enhancing data reliability, ensures statewide consistency, and strengthens seismic risk evaluation and response. The continuous wave pattern data and metadata, which is description of data's characteristics, are the fundamental data seismologists use to calculate earthquake magnitude, travel time and duration. This provision ensures that, by requiring connection to the CISN, the project's seismic array will operate at frequencies compatible with CISN standards having a minimum frequency of 100Hz, or 100 cycles per second (BDSN, n.d.).

95704.3(b)(5)

Purpose

The purpose of this subsection is to require the GCS operator to demonstrate that the seismic monitoring system can detect seismic events that may lead to the consequences described in section 95704.3(a)(1). These include damage to GCS infrastructure, harm to nearby populations, damage to public structures, public nuisance, compromised wellbore and confining system integrity, and activation of nearby faults.

Rationale

This subsection is necessary to ensure that the seismic monitoring system can detect any seismic events with the potential to cause harmful outcomes listed in section 95704.3(a)(1). Early detection of seismic events through a robust seismic monitoring system is critical because such events could damage GCS site infrastructure, harm nearby populations, and damage public structures, all of which pose significant safety and operational risks. It also helps prevent conditions that may create public nuisances, such as persistent vibrations or noise affecting surrounding communities. Furthermore, timely detection supports protection of well-bore and confining system integrity, reducing the likelihood of leaks or system failure. Finally, the ability to detect seismic activity that could activate nearby faults is essential for preventing more severe, cascading seismic hazards. These consequences must be

considered when developing a seismic monitoring system that has sufficient sensitivity and capability and guided by the seismic risk assessment.

95704.3(c)

Purpose

The purpose of this subsection is to require GCS operators to develop a baseline seismic monitoring plan to monitor and collect natural background seismic data for at least one year prior to the start of injection. Additionally, this baseline monitoring must support characterizing the background seismicity at the GCS site. This provision will also require GCS operators to disclose this plan on a publicly accessible project webpage at least 90 days before injection begins.

Rationale

This subsection is necessary to ensure that GCS operators plan and conduct baseline monitoring and analyze the natural seismicity of the area before operations begin for at least year. The baseline monitoring period may extend over a year depending upon the storage site's seismic history and profile. Prior to the start of injection, monitoring of a baseline of seismicity establishes a benchmark of natural seismic activity based on earthquakes detected by the seismic monitoring system, and confirms the seismic monitoring system can detect microseismicity at the required performance parameters described in section 95704.3(b) (Mandler et al., 2025). Additionally, by requiring the baseline monitoring plan to be posted on a publicly accessible project webpage at least 90 days before injection begins, this subsection supports public access to project monitoring information and enables early informed public engagement and allows the public to stay informed about evolving site conditions and monitoring responses.

Baseline monitoring is critical to establish reference seismicity parameters such as the Gutenberg-Richter b-value—which characterizes the natural frequency-magnitude distribution of earthquakes (Chang et al., 2025; Mukuhira et al., 2024). The b-value reflects stress conditions and seismic hazard indicators for natural earthquakes prior to injection, forming the essential foundation for detecting and assessing induced seismic events that often show a deviation from natural b-value during and after the injection operations. To achieve this minimum data requirement, a baseline period of at least one year should capture adequate natural seismicity to provide a robust foundation for detecting and assessing induced seismic events during and after injection operations.

95704.3(c)(1)

Purpose

The purpose of this subsection is to require GCS operators to describe in the baseline monitoring plan the seismic monitoring system and demonstrate that it fulfills all minimum performance standards specified in sections 95704.3(b)(1)–(4).

Rationale

This subsection is necessary to ensure that CARB can review and confirm, within the baseline seismic monitoring plan, that the described monitoring systems are capable of detecting and characterizing induced seismicity associated with geologic CO_2 injection. This provision is consistent with Health and Safety Code section 39741.1(a)(3)(D), which directs CARB to require GCS operators to conduct monitoring sufficient to confirm that the risk of carbon dioxide leakage poses no material threat to public health, safety, and the environment. Establishing these seismic monitoring capabilities upfront supports early detection of injection-related geomechanical risks, informs emergency response actions if needed, and ensures monitoring practices are technically robust before injection activities begin.

95704.3(c)(2)

Purpose

The purpose of this subsection is to require GCS operators to describe the type and placement of all seismic monitoring sensors in their seismic monitoring system. The GCS operator must provide detailed information on the seismic monitoring sensor network, including a map and table in PDF and Geographic Information Systems (GIS) formats detailing the sensor location. This subsection also requires the GCS operator to provide a table identifying the sensor identification number, location and depth of all equipment, bandwidth, model type, data logger type, and sampling rate for the data logger.

Rationale

This subsection is necessary to ensure that the seismic monitoring system included in the baseline monitoring plan is designed to monitor the storage complex and pressure front, and is capable of detecting seismic activity relevant to support the TLS and ERRP. Identifying the types of sensors used for seismic stations and associated information like sensor identification number, location and depth of all equipment, bandwidth, model type, data logger type, and sampling rate for the data logger provides the necessary information on the technology and technical capabilities of the instrument(s) for verification and evaluation of the monitoring system's coverage, and overall effectiveness to meet the CCUS program requirements.

Additionally, this subsection is necessary to confirm that the spatial distribution and depth placement of seismic monitoring equipment provides sufficient coverage and resolution to detect and locate seismic events. A detailed map and GIS data allows CARB and CGS to evaluate whether the seismic monitoring system can meet the detection requirements to support monitoring and risk minimization consistent with Health and Safety Code section 39741.1(a)(3)(D). The public disclosure of the map and GIS data in the baseline monitoring plan will support public awareness on the seismic monitoring systems performance.

95704.3(d)

Purpose

The purpose of this subsection is to require GCS operators to evaluate and summarize all results from the baseline seismic monitoring data prior to the start of injection activities. This subsection also requires GCS operators to disclose these findings on a publicly accessible

webpage prior to the start of CO_2 injection and to retain this baseline summary until 100 years after injection ends.

Rationale

This subsection is necessary because a comprehensive summary of baseline seismic monitoring results provides the site-specific record of detected seismic events, natural seismicity conditions, magnitude of completeness (Mc), and forms the foundational reference against which future seismic activity can be compared. This requirement is critical for ensuring the seismic monitoring system meets operational monitoring needs and in distinguishing natural background seismicity from potential induced seismicity once injection begins. Documenting and disclosing the baseline results ensures that GCS operators, regulators, and stakeholders have a clear understanding of pre-existing seismic conditions and the ability of the seismic monitoring system to detect microseismicity at the required Mc, which is essential for accurate risk evaluation, early detection of anomalous seismic trends, and implementation of operational responses through the TLS and ERRP. Additionally, retaining this information is crucial to ensure that natural background seismicity information is accessible to both GCS operators and regulators. This allows GCS operators to distinguish induced seismic events during injection operations and to determine whether seismicity rates have returned to background levels after injection has ceased.

Requiring a formal baseline summary supports consistent seismic risk assessment practices, and ensures that the monitoring framework is properly calibrated before injection activities commence.

95704.3(d)(1)

Purpose

The purpose of this subsection is to require GCS operators to include in the baseline summary an earthquake catalog that documents all natural earthquakes detected by the GCS operator's seismic monitoring system, as well as those identified in publicly available earthquake catalogs, along with the required information for each event.

Rationale

This subsection is necessary to establish a comprehensive baseline database of essential seismic event parameters—date and time, magnitude, and precise location (latitude, longitude, and depth relative to Mean Sea Level). This baseline database would be consistent with Advanced National Seismic System attribute standards and serves as the primary dataset for making monitoring data available to the CISN and the public.

This catalog establishes a clear, site-specific record of seismicity that ensures GCS operators can evaluate pre-injection natural seismic activity and distinguish it from injection-related seismicity once injection commences (Templeton et al., 2021). Documenting natural earthquakes from the seismic monitoring system and publicly available earthquake catalogues ensures GCS operators can identify anomalous trends or elevated seismicity potentially related to injection activities. The seismic event origin date and time, and the magnitude, latitude, longitude and depth are standard attributes in earthquake catalogues such as the

Advanced National Seismic System ComCat catalogue (USGS, n.d.a.). These standard earthquake catalogue information enable consistent comparison over time, improves event characterization, and ensures reliable inputs for seismic hazard assessments, ground-motion evaluations, and operational decision-making. Therefore, a comprehensive earthquake catalog provides the essential reference framework for assessing deviations from background conditions and supports effective seismic monitoring and risk minimization in accordance with Health and Safety code section 39741.1(a)(3)(D).

95704.3(d)(2)

Purpose

The purpose of this subsection is to require GCS operators to determine and document the subsurface velocity structure of the storage complex and pressure front, using either natural seismicity or controlled acoustic sources, during the baseline monitoring period.

Rationale

This subsection is necessary because a velocity model underpins every aspect of seismic monitoring and interpretation (Brewer, 2002; U.S. EPA, n.d.a.). Accurately characterizing velocity structure is essential for calibrating the seismic monitoring network, determining event locations and depths, and defining the magnitude of completeness (Mc). This foundational understanding ensures that seismic data collected during baseline and injection periods can be reliably interpreted and that seismic events are accurately detected and located to support TLS and ERRP processes. Without a site-specific velocity structure, estimates of event magnitude, depth, and location remain uncertain, undermining the ability to accurately detect small precursor events, distinguish between natural and injection-related seismicity, and assess subsurface impacts. By requiring this analysis upfront, the regulation ensures that the seismic network is properly calibrated enhancing detection capability, reducing false positives or negatives, and ensuring confidence in monitoring data used to evaluate injection impacts on reservoir and wellbore integrity, and public safety in accordance with Health and Safety code section 39741.1(a)(3)(D).

95704.3(d)(3)

Purpose

The purpose of this subsection is to require GCS operators to establish and report the natural background seismicity rates using data collected during the baseline monitoring period together with methods and analysis used to establish these rates.

Rationale

This subsection is necessary because identifying natural background seismicity serves to highlight known and unknown faults, and establish the natural, pre-injection earthquake b-value. GCS operators must establish a clear understanding of the site's natural seismic conditions before injections begins, providing a baseline against which operational and post-injection seismicity can be compared (Templeton et al., 2021). According to the Gutenberg-Richter law, earthquakes in seismically active regions typically have a b-value near 1.0, which is a statistical metric from the Gutenberg-Richter law that describes the ratio of small

earthquakes to large earthquakes in a given region (Mukuhira et al., 2024). This value is key for earthquake prediction and hazard assessment, including risk assessment during injection operations; for comparing injection induced earthquake b-value with natural pre-injection b-value, to identify deviations or evolving trends in stress conditions that may increase or decrease earthquake risk; and, for determining if the seismicity rate has returned to the background seismicity rate during the post-injection site care period. Characterizing natural background seismicity rate supports the implementation of the TLS and ERRP mitigation measures consistent with H&S section 39741.1(a)(3)(D).

Additionally, providing the methods and analyses used to determine natural background seismicity rates supports transparency and reproducibility of the values presented in the baseline summary and the values resulting from monitoring conducted during active injection and post-injection.

95704.3(d)(4)

Purpose

The purpose of subsection is to ensure that GCS operators document and disclose the quality assurance methods used to verify that seismic monitoring data collected during the baseline period are accurate, reliable, consistent and provides confidence that the baseline dataset reflects true seismic conditions at the project site.

Rationale

This subsection is necessary to require GCS operators to provide a clear account of how baseline seismic monitoring data were assessed for accuracy, reliability, and consistency, supporting evaluation of monitoring system performance (Petersen et al., 2019). Summarizing quality assurance methods is necessary to demonstrate that the GCS operator is accurately processing baseline seismic data and providing dependable seismic monitoring information. More specifically, these methods help ensure that baseline seismic monitoring data are accurate and reliable for comparison with operational and post-injection seismic monitoring data, facilitate early identification of conditions that may elevate seismic risk, and advance seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(e)

Purpose

The purpose of subsection is to require GCS operators to develop, maintain, and implement an operational seismic monitoring plan that begins when CO_2 injection starts. Under this provision, GCS operators are responsible for conducting seismic monitoring within both the storage complex and the pressure front to detect natural and induced seismic events, including any events that meet or exceed the yellow-light TLS threshold described in section 95704.4(a)(1). GCS Operators are also required to prepare and document the procedures and activities that make up their operational seismic monitoring approach and to make this plan publicly accessible by posting it to the project webpage, in accordance with section 95703, at least 90 days prior to initiating injection.

Rationale

This subsection is necessary to ensure that GCS operators plan and conduct operational seismic monitoring and analyze the resulting data for induced seismicity and its potential impacts on safety and permanence. Additionally, by requiring the operational monitoring plan to be posted on a publicly accessible project webpage at least 90 days before injection begins, this subsection supports public access to project monitoring information and enables informed public engagement (Templeton et al., 2021).

95704.3(e)(1)

Purpose

The purpose of subsection is to require GCS operators to incorporate the results of their baseline monitoring results and document any necessary updates to the seismic monitoring system pursuant to sections 95704.3(b)(1)-(4). Updates may include installing additional seismic equipment or implementing elements such as adjusting data collection frequency. These updates must then be reflected in the seismic operational monitoring plan.

Rationale

This subsection is necessary to ensure that the operational monitoring plan reflects the most accurate understanding of site-specific seismic conditions and incorporates any improvements identified during the baseline evaluation that support the Mc detection and accuracy requirements (Templeton et al., 2021). This supports continuous refinement of the seismic monitoring approach, strengthens the GCS operator's ability to detect and assess induced seismicity during injection operations, and ensures the plan remains aligned with seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(e)(2)

Purpose

The purpose of this subsection is to require GCS operators to continuously collect and evaluate microseismic and seismic event locations and magnitudes within the storage complex and pressure-front, to describe how they will maintain an earthquake catalog, to use monitoring data to identify seismic clusters that may indicate activity on previously unknown faults that could pose future risks to wellbores and confinement layers, and to use these data to determine whether TLS thresholds may be exceeded and to take remedial action when necessary. These methods used to evaluate seismic data must be documented in the operational seismic monitoring plan.

Rationale

This subsection is necessary to ensure that the operational monitoring plan fully documents the current, site-specific approach to ongoing seismic monitoring, reflecting updates informed by the baseline evaluation while providing a complete description of the methods utilized. (A, C) Continuous evaluation of seismic event locations and magnitudes allows GCS operators to track evolving seismic patterns, identify emerging faults or structural features that could influence CO_2 containment, and detect microseismic precursors to larger events. (B) An

earthquake catalogue must be developed and maintained for the operational period and post-injection period (Templeton et al., 2021) that can help track abnormal seismic behavior. (D) Determining whether TLS thresholds have been exceeded enables rapid activation of mitigation measures, ensuring protection of nearby populations. Thorough documentation enables GCS operators to demonstrate how continuous data collection and analysis will be conducted, supports timely identification of conditions that may elevate seismic risk, informs actions in the ERRP, and ensures the public has access to and awareness of these monitoring practices. These elements advance seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(e)(3)

Purpose

The purpose of subsection is to require GCS operators to analyze seismic and operational data to determine whether anomalous subsurface pressure changes or seismic activity are correlated with injection operations. Under this subsection, GCS operators must evaluate key operational data—including injection rate, wellhead and bottomhole injection pressure, cumulative injection volume within the storage complex, and reservoir pressure—and document the methods used to assess these parameters in the Operational Seismic Monitoring Plan.

Rationale

This subsection is necessary to ensure that the operational seismic monitoring plan provides a description of how key operational parameters such as injection rate, pressure, cumulative injection volume and monitoring data such as reservoir pressure will be collected and evaluated together with seismic data during injection operations. The evaluation of these data support the identification and correlation of anomalous subsurface pressure changes and seismic activity with injection operations (Templeton et al., 2021).

Documenting these methods and evaluating the operational data with seismic monitoring data ensures GCS operators review and make informed decisions considering all factors leading to induced seismicity (Templeton et al., 2021; Kroll and Sherman, 2023). Evaluating operational, monitoring, and seismic data together is necessary to detect abnormal subsurface pressure changes, detect potential leakage, identify correlations between injection activities and seismicity, and make data informed decisions to support implementation of the TLS and ERRP. These elements support timely identification of conditions that may elevate seismic and leakage risks and advance risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(f)

Purpose

The purpose of subsection is to require GCS operators to review and update the operational seismic monitoring plan every five years and whenever key project elements change within 60 days to reflect current site conditions, seismic monitoring system capabilities, and project-specific seismic risks. These elements include changes to the seismic monitoring

system, including different sensor types and new or changed locations, changes in the storage complex extent that would require adjustments to the seismic monitoring system design, identification of any faults and fractures observed through seismic monitoring, and changes to thresholds of response and actions taken within the TLS and ERRP. This provision also requires the GCS operator to post all updates to the operational seismic monitoring plan pursuant to section 95703 within 60 days of implementation of the plan.

Rationale

This subsection is necessary to ensure that the operational seismic monitoring plan remains accurate and effective by requiring the GCS operator to review and update it whenever project elements influence operational monitoring. Changes to the seismic monitoring system may alter network sensitivity, event-location detection capability, or the ability to detect fault activity, requiring the monitoring approach and TLS threshold to be reassessed. Adjustments to the storage complex extent can change the geographic extent over which monitoring and risk evaluation must occur, necessitating corresponding updates to monitoring coverage. Identification of faults and fractures through microseismic analysis needs to be taken into account when updating the operational seismic monitoring plan, as they can significantly change the seismic risk profile of a GCS site. Any changes to TLS thresholds and related mitigation actions described in the ERRP must be disclosed, as they are critical to the risk-minimization objectives. Requiring updates every five years, or within 60 days of specific element changes, ensures that the monitoring plan remains accurate, responsive, and aligned with real-time seismic understanding. Maintaining an up-to-date operational seismic monitoring plan supports effective seismic risk management and ensures that monitoring practices evolve alongside project developments and observed seismicity.

Periodic reviews and timely updates, and disclosing them within a reasonable time frame, which is 60 days, help maintain an accurate, current seismic monitoring framework that reflects evolving site conditions and operational requirements. Posting updates within 60 days ensures that changes to monitoring strategies, thresholds, or operational practices are communicated promptly, reducing uncertainty and supporting trust in the project's management of seismic risk. Making these documents publicly available allows regulators and community stakeholders to stay informed about evolving site conditions and monitoring responses, reinforcing confidence in the safeguards designed to mitigate seismic hazards. Reviewing the plan under the conditions explained above ensures that GCS operators maintain an effective, current monitoring approach that supports timely detection of conditions that may elevate seismic risk and advances seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(g)(1)-(3)

Purpose

The purpose of subsections is to require GCS operators to evaluate seismic monitoring data and operational data on an annual basis and provide a summary of their findings. GCS operators must report the number and details of seismic events detected during the reporting period, including the date and time, magnitude, and location as documented in the earthquake catalogue, along with the relevant injection operational data. They are required to discuss

these seismic and operational data within the storage complex and the pressure front. In addition, GCS operators must analyze and report any evidence of potential links between injection operations and seismic events, ensuring that all conclusions are supported by the data collected.

Rationale

This subsection is necessary because the required annual summary establishes a clear expectation for data organization, and systematic review, providing an essential record of evolving seismicity during injection (earthquake catalogue), and maintaining continuity in seismic risk assessment throughout project operations. Summaries should include well injection rate, volume, well-head and bottom hole pressure, reservoir pressure, earthquake locations, timing, and magnitudes, to identify relationships and trends between injection operations and seismic activity. This requirement ensures GCS operators provide a consistent evaluation of subsurface conditions and potential correlations between injection activities and seismicity (Templeton et al., 2021). The importance of these parameters is described in sections 95704.3(e)(2)-(3).

Maintaining these summaries ensures GCS operators track trends in the distribution and magnitude of seismic events within the storage complex and pressure front, or emerging conditions that could indicate elevated potential for seismic or leakage risk. Retaining these annual summaries ensures that a complete record is available should an incident occur, strengthening the GCS operator's ability to evaluate seismic conditions over time and supporting seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(g)(4)

Purpose

The purpose of subsection is to require GCS operators to include in the annual summary an evaluation of any faults and fractures identified through microseismic data, including their locations and a determination of their potential risks to CO_2 containment and project safety pursuant to sections 95704.3(e)(2)(C) and 95704.3(a) respectively.

Rationale

This subsection is necessary to ensure that GCS operators maintain a consolidated record of any subsurface features detected through microseismicity during the operational phase (Templeton et al., 2021). Clusters and linear alignments of seismic events can be an indicator of previously unknown fault location (Park et al., 2022). The subsurface dimensions of these events can be related to potential earthquake magnitude and displacement. Both can present risks when extending through well bores or reservoir confinement and can be recognized as a precursor for larger earthquakes that may compromise confinement and well integrity. Summarizing the location and characteristics of identified faults or fractures ensures GCS operators track changing conditions that may impact seismic activity or containment risk. Documenting the potential risks these features pose to CO_2 containment, and project safety ensures GCS operators retain the information needed to evaluate conditions should an incident occur and to support implementation of their TLS and ERRP. Maintaining these

summaries supports ongoing assessment of seismic risk and ensure seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C) are met.

95704.3(g)(5)

Purpose

The purpose of subsection is to require GCS operators to include in the annual summary a detailed account of any induced seismic activity detected above the green-light threshold level as defined by the Traffic Light System, as well as a summary of any actions taken under the Emergency Remedial Response Plan (ERRP) during that year.

Rationale

This subsection is necessary to ensure that GCS operators retain an annual record of induced seismic events that exceed an actionable TLS level and may indicate elevated seismic activity relevant to the ERRP. Documenting these events, along with any corresponding actions and notifications taken under the ERRP, ensures clear communication by the GCS operator, providing regulators access to essential operational history that can be referenced if conditions change or if an incident occurs. Maintaining this information supports ongoing assessment of seismic conditions during injection, ensures GCS operators evaluate how response actions align with observed seismicity, and ensures key information remains available for future analysis. These summaries contribute to maintaining an effective monitoring response framework and ensures seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C) are met.

95704.3(g)(6)-(7)

Purpose

The purpose of subsection is to require GCS operator to evaluate and summarize the results of operational seismic monitoring data, including summary information on data quality assurance methods and any seismic monitoring plan reviews and update results in accordance with section 95704.3(f), as part of the annual reporting requirements.

Rationale

This subsection is necessary to ensure that GCS operators provide an account of how seismic monitoring data were assessed for accuracy, reliability, and consistency, supporting evaluation of monitoring system performance. Summarizing quality assurance methods demonstrates to regulators and the public that the GCS operator is accurately processing collected data and providing accurate seismic monitoring information. Summarizing any review and updates to operational seismic monitoring plans and seismic monitoring system ensures that any updates are documented and reflected in the annual review. Together, these summaries support effective interpretation of seismic monitoring data, facilitate early identification of conditions that may elevate seismic risk, and advance seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(h)

Purpose

The purpose of subsection is to require that GCS operators continue conducting seismic monitoring within the storage complex and the pressure front tied to CO_2 plume migration, as well as monitor any seismic events that reach or exceed the yellow-light TLS threshold outlined in section 95704.4. It requires GCS operators to prepare, maintain, and implement a comprehensive post-injection seismic monitoring plan detailing all post-injection seismic monitoring activities. This post-injection seismic monitoring plan must be initiated immediately at the start of the post-injection site care and remain in effect for a minimum of 100 years following the end of injection. Furthermore, this subsection requires that GCS operators complete any necessary revisions to the plan and post the updated version on the project's webpage, per section 95703, no later than 90 days before the end of injection.

Rationale

This subsection is necessary to ensure that GCS operators develop and implement a seismic monitoring plan that reflects post-injection site conditions throughout the 100-year period, and that they analyze the resulting data for seismicity and its implications for safety and permanence. This provision also ensures that the documented plan is publicly accessible, enabling informed public engagement on project activities at least 90 days before the last date of injection. Incorporating the results of annual operational monitoring evaluations ensures that updated information on system performance, seismicity trends, and site conditions informs post-injection monitoring design. Considering relevant findings from operational seismic monitoring plan reviews and annual summaries helps ensure that the seismic monitoring system remains adequate to detect and characterize seismicity and provide early indication of conditions that may elevate seismic risk during the 100 years after injection ends. These requirements support long-term seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(h)(1)

Purpose

The purpose of subsection is to require GCS operators to describe and update the seismic monitoring system that will be used during the post-injection site care and demonstrate that it continues to meet the technical requirements in sections 95704.3(b)(1)–(4), including monitoring microseismicity with a magnitude of completeness between -0.5 and 0.5, locating seismic events with specified horizontal and vertical accuracy, maintaining calibration through check-shots or vertical seismic profiling, and ensuring continuous connection to the CISN. This subsection also requires GCS operators to use the results of the annual operational seismic monitoring evaluations required under section 95704.3(g) to design and configure the post-injection seismic monitoring system so that it reflects evolving site conditions and remains capable of detecting and characterizing seismicity during post-injection site care.

Rationale

This subsection is necessary to ensure that the post-injection seismic monitoring system reflects an accurate and up-to-date understanding of site-specific seismic conditions and incorporates improvements identified through the annual monitoring evaluations performed under section 95704.3(g). These evaluations provide updated information on system performance, seismicity trends, and subsurface conditions, enabling adjustments to the monitoring configuration so that it continues to meet the technical completeness, accuracy, calibration, and data-integration requirements in sections 95704.3(b)(1)–(4). Ensuring that the monitoring system remains capable of detecting and characterizing microseismicity throughout the post-injection site care strengthens the GCS operator's ability to assess seismic behavior and identify early indicators of conditions that may elevate seismic risk. Maintaining a monitoring system that is robust, well-calibrated, and appropriately configured supports long-term seismic-risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(h)(2)

Purpose

The purpose of subsection is to require GCS operators to continuously collect and evaluate seismic data within the storage complex and pressure front and to describe in the post-injection plan the specific methods that will be used to evaluate this data as outlined in sections 95704.3(e)(2)(A)–(D). These required evaluation methods include determining seismic event locations and magnitudes within the storage complex and the pressure front; maintaining an earthquake catalogue consistent with section 95704.3(d)(1); identifying any previously unknown faults; and determining whether TLS site-specific thresholds have been exceeded.

Rationale

This subsection is necessary to ensure that the post-injection seismic monitoring plan reflects the most accurate understanding of site-specific seismic conditions and incorporates the full suite of seismic data evaluation methods required under sections 95704.3(e)(2)(A)–(D). Applying these methods—determining seismic event locations and magnitudes, maintaining a complete earthquake catalogue, identifying previously unknown faults, and determining whether TLS thresholds have been exceeded—supports consistent, rigorous analysis of seismicity throughout the post-injection site care. This continuous evaluation strengthens the GCS operator's ability to detect and characterize seismic events that may signal changes in subsurface conditions relevant to long-term containment and stability. By requiring GCS operators to demonstrate how these evaluation methods will be implemented after injection ends, the subsection promotes a monitoring approach that remains aligned with seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C) and supports effective long-term site management.

95704.3(i)

Purpose

The purpose of subsection is to require GCS operators to review and update the post-injection seismic monitoring plan every five years and whenever key project elements change within 60

days to reflect current site conditions, seismic monitoring system capabilities, and project-specific seismic risks. These elements include changes to the seismic monitoring system, including different sensor types and new or changed locations, changes in the storage complex extent that would require adjustments to the seismic monitoring system design, and changes to thresholds of response and actions taken within the TLS and ERRP. This provision ensures that the monitoring approach remains current and appropriate for post-injection monitoring needs.

Rationale

This subsection is necessary to ensure the post-injection seismic monitoring plan remains accurate and effective by requiring GCS operators to review, update, and document updates every five years or whenever project elements that influence seismic monitoring changes. The rationale for each is listed below:

1. Changes to the seismic monitoring system may alter network sensitivity, event-location detection capability, or the ability to detect fault activity, requiring the monitoring approach and TLS to be reassessed;
2. Adjustments to the storage complex can change the geographic extent over which monitoring and risk evaluation must occur, necessitating corresponding updates to monitoring coverage;
3. Identification of faults and fractures through microsesimic analysis need to be taken into account when updating the post-injection seismic monitoring plan as they can significantly change the seismic risk profile of a GCS site;
4. If changes are made to seismic event thresholds of response within the TLS, and related actions taken within the ERRP, the monitoring network must reflect the detection requirements to support those changes.

Periodic reviews and timely updates and disclosing them in a reasonable time frame which is 60 days, help maintain an accurate, current seismic monitoring framework that reflects evolving site conditions and post-injection phase requirements. Posting updates within 60 days ensures that changes to monitoring strategies, thresholds, or operational practices are communicated promptly, reducing uncertainty and supporting trust in the project's management of seismic risk. Making these documents publicly available allows regulators and community stakeholders to stay informed about evolving site conditions and monitoring responses, reinforcing confidence in the safeguards designed to mitigate seismic hazards. Reviewing and updating the plan under the conditions explained above ensures that GCS operators maintain an effective, current monitoring approach that supports timely detection of conditions that may elevate seismic risk and advances seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(j)

Purpose

The purpose of subsection is to allow GCS operators to propose full or partial retire the seismic monitoring system once the GCS site reaches the end of the U.S. EPA-approved PISC timeframe. The subsection requires GCS operators to submit a retirement proposal that

demonstrates no seismic events have exceeded the green-light TLS threshold within a five-year period and that seismic monitoring data show no fracture or fault activation within the storage complex or pressure front that presents a loss of CO_2 containment. The Executive Officer will approve the reduction or reretirement of the seismic monitoring system if the above mentioned criteria are met.

Rationale

This subsection is necessary to establish the criteria by which an GCS operator may propose a full or partial retirement of the seismic monitoring system. Retirement of seismic monitoring system should only be considered when long-term subsurface conditions demonstrate sustained stability and minimal risk to CO_2 containment. Demonstration by the GCS operator that no seismic events exceed the green-light threshold within the recent five-year period provides evidence that reservoir pressures, subsurface stress conditions, and injection-related influences have sufficiently diminished and are no longer generating measurable or concerning seismic activity that would require mitigative action. Similarly, confirming that no fractures or faults have been activated within the storage complex and the pressure front that could present a loss of CO_2 confinement ensures that geologic confining layers remain intact and capable of permanently isolating injected CO_2. Collectively, these provide objective criteria that the Executive Officer can use to evaluate GCS operator proposals to retire or reduce seismic monitoring which are based on seismic activity data that shows no indication of instability or containment risk. This approach ensures that any modification to the seismic monitoring system aligns with demonstrated low-risk post-injection conditions. Together, these requirements allow for appropriate scaling of seismic monitoring infrastructure while maintaining sufficient seismic monitoring to identify conditions that may elevate seismic risk, consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(k)

Purpose

The purpose of subsection is to establish obligations for GCS operators with approved full or partially retired seismic monitoring systems by requiring them to continue certain seismic monitoring activities for at least 100 years after injection ends. GCS operators must keep monitoring through the CISN, provide five-year evaluations and summaries of seismic monitoring results as required in section 95704.3(n), and, if their system is only partially retired, continue meeting all applicable requirements in section 95704.3(h).

Rationale

The subsection is necessary because seismic risks can continue to develop long after injection activities have stopped, and ending seismic monitoring too soon could allow these risks to go undetected. Requiring GCS operators to maintain monitoring through the CISN ensures ongoing seismic coverage, enabling early detection of any concerning activity and supporting continued readiness under the TLS and ERRP. The five-year evaluation and summary requirement pursuant to section 95704.3(n), preserves consistent documentation, allowing regulators and GCS operators to track trends and assess evolving seismic conditions throughout the post-injection period. GCS operators must continue to meet all requirements for

a post-injection monitoring plan after partially retiring their seismic monitoring system as outlined in section 95704.3(h) to helps ensure that the seismic monitoring system remains adequate to detect and characterize seismicity and provide early indication of conditions that may elevate seismic risk during the 100 years after injection ends. These requirements support long-term seismic risk-minimization objectives consistent with Health and Safety Code section 39741.1(a)(3)(C). These obligations maintain long-term oversight, and adaptive risk management even after the GCS operator-managed seismic monitoring system has been fully or partially retired.

95704.3(l)

Purpose

The purpose of subsection is to ensure that GCS operators promptly reinstate a compliant post-injection seismic monitoring plan whenever a seismic event at or above the yellow-light threshold occurs after the seismic monitoring system has been fully or partially retired. This subsection requires GCS operators to re-activate monitoring consistent with the standards in section 95704.3(h), maintaining continued oversight of seismic risks even after injection activities have ceased.

Rationale

This subsection is necessary because seismic conditions may change after the seismic monitoring system has been retired, and significant seismic events may indicate emerging risks that were not previously detected. Requiring GCS operators to reinstate seismic monitoring when a seismic event meets or exceeds the yellow-light threshold ensures that any renewed or evolving seismic activity is appropriately tracked and evaluated. Reinstating a post-injection seismic monitoring plan restores the GCS operator's ability to detect potential fault activation, stress changes, or other indicators relevant to reservoir integrity and public safety. This requirement ensures that GCS operators can promptly reestablish monitoring when warranted, maintaining protective oversight of the storage complex throughout the 100-year post-injection period and supporting Health and Safety Code section 39741.1(a)(3)(D) by providing monitoring and reporting of seismic activity related to geologic sequestration of carbon dioxide.

95704.3(m)

Purpose

The purpose of subsection is to allow GCS operators, after five years of reinstated seismic monitoring, to propose to retire seismic monitoring consistent with the requirements in section 95704.3(j). This subsection requires GCS operators to show that seismic risks have been sufficiently evaluated and mitigated so that the seismic monitoring system may be retired again once long-term safety has been confirmed.

Rationale

This subsection is necessary because seismic conditions may continue to evolve even after monitoring has been reinstated, and a defined period of continued observation is needed to ensure that any ongoing or emerging seismic risks are fully understood. Requiring GCS

operators to conduct five years of reinstated seismic monitoring provides time to evaluate site behavior, detect potential fault activation, stress changes, or other indicators relevant to reservoir integrity.

This section provides evidence-based mechanism for retiring the monitoring system, consistent with 95704.3(j).

95704.3(n)

Purpose

The purpose of subsection is to require GCS operators to evaluate and summarize the results of their post-injection seismic monitoring activities every five years. These summaries must document key seismic information, including an updated earthquake catalog covering events within the storage complex and the pressure front, as well as an assessment of any potential links between CO_2 plume migration and seismic events. GCS operators must also report observed faults or fractures, their locations, and their potential risks, along with any seismic activity detected above the yellow-light threshold and the corresponding remedial actions taken.

In addition, this subsection requires GCS operators to provide a description of the quality-assurance methods used to ensure accurate and reliable data collection, and to summarize any updates made to the post-injection seismic monitoring plan or seismic monitoring system under section 95704.3(i).

Rationale

This subsection is necessary because long-term data retention and documentation are essential for understanding the post-injection seismic history and risk profile of a geologic carbon storage project. Maintaining an earthquake catalog (1) enables CARB to assess trends in induced or natural seismicity and evaluate whether reservoir conditions remain stable. Assessing potential links between CO_2 plume migration and seismicity (2) supports understanding of how reservoir behavior may affect induced seismic risk. Summaries of faults and fractures and their associated risks (3) help identify subsurface features that may require additional monitoring. Retaining evidence of potential links between CO_2 plume movement and seismic events helps CARB and CGS determine whether stress changes are occurring in the reservoir. Documenting seismic activity above the yellow-light threshold and any remedial actions taken (4) provides critical information on incident responses and verifies that GCS operators acted and responded to the event consistent with the TLS and ERRP requirements. Including a summary of quality assurance methods (5) ensures that all submitted data are accurate, reliable, and suitable for regulatory evaluation. Finally, documenting updates (6) made in accordance with section 95704.3(j) demonstrates how GCS operators have adapted monitoring strategies or corrective actions based on evolving reservoir conditions. Collectively, these summaries strengthen regulatory oversight, support investigations into anomalous events, and contribute to the ongoing protection of public health, environmental resources, and the permanence of geologic CO_2 storage, consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(o)

Purpose

The purpose of subsection is to require GCS operators to retain all seismic monitoring records and documentation, including raw monitoring data (i.e. operational and seismic monitoring data), all seismic monitoring plans, and five-year and annual summaries. This provision sets forth requirements for GCS operators to make those records available to CARB upon request. Further, this provision requires GCS operators to complete annual summaries no later than March 31 for the previous calendar year. Additionally, this provision requires GCS operators to complete the five-year summary and make it available by March 31 following the end of each five-year monitoring period. In other words, once a five-year monitoring period is completed, the summary covering those five years is due by March 31 of the fifth year.

Rationale

This subsection is necessary because long-term retention of a complete and continuous record of seismic monitoring data and information is critical for evaluating trends, supporting compliance, and enabling retrospective analysis of seismic behavior or operational decisions throughout the active injection and 100 years after injection ends. Maintaining seismic and operational raw data, seismic monitoring plans, and five-year and annual summaries ensures that CARB and CGS can review historical records as needed to assess seismic risk, confirm that monitoring requirements have been met, or investigate seismic events that occur during and long after injection activities have ended. Requiring annual summaries to be completed and available by March 31, as well as five-year summaries to be completed by March 31 following the end of each five-year monitoring period, ensures timely documentation and supports continuous regulatory oversight, providing confidence that seismic monitoring activities remain traceable and aligned with long-term public health and safety objectives, consistent with Health and Safety Code section 39741.1(a)(3)(C).

95704.3(p)

Purpose

The purpose of this subsection is to establish continuous data coverage requirements for all monitoring equipment associated with the seismic monitoring system. This subsection requires GCS operators to ensure that all monitoring equipment collects valid data for at least 90 percent of the calendar year. It also requires GCS operators to document and remove corrupted data from analysis when data loss occurs due to equipment damage or repair-related delays. The documentation must be included in the reported summaries.

Rationale

This subsection is necessary to ensures that monitoring equipment operates continuously to support seismic monitoring, consistent with the statutory direction in Health and Safety Code section 39741.1(a)(3)(D). Requiring valid data for at least 90 percent of the calendar year ensures that seismic monitoring activities can continue to monitor for natural or induced microsiesmicity that can be indicators of conditions that may indicate surface. Events outside of operator’s control do occur, such as weather event, crime, and or faulty equipment with

unresponsive technical support, which may lead to legitimate cause for not meeting this threshold. Continuous data coverage is essential for protecting human health and the environment from a potential surface leakage event.

Requiring GCS operators to document and disclose data corruption associated with equipment maintenance or repairs and to remove such corrupted data from subsequent analysis provides necessary information for regulators on how operators are addressing repair-related data gaps. Allowing GCS operators to exclude repair time from the cumulative data loss calculation provides necessary operational flexibility so operates are not penalized for performing necessary instrument maintenance and repairs.

I. Section 95704.4. Emergency Remedial Response Plan.

95704.4(a)

Purpose

The purpose of subsection is to require GCS operators to identify potential risks from seismicity and injected CO_2 or formation fluids that could endanger public health, safety, or the environment, and to develop an Emergency and Remedial Response Plan (ERRP) that documents the necessary mitigation and remediation measures. This subsection requires GCS operators to prepare, maintain, and implement the ERRP throughout CO_2 injection activities and for 100 years after injection ends, ensuring long-term readiness to respond to seismic or reservoir-related incidents. It also requires GCS operators to post the ERRP to the project webpage at least 90 days before injection begins and include detailed procedures and information specified in the regulation.

Rationale

This subsection is necessary because it establishes the overarching emergency and remedial response plan (ERRP) requirements that are essential for managing risks associated with seismicity and the behavior of injected CO_2 and formation fluids. A clearly defined ERRP supports the CCUS program’s regulatory goals by ensuring long term safety and permanence of stored carbon dioxide. Effective risk minimization must be central to GCS site planning and operation, and the ERRP—together with related monitoring requirements—serves as a critical component of that risk management framework.

By requiring GCS operators to maintain and implement the ERRP throughout injection and for 100 years afterward, this subsection ensures that mitigation strategies are in place to minimize leakage, address seismic related hazards, and manage any impacts on public health and the environment. Establishing these requirements ensures that GCS operators are prepared to respond promptly and effectively to abnormal conditions, consistent with Health and Safety Code section 39741.1(a)(3)(C), thereby supporting the ongoing protection and permanence of geologic CO_2 sequestration.

The timeframe of 90 days was chosen as a reasonable timeframe to balance public access while providing sufficient time for the operator.

95704.4(a)(1)

Purpose

The purpose of subsection is to require GCS operators to develop a traffic light system (TLS) that is informed by the site-specific risk assessment and the seismic monitoring system outlined in section 95704.3(b).

Rationale

This subsection is necessary because a traffic light system provides a structured, clear, and proactive framework for interpreting seismic conditions and taking appropriate operational or remedial actions before risks escalate. By basing TLS thresholds on the project's risk assessment and real-time seismic monitoring data, GCS operators can quickly recognize abnormal seismicity that could indicate fault activation, pressure-front interaction with geologic structures, or the development of pathways that increase the likelihood of leakage and reduce risks to public health, safety, and the environment, supporting Health and Safety Code section 39741.1(a)(3)(D).

95704.4(a)(1)(A)

Purpose

The purpose of subsection is to require GCS operators to establish TLS thresholds based on the risk assessment and to include at least three levels, green, yellow, and red, that reflect increasing degrees of seismic risk. The green-light level signifies normal operating conditions. The yellow-light level is triggered when seismic activity exceeds a threshold set at least two magnitude steps below the red-light level, requiring GCS operators to increase seismic monitoring and evaluate or implement operational adjustments. The red-light level is triggered when earthquakes cause consequences listed in section 95704.3(a)(1) such as nuisance, damage, or potential leakage of injected CO_2 or formation fluids, at which point GCS operators must suspend operations as required under section 95704.4(d).

Rationale

This subsection is necessary because a traffic light system with at least three threshold levels ensures that GCS operators can manage seismic risk in a graduated manner consistent with practices identified in the literature (Templeton et al., 2021). The green-light threshold establishes a baseline of normal, stable operating conditions. The yellow-light threshold set two magnitude steps below the red-light threshold ensures that GCS operators take early, risk-reducing actions, ensuring de-escalation of induced seismicity that lowers the potential for the red-light threshold to be exceeded. Examples of specific operational modifications are reduced injection rate, pressure changes or reduction, enhanced review frequency, and regulator notification. The red threshold is critical for triggering immediate operational or emergency measures, including pausing injection activities, when seismic activity reaches levels that could compromise the geologic storage system or cause earthquakes large enough that result in any levels of shaking causing damage and widespread nuisance and other consequences. These distinct thresholds are necessary for GCS operators to follow in order to mitigate seismic risk, support the broader risk reduction and permanence goals of the CCUS Program, and address the requirements of Health and Safety Code section 39741.1(a)(3)(C).

95704.4(a)(1)(B)

Purpose

The purpose of subsection is to allow GCS operators to use an adaptive traffic light system (ATLS) based on feasibility determination by GCS operators. When GCS operators elect to implement an ATLS, they must incorporate specific data inputs to ensure the system can dynamically respond to changing conditions. These inputs include operational data described in section 95704.3(e)(3), the earthquake catalogue outlined in section 95704.3(d)(1), seismic station attributes identified in section 95704.3(c)(2), and the background seismicity rate required under section 95704.3(d)(3). Integrating these datasets into the ATLS ensures that the system remains responsive to real-time operations and seismic activity, thereby supporting more informed and adaptive decision-making.

Rationale

This subsection is necessary to ensure an adaptive traffic light system (ATLS) provides GCS operators with a way to evaluate the likelihood of seismic risk escalation under current and proposed operating conditions, which is especially important in higher-risk settings such as those located near sensitive receptors. For high-risk settings such as greater sensitive receptor exposure, an ATLS may be utilized so GCS operators can evaluate the likelihood of escalation under current and proposed operating conditions, rather than only reacting after a magnitude or risk threshold has already been exceeded (Schultz et al., 2021). Using an adaptive traffic light system (ATLS) enables operators to proactively manage seismic risk by providing real time information and facilitating timely operational adjustments. Because ATLS continuously integrates seismic and operational data, it can help reduce the likelihood of induced seismic events. While an ATLS may be used for any geologic carbon storage project, it is specifically recommended for projects where injection wells are located within two miles of sensitive receptors that could be affected by seismic activity. Implementing an ATLS in close proximity to sensitive receptors enhances public health and safety by minimizing potential seismic impacts through early detection and responsive operational control. ATLS uses operational data, earthquake catalogue data, seismic station attribute information, and background seismicity rate, among other site data. The ATLS can inform operation decisions, such that elevated risk levels might not be reached in the first place (Templeton et al., 2021). The Department of Energy has developed a publicly available Operational Forecasting of Induced Seismicity platform for this purpose (Kroll and Sherman, 2023).

Allowing the use of ATLS ensure that GCS operators have a proactive, data-driven approach for anticipating seismic risk escalation, supporting the CCUS Program’s broader goals of risk reduction and long-term storage permanence, and meeting the requirements of Health and Safety Code 39741.1(a)(3)(C).

95704.4(a)(1)(C)

Purpose

The purpose of subsection is to require GCS operators to submit their traffic light system (TLS) thresholds to CGS in PDF form for independent evaluation. GCS operators must also include the site-specific seismic risk assessment prepared under section 95704.3(a)(3) and explain

how that assessment informed the development of the TLS thresholds. This ensures that CGS can verify that the TLS is both accurate and complete and that its thresholds are appropriately grounded in the GCS operator's seismic risk analysis.

Rationale

This subsection is necessary to ensure that the TLS is accurate and complete and to provide an opportunity for early regulatory intervention if it is improperly developed. Independent review of the TLS is essential to confirm that the risk-based response thresholds are accurate, complete, and aligned with the seismic risk assessment (Templeton et al., 2021). Requiring third-party review by CGS, an independent applied science agency responsible for the State's seismic monitoring system, promotes rigorous adherence to safety and monitoring requirements and protects the integrity of the CCUS program.

95704.4(a)(2)

Purpose

This purpose of this subsection is to require GCS operators to proactively plan for, detect, and respond to any potential CO_2 or formation fluid leakage by requiring the development of site-specific leakage mitigation measures as developed for Class VI permit application under 40 CFR section 146.94. This section also requires GCS operators to continue implementing these leakage mitigation measures for the entire 100-year period after injection ends.

Rationale

Requiring GCS operators to develop site-specific mitigation measures ensures that any identified leakage pathway or release can be promptly managed using strategies appropriate to the geologic, operational, and risk characteristics of the site. By requiring GCS operators to proactively prepare tailored mitigation strategies, this provision ensures that appropriate remedial actions can be implemented quickly and effectively if leakage risks arise for a period of 100 years after injection to support CARB's statutory obligations under Health and Safety Code section 39741.1(a)(3)(D). These measures provide a structured approach for addressing both early indicators of leakage and confirmed releases, helping maintain reservoir integrity and protecting public health, safety, and the environment. Effective leakage mitigation should incorporate subsurface CO_2 plume tracking technologies capable of detecting early indications of migration outside the intended storage interval; pressure adjustments, extraction, mechanical repairs, and sealant injections provide diverse, practical tools to address different leakage scenarios (U.S. EPA, 2013b; U.S. EPA, 2018; Sustainability Directory, n.d.). Having mitigation strategies prepared in advance ensure GCS operators have thoroughly evaluated appropriate technical responses tailored to reservoir characteristics and site risks. This strengthens readiness, reduces response time, and supports regulatory assurance that leakage will be contained, corrected, and monitored in a manner protective of long-term storage performance and public safety.

95704.4(b)

Purpose

The purpose of subsection is to require GCS operators to review and update the emergency and remedial response plan (ERRP) every five years, at the start of the post-injection phase, and within 90 days after any CO_2 or formation-fluid leak or red-light Traffic Light System (TLS) threshold is triggered. This subsection also requires each ERRP update to include an impact analysis of public health, safety, and the environment related consequeces listed in 95704.3(a)(1), and an evaluation of the effectiveness of the TLS thresholds and associated mitigation measures, including any necessary revisions.

Rationale

This subsection is necessary to establish the frequency and timing for updating the ERRP and to ensure the plan remains effective during active injection and throughout the 100 years after injection ends. Periodic five-year ERRP reviews are important because the plan must evolve alongside changing site conditions, operational experience, and emerging technologies to remain protective of public health, safety, and the environment. Updating the ERRP at the start of the PISC period is equally critical because site conditions can change once injection stops (Pawar et al., 2020), pressure and fluid movement stabilize over time, no new CO_2 is entering the reservoir, and the risk profile becomes fundamentally different, making it essential to adjust the plan's response elements to these long-term conditions. Updating the ERRP after any leak or red-light TLS event is also crucial because immediate amendments ensure the plan reflects real-world incidents, incorporates an impact analysis which ensures that GCS operators evaluate the potential consequences of seismicity or CO_2-storage issues using the most recent site-specific information. Likewise, assessing the effectiveness of TLS thresholds and related mitigation measures allows GCS operators and regulators to verify whether the existing response framework is sufficient to minimize potential harm or whether adjustments are needed. incorporates an impact analysis grounded in potential public health, safety, and environmental consequences, and evaluates whether TLS thresholds remain effective or need adjustment to stay aligned with the site's actual seismic and leakage risks. Together, these adaptive updates reinforce long-term CO_2 containment and support Health and Safety Code section 39741.1(a)(3)(D) for extended monitoring requirements, ensuring seismic activity, CO_2 movement, and potential leakage risks are continually assessed for at least 100 years after injection.

95704.4(c)

Purpose

The purpose of subsection is to require GCS operators to publicly post and notify CARB and CGS whenever an incident such as seismic event that triggers a TLS threshold yellow-light or higher, or evidence of leakage, occurs and to submit information related to the incident within 24 hours.

Rationale

This subsection ensures that GCS operators notify the public and reports to CARB and CGS so the agency can provide support and oversight for GCS operators implementing emergency response procedures, such as initiating shutdown plans, notifying authorities, and implementing remedial measures to mitigate ongoing or escalating risks. Public posting on the

website will also provide transparency to ensure people are aware of a situation that may require attention.

95704.4(c)(1)

Purpose

The purpose of subsection is to require GCS operators to notify CARB and CGS whenever an incident such as CO_2 or formation fluid leakage from the storage complex or the yellow-light TLS threshold or higher is triggered and to submit information related to the incident within 24 hours. This provision specifies the information that must be reported, including the date, time, and location of any seismic event or suspected or confirmed CO_2 leak; the distance from the epicenter of the seismic event or the leak from the injection well; the magnitude of the seismic event; an initial assessment of whether injection activities may be linked to the event; an initial description and quantification of any CO_2 or formation fluid leakage; and any notifications issued to the U.S EPA Director and first responders.

Rationale

This subsection ensures that GCS operators notify and report to CARB and CGS the listed information that follow required procedures, such as initiating shutdown plans, notifying authorities within the specified timeframes, and implementing remedial measures to mitigate ongoing or escalating risks within 24 hours of the incident. Reporting the date, time, and location of any seismic event or suspected or confirmed CO_2 leak enables CARB and CGS to identify the immediacy and spatial extent of the incident. Requiring the distance of the epicenter or CO_2 or formation fluid leak from the injection well(s) helps assess potential impacts on well integrity and injection operations. Including the magnitude of any seismic event offers insight for GCS operators, CARB, and CGS into the severity of ground motion and potential subsurface impacts.

Providing an initial assessment of whether injection activities are linked to the seismic or leakage event supports preliminary causal analysis essential for determining whether operational adjustments are needed. Early estimation and characterization of CO_2 or formation fluid leakage is vital for evaluating containment performance by determining the size and severity of the leak. This helps prioritize remedial measures and helps regulators determine urgency and potential impacts. Lastly, providing notifications issued to the U.S. EPA Director and first responders demonstrates coordination has been conducted with key emergency management professionals.

95704.4(c)(2)

Purpose

The purpose of subsection is to require GCS operators to submit an incident report to CARB within 60 days after an incident notification. This report must explain the root cause of the seismic or CO_2 leakage event using available data as informed by collected, government, or third party collected data; quantify (to the extent feasible) the total amount of leaked CO_2; and describe any earthquake felt reports and associated damage. GCS operators must also document all remedial actions completed under the ERRP and identify any updates made to

the seismic monitoring plan currently in use (whether the operational seismic monitoring plan or the post-injection seismic monitoring plan), as well as any updates to the subsurface CO_2 plume and pressure-front monitoring plan. The subsection further requires GCS operators to include a summary of the quality assurance methods used to ensure that all reported data are accurate, reliable, and consistent.

Rationale

Identifying the root cause(s) of seismic or CO_2 leakage events is critical for understanding failure mechanisms and preventing recurrence through targeted remedial actions. Real-time correlation between injection phases and seismicity is essential for proactive risk mitigation (White and Foxall, 2016). In the case of a leakage event, this provision ensures CARB receives essential information about the GCS site and incident to understand the scale and nature of the leak, including where it occurred and what indicators point to operational, geologic, or mechanical causes.

Quantifying the total containment loss provides a measure of environmental release and the scale of the leak incident, essential for evaluating impact severity. This provision ensures GCS operators analyze operational data to support the determination of the incident root causes.

Documenting completed remedial actions demonstrates that the ERRP was executed effectively and outlines lessons learned for operational response. By reporting the mitigative steps taken—such as reducing injection rates, implementing temporary shutdowns, or mobilizing response teams—GCS operators demonstrate how they managed the induced seismicity risk and resolved the incident. This is critical for closure of the incident and in implementing safeguards. Reporting modifications to the monitoring plans and ERRP ensures that lessons from the incident are incorporated into future safeguards. Detailing implemented enhancements and monitoring modifications ensures detection sensitivity matches evolving seismicity conditions. For example, adjustments like increasing sensor density or revising detection thresholds signal a proactive stance and allow for more accurate assessment of seismic trends. This demonstrates that the monitoring system improvements were fully integrated and are sufficient to capture any further risks. Finally, summarizing quality assurance methods underscores the reliability and credibility of incident data. Together, these elements ensure that post-incident reporting is thorough and actionable, reinforcing safety, permanence, and regulatory confidence in geologic carbon storage operations, and supporting strategies to minimize seismic-related leakage risk consistent with Health and Safety Code section 39741.1(a)(3)(C).

The timeframe of 60 days was chosen as a reasonable timeframe to balance access to information while providing sufficient time for the operator.

95704.4(d)

Purpose

The purpose of subsection is to require GCS operators to cease injection in all wells upon any evidence that injected CO_2 or formation fluid is migrating outside the designated sequestration zone, or when a red-light seismic event is detected. GCS operators would not be permitted to

resume injection without first receiving approval from the Executive Officer based on criteria specified in sections 95704.4(e)(1)-(2).

Rationale

This subsection is necessary because both identified conditions represent high-risk scenarios requiring immediate cessation of injection to prevent further escalation of harm. Evidence of CO_2 or formation fluid leakage outside the designated sequestration zone indicates a breach of containment performance and presents a potential environmental risk; therefore, halting injection reduces pressure and prevents exacerbation of the leakage pathway. A red-light seismic event reflects a level of ground motion or fault activation that poses significant risk to well integrity, reservoir stability, and the potential creation of new migration pathways; immediate cessation of injection is essential to reduce stress loading, limit induced seismicity and protect subsurface structures from additional destabilization.

Together, these triggers ensure GCS operators act promptly during conditions that represent the highest level of operational and environmental risks. GCS operations must ensure seismic activity has de-escalated and all leakage has stopped before resuming injections. This reinforces an approach that maintains public safety, protects environmental resources, and supports the long-term permanence of geologic carbon storage, consistent with Health and Safety Code section 39741.1(a)(3)(C). This provision is also aligned with Public Resources Code section 71463 that permits CARB, under the consultation of the State Geologist, to intervene and recommend operational changes to ensure public and environmental health and safety, including, but not limited to, a mandatory pause in operation for the incidences mentioned in section 95704.4(d).

95704.4(e)

Purpose

The purpose of subsection is to require GCS operators to obtain approval from the Executive Officer before restarting injection operations, and to demonstrate that (1) seismic activity has subsided to background levels or below the yellow-light TLS threshold for at least 30 consecutive days, and (2) any CO_2 or formation-fluid leakage has been fully remediated in accordance with section 95704.4(a)(2) and no longer poses a risk of further migration.

Rationale

This subsection is necessary because restarting injection operations without verifying stable seismicity and effective leakage control could exacerbate subsurface stresses or promote additional migration of CO_2 or formation fluids. Demonstrating that seismicity has declined below the yellow-light threshold ensures that injection activities will not resume under conditions of elevated seismic risk. Confirming that leakage has been eliminated or minimized and no longer poses a migration risk maintains public safety, protects environmental resources, and supports the long-term permanence of geologic carbon storage. Requiring GCS operators to demonstrate both conditions before restart provides a clear, data-driven basis for determining when injection can safely re-commence, ensuring that operational decisions remain protective and aligned with long-term risk-management objectives, consistent with Health and Safety Code section 39741.1(a)(3)(D).

The timeframe of 30 days was chosen as a reasonable timeframe to balance safety while providing sufficient time for the operator.

95704.4(f)

Purpose

The purpose of subsection is to ensure that GCS operators retain the active ERRP, all ERRP updates, and copies of any notifications submitted to CARB for at least 100 years after injection ends.

Rationale

This subsection is necessary because emergency response documentation provides essential evidence of how GCS operators have managed seismic events, leakage incidents, and risk mitigation activities over time. Retaining ERRPs, updates, and notifications for at least 100 years ensures that CARB can assess long-term compliance, evaluate past responses, and investigate site conditions even decades after injection operations have ceased. Long-term record availability strengthens accountability, supports continuity of oversight across regulatory and institutional changes, and provides critical information needed to evaluate potential risks to public health, safety, and environmental integrity throughout the extended post-injection period.

J. Section 95704.5 Financial Responsibility.

95704.5(a)

Purpose

The purpose of this subsection is to establish that GCS operators must develop and submit to CARB a financial responsibility plan prior to the start of CO_2 injection. The plan must demonstrate the GCS operator's ability to cover the short- and long-term costs of corrective action, plugging injection wells, post-injection site closure, and emergency and remedial response as required under 40 CFR section 146.85, as well as monitoring and remedial activities required under section 95704, which include leak detection, plume movement, and seismic monitoring and response. Collectively, financial responsibility for these actions helps ensure that the risk of carbon dioxide leakage poses no material threat to public health, safety, and the environment for no less than 100 years after injection ends, as required by Health & Safety Code section 39741.5 and Public Resources Code section 71464(a).

Rationale

This subsection is necessary to implement Public Resources Code section 71464(a), which requires GCS operators to submit a financial responsibility plan demonstrating their ability to cover, through financial responsibility instruments, the short- and long-term costs associated with the following: corrective action; well plugging and abandonment; geologic storage reservoir monitoring; site care and site closure; emergency and remedial response; liability associated with seismic activity triggered by the reservoir or loss of CO_2 containment by the geologic storage reservoir; protection of drinking water quality; and protection of public health, safety, and the environment. Proof of approval of financial instruments by the U.S. EPA

Director along with demonstration of how additional requirements set forth by this regulation will be met will provide CARB with critical documentation demonstrating how a GCS operator will be able to sufficiently maintain financial responsibility for the period of time required. This subsection also provides GCS operators with a flexible compliance window, allowing the plan to be submitted at any point prior to the start of injection operations, while still establishing a clear and enforceable deadline by which financial responsibility must be demonstrated. This section also prevents any GCS operator from beginning injection without adequate financial mechanisms. Alignment of this requirement with conditions of 40 CFR section 146.85 is required by Health and Safety Code section 39741.5, which requires California standards to be no less stringent than federal requirements.

95704.5(a)(1)

Purpose

The purpose of this subsection is to establish that GCS Operators must include, as part of their financial responsibility plan, evidence that the U.S. EPA Director has approved their qualifying financial instruments in accordance with 40 CFR section 146.85(a)(5)(i), which in turn means they have met initial instrument and applicable financial strength requirements of the broader section under 40 CFR section 146.85.

Rationale

This requirement is necessary to ensure that GCS Operators demonstrate, as part of their financial responsibility plan, that they are already in compliance with federal financial responsibility requirements. The regional U.S. EPA director is required to consider and approve qualifying instruments for all project phases or actions of the GCS project prior to issuing a Class VI permit. Requiring evidence of this approval allows CARB to confirm that GCS operators have met federal baseline financial assurance requirements before CARB evaluates California-specific additions. This prevents duplication of review and ensures compliance with Health and Safety Code section 39741.5, which requires California's standards to be no less stringent than federal requirements.

95704.5(a)(2)

Purpose

The purpose of this subsection is to establish that GCS operators must demonstrate that the cost estimates and face amount of the qualifying financial instruments approved under paragraph (1) of section 95704.5(a) by the U.S. EPA Regional Director will also account for the costs of additional activities required by California state law. These additional state law-required activities are emergency and remedial response, air pollutant and surface CO_2 monitoring, seismic monitoring, and subsurface CO_2 plume and pressure front monitoring.

Rationale

This subsection is necessary to ensure that GCS operators maintain financial responsibility that satisfies Health and Safety Code section 39741.5, which requires that GCS operators

maintain financial responsibility for a period of time that is sufficiently long enough to demonstrate that the risk of carbon dioxide leakage poses no material threat to public health, safety, and the environment and to achievement of net zero GHG emissions in California and that terminates no earlier than 100 years after the last date of injection. U.S. EPA-approved instruments cover federal Class VI requirements.

The requirements for which project phases require financial responsibility by the U. S. EPA, ensuring funding exists to protect underground sources of drinking water (USDWs), the environment, and California's broader climate goals throughout the full lifecycle of a GCS site. Corrective action, under 40 CFR section 146.84, protects USDWs by requiring GCS operators to identify and remediate legacy wells within the Area of Review that could otherwise act as conduits for injected CO_2 or displaced formation fluids to migrate upward and contaminate drinking water sources. Well plugging, under 40 CFR section 146.92, protects both USDWs and long-term containment integrity by requiring injection and monitoring wells to be properly closed once no longer in use, preventing future fluid movement through the wellbore.

Post-injection site care and site closure (PISC), under 40 CFR sections 146.93 and 146.90, requires GCS operators to track the position of the CO_2 plume and pressure front and demonstrate that underground sources of drinking water (USDWs) are not endangered for a minimum of 50 years after injection ends. During this period, GCS operators must continue mechanical integrity testing at least annually, pressure fall-off testing at least once every five years, and plume and pressure front tracking using direct methods, such as in-zone pressure monitoring, or indirect methods, such as seismic, electrical, or down-hole CO_2 detection tools, at a site-specific frequency proposed by the GCS operator and approved by the Director. GCS operators must also submit post-injection monitoring results on a Director-approved schedule, and site closure cannot be authorized until the GCS operator demonstrates, based on this monitoring data, that no additional monitoring is needed to ensure the project does not endanger a USDW; if that demonstration cannot be made, monitoring continues.

Emergency and remedial response, under 40 CFR section 146.94, further protects USDWs, public health, and the environment by requiring GCS operators to maintain a plan governing their response to any indication that the CO_2 stream or pressure front may endanger a USDW, spanning the construction, operations, and post-injection site care.

The state law additions, imposed by SB 905 and proposed under this regulation, strengthen the federal PISC baseline by requiring surface CO_2 monitoring, subsurface CO_2 plume monitoring, elevated pressure tracking, and seismic monitoring as mandatory, rather than Director-discretionary, ensuring consistent, multi-layered detection of leakage or containment risk across every California GCS project, regardless of site-specific determinations. GCS operators must demonstrate that their instruments have sufficient face amount to cover these California-specific obligations, or obtain additional instruments to do so. Without this demonstration, the State cannot ensure adequate financial capacity to address leakage risks, induced seismicity, or environmental harms over the full 100-year post-injection period

95704.5(a)(2)(A)

Purpose

The purpose of this subsection is to establish that the GCS operators' financial plans must document that they meet the requirements of the U.S. EPA for financial responsibility, including coverage of corrective action (that meets the requirements of 40 CFR section 146.84), well injection plugging (that meets the requirements of 40 CFR section 146.92), post injection site care and site closure (that meets the requirements of 40 CFR section146.93), and emergency and remedial response (that meets the requirements of 40 CFR section 146.94). The requirements for post injection site care and site closure and emergency and remedial response under 40 CFR sections are not the same as those required under this Regulation, but still must be financially assured.

Rationale

Requiring demonstration of compliance with federal requirements for financial responsibility meets the requirement of being no less stringent than section 146.85 of Title 40 of the Code of Federal Regulations, as that section read on January 1, 2022. This ensures these crucial project phases are assured for up to 50 years after the last date of injection, and are undergoing review by the U.S. EPA on an annual basis, while not creating additional redundancy in review of these instruments at the state level.

95704.5(a)(2)(B)

Purpose

The purpose of this subsection is to establish that GCS operators must demonstrate financial responsibility sufficient to cover the costs of emergency and remedial response for 100 years after the last date of injection, pursuant to section 95704.4.

Rationale

This subsection is necessary to implement requirements of coverage set forth by Public Resources Code section 71464(a), which requires "The GCS operator shall demonstrate financial responsibility by... cover[ing] the short- and long-term costs [of]... liability associated with seismic activity triggered by the reservoir, or loss of carbon dioxide containment by the geologic storage reservoir, and protection of drinking water quality and public and environmental health and safety." This subsection also implements the requirements set forth by Health and Safety Code section 39741.5, which requires that the coverage "terminates no earlier than 100 years after the last date of injection." These provisions necessitate GCS operators demonstrate financial responsibility for emergency and remedial response plan obligations additional to the federal Class VI regulations, which require financial responsibility for a default of 50 years or for the duration of the alternative timeframe pursuant to 40 CFR section 146.93(b)(1). Rationale under section 95704.4 provides explanation of specific response action requirements under the ERRP in response to triggering seismic activity, which is necessary to mitigate risk of a larger and potentially more damaging seismic event.

95704.5(a)(2)(C)-(E)

Purpose

The purpose of this subsection is to establish that GCS operators must demonstrate financial responsibility sufficient to cover the additional monitoring activities required under the

Proposed Regulation, which includes surface CO_2 monitoring, air pollutant monitoring, subsurface CO_2 plume monitoring, and seismic monitoring.

Rationale

This subsection is necessary to implement the requirements of coverage set forth by Public Resources Code Section 71464(a), which requires “The operator shall demonstrate financial responsibility by... cover[ing] the short- and long-term costs [of]... liability associated with seismic activity triggered by the reservoir, or loss of carbon dioxide containment by the geologic storage reservoir, and protection of drinking water quality and public and environmental health and safety.” This subsection also implements the requirements set forth in Health and Safety Code section 39741.5, which requires that the coverage “terminates no earlier than 100 years after the last date of injection.” These provisions necessitate GCS operators demonstrate financial responsibility for post injection site care obligations additional to the requirements of the federal Class VI regulations.

95704.5(a)(3)

Purpose

The purpose of this subsection is to allow GCS operators to obtain wholly separate financial instruments to cover the monitoring and remediation activities required under subsections 95704.5(a)(2)(B)-(E). This serves as an alternative to including estimated costs for these activities in instruments intended to satisfy the U.S. EPA Class VI requirements found in 40 CFR section 146.85. These alternative instruments are allowable if the GCS operator identifies these instruments in the financial plan, demonstrates their sufficiency to cover costs, complies with annual cost estimate requirements, and reports any change in the face amount consistent with the Notification of Change to Financial Coverage or Condition requirements under subsection 95704.5(c). Additionally, such instruments must meet requirements consistent with 40 CFR section 146.85.

Rationale

This subsection is necessary to provide GCS operators flexibility in how they meet the additional financial responsibility requirements under subsections 95704.5(a)(2)(B)-(E), which may fall outside the scope of U.S. EPA's review of financial instruments under 40 CFR section 146.85. Because these additional instruments to assure monitoring and remediation requirements under the Proposed Regulation are not subject to U.S. EPA's review process, GCS operators must independently demonstrate to CARB, through the financial responsibility plan, that these instruments are sufficient, and must meet the same annual cost estimate review requirements as U.S. EPA-reviewed instruments (see section 95704.5(b)(3)). Under the Proposed Regulation, these instruments would be subject to the notification obligations under subsection 95704.5(c) for any face-amount change or termination, replacement and renewal. These additional annual and as-needed requirements for any separate instruments that may be used to cover monitoring and remediation requirements under sections 95705.5(a)(B)-(E) are no less stringent than section 146.85 of Title 40 of the Code of Federal Regulations, as that section read on January 1, 2022.

95704.5(a)(3)(A)

Purpose

The purpose of this subsection is to ensure that if GCS operators obtain additional instruments to cover the cost for each activity under section 95704.5(a)(2)(B)-(E) (emergency and remedial response, air pollutant and surface CO2 monitoring, subsurface CO2 plume monitoring, and seismic monitoring), that instruments meet certain requirements. This subsection also requires the operator to follow annual cost estimate requirements under section 95704.5(b)(3) throughout the full project duration.

Rationale

This subsection is necessary to ensure that any additional instruments secured by GCS operators to cover monitoring and remediation activities required under this regulation that are not reviewed and approved by the U.S. EPA meet at least the same level of stringency as the requirements in section 146.85 of Title 40 of the federal code of regulations as that section read on January 1, 2022, as required by Health and Safety Code section 39741.5.

95704.5(a)(3)(A)(i)

Purpose

The purpose of this subsection is to specify that instruments may not cancel, terminate or fail to renew except if it is not paid. If this occurs, the operator must secure a new instrument 60 days before the instrument is cancelled, or let CARB know it is not possible. In the latter case, funds must be released before or upon cancellation.

Rationale

This subsection is necessary to ensure that cancellation of an instrument is limited to non-payment rather than provider discretion. The operator is required to replace a cancelled instrument with a period of overlap in order to avoid lapse in coverage. Notification to CARB is necessary to ensure the State is aware of risk of non-performance by the operator. As required by Health and Safety Code section 39741.5, this proposed regulation is no less stringent than 40 CFR section 146.85, as that section read on January 1, 2022.

95704.5(a)(3)(A)(ii)

Purpose

The purpose of this subsection is to specify that GCS operators must renew all financial instruments, if an instrument expires, for the full project life, which includes 100 years after the last date of injection for a term expiring no sooner than 100 years after the last date of injection. The GCS operator is also permitted to exercise auto-renew, so long as they can renew at the face amount of the expiring instrument.

Rationale

This subsection is necessary to ensure that a lapse in coverage may not occur due to expiration of an instrument holding period, and that renewal must meet the full time of

coverage requirement under the Proposed Regulation. Specifying that GCS operators must be able to auto-renew at face value also supports continuity of coverage by prohibiting sudden increases in costs related to renewal. As required by Health and Safety Code section 39741.5, this proposed regulation is no less stringent than 40 CFR section 146.85, as that section read on January 1, 2022.

95704.5(a)(3)(A)(iii)

Purpose

The purpose of this subsection is to explain that the financial instrument must stay in effect if certain events occur before it expires, which may include the facility being deemed abandoned, the permit being revoked or denied, a court ordering closure, the operator entering bankruptcy, or the amount due has been successfully paid.

Rationale

This subsection is necessary to ensure that financial responsibility remains fully in effect when the risk of project non-performance is high, such as after abandonment, permit revocation or denial, court-ordered closure, or operator bankruptcy. It also explicitly requires that an instrument that has been paid in full be maintained in full force, to protect financial assurance on behalf of geologic project operators. Requiring that the instrument remain in full force under the circumstances described, ensures continuity of financial assurance, and prevents the burden of unfunded liabilities from shifting to the state or affected communities. As required by Health and Safety Code section 39741.5, this proposed regulation is no less stringent than 40 CFR section 146.85, as that section read on January 1, 2022.

95704.5(a)(3)(B)

Purpose

This section specifies that if a GCS operator uses more than one instrument to assure a single monitoring or remediation activity required under the proposed regulation, that none of the instruments used may be based on financial strength of the operator.

Rationale

The subsection is necessary to ensure that GCS operators can reasonably select the most appropriate instruments for their operational needs while still ensuring operators cannot bypass financial strength and rating metrics required for self-insurance through use of multiple instruments. This decreases the risk of transferring project liability to the State or public. As required by Health and Safety Code section 39741.5, this proposed regulation is no less stringent than 40 CFR section 146.85, as that section read on January 1, 2022.

95704.5(a)(3)(C)

Purpose

The purpose of this subsection is to specify the financial strength requirements for a financial institution provider when GCS operators use third-party instruments. It is the GCS operator’s

responsibility to ensure these requirements are met. They may either use a provider of an instrument already approved by the U.S. Regional U.S. EPA Director, or demonstrate in their financial plan how the provider is of equal or greater financial strength than a provider of instruments already approved by the U.S. EPA Regional Director.

Rationale

This subsection is necessary to ensure that GCS operators secure financial instruments from providers that meet specified financial strength and rating requirements that are equal to, or better than those required by the U.S. EPA under 40 CFR section 146.85. It is necessary for third party providers of financial instruments to have adequate financial strength in order to assure the public that the funds promised by the instrument will be available if a condition triggering the disbursal of such funds comes to pass. As required by Health and Safety Code section 39741.5, this proposed regulation is no less stringent than 40 CFR section 146.85, as that section read on January 1, 2022.

95704.5(a)(3)(D)

Purpose

The purpose of this subsection is to establish that if the trustee or issuing institution for a financial responsibility instrument including a trust fund, surety bond, letter of credit, escrow account, or insurance policy enters bankruptcy or loses the legal authority to issue or administer that instrument, the geologic storage project will be considered without valid financial assurance. In such cases, the operator is required to secure replacement financial assurance within 60 days after the commencement of the bankruptcy proceeding or loss of authority.

Rationale

This subsection is necessary to ensure continuous financial responsibility when the financial institution backing an operator's trust fund, surety bond, letter of credit, escrow account, or insurance policy becomes bankrupt or loses the legal authority to issue or administer those instruments. By treating the project as without financial assuranceuninsured under such circumstances, this provision prevents gaps in coverage that could leave corrective action, well plugging, post-injection care, or emergency response activities unfunded. As required by Health and Safety Code sSection 39741.5, this proposed regulation is no less stringent than 40 CFR section 146.85, as that section read on January 1, 2022.

95704.5(a)(3)(E)

Purpose

The purpose of this subsection is to establish that when a GCS operator uses credit to satisfy additional financial responsibility requirements under the proposed regulation that they must also establish a standby trust. The subsection also specifies that the trust may not be canceled, funds must be used for their intended purpose, and CARB must be notified within 30 days when any payment is made from the trust. If the GCS operator uses surety bonds or letters of credit, they must establish a standby trust.

Rationale

If the GCS operator uses surety bonds or letters of credit, they must establish a standby trust. The standby trust fund is necessary to provide a location to place funds if needed and may not be cancelled so long as these instruments are used. The GCS operator must notify CARB when any payment is made from the standby trust. Explicitly stating that these funds must be used for their intended purpose, and not canceled, ensures a reduced risk of liability to the state and notification requirements ensure that CARB retains visibility in how instrument funds are utilized.

95704.5(a)(3)(F)

Purpose

The purpose of this subsection is to ensure that if a GCS operator or its guarantor uses self insurance to meet their financial responsibility obligations That certain financial strength and rating metrics are met This includes a tangible net worth and networking capital value of at least six times the total estimated financial liability of all the activities requiring coverage Under (a)(2) of this section. GCS operators must also meet additional requirements specified in 40 CFR section 146.85(a)(6)(v). They need to submit a report containing their bond rating and relevant financial information biannually to CARB. Additionally, they may arrange a corporate guarantee.

Rationale

This subsection is necessary to ensure that robust financial strength and rating metrics are met and retained by GCS operators or their parent companies if self insurance is to be used. Operators must submit documentation to redemonstrate this every two years in order to ensure there is little to no risk of project nonperformance over the lifespan of the project. The specific financial strength and rating requirements specified under the subsection are no less stringent than those of 40 CFR section 146.85, as that section read on January 1, 2022.

95704.5(a)(3)(G)

Purpose

The purpose of this subsection is to ensure that if the GCS operator uses a trust fund or escrow account with a pay-in-period structure, that they have to provide justification in their financial plan for the use of pay-in-periods. They also must provide justification for the selected length of pay-in-period. Also, this subsection specifies that if an escrow account is used to meet financial responsibility obligations it is required to be segregated from funds of other accounts and uses.

Rationale

This subsection is necessary to ensure that the use of pay in periods with a trust fund or escrow account will result in adequate assurance for the required monitoring and remediation activities under the proposed regulation. As required by Health and Safety Code section 39741.5, this proposed regulation is no less stringent than 40 CFR section 146.85, as that section read on January 1, 2022.

95704.5(a)(4)

Purpose

The purpose of this subsection is to establish that GCS operators must provide a statement of assurance that financial responsibility will be maintained without any lapse in coverage, including during changes in ownership or the cancellation or renewal of qualifying financial instruments, along with a description of the steps taken to prevent such a lapse.

Rationale

This subsection is necessary to ensure continuous coverage under all circumstances, including ownership changes and instrument cancellation or renewal. Including steps taken to prevent such a lapse is necessary to minimize the risk of a lapse in coverage. Avoiding lapses in coverage is necessary to avoid situations where no entity has responsibility for costs of the GCS project.

95704.5(b)

Purpose

The purpose of this subsection is to establish that even if and when the U.S. EPA Regional Director approves site closure and releases the GCS operator from federal financial responsibility requirements under 40 CFR section 146.85, the operator's financial responsibility obligations do not end for the purposes of this regulation in the state of California. Instead, the GCS operator must maintain financial responsibility that meets the requirements of 40 CFR section 146.85, as applicable, for at least 100 years following the last date of injection.

Rationale

This subsection is necessary to establish that federal determinations of site closure and release under 40 CFR section 146.85 do not relieve GCS operators of compliance with the financial responsibility requirements established under the CCUS Program. While the U.S. EPA allows for release from financial instruments after a maximum 50-year post-injection period, California law requires financial responsibility to be maintained for a minimum of 100 years following the last date of injection.

95704.5(b)(1)

Purpose

The purpose of this subsection is to establish that GCS operators must update their financial plan for compliance with section 95704.5(a) and submit the updated financial plan to CARB within 60 days of receiving U.S. EPA approval pursuant to 40 CFR section 146.85(b)(2)).

Rationale

This subsection is necessary to ensure that after the period for financial responsibility required by the Class VI regulations ends, GCS operators' financial plans demonstrate responsibility for the full scope of coverage required to protect public and environmental health and safety during the post-Class VI permit phase up to a minimum of 100 years after the last date of

injection. This subsection enforces expanded coverage by requiring GCS operators to submit an updated financial plan reaffirming how they will continue to hold financial responsibility beyond the point of federal release. While this regulation generally aligns notification and submission periods to 30 days, a 60-day period is applied to this subsection to allow GCS operators additional time to make the necessary adjustments to their financial plan following the Director's determination. Alignment of this requirement with conditions of 40 CFR section 146.85 is required by Health and Safety Code section 39741.5, which requires State financial responsibility must be no less stringent.

95704.5(b)(2)

Purpose

The purpose of this subsection is to establish that where a GCS operator uses a financial responsibility instrument requiring a standby trust during the post-Class VI permit phase, CARB must be named as a party to that standby trust, but not as its beneficiary. This subsection has the same meaning as 40 CFR section 146.85(a)(6)(ii).

Rationale

This subsection is necessary because certain financial instruments, such as surety bonds and letters of credit, do not hold funds directly and instead rely on a standby trust as the mechanism through which funds are actually deposited and held if the instrument is drawn on. Under the federal framework, a standby trust is required specifically to enable the U.S. EPA to be a party to the financial responsibility agreement without being the beneficiary of the funds, ensuring oversight without placing the funds themselves under the Regional Director's direct control. Extending this same structure to CARB during the post-Class VI permit phase, when the state's financial responsibility requirements extend beyond the point of federal release, ensures that CARB retains equivalent standing and visibility into these instruments as the GCS operator continues to hold the extended financial responsibility required under state law. Alignment of this requirement with conditions of 40 CFR section 146.85 is required by Health & Safety Code section 39741.5, which requires State financial responsibility must be no less stringent.

95704.5(b)(3)

Purpose

The purpose of this subsection is to require GCS operators to continue to conduct an annual review of their financial instruments throughout the period for which financial responsibility is required by the CCUS Program. During this review the GCS operator must determine whether cost adjustments are needed for the required project phases under 40 CFR section 146.85(a)(2), or for the additional monitoring and remediation activities required under section 95704.5(a)(2). Any cost adjustments must be calculated in current dollars (consistent with 40 CFR section 146.85(c)), performed separately for each phase or action, and based on the cost CARB would incur to hire an independent third party, meaning a party outside the operator's own corporate structure, to perform the required work (consistent with 40 CFR section 146.85(c)(2)).

Rationale

This subsection is necessary to ensure that GCS operators maintain and adequately reassess financial responsibility instruments between the time the U.S. EPA stops requiring maintenance of financial responsibility and 100 years after the date of last injection. Requiring an annual review ensures that cost estimates keep pace with inflation, changing site conditions, and evolving technical requirements over the life of a project that may span decades. Each monitoring and remediation plan required under this Regulation (sections 95704.5(a)(B) and (C)) also requires annual review of the plan. GCS operators can and should utilize review of those plans to inform necessary cost adjustments of their financial instruments to assure those plans. Basing the cost estimate on the price of hiring an independent third party, rather than the GCS operator's own internal costs, is necessary because if a GCS operator becomes unable or unwilling to perform the required activities itself, a third party would be needed to complete the work. This requirement is consistent with the same third-party cost basis standard established under 40 CFR section 146.85(b), and extends that same protective standard to the additional monitoring and remediation activities required under California's expanded financial responsibility requirements.

95704.5(c)

Purpose

The purpose of this subsection is to establish when GCS operators' notification and disclosure obligations begin and how long they last — starting from within 30 days of first submitting their financial plan to CARB, and continuing for the entire duration of the project, through both the active, irrespective of whether Class VI permits are still in effect. This subsection also requires the GCS operator to post any notice submitted to CARB on the GCS operator’s project webpage within 30 days of submission.

Rationale

This subsection is necessary to ensure that GCS operators provide certain notifications throughout the full lifespan of the project, including for at least 100 years after the last date of injection. This subsection ensures that CARB and the public are made aware of the occurrence of any event which could affect a GCS operator’s financial responsibility for a project. As a result, interested parties and communities near GCS projects have timely, centralized access to information on project performance that directly affects the financial security of monitoring, remediation, and closure activities at the GCS site. While some of this information, such as a bankruptcy filing, may already be discoverable through other public court records, it is not reasonably accessible to most members of the public.This requirement supports the same transparency and public trust goals underlying the disclosure provisions elsewhere in the Proposed Regulation.

The required timing of the notice is consistent with existing CARB requirements, such as California’s Low Carbon Fuel Standard Program. By requiring 30 days of notice, this subsection aligns its expectation of notification requirements both to CARB and the public with recognized environmental program standards. Thirty days strikes a reasonable balance between ensuring CARB and the public receive information in a timely manner and providing sufficient time to GCS operators.

95704.5(c)(1)

Purpose

The purpose of this subsection is to establish that any change in coverage for all required project phases or monitoring and remedial activities must be reported to CARB, including the renewal or replacement of one or more instrument, or an adjustment to the instrument's face amount. This notification must explain the cause for the change, the effective date, and include any relevant supporting documentation such as annual cost estimates that explain why the change in coverage is necessary or permissible.

Rationale

This subsection is necessary to ensure that CARB remains informed of changes to a GCS operator's financial responsibility coverage throughout the full 100-year period required under this Regulation, requiring the same disclosure and accountability practices already required under 40 CFR section 146.85, and well extending them if and when the U.S. EPA Regional Director approves release from financial instruments. During the period U.S. EPA retains authority over the project, the U.S. EPA already requires GCS operators to report changes such as instrument renewal, replacement, or adjustment to a face amount. Thus, this requirement does not create a new substantive standard but ensures that same reporting obligation continues without interruption once the project moves beyond U.S. EPA's involvement, in alignment with Health and Safety Code section 39741.5 which requires CARB's financial responsibility requirements apply to projects for 100 years after the last date of injection and be no less stringent than those contained in 40 CFR section 146.85. Requiring notification keeps CARB informed of the current status of financial responsibility coverage throughout this extended period. Because monitoring requirements are expected to decline over time following final injection (particularly from year 51 to 100 as opposed to 0 to 50), cost adjustments to reduce the face amount of instruments may be expected and warranted. It is however, important to ensure GCS operators keep CARB informed of any such adjustments.

95704.5(c)(2)

Purpose

The purpose of this subsection is to establish that GCS operators must disclose any cancellation, termination, failure to renew, or other event requiring renewal or replacement of a financial responsibility instrument, or any notice thereof. This must be done within thirty days of notice or change.

Rationale

This subsection is necessary to provide operational disclosure and accountability to interested parties within the public. Because geologic storage involves long-term environmental and public safety commitments, any disruption to its financial security represents an operational risk. Requiring that notice of cancellation, termination, failure to renew, or other event requiring renewal or replacement of a financial responsibility instrument be disclosed along with overall compliance status provides additional information and context to operational performance. This subsection allows a 60-day grace period for notification to be consistent with other notification requirements within this section and across the CCUS Program.

95704.5(c)(3)

Purpose

The purpose of this subsection is to ensure that CARB receives timely notification when a GCS operator files for Chapter 7 or Chapter 11 bankruptcy.

Rationale

This subsection is necessary to maintain continuous oversight and ensure that adequate financial assurance remains in place to support project phases or actions. Alignment of this requirement with conditions of 40 CFR section 146.85 is required by Health and Safety Code section 39741.5, which requires State financial responsibility must be no less stringent.

95704.5(c)(4)

Purpose

The purpose of this subsection is to establish that GCS operators must provide notification of transfer of ownership. The notification or disclosure must include the effective date of transfer.

Rationale

This subsection is necessary to provide direction of how GCS operators must publicly disclose change in ownership to ensure continuity of responsibility. Requiring the effective date of transfer specifically allows CARB to establish an unambiguous point in time at which regulatory responsibility shifts from the prior owner or operator to the new one, which is essential for determining which party was responsible for compliance. Requiring the effective date of transfer specifically allows CARB to establish an unambiguous point in time at which regulatory responsibility shifts from the prior owner or operator to the new one, which is essential for determining which party was responsible for compliance at any given time.

95704.5(d)

Purpose

The purpose of this subsection is to ensure that GCS operators retain all records and documentation pertaining to financial responsibility for at least 100 years, including the financial responsibility plan, updates to the financial responsibility plan, annual cost estimates, and updated standby trust documentation. Records must be made available to CARB upon request.

Rationale

This subsection is necessary to maintain accountability and prevent data gaps, in the case that GCS operators are at risk of not maintaining compliance with Health and Safety Code section 39741.5 and Public Resource Codes section 71464(a).

K. Section 95704.6. Legal Demonstration.

95704.6(a)

Purpose

The purpose of this subsection is to require that GCS operators obtain and submit an electronic proof of a legally binding agreement to CARB that includes all relevant surface and subsurface interest holders. The agreement of the GCS site surface and subsurface estates, and prohibits any drilling into or extraction from the GCS site. It also specifies that the legally binding agreement must include a minimum number of conditions that must be satisfied prior to termination of the agreement.

Rationale

This subsection is necessary to ensure that long-term physical protections remain in place for GCS storage sites in California. The agreement must be made among all relevant interest holders to ensure that any parties who may have interest, motivation, or belief of a right to drill into the GCS site at any point during or after site closure, clearly understand the requirement of long-term storage and priority of climate and environmental protection by the State, and make investment or interest decisions accordingly. The agreement is required prior to commencing injection operations to ensure all relevant interest holders are aware of, and consenting to, long term prohibitions of drilling activities to the GCS site before operations begin. It also sets a flexible time period for compliance, while specifying a clear end date, aligning with financial responsibility plan requirements. This subsection also provides interpretation of Public Resources Code section 71464(b) necessary for GCS operators to know what CARB will consider “binding agreement” sufficient for compliance with that provision. Additionally, this subsection ensures that the legally binding agreement does not terminate, and thus relevant parties continue not to engage in activities which could penetrate the storage complex, until conditions have been met that demonstrate there is no risk of release of carbon dioxide to the atmosphere from the GCS site. It sets a minimum set of conditions because depending on the particular site, relevant interest parties may stipulate additional requirements

95704.6(a)(1)

Purpose

The purpose of this subsection is to specify that a GCS operator must have completed the U.S. EPA approved PISC timeframe and has received approval for their site closure plan pursuant to 40 CFR sections 146.93(b)(2)-(3),as a requisite condition to be satisfied prior to agreement termination.

Rationale

This subsection is necessary to provide a safeguard criteria against leakage of CO_2 to the atmosphere. U.S. EPA approval of a GCS operators PISC timeframe, and approval of site closure plan indicates the operator has provided substantial, evidence-based demonstration of reservoir stability that has been reviewed and approved by the U.S. EPA Director. This approval means that the Director has deemed that the project deems no endangerment to USDWs.

95704.6(a)(2)

Purpose

The purpose of this subsection is to specify that seismic activity must be demonstrated to have returned to natural, pre-injection rate, as a condition of agreement termination.

Rationale

This subsection is necessary to provide an additional safeguard criteria against leakage of CO_2 to the atmosphere. Seismic levels returning to pre-injection rates should provide strong indication that stress perturbations from the carbon dioxide plume have dissipated. This gives confidence to much more predictable behavior, which would be critical under a scenario of drilling into the GCS site.

95704.6(a)(3)

Purpose

The purpose of this subsection is to specify that no less than 100 years must have elapsed since the last date of injection, as a condition of agreement termination.

Rationale

This subsection is necessary because Public Resources Code 71464(b) expressly requires that agreements last no less than 100 years after the last date of injection. This period directly corresponds to the minimum period of required post-injection site care, meaning certain monitoring requirements, emergency and remedial response plan, and post injection site care will be in effect until this time.

95704.6(b)

Purpose

To require the agreement bind successive interest holders, and if such agreement is established through creation of one or more real covenants, such covenant(s) meet all legal standards under Civil Code section 1468.

Rationale

Requiring that agreements are binding on successors and that any real covenants created to satisfy this subsection meet Civil Code section 1468 is necessary to ensure the agreement remains valid across property and interest transfers, preventing future challenges or loopholes that could jeopardize reservoir integrity.

L. Section 95704.7. Community Communication.

95704.7(a)

Purpose

The purpose of this subsection is to establish the overarching requirement that GCS operators must communicate directly with both communities located adjacent to proposed GCS sites and any other interested party. This subsection sets forth the minimum expectations for transparent communication regarding the project development milestones and operations.

Rationale

This subsection is necessary to ensure that the public receive clear and timely information about project activities and potential impacts. Establishing these minimum requirements ensures consistent communication, supports accessibility to information, and supports public participation in project development.

M. Section 95705. Carbon Management Projects and Quantification Methodologies.

95705(a)

Purpose

Section 95705 establishes a regulatory mechanism for certification of carbon management project types that are not yet addressed by California Air Resources Board (CARB)-approved Compliance Offset protocols, other CARB protocols, or that are not eligible for compliance obligation reductions under the Cap-and-Invest Program. This section allows carbon management project operators to apply for CARB review to ensure that emerging carbon management approaches can be evaluated against consistent criteria for quantification, monitoring, reporting, verification, additionality, and permanence. Additionally, this section establishes that a project type covered under an existing CARB-approved protocol must follow that protocol's established procedures. This section also requires any projects which geologically store carbon to also receive permanence certification under the GCS Protocol. This section would only allow the Executive Officer to review and certify projects based on a set of criteria, and does not stipulate any program to which this project would enter.

Rationale

This section is necessary because CARB is tasked to support additional methods of utilization or storage of captured carbon dioxide and to facilitate the capture and sequestration of carbon dioxide. Many emerging carbon management project types or portions of project types are not yet addressed by existing CARB-approved protocols, and therefore there is a need to establish a standardized procedure for evaluating these project types. Using a certification approach allows for an ongoing assessment and evaluation as different carbon management projects and technologies are researched and developed. It also provides investor certainty on how innovate approaches can be considered for recognition under this framework.

95705(b)

Purpose

The purpose of this subsection is to establish the minimum requirements a project applicant must meet before submitting a project for review. This includes requiring demonstrating conformance with the criteria in section 95705(d), and having an associated quantification assessment methodology (QAM) that meets one of the following conditions: (1) has been reviewed by, and is eligible to generate credits under a third-party carbon market registry; (2) the QAM has been reviewed and approved for the carbon capture portion of the project under a third-party carbon market registry and the storage portion of the project has been reviewed and certified under the GCS Protocol; or (3) the QAM demonstrates the verified, real, and existing GHG benefits of the project using operational data, with most recent measurements collected within 24 months of application submission, and demonstrates financial viability via purchaser commitments.

Rationale

This subsection is necessary to ensure that any eligible project applicants understand the requirements necessary to be certified under this process.

95705(c)(1)

Purpose

The purpose of this subsection is to establish that projects must submit documentation that complies with the requirements of their respective QAM. Additionally, this subsection sets forth that the Executive Officer may request additional documentation as needed to evaluate the project.

Rationale

This subsection is necessary to ensure that all carbon management project submissions include the documentation required to evaluate whether the project meets the criteria set forth in section 95705(d)(1).

95705(c)(2)

Purpose

The purpose of this subsection is to require the applicant to submit a description of their carbon management project.

Rationale

This subsection is necessary to ensure that all carbon management project applications include basic information regarding the proposed project and applicant and the documentation required to evaluate whether the project meets the criteria set forth in section 95705(d)(1).

95705(c)(3)

Purpose

The purpose of this subsection is to set forth the carbon management QAM documentation requirements that applicants must provide to CARB, including the entire QAM version, name of applicable registry, relevant guidance documents, formal public comments, and any other documentation that describes the QAM. This subsection also sets forth the requirement that a project's QAM must have been issued or updated by an established registry or compliance market within the last 5 years. Additionally, this subsection specifies that a QAM may also be developed using operational data.

Rationale

This subsection is necessary to ensure that applicants provide sufficient evidence that their project adheres to an issued QAM and has undergone formal review and approval by an established registry. This subsection also ensures the applicant provides the necessary documentation to evaluate the QAM criteria set in section 95705(d). This is also necessary to ensure applicants know they can develop a QAM using operational data. Finally, this subsection also ensures that the QAM used within the project application is up to date helping to ensure that the QAM utilizes the most recent science.

95705(c)(4)

Purpose

The purpose of this subsection is to establish the documentation and evidence a carbon mangement project applicant must provide to demonstrate that the project conforms with the QAM. This includes crediting by an established registry, identification of that registry, QAM and QAM version, and proof of recognition of conformance by the administering entity. If a project applicant is capturing and storing carbon in a GCS site, pre-application crediting is not required, but they must use a GCS site that has permanence certification through CARB's GCS protocol and use a QAM from an established registry for the capture portion of the project. If a QAM is developed using operational data, this subsection is necessary to clarify the standards by which a QAM shall be developed and the required information that must be provided.

Rationale

This subsection is necessary to ensure that carbon management project design, monitoring, quantification, and reporting procedures align with CARB's goal to achieve real, permanent, quantifiable, verifiable, enforceable, and additional GHG removals. This subsection is also necessary such that muiltiple carbon capture technologies can to used in conjunction with a GCS site that has permanence certification. This also provides flexibility for project developers to submit projects types that may not currently have existing QAM issued or published by a registry.

95705(c)(5)

Purpose

The purpose of this subsection is to ensure documentation is provided to assess the conformance of the project to the criteria set forth in section 95705(d).

Rationale

This subsection is necessary to ensure that the applicant demonstrates conformance with established criteria.

95705(d)(1)

Purpose

The purpose of this subsection is to specify that a project must be evaluated against a defined set of criteria. By requiring conformance with specific criteria, this subsection ensures that the QAM meets these criteria and that every project meets the minimum standards necessary for CARB to evaluate carbon management projects under the CCUS Program.

Rationale

This subsection is necessary to establish the criteria that projects must meet to be certified under section 95705.

95705(d)(1)(A)

Purpose

The purpose of this subsection is to require projects to include the QAM's quantification methodology accurately determines the extent to which GHG emissions reductions and removal enhancements are achieved by the project. This includes requiring complete documentation of all project-related GHG emissions and removals, system boundaries, baselines, assumptions, data sources, exclusions, and conservative factors. The quantification methodology must be based on empirically measured project GHG's or carbon. This subsection also ensures that the Executive Officer has the information necessary to assess this criteria.

Rationale

This subsection is necessary to establish the requirement that projects' GHG removals or reductions are real and can be quantified.

95705(d)(1)(B)

Purpose

The purpose of this subsection is to require projects to provide mechanisms capable of demonstrating that the project achieves permanent GHG removal outcomes. This includes requiring projects to specify the expected duration of carbon storage along with evidence to support this, and quantification of all reversal risks or loss of stored carbon.

Rationale

This subsection is necessary to establish the requirement that projects can demonstrate how their GHG removals or reductions are permanent. This requirement ensures that projects do not overstate permanence or rely on unsupported claims and creates a mechanism for evaluating reversal risks.

95705(d)(1)(C)

Purpose

The purpose of this subsection is to require projects to provide sufficient documentation and methodological guidance for GCS protocol such that any GHG removal or reduction outcome claimed by the project can be independently verified. This includes requiring submission of all quantification methodologies, models, and supporting materials.

Rationale

This subsection is necessary to establish the requirement that projects demonstrate verifiable GHG removals. Verification depends on the ability of an accredited verification body to objectively review data, methods, assumptions, and calculations underlying a project's claims removals.

95705(d)(2)

Purpose

The purpose of this subsection is to set forth the requirement that the QAM must include standards and metrics that ensure projects conform with all criteria.

Rationale

The subsection is necessary to ensure that the project conforms with the criteria.

95705(e)(1)

Purpose

The purpose of this subsection is to require that the documentation submitted by the project is complete, consistent, and detailed. This includes evaluation by the Executive Officer, with appropriate guardrails, that all relevant information is included necessary to replicate the QAM review and that the application is able to proceed to certification. This subsection sets forth that the Executive Officer may request additional explanations, modifications, or revisions. Additionally, this subsection requires applicants to respond and address any requests within 30 days.

Rationale

This subsection is necessary to establish the requirements for reviewing an application for completeness. It ensures that system boundaries, assumptions, quantification methods, and any criteria related documents can be reviewed or replicated where appropriate by CARB staff. This step ensures that applicants have met minimum eligibility criteria before entering the verification phase. This subsection is also necessary to ensure prompt project reviews and determinations.

The timeframe of 30 days was chosen as a reasonable timeframe to balance the need for information while providing sufficient time for the operator.

95705(e)(2)

Purpose

The purpose of this subsection is to establish the procedure when an application is not ready for a comprehensive technical review outlined in subsection 95705(e)(3).

Rationale

This subsection is necessary to ensure that projects with deficiencies or incomplete applications are not advanced, which ensures the integrity of the program.

95705(e)(3)

Purpose

The purpose of this subsection is to allow CARB to conduct its own technical evaluation and review of the entire application once the project application is verified.

Rationale

This requirement ensures that CARB's independent confirmation of quantification and methodologies submitted by project applicants are accurate, reproducible, and scientifically defensible even after verification. This is essential for evaluating project claims and confirming consistency between the applicant's submission and regulatory standards.

95705(e)(3)(A)

Purpose

The purpose of this subsection is to ensure all project data related to emissions, removals, baselines, storage durations, reversal risks, and avoided emissions can be evaluated and reproduced, as necessary, by the Executive Officer. This subsection also provides criteria on when the Executive Officer may determine when an project application does not meet the criteria for certification.

Rationale

This subsection is necessary to confirm the accuracy and scientific validity of a project. This subsection also ensures that the GHG removal by the project are supported by strong evidence and that the methodologies followed by the project are also reproducible, and that the necessary environmental impact analyses have been completed and approved. This subsection is also necessary to provide guidance on how the Executive Officer will determine certification.

95705(e)(3)(A)(1)

Purpose

The purpose of this subsection is to set forth that a project does not meet the criteria for certification if the Executive Officer cannot evaluate the applicant's results.

Rationale

This subsection is necessary to specify the conditions under which an application fails to satisfy the criteria for certification.

95705(e)(3)(A)(2)

Purpose

The purpose of this subsection is to set forth so that a project does not meet the criteria for certification if the Executive Officer determines that any inputs or assumptions are unsupported by science or incorrect.

Rationale

This subsection is necessary to specify the conditions under which an application fails to satisfy the criteria for certification.

95705(e)(3)(A)(3)

Purpose

The purpose of this subsection is to set forth so that a project does not meet the criteria for certification if the QAM does not sufficiently demonstrate that the project meets the criteria in section 95705(d)(1).

Rationale

This subsection is necessary to specify the conditions under which an application fails to satisfy the criteria for certification.

95705(e)(3)(A)(4)

Purpose

The purpose of this subsection is to set forth so that a project does not meet the criteria for certification if the project does not meet any of the criteria in section 95705.4.

Rationale

This subsection is necessary to specify the conditions under which an application fails to satisfy the criteria for certification.

95705(e)(3)(A)(5)

Purpose

The purpose of this subsection is to set forth to assess if the provided operational data is deemed not sufficient to develop a QAM and assess the project.

Rationale

This subsection is necessary to specify the conditions under which an application fails to satisfy the criteria for certification.

95705(e)(3)(A)(6)

Purpose

The purpose of this subsection is to ensure sufficient financial viability for projects that do not use a QAM from an established registry.

Rationale

This subsection is necessary to specify the conditions under which an application fails to satisfy the criteria for certification.

95705(e)(3)(A)(7)

Purpose

The purpose of this subsection is to set forth that a project does not meet the criteria for certification if the applicant is unresponsive within the given time period.

Rationale

This subsection is necessary to specify the conditions under which an application fails to satisfy the criteria for certification.

95705(e)(3)(B)

Purpose

The purpose of this subsection is to set forth the requirements for publicly disclosing the Executive Officer's comprehensive technical review summary and allowing the executive officer to establish operating conditions before certification.

Rationale

This subsection is necessary to ensure that this process is transparent and available to the public and provides an opportunity to ensure robust operating conditions are in place before public posting.

95705(e)(4)

Purpose

The purpose of this subsection is to establish a formal public comment period.

Rationale

This subsection is necessary to ensure that CARB provides the opportunity for the public to comment on a given project's application package.

95705(e)(4)(A)(1)-(4)

Purpose

The purpose of this subsection is to set forth the steps for project to address any comments made after their application is posted online. This subsection ensures that the applicant has an opportunity to correct errors, provide justification when corrections are unnecessary, provide revisions with written explanations where needed, or withdraw the application if the revisions cannot be addressed.

Rationale

This subsection is necessary to ensure that any issues raised by the public on factual or methodological errors are addressed. These requirements ensure that the public comment process potentially increases the scientific and technical integrity of project applications. Allowing applicants to revise their submissions or justify why revisions are not needed helps ensure that only accurate, defensible, and methodologically sound applications advance to certification. This subsection creates a complete administrative record of how public feedback was addressed and ensures that potential unresolved factual or methodological deficiencies are addressed.

95705(e)(4)(B)

Purpose

The purpose of this subsection is to set forth the role of the Executive Officer to evaluate whether an applicant's responses to public comments were adequate.

Rationale

This evaluation by the Executive Officer ensures that fully addressed factual or methodological issues are identified and addressed.

95705(e)(4)(C)

Purpose

The purpose of this subsection is to set forth that any absence of comments will indicate no identified issues and will allow project certification to proceed.

Rationale

This provision ensures that there is procedural certainty and avoids unnecessary delay.

95705(e)(5)

Purpose

The purpose of this subsection is to finalize the evaluation and certification of projects once all requirements and criteria have been met.

Rationale

This inclusion of the provision establishes clear conditions under which a project is certified. This step ensures that only the projects meeting regulatory standards are certified.

95705(f)

Purpose

The purpose of this subsection is to require applicants to maintain the monitoring, reporting, and records necessary to demonstrate permanent carbon dioxide removal under the the associated QAM and to provide those records to CARB upon request.

Rationale

This subsection is necessary to ensure that all records are accurate and accessible in order to verify project performance, confirm permanence, and support CARB's ability to evaluate projects.

N. Section 95706. Violations.

95706(a)

Purpose

The purpose of this subsection is to establish that the Executive Officer has authority to seek penalties and injunctive relief for any violation of this subarticle pursuant to Health and Safety Code section 38580 and Chapters 1.5 and 4 of Part 4 of Division 26. This subsection sets forth that each day of noncompliance constitutes a separate violation and that violations are subject to all penalties and remedies permitted under State law. This provision establishes enforcement mechanisms available to CARB and the consequences of GCS operators failing to comply with any requirement in this subarticle.

Rationale

This subsection is necessary to ensure enforceability of the regulations and to deter noncompliance. Without clear enforcement authority, CARB would be unable to effectively uphold the safety, environmental protection, and transparency objectives mandated by SB 905 and Health and Safety Code provisions applicable to CCUS projects. Establishing that each day of violation constitutes a separate violation reinforces the importance of timely compliance and prevents GCS operators from deferring corrective actions. The inclusion of injunctive relief authority is necessary because some violations, such as failure to conduct monitoring or maintain financial responsibility, could pose immediate risks that require urgent corrective action rather than monetary penalties alone. By referencing existing statutory enforcement provisions, this subsection ensures consistency with CARB's broader enforcement framework.

95706(b)

Purpose

The purpose this subsection is to establish that each day or portion of a day during which required action is not taken or required information or records are unsubmitted, incomplete, or inaccurate constitutes a separate violation. This subsection sets forth a clear standard for evaluating compliance with reporting, posting, and recordkeeping obligations throughout the regulation.

Rationale

This subsection is necessary because timely action as required under the regulation and accurate submission, posting, and retention of required documents are fundamental to the transparency, monitoring, and compliance structure of the CCUS program. CARB relies on these documents to verify ongoing compliance, assess project risks, and ensure GCS operators are meeting statutory obligations related to monitoring, emergency response, community communication, and financial responsibility. Allowing prolonged or partial noncompliance without daily penalties would undermine the effectiveness of the reporting requirements and reduce incentives for GCS operators to maintain accurate and timely records. By specifying that each day of noncompliance constitutes a separate violation, this subsection creates a clear and enforceable framework that encourages GCS operators to promptly correct deficiencies and maintain full compliance.

95706(c)

Purpose

The purpose of this subsection is to establish the Executive Officer's authority to inspect any premises used, leased, or controlled by a regulated entity as necessary to investigate activities and documentation relevant to a determination of compliance with this subarticle.

Rationale

This subsection is necessary because physical inspection of premises may be required to verify accuracy of reported information, evaluate monitoring and mitigation equipment, confirm implementation of required plans, or investigate potential violations. GCS operators exercise discretion in how they conduct monitoring, maintain equipment, store records, and operate GCS or capture systems; therefore, CARB must have the ability to inspect facilities to verify compliance with these requirements. Inspection authority ensures that CARB can evaluate the reliability of GCS operators' self-reported information, identify potential risks, and enforce corrective actions where necessary. This authority is essential to carrying out the statutory purpose of ensuring the safe, transparent, and protective deployment of carbon management projects.

The Specific Purpose and Rationale of Each Adoption, Amendment, or Repeal to California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 5, Sections 95802, 95814, 95831, 95852.3.

O. Section 95802. Definitions.

"95705 Project" Definition [new]

Purpose

A definition is added for “95705 Project” to define projects that follow the regulatory criteria under CARB’s CCUS Program for Executive Officer certification.

Rationale

This addition is necessary to clearly and consistently identify projects that are evaluated under the specific criteria set forth in section 95705. This addition supports alignment between CARB’s Cap-and-Invest Program and the CCUS Program.

“Active Life” Definition [new]

Purpose

A definition is added for “active life” to define the operational phase of a GCS project during which injection and/or production occurs.

Rationale

The addition is necessary to specify the phase of a GCS project operation during which carbon dioxide injection occurs as opposed to the post-injection site care and monitoring phase, which is the period after injection is complete.

“Geologic Carbon Storage or GCS” Definition

Purpose

The term “geologic sequestration” is changed to “geologic carbon storage” or “GCS,” and the definition of “geologic carbon storage” is modified to be consistent with the definition in the GCS Protocol.

Rationale

This modification is necessary to define “geologic carbon storage” as an activity that contains CO_2 for at least 100 years and to make the definition consistent with the definition in the GCS Protocol. SB 905 requires CARB to create a Carbon Capture, Removal, Utilization, and Storage Program. To align with the use of “storage” in the overall program, “sequester” and its related usages have been changed to “storage.

“Geologic Carbon Storage Project” or “GCS Project” Definition [new]

Purpose

A definition is added for “geologic carbon storage project” to recognize a project type that may permanently sequester CO_2 to reduce entity’s compliance obligation.

Rationale

This addition is necessary to identify a type of project that can reduce an entity’s or CO_2 supplier’s compliance obligation in the Cap-and-Invest Program through the permanent storage of CO_2 while meeting requirements specified in the GCS Protocol, among all other applicable requirements.

“Geologic Carbon Storage Project Operator” or “GCS Project Operator” Definition [new]

Purpose

A definition is added for “geologic carbon storage project operator” to specify the roles and responsibilities of an entity that operates a geologic carbon sequestration project in the Program.

Rationale

This addition is necessary to identify the entity that is responsible for a GCS project during both its active life and its post-injection site care and monitoring period, such as responsibility for required GCS project reporting, verification, monitoring, and compensation for an intentional GCS project reversal. It also specifies that, for a GCS operator to be recognized by the Program and register for an account, it must obtain and maintain permanence certification pursuant to the GCS Protocol and meet its requirements for GCS operations and monitoring during the active life and post-injection site care and monitoring period of a GCS project.

“Geologic site”, “storage site” or “site” Definition [new]

Purpose

A definition is added for “geologic site,” “storage site” or “site” to specify the elements that are included in a geologic carbon sequestration site pursuant to the GCS Protocol.

Rationale

This addition is necessary to specify that a geologic site includes the storage zones and associated confining layer(s) , the facilities and infrastructure that are capable of conveying or injecting CO_2 streams at the site and monitoring to ensure permanent storage consistent with the GCS Protocol.

“GCS Project Reversal” Definition [new]

Purpose

A definition is added for “GCS project reversal” to describe conditions under which sequestered CO_2 that was previously recognized as reducing an entity’s compliance obligation is no longer recognized as being permanently stored.

Rationale

This addition is necessary to describe the conditions under which stored CO_2 is no longer considered to be permanently stored and therefore must be compensated in order to maintain the environmental integrity of the Program. The CO_2 that was previously recognized as permanently stored loses the status of permanent storage if the CO_2 migrates outside of the storage complex of a GCS project site with permanence certification. The permanence status is also reversed if the CO_2 was stored at a GCS project site that has its permanence certification revoked and not reissued within two years of revocation pursuant to the GCS Protocol.

“Intentional GCS Project Reversal” Definition [new]

Purpose

A definition is added for “intentional GCS project reversal” to identify instances when GCS project reversal must be compensated by the GCS project operator, such as when the reversal is due to a GCS project operator’s negligence, gross negligence, willful intent, or failure to adhere to the requirements of the GCS Protocol.

Rationale

This addition is necessary to establish GCS project operator is the entity that is responsible for compensating for a GCS project reversal that is due to negligence, gross negligence, willful intent, or failure to adhere to the requirements of the GCS Protocol.

“Post-injection Site Care and Monitoring Period” Definition [new]

Purpose

A definition is added for “post-injection site care and monitoring period” to specify the latter phase of a GCS project after CO_2 injection is complete.

Rationale

This addition is necessary to specify that a GCS project includes a period after CO_2 injection is complete during which the GCS project operator continues to be responsible for meeting all applicable GCS Protocol requirements. The post-injection site care and monitoring period is the time between the date of final injection completion and 100 years after the final injection completion.

“Section 95705 Project reversal” Definition [new]

Purpose

A definition is added for “Section 95705 Project reversal” to describe conditions under which sequestered CO_2 that was previously recognized as an offset is no longer recognized as being permanently stored.

Rationale

This addition is necessary to describe the conditions under which stored CO_2 is no longer considered to be permanently stored and therefore must be compensated in order to maintain the environmental integrity of the Program. The CO_2 that was previously recognized as permanently stored loses the status of permanent storage.

“Section 95705 Project intentional reversal” Definition [new]

Purpose

A definition is added for “Section 95705 Project intentional reversal” to identify instances when Section 95705 project reversal must be compensated by the Offset Project Operator or

Authorized Project Desigee, such as when the reversal is due to a project operator's negligence, gross negligence, willful intent, or failure to adhere to the requirements of the project certified by the Executive Officer pursuant to Section 95705.

Rationale

This addition is necessary to clarify that the Offset Project Operator or Authorized Project Designee is the entity that is responsible for compensating for a section 95705 project reversal that is due to negligence, gross negligence, willful intent, or failure to adhere to the requirements of the project certified by the Executive Officer pursuant to section 95705.

Section 95705 Project unintentional reversal" Definition [new]

Purpose

A definition is added for "Section 95705 Project unintentional reversal" to identify instances when a Section 95705 project reversal shall be compensated by the CCUS Buffer Account, such as when the reversal is not due to a Offset Project Operator or Authorized Project Designee's negligence, gross negligence, willful intent, or failure to adhere to the requirements of the project certified by the Executive Officer pursuant to Section 95705.

Rationale

This addition is necessary to define a Section 95705 project reversal that is not the result of a Offset Project Operator or Authorized Project Designee negligence, gross negligence, willful intent, or failure to adhere to the requirements of the project certified by the Executive Officer pursuant to section 95705. Unintentional Section 95705 project reversals shall be compensated by retiring compliance instruments in the CCUS Buffer Account pursuant to proposed section 95852.3.(b)(11).

"Storage Zone" Definition [new]

Purpose

A definition is added for "storage zone" to define the reservoir used for geologic carbon sequestration.

Rationale

This addition is necessary to define the reservoir into which CO_2 is injected for permanent geologic storage for clarity and enforceability of the program.

"Storage Complex" Definition [new]

Purpose

A definition is added for "storage complex" to define the subsurface volume of rock that a GCS project uses for permanent storage of CO_2.

Rationale

This addition is necessary to define the three-dimensional subsurface volume of rock comprised of a storage zone that a GCS project uses for the injection and permanent storage of CO_2. This is necessary for clarity and enforceability of the program.

“Unintentional GCS project reversal” Definition [new]

Purpose

A definition is added for “unintentional GCS project reversal” to identify instances when a GCS project reversal shall be compensated by the CCUS Buffer Account, such as when the reversal is not due to a GCS project operator’s negligence, gross negligence, willful intent, or failure to adhere to the requirements of the GCS Protocol.

Rationale

This addition is necessary to define a GCS project reversal that is not the result of a GCS project operator’s negligence, gross negligence, willful intent, or failure to adhere to the requirements of the GCS Protocol. Unintentional GCS project reversals shall be compensated by retiring compliance instruments in the CCUS Buffer Account pursuant to proposed section 95852.3.(d)(1).

P. Section 95814. Voluntarily Associated Entities and Other Registered Participants.

95814(a)

Purpose

Section 95814(a) is modified to specify that a GCS project operator must register for an account in the Tracking System pursuant to section 95830(c).

Rationale

This modification is necessary to ensure that GCS project operators are vetted for participation in the Program as voluntarily associated entities. This change ensures that these entities have an account in the Tracking System to support submitting compliance instruments to CARB to compensate for an intentional GCS project reversal if needed. This change ensures the enforceability of the Cap-and-Invest Regulation.

Q. Section 95831. Account Types.

95831(b)(11) [new]

Purpose

This new subsection establishes the CCUS Buffer Account under the control of the Executive Officer, specifies the terms for entities to contribute compliance instruments to the account, and specifies the terms for CARB to retire compliance instruments from the account.

Rationale

This addition is necessary to create a new holding account under the control of the Executive Officer in order to implement an insurance mechanism that can be drawn upon to preserve the environmental integrity of the Program if there is an unintentional project reversal for either GCS projects or Section 95705 projects. Entities that reduce their compliance obligation by permanently sequestering CO_2 that was captured on-site pursuant to the GCS Protocol must transfer the amount of allowances calculated pursuant to section 95852.3 (b) into the CCUS Buffer Account. Offset Project Operators or Authorized Project Designees that generate offset credits for projects certified pursuant to Section 95705 must transfer the amount of offset credits calculated pursuant to section 95983.2 into the CCUS Buffer Account. CARB will retire allowances to compensate for unintentional GCS project reversals or compliance instruments for unintentional section 95705 project reversals, where carbon dioxide is no longer considered to be permanently stored, in order to maintain the environmental integrity of the Program.

R. Section 95852.3. Compliance Obligations for Utilized or Sequestered Captured Carbon Dioxide.

95852.3(a)

Purpose

This subsection is modified to enable a covered entity to reduce its compliance obligation for captured carbon dioxide from a carbon capture unit that was installed after September 16, 2022, that is sequestered or utilized pursuant to the requirements of a Board-adopted protocol.

Rationale

This addition is necessary to describe that an entity has an aggregated compliance obligation for all carbon dioxide captured from a covered facility CO_2 stream that is from a carbon capture unit that was installed after passage of Senate Bill 905 that established the Carbon Capture, Removal, Utilization, and Storage Program, except for the amount that is verified to be sequestered or utilized pursuant to the requirements of a Board-approved protocol. A facility's covered emissions are calculated as its verified emissions minus the amount of CO_2 that was captured from the facility and permanently sequestered based on the emissions data that has received a positive or qualified positive emissions data verification statement issued pursuant to MRR. This change is also necessary to require that each Board-adopted protocol be incorporated into the Cap-and-Invest Regulation before it can be used to reduce an entity's compliance obligation. The requirement that the capture unit be installed after September 2022 is necessary to help facilitate new and expanded CO_2 capture and storage and to minimize the potential that sources of captured and/or utilized CO_2 that existed prior to the passage of SB 905 are not simply redirected to storage reservoirs for the purposes of reduction in a Cap-and-Invest compliance obligation. A reduced compliance obligation is different and distinct from allowance allocation which utilitizes annually reported and verified production data and not compliance obligations.

95852.3(a)(1) [new]

Purpose

This new subsection incorporates by reference the Geologic Carbon Storage Protocol (GCS Protocol). A covered entity must follow the requirements set forth in the GCS Protocol in order to reduce its compliance obligation for carbon dioxide that is captured at its facility and permanently sequestered.

Rationale

This new subsection is necessary to incorporate the GCS Protocol and to require that for CO_2 that is captured and sequestered to reduce an entity's compliance obligation, all GCS Protocol requirements are met, including that the sequestration occur at a GCS project site that obtained permanence certification under the GCS Protocol and that the GCS project continues to meet the GCS Protocol requirements throughout its life.

95852.3(b)(1) [new]

Purpose

This new subsection is added to specify the quantity of allowances that an entity must submit to the CCUS Buffer Account in order to have its compliance obligation reduced for CO_2 that has been captured from its facility and sequestered.

Rationale

This addition is necessary to specify the equation to calculate the number of allowances each entity must contribute to the CCUS Buffer Account in order to reduce its compliance obligation by permanently sequestering CO_2 that was captured on-site. The amount is determined by multiplying the GCS project site risk rating by the reduced compliance obligation. A GCS project site risk rating is determined using the methodologies in Appendix A of the GCS Protocol, and the reduced compliance obligation is the amount of CO_2 emitted from the facility that is captured by carbon capture unit that was installed after September 16, 2022 and permanently sequestered as included in an emissions data report that has received a positive or qualified positive emissions data verification statement issued pursuant to MRR. The number of allowances that an entity must submit to the CCUS Buffer Account scales with both the amount of CO_2 sequestered and the risk that the sequestered CO_2 may not be permanently stored to ensure that the CCUS Buffer Account is sufficient to preserve the environmental integrity of the Program.

95852.3(b)(2) [new]

Purpose

This new subsection is added to specify the process and timing for an entity to submit the required number of allowances to the CCUS Buffer Account.

Rationale

This addition is necessary to require an entity that reduces its compliance obligation by sequestering CO_2 pursuant to the GCS Protocol to notify CARB of the number and vintage of compliance instruments that the Executive Officer will administratively transfer from the entity's Tracking System account to the CCUS Buffer Account and to specify the timing and manner of that notification. The change requires that the information be submitted at least 60 days before

the deadline to surrender compliance instruments for the reduced compliance obligation. This timing is necessary to support a CARB process of uploading timely and accurate obligations into the Cap-and-Invest Tracking System that reflect the reduced compliance obligations.

95852.3(c) [new]

Purpose

This new subsection is added to describe the process for CARB to retire allowances from the CCUS Buffer Account for CO_2 that is subject to an unintentional GCS project reversal.

Rationale

This subsection is necessary to specify that CARB will retire an allowance from the CCUS Buffer Account for every metric ton of CO_2 that is subject to an unintentional GCS project reversal in order to maintain the environmental integrity of the Program. The amount of CO_2 must be determined through an emissions data report that received a positive or qualified positive emissions data verification statement or be assigned by the Executive Officer pursuant to the GCS Protocol.

95852.3(d)(1)-(2) [new]

Purpose

This new subsection is added to describe the requirements to compensate for the amount of CO_2 that is subject to a GCS project reversal.

Rationale

This addition is necessary to describe how the Program will compensate for GCS project reversals that are unintentional and intentional. For every metric ton of CO_2 that is subject to an unintentional GCS project reversal, CARB will retire an allowance from the CCUS Buffer Account. For every metric ton of CO_2 that is subject to an intentional GCS project reversal, the GCS project operator must submit one allowance to CARB for transfer to the Retirement Account within six months of the verification or assignment by the Executive Officer of the amount of CO_2 subject to the reversal pursuant to the GCS Protocol. These provisions preserve the environmental integrity of the Program when there is a GCS project reversal and appropriately allocate the liability for a GCS project reversal to the responsible party for an intentional reversal and to the CCUS Buffer Account, which acts as an aggregate insurance mechanism, for an unintentional reversal.

S. Section 95970. General Requirements for ARB Offset Credits and Registry Offset Credits.

Section 95970(a)(2)

Purpose

The proposed amendment adds carbon management project and quantification methodology certification by the Executive Officer pursuant to section 95705 as a requirement for a registry offset credit as an alternative to the requirement to use a Compliance Offset Protocol that meets the requirements of section 95972 and is adopted by the Board pursuant to section 95971.

Rationale

The proposed amendment is necessary to support a process for issuance by an Offset Project Registry of a registry offset credit to a carbon capture project, carbon management project that meets the requirements of the Carbon Capture, Removal, Utilization, and Storage (CCUS) Program and is certified by the Executive Officer pursuant to section 95705.

T. Section 95973. Requirements for Offset Projects.

Section 95973 (Title)

Purpose

The phrase “Using Compliance Offset Protocols” is deleted to support section 95973 requirements applying to offset projects that are certified by the Executive Officer pursuant to section 95705.

Rationale

This change is necessary to clarify that the requirements of section 95973 apply to all offset projects whether they are a project developed under a CARB-adopted compliance offset protocol or a carbon dioxide removal (CDR) project certified by the Executive Officer pursuant to section 95705.

Section 95973(a)(1)

Purpose

The proposed amendment adds project certification by the Executive Officer pursuant to section 95705 as a general requirement for an offset project as an alternative to meeting the requirements in a Compliance Offset Protocol adopted by the Board pursuant to section 95971.

Rationale

The proposed change ensures that an offset project certified by the Executive Officer pursuant to section 95705 must meet the same rigorous requirements in section 95973 as an offset project developed under a CARB-adopted compliance offset protocol, including the additionality requirements in section 95973(a)(2) and the regulatory compliance requirements

in section 95973(b). The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95973(a)(2)(C)

Purpose

The proposed amendment adds a requirement for a project certified by the Executive Officer pursuant to section 95705 to achieve GHG reductions or GHG removal enhancements that exceed its baseline calculated under the quantification assessment methodology applicable for the certified project.

Rationale

The proposed change ensures that an offset project certified by the Executive Officer pursuant to section 95705 must meet the same additionality requirements as an offset project developed under a CARB-adopted compliance offset protocol. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95973(a)(2)(E)

Purpose

The proposed amendment adds a requirement for a project certified by the Executive Officer pursuant to section 95705 to meet all requirements in the quantification assessment methodology applicable for the certified project.

Rationale

The proposed change ensures that an offset project certified by the Executive Officer pursuant to section 95705 must meet the requirements in the Cap-and-Invest Regulation for the quantitative assessment methodology under which the offset project is listed, just as an offset project developed under a CARB-adopted compliance offset protocol must meet the requirements in the Cap-and-Invest Regulation for the applicable compliance offset protocol.

Section 95973(b)(1)

Purpose

The proposed amendment adds a requirement for a project certified by the Executive Officer pursuant to section 95705 to fulfill applicable local, regional, state, and national requirements on environmental impact assessments and to fulfill all local, regional, state, and national environmental and health and safety laws and regulations that apply based on the offset project location and that directly apply to the offset project.

Rationale

The proposed change ensures that an offset project certified by the Executive Officer pursuant to section 95705 satisfies the same regulatory conformance requirements to be eligible for credit issuance as an offset project developed under a CARB-adopted compliance offset protocol. A project that is out of regulatory compliance is not eligible to receive registry offset credits or ARB offset credits for GHG reductions or GHG removal enhancements that occurred

during the period that the offset project is out of regulatory compliance, just as an offset project developed under a CARB-adopted compliance offset protocol is not eligible to receive registry offset credits or ARB offset credits for GHG reductions or GHG removal enhancements that occurred during the period that the offset project is out of regulatory compliance.

Section 95973(f)

Purpose

The proposed amendment prohibits a project certified by the Executive Officer pursuant to section 95705 from receiving both ARB offset credits and credits from a Low Carbon Fuel Standard pathway within the same reporting period.

Rationale

The proposed change ensures that an offset project certified by the Executive Officer pursuant to section 95705, like an offset project developed under a CARB-adopted compliance offset protocol, cannot be issued credits under both the Cap-and-Invest Program and the Low Carbon Fuel Standard program for GHG emissions reductions or removals during the same reporting period. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program and to hold such projects to the same prohibitions and requirements as offset projects developed under a CARB-adopted compliance offset protocol.

U. Section 95975. Listing of Offset Projects Using ARB Compliance Offset Protocols.

Section 95975 (Title)

Purpose

The phrase "Using ARB Compliance Offset Protocols" is deleted to support section 95975 requirements applying to offset projects that are certified by the Executive Officer pursuant to section 95705.

Rationale

This change is necessary to clarify that the requirements of section 95975 apply to all offset projects whether they are a project developed under a CARB-adopted compliance offset protocol or are a project certified by the Executive Officer pursuant to section 95705.

Section 95975(c)(1)

Purpose

Text is added to the attestation statement in section 95975(c)(1) to make it applicable to a project certified by the Executive Officer pursuant to section 95705 in addition to being applicable to a project developed in accordance with a compliance offset protocol.

Rationale

The proposed change is needed so a project certified by the Executive Officer pursuant to section 95705 can attest under penalty of perjury that measurements are in accordance with quantification assessment methodology applicable for the project certified pursuant to section 95705 and that all submitted information submitted to CARB is true, accurate, and complete. The proposed change is necessary to support program enforceability for projects certified pursuant to section 95705 seek to be issued ARB offset credits.

Section 95975(e)

Purpose

The proposed amendment adds listing requirements for a project certified by the Executive Officer pursuant to section 95705 before such a project can be publicly listed for an initial crediting period.

Rationale

The proposed change ensures that an offset project certified by the Executive Officer pursuant to section 95705 must meet similar project listing requirements as an offset project developed under a CARB-adopted compliance offset protocol. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95975(h)

Purpose

The proposed amendment establishes a deadline for an Offset Project Operator or Authorized Project Designee to submit project listing requirements for a project certified by the Executive Officer pursuant to section 95705.

Rationale

The proposed change ensures that an offset project certified by the Executive Officer pursuant to section 95705 has a deadline for submitting project listing requirements that is clear, timely, and achievable. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Because projects certified pursuant to section 95705 will need to have implementation data in place to receive 95705 certification, the projects certified pursuant to section 95705 are not required to list within one year of project commencement but rather within one year of receiving their certification pursuant to section 95705.

Section 95975(j)(6)

Purpose

For a project certified by the Executive Officer pursuant to Section 95705, the proposed amendment adds to the information that must be submitted for a renewed crediting period the project, including the quantification assessment methodology, and the date of certification for the project certified by the Executive Officer pursuant to Section 95705.

Rationale

The proposed amendment is necessary to clarify the relevant quantification assessment methodology and the certification date for a project that is seeking to renew its crediting period.

V. Section 95975.1. Notice and Disclosures for Sequestration Offset Project Ownership Transfer.

Section 95975.1(a)(2)

Purpose

The proposed amendment adds text to ensure that the attestation statement is broadly applicable to all potential sequestration projects and not only to forest projects. The text requires the project operator to obtain the signed attestation statement from the individual or entity that is pursuing acquisition of any portion of the project boundary prior to the transfer of title.

Rationale

The proposed amendment is necessary to ensure that a party that is potentially acquiring a portion of a sequestration project is aware of the regulatory requirements and liabilities associated with project ownership.

Section 95975.1(b)

Purpose

The proposed amendment adds a deadline of 60 days after sale or transfer of title of the storage zone of an offset project for a former project operator or authorized project designee to notify CARB of the transfer of ownership and to submit additional information to CARB.

Rationale

The proposed amendment is necessary to ensure that CARB is aware in a timely fashion when ownership of the storage zone for an offset project is transferred, similar to how CARB must be made aware in a timely fashion when ownership of any real property interest in a forest offset project is transferred.

Section 95975.1(b)(1)

Purpose

The proposed amendment requires that contact information for each storage zone owner that sold or transferred real property interests comprising any portion of an offset project boundary must be submitted to CARB within 60 days of the transfer of ownership.

Rationale

The proposed amendment is necessary for CARB to fully understand the scope of ownership and land title for sequestration offset projects in the program.

The timeframe of 60 days was chosen as a reasonable timeframe to balance need for information while providing sufficient time for the operator.

Section 95975.1(c)

Purpose

The proposed amendment requires that upon transfer of any real property interest containing an offset project boundary, including a forest offset project or a geologic sequestration project, occurs without meeting all notification, attestation, and disclosure requirements, then the project terminates and the owner(s) that had the project prior to the transfer is responsible for compensating for the project termination.

Rationale

The proposed amendment is necessary to ensure that a project is held to permanence requirements when there is a transfer of ownership, to ensure the environmental integrity of sequestration projects, and to clearly identify the party responsible for compensating for the project termination.

Section 95975.1(f)

Purpose

The proposed amendment requires that a sequestration project terminates upon transfer of any real property interest containing an offset project boundary to an entity or individual that is not eligible to participate in the Cap-and-Invest Program pursuant.

Rationale

The proposed amendment is necessary to ensure that a project is held to permanence requirements when there is a transfer of ownership, to ensure the environmental integrity of sequestration projects, and to clearly identify the party responsible for compensating for the project termination.

W. Section 95976. Monitoring, Reporting, and Record Retention Requirements for Offset Projects.

Section 95976(a)

Purpose

The proposed amendment establishes that projects participating in the Compliance Offset Program that were certified by the Executive Officer pursuant to section 95705 must follow the general monitoring procedures in the applicable quantification assessment methodology.

Rationale

The proposed change ensures that offset projects certified by the Executive Officer pursuant to section 95705 have the same general monitoring requirements as other offset project types. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95976(b)

Purpose

The proposed amendment establishes that projects participating in the Compliance Offset Program that were certified by the Executive Officer pursuant to section 95705 must follow the data substitution methods specified in the applicable quantification assessment methodology.

Rationale

The proposed change ensures that offset projects certified by the Executive Officer pursuant to section 95705 must follow data substitution methods as prescribed in the applicable quantification assessment methodology instead of any other potential substitution methods. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95976(c)

Purpose

The proposed amendment establishes that projects participating in the Compliance Offset Program that were certified by the Executive Officer pursuant to section 95705 put in place all monitoring equipment or mechanisms specified in the applicable quantification assessment methodology.

Rationale

The proposed change ensures that offset projects certified by the Executive Officer pursuant to section 95705 put in place all monitoring equipment or mechanisms as prescribed in the applicable quantification assessment methodology instead of any other potential equipment or mechanism. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95976(d)

Purpose

The proposed amendment requires that an Offset Project Data Report for a project certified by the Executive Officer pursuant to section 95705 contains all information required by the quantification assessment methodology applicable for the certified project.

Rationale

The proposed amendment is necessary to ensure that reporting in an Offset Project Data Report for a project certified by the Executive Officer pursuant to section 95705 contains information that is accurate and complete pursuant to the quantification assessment methodology applicable for the certified project.

Section 95976(d)(1)

Purpose

The proposed amendment requires that a project certified by the Executive Officer pursuant to section 95705 participating in the Compliance Offset Program attest to measuring GHG emission reductions and GHG removal enhancements in accordance with the applicable quantification methodology.

Rationale

The proposed change ensures that for a project certified by the Executive Officer pursuant to section 95705, the Offset Project Operator will, as part of its regular reporting requirements, attest to measuring GHG emission reductions and GHG removal enhancements as prescribed in the applicable quantification assessment methodology. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program and to support program enforceability for projects certified pursuant to section 95705 that receive credits through CARB's compliance offset program.

Section 95976(f)

Purpose

The proposed amendment requires that projects participating in the Compliance Offset Program that were certified by the Executive Officer pursuant to section 95705 must, when other methods are not already clearly identified, follow the general procedure for interim data collection in section 95976(f).

Rationale

The proposed change ensures that offset projects certified by the Executive Officer pursuant to section 95705 will follow the same data collection procedures in section 95976(f) as all other offset projects in cases where such data collection procedures are not otherwise prescribed in the applicable quantification assessment methodology for the certified project. Projects may not follow any other potential data collection procedures. The proposed text is necessary to support the availability of data and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95976(g)

Purpose

The proposed amendment establishes that projects participating in the Compliance Offset Program that were certified by the Executive Officer pursuant to section 95705 must gain approval for an alternate monitoring or measurement method pursuant to this section before being allowed to that alternate method.

Rationale

The proposed change ensures that offset projects certified by the Executive Officer pursuant to section 95705 will have the same requirements for potentially using an alternate monitoring or measurement method as projects using a compliance offset protocol. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95976(g)(7)

Purpose

The proposed amendment establishes that the approval of an alternate monitoring or measurement method for projects participating in the Compliance Offset Program and certified by the Executive Officer pursuant to section 95705 and may be rescinded if new information indicates that the alternate method is not at least as accurate as the commonly employed method at the time when the project was certified.

Rationale

The proposed change ensures that offset projects certified by the Executive Officer pursuant to section 95705, just like project using compliance offset protocols, may have their approved alternate measurement or monitoring methods rescinded when CARB becomes aware of information that the alternate method is not at least reasonably equivalent to the accuracy of the method(s) commonly employed when a project was certified or if the alternate method is not capable of being verified to a reasonable level of assurance. The proposed text is necessary to ensure data accuracy and to support participation by innovative and new project types in CARB's compliance offset program.

X. Section 95977. Verification of GHG Emission Reductions and GHG Removal Enhancements from Offset Projects.

Section 95977(b)

Purpose

The proposed amendment requires that projects participating in the Compliance Offset Program that were certified by the Executive Officer pursuant to section 95705 have a verification schedule the same as non-sequestration offset projects.

Rationale

The proposed change requires that offset projects certified by the Executive Officer pursuant to section 95705 are subject to the same verification schedule as non-sequestration offset projects that use compliance offset protocols. This ensures that projects certified pursuant to section 95705 undergo annual verification when seeking to be issued offset credits. In cases where a project reports less than 25,000 metric tons of GHG emission reductions, the verification may be deferred until after the next reporting period such that that verification covers at most two consecutive reporting periods. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program and to clarify the verification schedule for these innovate and new project types.

Section 95977(c)

Purpose

The proposed amendment limits the verification schedule described in section 95977(c) to only forest sequestration projects and not all sequestration projects.

Rationale

The proposed amendment is necessary to clarify that the existing verification schedule described in section 95977(c) applies to only forest sequestration projects and that the verification schedule described in section 95977(b) applies to sequestration projects certified by the Executive Officer pursuant to section 95705.

Y. Section 95977.1. Requirements for Offset Verification Services.

Section 95977.1(b)(3)(A)3.

Purpose

The proposed amendment establishes that Offset Verification Plans, when they are part of offset verification services for projects certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program, will identify the project, including the quantification assessment methodology, and project certification date. The verification plan will also identify any other required data in the quantification assessment methodology applicable for the certified project.

Rationale

The proposed change ensures that Offset Verification Plans for offset projects certified by the Executive Officer pursuant to section 95705 are subject to the same verification planning requirements as offset projects that use compliance offset protocols. The proposed text is necessary to ensure thorough verification services and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(D)

Purpose

The proposed amendment establishes that verification site visits are required following a project's first reporting period for projects certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program. The requirement applies following the first reporting period in both an initial crediting period and a renewed crediting period.

Rationale

The proposed change ensures that verification site visits for offset projects certified by the Executive Officer pursuant to section 95705 are subject to the same verification site visit requirement as for offset projects which use compliance offset protocols. The proposed text is necessary to ensure thorough verification services and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(D)1.a.

Purpose

The proposed amendment requires that offset verification services for the first reporting period in any crediting period must assess the additionality and eligibility according to any requirements in the applicable quantification methodology for projects certified by the

Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program.

Rationale

The proposed change ensures that offset verification services assess additionality and eligibility for offset projects certified by the Executive Officer pursuant to section 95705 similar to how additionality and eligibility are assessed for offset projects that use compliance offset protocols. The proposed text is necessary to ensure thorough verification services and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(D)1.f.

Purpose

The proposed amendment requires that offset verification services in the first reporting period in any crediting period for projects certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program must confirm that all applicable eligibility criteria to design, measure, establish the chain of custody, and monitor conform to the quantification assessment methodology applicable to the certified project.

Rationale

The proposed change ensures that offset verification services assess eligibility criteria and methodology conformance for projects certified by the Executive Officer pursuant to section 95705 as that information is assessed for offset projects that use compliance offset protocols. The proposed text is necessary to ensure thorough verification services and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(D)2.b.

Purpose

The proposed amendment requires that offset verification services for projects certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program must review and understand the project developer's data management systems and ensure that they conform to the quantification assessment methodology applicable to the certified project.

Rationale

The proposed change ensures that offset verification services review and understand the project developer's data management systems for projects certified by the Executive Officer pursuant to section 95705 as those systems are reviewed for offset projects that use compliance offset protocols. The proposed text is necessary to ensure thorough verification services and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(D)2.g.

Purpose

The proposed amendment requires that offset verification services for projects certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program must review all chain of custody documents as required in the certified project.

Rationale

The proposed change ensures that offset verification services review chain of custody documents for projects certified by the Executive Officer pursuant to section 95705 as those documents are reviewed for offset projects that use compliance offset protocols. The proposed text is necessary to ensure thorough verification services and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(E)

Purpose

The proposed amendment requires that offset verification services for projects certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program must review project operations to identify applicable GHG sources, sinks, and reservoirs as required by the certified project.

Rationale

The proposed change ensures that offset verification services review project operations to identify required applicable GHG sources, sinks, and reservoirs for projects certified by the Executive Officer pursuant to section 95705 as project operations are reviewed for offset projects that use compliance offset protocols. The proposed text is necessary to ensure thorough verification services and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(F)

Purpose

The proposed amendment requires that project developers for projects certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program must provide to verifiers all information and documentation used to calculate and report project baseline and project GHG emissions, GHG emissions reductions, GHG removal enhancements, and other information required by the certified project.

Rationale

The proposed change ensures that project developers for projects certified by the Executive Officer pursuant to section 95705 are required to provide to verifiers all information and documentation used to calculate the number of offset credits a project may receive just as project developers of offset projects using compliance offset protocols must provide all such information and documentation. The proposed text is necessary to ensure thorough verification

and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(G)3.

Purpose

The proposed amendment requires that verification Sampling Plans must include a qualitative narrative of uncertainty risk assessment as applicable given any requirements in a quantification assessment methodology applicable for a project certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program.

Rationale

The proposed change ensures that verification Sampling Plans for projects certified by the Executive Officer pursuant to section 95705 will, as part of their qualitative narrative of uncertainty risk assessment, include any requirements from the certified project as the qualitative narrative must include any requirements from a compliance offset protocol for a project using a compliance offset protocol. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(H)1.

Purpose

The proposed amendment requires that verification Sampling Plans must include a list of GHG sources, sinks, and reservoirs that will be targeted for document reviews to ensure conformance with the project certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program.

Rationale

The proposed change ensures that verification Sampling Plans include a list of GHG sources, sinks, and reservoirs to ensure projects certified pursuant to section 95705 conform to the applicable quantification assessment methodology just as offset projects using a compliance offset protocol must conform to the applicable compliance offset protocol. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(J)

Purpose

The proposed amendment requires that verification Sampling Plans must be updated as relevant data suggests a potential nonconformance with the applicable quantification assessment methodology for a project certified by the Executive Officer pursuant to section 95705 and participating in the Compliance Offset Program. The proposed amendments also update the word order for improved clarity.

Rationale

The proposed change ensures that verification Sampling Plans for projects certified by the Executive Officer pursuant to section 95705 are updated during offset verification services such that the verifications meet the same verification requirements as verifications for offset projects using compliance offset protocols. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(L)1.

Purpose

The proposed amendment requires that during offset verification services for projects certified by the Executive Officer pursuant to section 95705, verifiers must use data checks to ensure that the appropriate methodologies and emission factors are applied in calculating GHG emissions, GHG emissions reductions, and GHG removal enhancements.

Rationale

The proposed change ensures that the verification data checks are conducted in a manner to ensure that the calculation of GHG emissions reductions and GHG removal enhancements conforms with the calculations specified in a certified project. This requires verification of projects certified by the Executive Officer pursuant to section 95705 to meet the same verification requirements as verifications for offset projects using compliance offset protocols. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(L)3.

Purpose

The proposed amendment requires that during offset verification services for projects certified by the Executive Officer pursuant to section 95705, verifiers must use their professional judgment to determine the appropriate number of data checks in order to conclude with reasonable assurance that the Offset Project Data Report conforms to the requirements of the project certified pursuant to section 95705.

Rationale

The proposed change ensures that the verification data checks are conducted in a manner to ensure Offset Project Data Reports for projects certified by the Executive Officer pursuant to section 95705 have the same conformance requirements as Offset Project Data Reports for offset projects using compliance offset protocols. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(L)3.e.

Purpose

The proposed amendment requires that as part of offset verification services or projects certified by the Executive Officer pursuant to section 95705, data checks must review

calculation methodologies to ensure their conformance to the requirements of the certified project.

Rationale

The proposed change ensures that the verification data checks for projects certified by the Executive Officer pursuant to section 95705 have the same conformance requirements as for offset projects using compliance offset protocols. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(L)3.g.

Purpose

The proposed amendment requires that as part of offset verification services for projects certified by the Executive Officer pursuant to section 95705, data checks must review quantification from models approved for use to ensure their conformance to the requirements of the certified project.

Rationale

The proposed change ensures that the verification data checks for projects certified pursuant to section 95705 have the same conformance requirements as for offset projects using compliance offset protocols. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(M)

Purpose

The proposed amendment requires that as part of offset verification services for projects certified by the Executive Officer pursuant to section 95705, correctable errors resulting from nonconformances with the requirements of the certified project must be addressed prior to a positive verification opinion.

Rationale

The proposed change ensures that correctable errors for projects certified pursuant to section 95705 are fixed before the verification team reaches a positive verification opinion just as offset projects using compliance offset protocols are required to fix their correctable errors. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(N)

Purpose

The proposed amendment requires that verifiers, when verifying that an Offset Project Data Report is free of offset material misstatement, must use their data check to assess conformance with the requirements of a project certified pursuant to section 95705.

Rationale

The proposed change ensures that assessing offset material misstatement for projects certified pursuant to section 95705 requires assessing conformance with the applicable quantification assessment methodology just as conformance is assessed against a compliance offset protocol for offset projects using a compliance offset protocols. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(O)

Purpose

The proposed amendment requires that the verification Issues Log, when applicable, must identify the section(s) of a quantification assessment methodology applicable for a project certified pursuant to section 95705 for any issues that may result in an offset material misstatement or nonconformance.

Rationale

The proposed change ensures that an Issues Log identifies for any issues the section of the quantification assessment methodology for a project certified pursuant to section 95705 just as an Issues Log is required to identify the section of the compliance offset protocol for offset projects using compliance offset protocols. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(R)4.b.

Purpose

The proposed amendment requires that Offset Verification Statements must include an attestation that the Offset Project Data Report for a project certified pursuant to section 95705 is in conformance with the certified project.

Rationale

The proposed change ensures that Offset Verification Statements for projects certified pursuant to section 95705 attest to conformance with the applicable quantification assessment methodology just as Offset Verification Statements for offset projects using a compliance offset protocol attest to conformance with the applicable compliance offset protocol. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(R)4.g.

Purpose

The proposed amendment requires that within the Offset Verification Statement the lead verifier must include an attestation that the offset verification team has carried out all offset

verification services as required by the applicable quantification assessment methodology and that the findings are true, accurate, and complete.

Rationale

The proposed change ensures that lead verifiers for projects certified pursuant to section 95705 attest to conformance with the applicable quantification assessment methodology just as lead verifiers for offset projects using a compliance offset protocol attest to conformance with the applicable compliance offset protocol. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(R)6.

Purpose

The proposed amendment provides that developers for a project certified pursuant to section 95705 and participating in CARB's compliance offset program, when in disagreement with their verifiers about the requirements of the applicable quantification assessment methodology, may petition CARB to make a determination of their Offset Project Data Report's verifiability, provided they petition CARB prior to the verification deadline either in section 95975 or, when applicable, in the quantification assessment methodology.

Rationale

The proposed change enables developers of projects certified pursuant to section 95705 to petition CARB concerning their Offset Project Data Report's verifiability just as developers of projects using compliance offset protocols may petition CARB. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95977.1(b)(3)(W)

Purpose

The proposed amendment requires that verifiers for a project certified pursuant to section 95705 must be available for audit by CARB and offset project registry staff. In addition, the Offset Project Operator must allow the auditing staff to visit the project location to witness the verification site visit.

Rationale

The proposed change ensures that CARB and offset project registries have the same ability to audit verifications of projects certified pursuant to section 95705 as they have to audit verifications for offset projects using compliance offset protocols. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

Z. Section 95977.2. Additional Project Specific Requirements for Offset Verification Services.

Purpose

The proposed amendment requires that a project certified pursuant to section 95705 must meet any additional verification requirements included in the quantification assessment methodology for the project.

Rationale

The proposed amendment is necessary to ensure that a project certified pursuant to section 95705 meets any additional specific verification requirements in the quantification assessment methodology for the project. The proposed text is necessary to ensure thorough verification and to support participation by innovative and new project types in CARB's compliance offset program.

AA. Section 95979. Conflict of Interest Requirements for Verification Bodies and Offset Verifiers for Verification of Offset Project Data Reports.

Section 95979(g)(1)

Purpose

The proposed amendment establishes that verification bodies for projects certified pursuant to section 95705 must monitor and disclose to CARB and the Offset Project Registry regarding any potential conflict of interest situation that arises after offset verification services begin.

Rationale

The proposed change ensures that verification bodies have the same conflict of interest requirements when verifying projects certified pursuant to section 95705 as they have for offset projects using compliance offset protocols. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95979(g)(2)

Purpose

The proposed amendment establishes that verification bodies for projects certified pursuant to section 95705 must monitor and disclose to CARB and the Offset Project Registry regarding any potential conflict of interest situation that arises within one year of completing offset verification services.

Rationale

The proposed change ensures that verification bodies have the same conflict of interest requirements when verifying projects certified pursuant to section 95705 as they have for offset projects using compliance offset protocols. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95979(g)(3)

Purpose

The proposed amendment establishes that verification bodies verifying projects certified pursuant to section 95705 must notify CARB and the Offset Project Registry within 30 days of any emerging conflicts of interest during the time offset verification services are being provided.

Rationale

The proposed change ensures that verification bodies have the same conflict of interest requirements when verifying projects certified pursuant to section 95705 as they have for offset projects using compliance offset protocols. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

BB. Section 95981. Issuance of ARB Offset Credits.

Section 95981(c)

Purpose

The proposed amendment requires that when deciding whether to issue offset credits to projects certified pursuant to section 95705, CARB will determine whether the GHG emissions reductions and GHG removal enhancements meet the requirements of the applicable quantification assessment methodology.

Rationale

The proposed change ensures that CARB, in its determination of whether to issue ARB offset credits, considers whether the GHG removal enhancements meet the requirements of the applicable quantification assessment methodology just as CARB considers whether the GHG emission reductions and GHG removal enhancements meet the requirements of the applicable compliance offset protocol for offset projects using a compliance offset protocol. The proposed text is necessary to ensure the environmental integrity of ARB offset credits and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95981(d)(1)

Purpose

The proposed amendment requires that prior to the issuance of ARB offset credits, an account representative of the Offset Project Operator for a project certified pursuant to section 95705 must attest under penalty of perjury that the GHG reductions and GHG removal enhancements have been measured in accordance with the applicable quantification assessment methodology.

Rationale

The proposed change ensures that the operator of a project certified pursuant to section 95705 attest that the project's GHG reductions and GHG removal enhancement were measured in accordance with the applicable quantification assessment methodology just as the operator of

an offset projects using a compliance offset protocol must attest that the project's GHG emission reductions and GHG removal enhancements were measured in accordance with the applicable compliance offset protocol. The proposed text is necessary to support program enforceability for projects certified pursuant to section 95705 that receive credits through CARB's compliance offset program.

CC. 95983.1. Section 95705 Project Offset Reversals.

95983.1(a)(1)-(3) [new]

Purpose

This new subsection is added to specify the quantity of offsets that an CARB will submit into the CCUS Buffer Account as part of offset credit issuance and the process by which CARB wil deposit offset credits into the CCUS Buffer Account.

Rationale

This addition is necessary to specify both the timing and the equation to calculate the number of offsets that CARB will place into the CCUS Buffer Account from a project certified by the Executive Officer pursuant to Section 95705. The amount is determined by multiplying the offset project site risk rating by the offset issuance amount for any offset credits issued following a reporting period. The number of offsets that an entity must submit to the CCUS Buffer Account scales with both the amount of CO_2 sequestered and the risk that the sequestered CO_2 may not be permanently stored to ensure that the CCUS Buffer Account is sufficient to preserve the environmental integrity of the Program.

95983.1(b) [new]

Purpose

This new subsection is added to specify that Offset Project Operators or Authorized Project Designees must notify CARB of any unintentional reversals within a set time period.

Rationale

This addition is necessary to ensure CARB receives timely notification of any loss of CO_2 sequestration permanence for offset projects certified by the Executive Officer pursuant to section 95705.

95983.1(c) [new]

Purpose

This new subsection is added to specify that Offset Project Operators or Authorized Project Designees must notify CARB of any intentional reversals within a set time period.

Rationale

This addition is necessary to ensure CARB receives timely notification of any loss of CO_2 sequestration permanence for offset projects certified by the Executive Officer pursuant to section 95705.

95983.1(d) [new]

Purpose

This new subsection is added to describe the requirements to compensate for the amount of CO_2 that is subject to a section 95705 project unintentional reversal.

Rationale

This addition is necessary to speciify that CARB will compensate for section 95705 unintentional project reversals and to specific what data CARB will use in determining the quantity of offset credits subject to reversal determination. This section is necessary to specify that CARB will rely on either Verified Project Data or an Assigned Reversal Report in the case of an Offset Project Operator or Authorized Project Designee failing to receive a positive offset verification statement for the reporting period where the offset reversal occurred.

95983.1(e) [new]

Purpose

This new subsection is added to describe the requirements to compensate for the amount of CO_2 that is subject to a Section 95705 project reversal, both unintentional and intentional.

Rationale

This addition is necessary to speciify how CARB will compensate for section 95705 project reversals that are unintentional and intentional. For every metric ton of CO_2 that is subject to an unintentional Section 95705 project reversal, CARB will retire a compliance instrument from the CCUS Buffer Account. For every metric ton of CO_2 that is subject to an intentional section 95705 project reversal, the offset project operator must submit one compliance instrument to CARB for transfer to the Retirement Account within six months of the verification or assignment by the Executive Officer of the amount of CO_2 subject to the reversal pursuant to the section 95705 project. These provisions preserve the environmental integrity of the Program when there is a section 95705 project reversal and appropriately allocate the liability for a project reversal to the responsible party for an intentional reversal and to the CCUS Buffer Account, which acts as an aggregate insurance mechanism, for an unintentional reversal.

95983.1(f) [new]

Purpose

This new subsection is added to describe the process by which CARB will determine an Assigned Reversal Level for projects certified pursuant to section 95705.

Rationale

This addition is necessary to provide clarity on when the Executive Officer will create an Assigned Reversal Report in the case of an Offset Project Operator or Authorized Project Designee failing to receive a positive offset verification statement for the reporting period where the offset reversal occurred. This section identifies the the process CARB will follow to

develop an Assigned Reversal Report and the deadlines and requirements that the verification body and Offset Project or Authorized Project Designee will have to meet as CARB requests data and other information as part of preparing the Assigned Reversal Level. This section is necessary so that Executive Officer is able to have access to project-specific data and the best available information when creating the Assigned Reversal Level.

DD. Section 95985. Invalidation of ARB Offset Credits.

Section 95985(b)(1)(B)

Purpose

The proposed amendment establishes a process for the developers of a project certified pursuant to section 95705 to reduce the invalidation period of ARB offset credits issued to the project from eight year to three years.

Rationale

The proposed change ensures that the developers of a project certified pursuant to section 95705 have a process to reduce the invalidation period of ARB offset credits issued to the project from eight year to three years by following the same path as developers of offset projects using compliance offset protocols, except for project using the Destruction of Ozone Depleting Substances Compliance Offset Protocol. Under that protocol, all projects have only a single reporting period, and the path to reduce the invalidation period is described in section 95985(b)(1)(A). In section 95985(b)(1)(B), projects certified pursuant to section 95705 follow the same process to reduce the invalidation period as all other offset projects that have the potential for multiple reporting periods. The proposed text is necessary to appropriately reflect the invalidation risk of ARB offset credits and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95985(b)(1)(B)4.

Purpose

The proposed amendment establishes how the developers of a project certified pursuant to section 95705 may reduce the invalidation period for their ARB offset credits from eight years to three years when the project is in the final reporting period of a crediting period and will not have a renewed crediting period.

Rationale

The proposed change ensures that the developers of projects certified pursuant to section 95705 have a process to reduce the invalidation period of ARB offset credits issued to the project from eight years to three years by following the same path as developers of offset projects using compliance offset protocols for project types with multiple reporting periods. sections 95985(b)(1)(B)1. through 95985(b)(1)(B)3. provide a process for reducing the invalidation period of ARB offset credits issued for an earlier reporting period, and section 95985(b)(1)(B)4. provides a process for reducing the invalidation period when there is no

future reporting period to be credited. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95985(c)(1)(A)2.a.

Purpose

The proposed amendment establishes that if CARB finds that a project certified pursuant to section 95705 overstated the amount of GHG reductions or GHG removal enhancements, CARB may rely on the applicable quantification assessment methodology associated with a project certified by the Executive Officer for an initial determination of offset credit invalidation.

Rationale

The proposed change ensures that CARB may rely on the applicable quantification assessment methodology when determining potential over-issuance of offset credits to a project certified pursuant to section 95705 just as it may rely on the applicable compliance offset protocol when determining potential over-issuance of offset credits to an offset project using a compliance offset protocol. The proposed change is necessary to ensure the environmental integrity of ARB offset credits and to support program enforceability for projects certified pursuant to section 95705 that receive credits through CARB's compliance offset program.

Section 95985(c)(1)(A)2.b.

Purpose

The proposed amendment establishes that if CARB finds that a project certified pursuant to section 95705 overstated the amount of GHG reductions or GHG removal enhancements, CARB may rely on the applicable quantification assessment methodology certified by the Executive Officer, in addition to section 95976, for any missing data provisions to support determining the amount of the overstatement.

Rationale

The proposed change ensures that CARB may rely on the applicable quantification assessment methodology's missing data provision when determining potential over-issuance of offset credits to a project certified pursuant to section 95705 just as it may rely on the applicable compliance offset protocol's missing data provisions when determining potential over-issuance of offset credits to an offset project using a compliance offset protocol. The proposed change is necessary to ensure the environmental integrity of ARB offset credits and to support program enforceability for projects certified pursuant to section 95705 that receive credits through CARB's compliance offset program.

Section 95985(c)(2)

Purpose

The proposed amendment provides for invalidation of ARB offset credits issued to a project certified pursuant to section 95705 in instances when the project was not in compliance with all local, regional, state, and national environmental and health and safety laws and regulations

that apply based on the project location and that directly apply to the offset project, including as specified in the applicable quantification assessment methodology for a project certified pursuant to section 95705.

Rationale

The proposed amendment is necessary to ensure that CARB may invalidate ARB offset credits that were issued to a project that failed to comply with laws and regulations that are specified in the applicable quantification assessment methodology for a project certified pursuant to section 95705 just as CARB may invalidate ARB offset credits that were issued to a project that failed to comply with laws and regulations that are specified in the applicable compliance offset protocol for a project using a compliance offset protocol. The proposed change is necessary to ensure the environmental integrity of ARB offset credits and to support program enforceability for projects certified pursuant to section 95705 that receive credits through CARB's compliance offset program.

Section 95985(c)(2)(A)2.a.

Purpose

The proposed amendment establishes that for determining the invalidation of offset credits due to non-conformance with local, regional, state, and national environmental and health and safety laws and regulations by a project certified pursuant to section 95705, CARB may rely on the applicable quantification methodology.

Rationale

The proposed change ensures that CARB may rely on the applicable quantification assessment methodology when determining the invalidation of offset credits that were issued to a project certified pursuant to section 95705 just as it may rely on the applicable compliance offset protocol when determining the invalidation of offset credits to an offset project using a compliance offset protocol when it fails to comply with local, regional, state, and national environmental and health and safety laws and regulations. The proposed change is necessary to ensure the environmental integrity of ARB offset credits and to support program enforceability for projects certified pursuant to section 95705 that receive credits through CARB's compliance offset program.

Section 95985(c)(2)(A)2.b.

Purpose

The proposed amendment establishes that for determining the invalidation of offset credits due to due to non-conformance with local, regional, state, and national environmental and health and safety laws and regulations by a project certified pursuant to section 95705, CARB may rely on the applicable quantification assessment methodology approved by the Executive Officer, in addition to section 95976, for any missing data provisions.

Rationale

The proposed change ensures that CARB will rely on the applicable quantification assessment methodology's missing data provision when determining the invalidation of offset credits to a

project certified pursuant to section 95705 just as it relies on the applicable compliance offset protocol's missing data provisions when determining the invalidation of offset credits issued to an offset project using a compliance offset protocol. The proposed change is necessary to ensure the environmental integrity of ARB offset credits and to support program enforceability for projects certified pursuant to section 95705 that receive credits through CARB's compliance offset program.

EE. Section 95986. Executive Officer Approval Requirements for Offset Project Registries.

Section 95986(c)(1)

Purpose

The proposed amendment prohibits an Offset Project Registry, once approved, from being a project developer for projects that are listed on its own registry and that use a quantification assessment methodology for a project certified pursuant to section 95705.

Rationale

The proposed change ensures that an Offset Project Registry, once approved, may not be a project developer for projects that are listed on its own registry and that use a quantification assessment methodology for a project certified pursuant to section 95705 just as an Offset Project Registry may not be a project developer for offset projects that are listed on its own registry and use a compliance offset protocol. The proposed text is necessary to avoid a conflict of interest for offset project registries and to support participation by innovate and new project types in CARB's compliance offset program.

Section 95986(d)

Purpose

The proposed amendment requires that an Offset Project Registry must maintain its professional liability insurance while it provides registry services to project developers who are implementing projects certified pursuant to section 95705.

Rationale

The proposed change ensures that an Offset Project Registry must maintain its professional liability insurance while offering registry services for a project certified pursuant to section 95705 just as it must maintain its professional liability insurance while offering registry services for offset projects using a compliance offset protocol. The proposed text is necessary to ensure the viability of offset project registries and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95986(f)(2)

Purpose

The proposed amendment requires that an organization applying to be a CARB-approved Offset Project Registry must attest that all information that it submits to CARB related to a project certified pursuant to section 95705 will be true, accurate, and complete.

Rationale

The proposed change ensures that an Offset Project Registry provides the same attestation about the truth, accuracy, and completeness of information submitted to CARB related to a project certified pursuant to section 95705 that it provides about information submitted to CARB related to an offset project using a compliance offset protocol. The proposed text is necessary to ensure the integrity of information submitted to CARB, to support program enforceability for offset project registries, and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95986(f)(5)

Purpose

The proposed amendment establishes that an organization applying to be a CARB-approved Offset Project Registry must attest that it will participate in all CARB training related to section 95705.

Rationale

The proposed change ensures that an Offset Project Registry provides the same attestation to CARB about participating in training related to section 95705 as it provides about participating in training related to CARB's compliance offset program and its compliance offset protocols. The proposed text is necessary to support program enforceability for offset project registries and to support participation by innovative and new project types in CARB's compliance offset program.

FF. Section 95987. Offset Project Registry Requirements.

95987(a)

Purpose

The proposed amendment establishes that an offset project registry must use the quantification assessment methodology for a project certified pursuant to section 95705 to determine whether that project may be issued registry offset credits and ARB offset credits.

Rationale

This change is necessary so that projects certified pursuant to section 95705 may be issued registry offset credits and ARB offset credits as offset projects using a CARB-adopted compliance offset protocol may be issued registry offset credits and ARB offset credits. The proposed text is necessary to support participation by innovative and new project types in CARB's compliance offset program.

Section 95987(b)

Purpose

The proposed amendment requires that an offset project registry must make the identified information publicly available for a project certified pursuant to section 95705 within ten business days of the project listing requirements being deemed complete.

Rationale

This change is necessary so that information about a project certified pursuant to section 95705 is made publicly available in the same manner as information about a project using a compliance offset protocol. The proposed text is necessary to support transparent participation by innovative and new project types in CARB's compliance offset program.

Section 95987(b)(1)(E)

Purpose

For a project certified pursuant to section 95705, the proposed amendment requires that an offset project registry must make the quantification assessment methodology and the certification date by the Executive Officer publicly available within ten business days of the project listing requirements being deemed complete.

Rationale

This change is necessary so that information about quantification methods for a project certified pursuant to section 95705 is made publicly available in the same manner as information about quantification methods for a project using a compliance offset protocol. The proposed text is necessary to support transparent participation by innovative and new project types in CARB's compliance offset program.

Section 95987(b)(3)

Purpose

The proposed amendment requires that an offset project registry must clearly identify projects certified by the Executive Officer pursuant to section 95705 that are listed and submitting offset project data reports.

Rationale

This change is necessary so that information about the status of a project certified pursuant to section 95705 is made publicly available in the same manner as information about the status of a project using a compliance offset protocol. The proposed text is necessary to transparently identify projects that may be issued registry offset credits and ARB offset credits and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95987(b)(3)(D)

Purpose

The proposed amendment establishes that an offset project registry may update the listing status of a project certified pursuant to section 95705 to "Inactive" or "Terminated" if the project terminates as specified in the quantification assessment methodology for the project.

Rationale

This change is necessary so that information about the status of a project certified pursuant to section 95705 is made publicly available when it terminates in the same manner as information about the status of a project using a compliance offset protocol is made publicly available when it terminates. The proposed text is necessary to support transparent participation by innovative and new project types in CARB's compliance offset program.

Section 95987(b)(3)(E)

Purpose

The proposed amendment establishes that an offset project registry may update the listing status of a project certified pursuant to section 95705 to "Inactive" or "Terminated" if the offset project operator submits a letter to the offset project registry that, among other information, identifies the name of the project, identifies the date the project was certified pursuant to section 95705, and states that it no longer intends to pursue issuance of registry offset credit for the project.

Rationale

This change is necessary to ensure that information about the status of a project certified pursuant to section 95705 is made publicly available when it terminates in the same manner as information about the status of a project using a compliance offset protocol is made publicly available when it terminates. The proposed text is necessary to support transparent participation by innovative and new project types in CARB's compliance offset program.

Section 95987(b)(4)(C)

Purpose

The proposed amendment requires that when an offset project registry updates the listing status of a project certified pursuant to section 95705 to "Inactive" or "Terminated," the offset project registry must make publicly available either the letter submitted by the offset project operator pursuant to section 954987(b)(3)(E) that states that it no longer intends to pursue issuance of registry offset credit for the project or a memo authored by the offset project registry that explains the change of project status.

Rationale

This change is necessary so that information about the status of a project certified pursuant to section 95705 is made publicly available when it becomes inactive or terminates in the same manner as information about the status of a project using a compliance offset protocol is made publicly available when it terminates. The proposed text is necessary to support transparent participation by innovative and new project types in CARB's compliance offset program.

Section 95987(b)(5)

Purpose

The proposed amendment establishes that an offset project registry may update the listing status of a project certified pursuant to section 95705 to “Completed” if the end of the project life has been reached as defined in the project certified by the Executive Officer pursuant to section 95705 and if the project meets all other specified criteria.

Rationale

This change is necessary so that information about the status of a project certified pursuant to section 95705 is made publicly available when it is completed in the same manner as information about the status of a forest offset project using the U.S. Forest Compliance Offset Protocol is made publicly available when it is completed. The proposed text is necessary to support transparent participation by innovative and new project types in CARB’s compliance offset program.

Section 95987(d)

Purpose

The proposed amendment establishes that an offset project registry may provide guidance to Offset Project Operators, Authorized Project Designees, or offset verifiers for offset projects certified by the Executive Officer pursuant to section 95705 if there is no clear requirement for the topic in the project certified by the Executive Officer pursuant to section 95705, in the Regulation, or in a CARB guidance document, and after consulting and coordinating with CARB.

Rationale

This change is necessary to support an offset project registry providing guidance to Offset Project Operators, Authorized Project Designees, or offset verifiers for offset projects certified by the Executive Officer pursuant to Section 95705 in the same way that an offset project registry may provide guidance for projects using a compliance offset protocol. The proposed text is necessary to support providing guidance to innovative and new project types that could be participating in CARB’s compliance offset program.

Section 95987(d)(1)

Purpose

The proposed amendment requires that an offset project registry must maintain all correspondence and records of communication with an Offset Project Operator, Authorized Project Designee, or offset verifier when providing clarifications or guidance for an offset project certified by the Executive Officer pursuant to section 95705.

Rationale

This change is necessary to ensure that records of guidance from an offset project registry to projects certified pursuant to section 95705 are maintained for reference just as records of guidance from an offset project registry to projects using a compliance offset protocol are maintained. The proposed text is necessary to ensure that records of communication and guidance provided by an offset project registry are available for reference if needed and to

support participation by innovative and new project types in CARB's compliance offset program.

Section 95987(f)(1)

Purpose

For an offset project certified by the Executive Officer pursuant to section 95705, the proposed amendment requires that within three business days an offset project registry either issuing registry offset credits or otherwise concluding its review of a detailed verification report for offset verification services that do not result in issuing registry offset credits, the Offset Project Registry must provide to CARB, among other specific information, any attestations required in the project certified by the Executive Officer.

Rationale

For an offset project certified by the Executive Officer pursuant to section 95705, this change is necessary to ensure that the offset project registry provides to CARB all required attestations from the offset project operator and from the verification body after the offset project registry concludes its review of the verification process in the same manner as it provides to CARB all required attestations after it concludes its review of the verification process for a project using a compliance offset protocol. The proposed change is necessary to support program enforceability and to support participation by innovative and new project types in CARB's compliance offset program.

Section 95987(g)

Purpose

The proposed amendment requires that an offset project registry must provide all information in its possession related to a listed offset project certified by the Executive Officer pursuant to section 95705 within 10 calendar days of request by CARB.

Rationale

This change is necessary to ensure that CARB has timely access to all relevant information related to a project certified pursuant to section 95705 just as it has timely access to all relevant information related to a project using a compliance offset protocol. The proposed text is necessary to ensure that CARB can conduct a review of a project certified pursuant to section 95705 that is complete and thorough and to support participation by innovative and new project types in CARB's compliance offset program.

The timeframe of 10 days was chosen as a reasonable timeframe to balance the need for information while providing sufficient time for the operator.

Section 95987(h)

Purpose

The proposed amendment requires that an offset project registry must make its staff and all information related to a listed offset project certified by the Executive Officer pursuant to section 95705 available to CARB during and audits or oversight activities initiated by CARB.

Rationale

This change is necessary to ensure that CARB has access to all offset project registry staff and all relevant information related to a project certified pursuant to section 95705 for audit and oversight of the offset project registry just as it has access to all offset project registry staff and all relevant information related to a project using a compliance offset protocol for audit and oversight of the offset project registry. The proposed text is necessary to ensure that CARB has information and access that is sufficient to audit an offset project registry and to provide oversight of an offset project registry as it relates to the listing and review of a project certified pursuant to section 95705.

Section 95987(i)

Purpose

The proposed amendment requires that an offset project registry must remove or cancel any registry offset credits issued for an offset project certified by the Executive Officer pursuant to section 95705, such that the registry offset credits are no longer available for transaction on the Offset Project Registry system, once notified by CARB that the offset project is eligible to be issued ARB offset credits.

Rationale

This change is necessary to ensure that the offset project registry cancels registry offset credits that were issued for an offset project certified by the Executive Officer pursuant to section 95705 when CARB notifies the offset project registry that the project is eligible to be issued ARB offset credits, just as it cancels registry offset credits that were issued for an offset project using a compliance offset protocol when CARB notifies it that the project is eligible to be issued ARB offset credits. The proposed text is necessary to prevent double-crediting of GHG emissions reductions or GHG removal enhancements and to support ARB offset credit issuance processed for innovative and new project types in CARB's compliance offset program.

Section 95987(j)

Purpose

The proposed amendment requires that an offset project registry must include projects that are listed and certified by the Executive Officer pursuant to section 95705 in the annual report that it provides by January 31 of the previous year's projects that are listed.

Rationale

This change is necessary so that the annual report by the offset project registry includes projects that are listed and certified by the Executive Officer pursuant to section 95705 just as it includes projects that are listed using a compliance offset protocol. The proposed text is

necessary to support transparent participation by innovative and new project types in CARB's compliance offset program.

GG. Section 95988. Record Retention Requirements for Offset Project Registries.

Purpose

The proposed amendment requires that an offset project registry must maintain for at least 15 years all information submitted and all correspondence related to listed offset projects that are certified pursuant to section 95705.

Rationale

This change is necessary to ensure that records related to projects certified pursuant to section 95705 are retained for reference for the same duration as records related to offset projects using a compliance offset protocol. The proposed text is necessary to ensure that project records and documentation are available for reference if needed and to support participation by innovative and new project types in CARB's compliance offset program.

HH. Section 95989. Direct Environmental Benefits in the State.

Section 95989(a)

Purpose

The proposed amendment provides that projects certified pursuant to section 95705 that are located within, or that avoid GHG emissions within, the State of California are considered to provide direct environmental benefits in the State.

Rationale

This change is necessary so that projects certified pursuant to section 95705 may be considered to provide direct environmental benefits in the State if they are located within, or avoid GHG emissions within, the State of California, just as offset projects using a compliance offset protocol may be considered to provide direct environmental benefits in the State. The proposed text is necessary to ensure that the offset credits issued to in-state projects can be designated as providing direct environmental benefits in the State.

Section 95989(b)

Purpose

The proposed amendment provides that projects certified pursuant to section 95705 that are located outside the State of California may submit information to CARB to enable a determination of whether the project provides direct environmental benefits in the State.

Rationale

This change is necessary so that a project certified pursuant to section 95705 may be considered to provide direct environmental benefits in the State if it is located outside the State of California but can demonstrate a reduction or avoidance of emissions of any air pollutant in the State or any pollutant that could have an adverse impact on waters of the State, just as an offset project that is located outside of California and uses a compliance offset protocol may be considered to provide direct environmental benefits in the State. The proposed text is necessary to ensure that the offset credits issued to out-of-state projects can be designated as providing direct environmental benefits in the State if they can demonstrate such benefits.

The Specific Purpose and Rationale of Each Adoption, Amendment, or Repeal to California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 2, Sections 95101, 95102, 95103, 95123, 95125, 95131.

II. Section 95100(c). Purpose and Scope.

Purpose

The proposed amendments sets forth the publication date of U.S. EPA Part 98 Subpart RR that was previously incorporated by reference in the regulation.

Rationale

Incorporated documents must include a publication date to establish which version of the document regulated facilities must follow for reporting GHG data to CARB. This publication date was inadvertently omitted from the current regulation.

JJ. Section 95101(a)(1)(A)(6). Applicability.

Purpose

The proposed amendment replaces the term “sequestration” with “storage.”

Rationale

The term storage is closely related to sequestration and refers to the containment of carbon dioxide. The proposed amendment is necessary for clarity and to be consistent with the proposed Geologic Carbon Storage Protocol, as well as proposed changes to the Cap-and-Invest Regulation.

KK. Section 95102(a). Definitions.

“Carbon dioxide supplier” Definition

Purpose

The proposed amendment revises the current definition to replace the term “sequestration” with “storage.”

Rationale

The term storage is closely related to sequestration and refers to the containment of carbon dioxide. The proposed amendment is necessary for clarity and to maintain consistency with the terminology used in the proposed Geologic Carbon Storage Protocol, as well as proposed changes to the Cap-and-Invest Regulation.

“Facility” Definition

Purpose

The proposed amendment revises the current definition for Facility to set forth that both the storage zone and surface emissions sources are included within a geologic carbon storage facility.

Rationale

The definition is necessary to establish that the storage facility includes the storage site as well as surface equipment associated with injecting CO_2 underground as described in the proposed Geologic Carbon Storage Protocol. This is necessary for clarity and enforceability.

“Geologic carbon storage” Definition

Purpose

The proposed amendment replaces the term “sequestration” with “storage,” and also clarifies that geologic carbon storage, or GCS, refers to the permanent containment of CO_2 in deep underground porous rock formations.

Rationale

The proposed amendment is necessary to maintain consistency with the definitions and terminology used in the proposed Geologic Carbon Storage Protocol, as well as proposed changes to the Cap-and-Invest Regulation. This is necessary for clarity and enforceability.

LL. Section 95103(f). Verification Requirement and Deadlines.

Purpose

The proposed amendments sets forth that all geologic carbon storage facilities must be verified regardless of emissions threshold.

Rationale

These amendments are necessary in order to ensure stored CO_2 is reported and verified accurately. CO_2 stored at geologic carbon storage facilities will impact covered emissions for CO_2 suppliers and therefore storage facilities will be subject to verification.

MM. Section 95123(a). Suppliers of Carbon Dioxide.

Purpose

Proposed amendments require carbon dioxide suppliers to report the name of the storage facility if supplied CO_2 is stored within California. The proposed amendment also replaces the term sequestration with storage.

Rationale

The amendments are necessary because storage facilities are able to reduce a covered entity's compliance obligation if the supplied CO_2 is verified as stored. CARB needs to trace which supplied CO_2 was stored, which requires the supplier to identify the facility name in their annual emissions data report. The term storage is used instead of sequestration to be consistent with the proposed Geologic Carbon Storage Protocol, as well as the proposed amendments to the Cap-and-Invest Regulation.

NN. Section 95123(b)(1)E. Missing Data Substitution Procedures.

Purpose

This proposed amendments in this section sets forth that all storage facilities must clearly indicate which data is substituted and that only conservative values that result in the lowest amount of sequestered CO_2 can be used to calculate a reduction in the supplier's Cap-and-Invest compliance obligation when the data capture rate is less than 90%.

Rationale

Because missing data substitution applies to inaccurate data and emissions can be overestimated, only accurate and conservative data can be used to reduce a supplier's compliance obligation. Therefore these amendments are necessary to ensure the supplier is required to identify which data is measured accurately (and can be used in the compliance obligation calculation), and which data is substituted.

OO. Section 95125. Geologic Storage.

Purpose

The proposed amendment in this section clarifies that geologic carbon storage facilities are not eligible to report as an abbreviated reporter.

Rationale

Geologic carbon storage facilities are not eligible for abbreviated reporting because they are subject to the reporting requirements of 40 CFR Part 98 specified in section 95103(a). Storage facilities must report data irrespective of annual total emissions and have the data verified annually.

Section 95125(a)

Purpose

The amendments in this section require that facilities must allocate stored CO_2 using a mass-balance approach when assigning the injected amount to the various sources of carbon capture based on metered data.

Rationale

This change is necessary to allow CARB to correctly calculate each supplier's compliance obligation. Geologic carbon storage facilities with two or more suppliers must report total stored CO_2 by supplier.

Section 95125(b)

Purpose

The proposed amendments in this section require geologic carbon storage facilities to report surface leaks described in 40 CFR section 98.442(d) by type and location.

Rationale

Different leak types are required to be reported to ensure CARB staff need to understand the type of leak in order to correctly calculate a supplier's compliance obligation in the Cap-and-Invest Regulation.

Section 95125(c)

Purpose

The proposed amendments in this section sets forth that geologic carbon storage facilities must report injected CO_2 using a continuous flow or mass meter which is subject to the accuracy requirements in section 95103(k).

Rationale

Subpart RR requires quarterly estimates for CO_2 injected. To avoid confusion, this amendment clarifies that a single quarterly value for continuous flow or mass meter is not sufficient; that continuous measurement is required. That measurement must meet the accuracy requirements as it may be the basis for the CO_2 supplier's Cap-and-Invest compliance obligation.

Section 95125(d)

Purpose

The proposed amendments in this section sets forth that geologic carbon storage facilities must report injected CO_2 based on monthly concentration data which is subject to the accuracy requirements in section 95103(k).

Rationale

Subpart RR requires quarterly estimates for CO_2 injected. To avoid confusion, this amendment clarifies that a single quarterly value for concentration value is not sufficient; that monthly concentration data must be collected. That measurement must meet the accuracy requirements as it may be the basis for the CO_2 supplier's Cap-and-Invest compliance obligation.

Section 95125(e)

Purpose

The proposed amendments in this section sets forth that where references to U.S. EPA "subparts W and PP" are used, the corresponding MRR references should be used instead. Section 95123 and Subarticle 5 include MRR-specific requirements that differ slightly from U.S. EPA requirements.

Rationale

Geologic carbon storage facilities subject to MRR must comply with MRR requirements, which differ slightly from requirements in U.S. EPA Part 98 requirements. For storage facilities, it is necessary to replace requirements related to Subparts W and PP with the corresponding MRR requirements.

Section 95125(f)

Purpose

The proposed amendments in this section sets forth that the geologic carbon storage facility's "monitoring, reporting, and verification plan" shall be consistent with their testing and monitoring plan for permanence certification pursuant to the Geologic Carbon Sequestration Protocol, if applicable. The Geologic Carbon Sequestration Protocol is incorporated by reference.

Rationale

Geologic carbon storage facilities that apply for permanence certification should be expected to develop and use as a single monitoring plan for both permanence and MRR for consistency across programs. Incorporation of the Geologic Carbon Sequestration Protocol by reference is required under Cal. Code Regs. tit. 1, § 20(c)(4).

Section 95125(g)

Purpose

The proposed amendments in this section sets forth that subsurface leaks outside of the identified storage zone must be reported and reviewed during verification.

Rationale

For consistency with both the Low Carbon Fuel Standard and permanence verification, subsurface leaks must also be reported and verified. This information would inform the Cap-and-Invest program as to whether the facility has demonstrated mechanical integrity of the storage zone and should continue to store CO_2 and reduce the CO_2 supplier's compliance obligation.

PP. Section 95131. Verification.

Purpose

This proposed amendments in this section sets forth that verifiers are responsible for data within sections 95124 and 95125, in addition to data within sections 95110 to 95123.

Rationale

This is necessary to correct an omission in the 2026 MRR that omitted these two applicable sections. Information in sections 95124 and 95125 should be treated by verifiers similarly to information within 95110-95123.

Section 95131(b)(8)(F)(5)

Purpose

Thie proposed amendments in this section sets forth that verifiers are required to review quarterly CO_2 injection data, surface leaks, the installation date of the carbon capture unit, and the monitoring, reporting, and verification plan approved by CARB when verifying geologic carbon storage facilities. Data specified in this section is required to be reviewed.

Rationale

These changes are necessary to ensure that GCS facility data necessary for determining compliance obligations in Cap-and-Invest are reviewed thoroughly by the verifier. This section is reserved for data types that CARB has determined require verifier review because of the complexity and risk associated with misreporting data for this facility type. This is unlike other reported data for other sectors where the verifier may use their professional judgment regarding whether to review and sample that data based on their risk assessment.

Section 95131(b)(12)(F)

Purpose

The amendments in this section sets forth that verifiers must evaluate material misstatement for geologic carbon storage facilities for both surface leaks and for annual injected CO_2 (in metric tons).

Rationale

Verifiers will be required to separately evaluate leaks and injected CO_2 to ensure there is adequate review of small leaks, compared to the much larger quantity of injected CO_2. If both quantities are summed and evaluated together, small but important leaks might not be carefully assessed by the verifier for accuracy as the verifier would likely focus all of their attention on injected CO_2.

The Specific Purpose and Rationale of Each Adoption, Amendment, or Repeal California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Subarticle 7, Sections 95481, 95486, 95489, 95490

Purpose

Staff propose minor text changes throughout the Low Carbon Fuel Standard (LCFS) regulation to update outdated references to the “Carbon Capture and Sequestration Protocol” or the “CCS Protocol.” Specifically:

- References to “CCS Protocol” are replaced with “GCS Protocol” and “LCFS CCS QM” when the context regulates projects and pathways eligibility, general requirements, or buffer account.
- References to “CCS Protocol” are replaced with “LCFS CCS QM” when the context relates to LCFS credit accounting and quantification exclusively.
- References to “CCS Protocol” are replaced with “GCS Protocol” when the context pertains to permanence requirements and permanence certification exclusively.

Rationale

Under the Proposed Regulation, the CCS Protocol would no longer be in effect and would be superseded by the GCS Protocol and the LCFS CCS QM. Updating the terminology in the LCFS regulation is a procedural necessity to ensure regulated entities use the correct protocol and QM documents for eligibility determinations, permanence certification, buffer account management, reporting and verification, and LCFS credit accounting.

QQ. Section 95481. Definitions and Acronyms.

“Carbon capture and sequestration (CCS) project” Definition

Purpose

In the definition of “Carbon capture and sequestration (CCS) project”, staff propose a text change to replace to existing reference to “Carbon Capture and Sequestration Protocol” with updated references to the “Geologic Carbon Storage Protocol under the Carbon Capture, Removal, Utilization, and Storage Program (GCS Protocol) and the Greenhouse Gas Quantification Methodology for Carbon Capture and Sequestration under the Low Carbon Fuel Standard (LCFS CCS QM).” Because this is the first time in which these updated references are introduced, their full titles are provided here. Staff propose that the abbreviations shown in parentheses, “GCS Protocol” and “LCFS CCS QM”, are used throughout the subsequent text amendments in LCFS, as applicable.

Rationale

The definition of “Carbon capture and sequestration (CCS) project” in the LCFS regulation must reference the effective protocol and quantification methodology to establish regulatory certainty for both regulated entities and CARB. The previous CCS Protocol has been retired and replaced with the GCS Protocol and the LCFS CCS QM; therefore, updating these references is a procedural necessity to maintain consistency with current program requirements.

RR. Section 95486. Generating and Calculating Credits and Deficits.

Section 95486(a)(3)(C)

Purpose

Staff propose a text change to replace the existing reference to the “CCS Protocol” with the “GCS Protocol” and the “LCFS CCS QM.”

Rationale

This section pertains to the LCFS buffer account provisions. The CCS Protocol is no longer operative, as its components have been separated into the GCS Protocol and the LCFS CCS QM, including the portions relevant to buffer account requirements. Under the updated structure, the GCS Protocol establishes the standardized risk-rating framework used by applicable market-based programs to determine buffer account contributions, while the LCFS CCS QM provides the equation for calculating buffer account contributions and the requirements specific to LCFS implementation. As a result and a a procedural necessity, regulated entities must consult both the GCS Protocol and the LCFS CCS QM to understand and apply the buffer account contribution requirements.

SS. Section 95489. Provisions for Petroleum-Based Fuels.

Section 95489(e)(2)(A)

Purpose

Staff propose a text change to replace the existing reference to the “CCS Protocol” with a reference to the “LCFS CCS QM.”

Rationale

This section pertains to the LCFS project-based application credit calculations. LCFS credit calculations for project-based applications utilizing carbon capture and sequestration were previously covered under the CCS Protocol and now are governed exclusively by the LCFS CCS QM, not by the GCS Protocol. Therefore, only the LCFS CCS QM is cited here as a procedural necessity.

TT. Section 95490. Provisions for Fuels Produced Using Carbon Capture and Sequestration.

Section 95490(a)

Purpose

Staff propose the following text changes to ensure the accuracy of references cited:

- Update the eligibility provision by replacing the reference to “following protocol” with “following protocol and quantification methodology.”
- Update the eligibility provision by replacing the reference to “CCS Protocol” with references to “GCS Protocol” and “LCFS CCS QM.”
- Update the citations to the documents incorporated by reference below the eligibility provision to:

“Industrial Strategies Division, California Air Resources Board. [Date]. Geologic Carbon Storage Protocol under the Carbon Capture, Removal, Utilization, and Storage Program.

Industrial Strategies Division, California Air Resources Board. [Date]. Greenhouse Gas Quantification Methodology for Carbon Capture and Sequestration under the Low Carbon Fuel Standard.”

Rationale

This section describes the eligibility of fuels produced using carbon capture and sequestration under the LCFS. Therefore, both the GCS Protocol and the LCFS CCS QM are referred to here so that applicants understand the requirements for obtaining permanence certification and for calculating greenhouse gas reductions specific to LCFS accounting processes. The text changes made through reference updates in this section are a procedural necessity to ensure that the LCFS regulations reflect the retirement of the CCS Protocol and the effectiveness of the GCS Protocol and the LCFS CCS QM. With this update, regulated entities will be able to follow the correct procedures to submit LCFS applications and earn credits, if applicable.

Section 95490(b)(1) and 95490(b)(2)

Purpose

There are three references to the "CCS Protocol" in section 95490(b)(1) and one reference in section 95490(b)(2). For section 95490(b)(1), staff propose replacing the first reference with "GCS Protocol" and "LCFS CCS QM," and replacing the remaining two references with "GCS Protocol." For section 95490(b)(2), staff propose replacing the existing reference to the "CCS Protocol" with a reference to the "LCFS CCS QM."

Rationale

To reflect the retirement of the CCS Protocol and the effectiveness of the GCS Protocol and the LCFS CCS QM, the references are updated according to the context consistent with the criteria outlined in Section A.1. These updates are a procedural necessity to ensure that the regulation accurately cites the applicable protocol and quantification methodology.

Section 95490(c)(2)(F) and 95490(c)(2)(G)

Purpose

For section 95490(c)(2)(F), staff propose a text change to replace the existing reference to the "CCS Protocol" with a reference to the "LCFS CCS QM." For section 95490(c)(2)(G), staff propose replacing the reference to the "CCS Protocol" with "GCS Protocol."

Rationale

See Rationale for Section 95490(b)(1) and 95490(b)(2).

Section 95490(e). Reference Update.

Purpose

Staff propose a text change to replace the existing reference to the "CCS Protocol" with references to both the "GCS Protocol" and the "LCFS CCS QM."

Rationale

See the Rationale for Sections 95490(b)(1) and 95490(b)(2).

This section addresses reporting requirements. The GCS Protocol regulates the reporting associated with permanence compliance, while the LCFS CCS QM stipulates the reporting required for LCFS accounting. Therefore, as a procedural necessity both documents are cited here.

Section 95490(g) and 95490(g)(3)

Purpose

For section 95490(g), staff propose a text change to replace the existing reference to the "CCS Protocol" with references to the "GCS Protocol." Staff propose text changes to section 95490(g)(3) to replace the term "Accounting Protocol" with "LCFS CCS QM" and replace "Permanence Protocol" with "GCS Protocol."

Rationale

See the Rationale for Sections 95490(b)(1) and 95490(b)(2).

Section 95490(h)(2)

Purpose

Staff propose text changes to replace the existing reference to the "CCS Protocol" with references to both the "GCS Protocol" and the "LCFS CCS QM," and to correct the formatting of "$CO_2^{leakage}$" by adjusting it to the properly spaced subscript form "$CO_{2leakage}$".

Rationale

For reference updates, see the Rationale for Sections 95490(b)(1) and 95490(b)(2). The format of "$CO_{2leakage}$" is adjusted for consistency.

UU. References.

[1] Alaska Earthquake Center. (2020). *What is magnitude of completeness?* In Alaska.edu. *https://earthquake.alaska.edu/what-magnitude-completeness*

[2] ANSI National Accreditation Board. (n.d.). Greenhouse gas validation & verification. ANAB Accreditation. Retrieved September 18, 2026, from *https://anab.ansi.org/accreditation/greenhouse-gas-validation-verification/*

[3] Baek, S., Bacon, D. H., & Huerta, N. J. (2023). Enabling site-specific well leakage risk estimation during geologic carbon sequestration using a modular deep-learning-based wellbore leakage model. International Journal of Greenhouse Gas Control, 124, 103923. *https://doi.org/10.1016/j.ijggc.2023.103923*

[4] Berkeley Digital Seismic Network Overview (BDSN). (n.d.). Berkeley Digital Seismic Network Overview. *https://earthquakes.berkeley.edu/bdsn/bdsn.overview.html*

[6] Brewer, R.J. (2000). VSP Data in Comparison to the Check Shot Velocity Survey. AAPG. *https://www.searchanddiscovery.com/documents/geophysical/brewer/index.htm*

[7] California Air Resources Board (CARB). (2018, August 13). *Carbon capture and sequestration protocol under the Low Carbon Fuel Standard* [Protocol]. *https://ww2.arb.ca.gov/resources/documents/carbon-capture-and-sequestration-protocol-under-low-carbon-fuel-standard*

[12] California Integrated Seismic Network (CISN). (n.d.). CISN: Home. In www.cisn.org. Retrieved August 6, 2026, from *https://www.cisn.org/*

[36] Chang, Y., Wang, R., Han, P., Wang, J., Miao, M., Zeng, Z., ... & Hattori, K. (2025). b-Value evaluation and applications to seismic hazard assessment. Entropy, 27(9), 958. *https://pmc.ncbi.nlm.nih.gov/articles/PMC12468554/*

[39] Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO). (n.d.). Waveform data processing and analysis. *https://www.ctbto.org/our-work/international-data-centre/waveform-data-processing-and-analysis*

[44] Davis, W., & Hunt, C. R. (2024). Knowledge graphs for seismic data and metadata. Applied Computing and Geosciences, 21, 100151. *https://www.sciencedirect.com/science/article/pii/S259019742300040X*

[46] De Santis F., Maury J., Klein E., Peter-Borie M., Contrucci I., Dominique P. (2023). Good practices guide for managing induced seismicity by deep geothermal operations. *https://www.ineris.fr/sites/default/files/contribution/Documents/Guide%20geothermie_Ineris-BRGM_anglais%20%28ID%202821990%29.pdf*

[47] EarthScope Primary Instrument Center. (n.d.a). Sensors. *https://epic.earthscope.org/content/instrumentation/sensors*

[48] EarthScope Primary Instrument Center. (n.d.b). Dataloggers. In Instrumentation. Retrieved August 8, 2026. *https://epic.earthscope.org/content/instrumentation/dataloggers*

[51] Federal Emergency Management Agency (FEMA). (2004). Primer for design professionals: Communicating with owners and managers of new buildings on earthquake risk (FEMA 389). *https://mitigation.eeri.org/files/fema389.pdf*

[52] Felzer, K. R. (2008). *Appendix I: Calculating California seismicity rates* (No. 2007-1437-I). US Geological Survey. *https://www.resolutionmineeis.us/documents/felzer-2008*

[53] Gardine, L. (2020, June 15). *WHAT IS MAGNITUDE OF COMPLETENESS?* Alaska Earthquake Center. Retrieved August 3, 2026, from *https://earthquake.alaska.edu/what-magnitude-completeness*

[58] International Energy Agency Greenhouse Gas (IEAGHG) (2012). Quantification techniques for CO_2 leakage (Report 2012/02). IEA Greenhouse Gas R&D Programme. *https://ieaghg.org/publications/quantification-techniques-for-*CO_2*-leakage/*

[59] IEAGHG R&D Programme. (2022). Current state of knowledge regarding the risk of induced seismicity at CO_2 storage projects (Technical Report 2022-02). *https://ieaghg.org/publications/current-state-of-knowledge-regarding-the-risk-of-induced-seismicity-at-co2-storage-projects/*

[61] Incorporated Research Institutions for Seismology (IRIS). (n.d.). How does a seismic station work? USArray. *http://www.usarray.org/public/about/how*

[63] Kroll, K., & Sherman, C. (2023). ORION: Operational FoRecastIng Of INduced Seismicity. Osti.Gov. *https://doi.org/10.18141/1958726*

[65] Lallemant, D., Kiremidjian, A., & Burton, H. (2015). Statistical procedures for developing earthquake damage fragility curves. Earthquake Engineering & Structural Dynamics, 44(9), 1373-1389. https://doi.org/10.1002/eqe.2522

[66] Lewicki, J. L., Hilley, G. E., & Oldenburg, C. M. (2005). An improved strategy to detect surface CO_2 leakage for verification of geologic carbon sequestration. Geophysical Research Letters, 32(19), L19403. *https://doi.org/10.1029/2005GL024281*

[67] Lewicki, J. L., Hilley, G. E., Dobeck, L., & Spangler, L. (2009). Dynamics of CO_2 fluxes and concentrations during a shallow subsurface CO_2 release. *Environmental Earth Sciences*, *60*(2), 285-297. *https://www.osti.gov/biblio/982055*

[68] Majer, E., Nelson, J., Robertson-Tait, A., Savy, J., & Wong, I. (2012). Protocol for Addressing Induced Seismicity Associated with Enhanced Geothermal Systems. US Department of Energy, 52(10.2172), 1219482.

[69] Mandler, H., Karimi, S., & Hutton, L. (2025, January 30). Passive seismic monitoring and induced seismicity risk management for carbon storage. Canadian Society of Exploration Geophysicists. Retrieved from *https://cseg.ca/passive-seismic-monitoring-and-induced-seismicity-risk-management-for-carbon-storage/*

[73] Mukuhira, Y., Fehler, M. C., Bjarkason, E. K., Ito, T., & Asanuma, H. (2024). On the b-value dependency of injection-induced seismicity on geomechanical parameters. International Journal of Rock Mechanics and Mining Sciences, 174, 105631. *https://www.sciencedirect.com/science/article/pii/S136516092300305*

[78] Park, Y., Beroza, G. C., & Ellsworth, W. L. (2022). Basement Fault Activation before Larger Earthquakes in Oklahoma and Kansas. The Seismic Record, 2(3), 197-206. The Seismic Record, 2(3), 197-206. *https://doi.org/10.1785/0320220020*

[79] Pawar, R. J., Chu, S., Makedonska, N., Onishi, T., & Harp, D. (2020). Assessment of relationship between post-injection plume migration and leakage risks at geologic CO_2 storage sites. International Journal of Greenhouse Gas Control, 101, 103138.

[82] Petersen, G. M., Cesca, S., Kriegerowski, M., & AlpArray Working Group. (2019). Automated quality control for large seismic networks: Implementation and application to the AlpArray seismic network. Seismological Research Letters, 90(3), 1177-1190. *https://doi.org/10.1785/0220180342*

[84] Rizzo, R. E., Forbes Inskip, N., Fazeli, H., Betlem, P., Bisdom, K., Kampman, N., Snippe, J., Senger, K., Doster, F., & Busch, A. (2024). Modelling geological CO_2 leakage: Integrating fracture permeability and fault zone outcrop analysis. International Journal of Greenhouse Gas Control, 133, 104105. *https://doi.org/10.1016/j.ijggc.2024.104105*

[86] Schultz, R., Beroza, G., Ellsworth, W., & Baker, J. (2020). Risk-informed recommendations for managing hydraulic fracturing–induced seismicity via traffic light protocols. *Bulletin of the Seismological Society of America*, *110*(5), 2411-2422. *https://doi.org/10.1785/0120200016*

[87] Schultz, R., Beroza, G. C., & Ellsworth, W. L. (2021). A risk-based approach for managing hydraulic fracturing–induced seismicity. *Science*, *372*(6541), 504-507. *https://doi.org/10.1126/science.abg5451*

[92] Templeton, D. C., Schoenball, M., Layland-Bachmann, C., Foxall, W., Guglielmi, Y., Kroll, K., ... & White, J. (2021). *Recommended practices for managing induced seismicity risk associated with geologic Carbon storage* (No. LLNL-TR-818759). Lawrence Livermore National Laboratory (LLNL), Livermore, CA (United States); University of California (United States); Lawrence Berkeley National Laboratory (LBNL), Berkeley, CA (United States); Pacific Northwest National Laboratory (PNNL), Richland, WA (United States). *https://www.osti.gov/biblio/1841840*

[93] Templeton, D. C., Schoenball, M., Layland-Bachmann, C. E., Foxall, W., Guglielmi, Y., Kroll, K. A., ... & White, J. A. (2023). A project lifetime approach to the management of induced seismicity risk at geologic carbon storage sites. *Seismological Society of America*, *94*(1), 113-122. *https://www.osti.gov/biblio/1959406*

[107] U.S. EPA. (2013a). *Geologic Sequestration of Carbon Dioxide Underground Injection Control (UIC) program Class VI well testing and monitoring guidance (EPA 816-R-13-001).* Office of Water. U.S. Environmental Protection Agency. *https://www.epa.gov/sites/default/files/2015-07/documents/epa816r13001.pdf*

[108] U.S. EPA. (2013b, May). *Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Well Area of Review Evaluation and Corrective Action Guidance* (EPA 816-R-13-005). *https://www.epa.gov/uic/final-class-vi-guidance-documents*

[109] U.S. EPA. (2016). *Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Well Plugging, Post-Injection Site Care, And Site Closure Guidance* (EPA 816-R-16-006). Office of Water. U.S. Environmental Protection Agency

[111] U.S. EPA. (2018). *Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Implementation Manual for UIC Program Directors (EPA 816-R-18-001).* Office of Water. U.S. Environmental Protection Agency. https://www.epa.gov/uic/final-class-vi-guidance-documents [110] U.S. EPA (n.d.a). Borehole vertical seismic profiling (VSP). *https://www.epa.gov/environmental-geophysics/borehole-vertical-seismic-profiling-vsp*

[114] U.S. EPA. (n.d.b). Surface to Borehole Procedures. Accessed 5 August 2026. *https://www.epa.gov/environmental-geophysics/surface-borehole-procedures*

[115] U.S. Geological Survey (U.S.G.S.). (2016, March 28). EarthWord – Induced Seismicity. U.S. Geological Survey. Retrieved August 8, 2026, from

https://www.usgs.gov/communications-and-publishing/news/earthword-induced-seismicity

[116] U.S.G.S. (2024). National Strong Motion Project [Fact sheet]. U.S. Department of the Interior. Retrieved from *https://earthquake.usgs.gov/monitoring/nsmp*

[117] U.S.G.S., Earthquake Hazards Program. (n.d.a). *ANSS comprehensive earthquake catalog (ComCat)*. Retrieved August 10, 2026, from *https://earthquake.usgs.gov/data/comcat/*

[118] U.S.G.S. (n.d.b). Earthquake Hazards Program. In USGS Glossary. Retrieved August 12, 2026, from *https://www.usgs.gov/glossary/earthquake-hazards-program*

[122] Wald, D. J., Quitoriano, V., Worden, B., Hopper, M., & Dewey, J. W. (2011). USGS “Did You Feel It?” internet-based macroseismic intensity maps. *Annals of Geophysics, 54*(6), 688–707. *https://doi.org/10.4401/ag-5354*

[123] White, J. A., & Foxall, W. (2016). Assessing induced seismicity risk at CO2 storage projects: Recent progress and remaining challenges. International Journal of Greenhouse Gas Control, 49, 413-424. *https://doi.org/10.1016/j.ijggc.2016.03.021*

[124] White, M. C., & Nakata, N. (2025). Induced seismicity and geothermal energy production in the Salton Sea Geothermal Field, California. Scientific Reports, 15(1), 1638. *https://www.nature.com/articles/s41598-025-85744-2*