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June 5, 2026

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File Ref.: 2026050258

California Air Resources Board
Carbon Capture, Removal, Utilization, and Storage Program
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Subject: Comments on Notice of Preparation for the Carbon Capture, Removal, Utilization, and Storage Program Draft Environmental Impact Analysis (SCH No. 2026050258) and California Air Resources Board Concepts for Potential Regulations under SB 905

Dear California Air Resources Board Staff,

The Commission appreciates the opportunity to provide comments on the Notice of Preparation for the Carbon Capture, Removal, Utilization, and Storage (CCUS) Program Draft Substitute Environmental Document, also referred to as an Environmental Impact Analysis (EIA), SCH No. 2026050258, and on California Air Resources Board (CARB) staff's May 2026 Concepts for Potential Regulations for Establishing the Carbon Capture, Removals, Utilization, and Storage Program (Concepts).

These comments are submitted from the Commission's jurisdictional, trustee, land-management, and reservoir-engineering perspectives. The Commission requests that the EIA and future regulations fully evaluate and preserve the Commission's authority and responsibilities where CCUS projects may affect sovereign tide and submerged lands, granted public trust lands, school lands, state mineral interests, existing and idle state oil and gas leases, pipelines, offshore and port infrastructure, and public trust resources.

The Commission also requests to be included in future notices, scoping materials, workshops, and project-level review for CCUS projects where the storage complex, pressure front, plume, Area of Review, monitoring area, pipeline route, emergency

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planning zone, access requirements, or long-term land-use restrictions may affect lands or interests under Commission jurisdiction.

I. Summary of the Commission's Primary Requests

The Commission requests that CARB revise and develop the EIA and regulatory concepts to address the following issues:

1. Treat geologic storage as a three-dimensional subsurface land-use and reservoir-engineering action, not merely as a surface facility or fixed storage polygon.
2. Define the environmental and jurisdictional footprint of geologic storage to include the storage complex, CO₂ plume, pressure front, Area of Review, monitoring area, displaced formation fluids, hydraulically connected formations, faults, wells, and cumulative pressure effects.
3. Require applicants to identify whether any storage, pressure, monitoring, pipeline, emergency-response, access, legal-instrument, or 100-year restriction feature intersects or affects Commission lands, leases, mineral interests, granted lands, or public trust resources.
4. Clarify whether offshore, submerged-land, bay, estuary, port, and navigable-water settings are included in the EIA and in the substantive geologic-storage regulations, or state how and when those settings will be reviewed with the Commission's participation.
5. Preserve the Commission's responsible-agency and/or trustee-agency participation for CCUS projects affecting the Commission's lands or interests and associated review of site-specific analysis of pressure-front migration, induced seismicity, subsidence, displaced fluids, legacy wells, pipelines, or public trust impacts.
6. Coordinate CARB's program with SB 614 and the Office of the State Fire Marshal's (OSFM) intrastate CO₂ pipeline regulations, and with the Commission's jurisdiction and plenary authority over tide and submerged lands and school lands.
7. Require public and agency-accessible Geographic Information System (GIS) and subsurface data submittals sufficient for the Commission, and other impacted agencies, to screen jurisdictional intersections and evaluate risks to state lands and resources.
8. Require enforceable, independently verifiable financial assurance and legal instruments that account for long-term monitoring, corrective action, well remediation, emergency response, induced seismicity, brine migration, subsidence, closure, post-closure care, and damage to public trust or state resources.

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II. Commission Jurisdiction and the Need for Three-Dimensional Screening

The EIA should expressly recognize that CCUS projects may affect the Commission's lands and interests even when the injection wellhead or capture facility is outside the Commission's jurisdiction. The location of the surface facility is not an adequate boundary for impact analysis. For geologic storage, the relevant footprint includes the storage reservoir, CO₂ plume, pressure front, Area of Review, monitoring area, wells, faults, displaced fluids, pipelines, emergency planning zones, access corridors, and long-term legal restrictions.

This distinction is critical because the injection-induced pressure front can extend beyond the mobile CO₂ plume. Pressure communication may affect wells, faults, reservoirs, active or idle leases, displaced formation fluids, caprock integrity, and mineral or public trust resources before injected CO₂ itself reaches those areas. CARB should therefore require applicants to identify, using both surface and subsurface mapping, whether a proposed CCUS project may affect sovereign tide and submerged lands, granted public trust lands, school lands, state mineral interests, existing or idle state oil and gas leases, port and waterfront infrastructure, or other public trust resources.

The EIA should require that this screening be performed early enough to determine whether the Commission's authorization, consultation, responsible-agency review, trustee-agency review, and/or further CEQA analysis are required. This is not a paperwork issue. Without three-dimensional screening, a project may appear to avoid the Commission lands at the surface while the pressure front, plume, monitoring area, pipeline corridor, or 100-year restriction affects the Commission-administered lands or interests.

III. CEQA Scoping Comments for the EIA

A. The EIA should not defer site-specific reservoir-engineering impacts.

The EIA should evaluate geologic storage as a dynamic pressure and multiphase-flow system. Where CARB appropriately relies on a program-level analysis and defers project-specific evaluation, the EIA should commit that site-specific review will evaluate pressure-front migration, plume migration, displaced brine, fault and caprock integrity, legacy well leakage pathways, induced seismicity, subsidence or rebound, pipeline risks, emergency response, and interference with existing or reasonably foreseeable subsurface uses. The Commission must be included as a responsible and/or trustee agency where a project affects lands or resources under Commission jurisdiction. Subsequent review should also address any expansion of the storage footprint, pressure front, or associated infrastructure driven by injectivity decline or operational change, as such expansion may reach Commission lands not evaluated in the original analysis.

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B. Offshore, submerged, port, bay, estuary, and navigable-water settings must be addressed.

The Commission's jurisdictional interests are concentrated in many of the settings most likely to raise difficult CCUS questions: sovereign tide and submerged lands, granted public trust lands, ports, bays, estuaries, navigable waters, offshore infrastructure corridors, and coastal basins with extensive legacy oil and gas development. CARB should clarify whether offshore or sub-tideland storage, offshore or submerged pipelines, port-related CO₂ infrastructure, and associated monitoring and emergency-response areas are included within the EIA. If CARB intends to defer these settings, the EIA should identify the future review pathway and confirm the Commission's role in that review.

C. Pressure-front extent should be treated as an environmental and jurisdictional impact boundary.

The EIA should distinguish between the extent of the mobile CO₂ plume and the extent of the injection-induced pressure front. The pressure front may propagate farther than the plume and may affect wells, faults, neighboring reservoirs, brine displacement, caprock integrity, and existing or idle state leases. The EIA should analyze pressure-front behavior under conservative and uncertainty-bounded cases, including sensitivity to boundary conditions, connected aquifer volume, transmissibility barriers, compartmentalization, and cumulative pressure interference among multiple CCUS projects in the same basin or hydraulically connected system. Although the federal Class VI program and CARB's draft concepts define the pressure front principally to protect underground sources of drinking water, the Commission's concern is the distinct set of receptors a drinking-water-based boundary omits — state mineral leases, sovereign and submerged lands, and jurisdictional boundaries — which warrant independent analysis.

D. Containment, faults, and induced seismicity require more than passive monitoring.

Containment should not be assumed based only on the presence of a mapped seal. The EIA should evaluate caprock and seal integrity using capillary entry pressure, thickness, lateral continuity, fracture pressure, geochemical alteration potential, legacy penetrations, and fault or fracture risk. Faults should be evaluated for transmissibility and reactivation potential where the storage complex, pressure front, or Area of Review intersects mapped or suspected faults. Induced seismicity should be evaluated as a function of injection rate, reservoir pressure, cumulative injected mass, event magnitude and location, and fault proximity. Monitoring should support enforceable operating responses, including pressure reduction or shut-in thresholds where warranted. This analysis is particularly important in coastal basins where mapped faults underlie or border sovereign, submerged, or granted lands.

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E. Legacy wells should be ranked by pressure exposure and leakage consequence.

California's oil, gas, and geothermal history make wellbores a principal leakage-pathway concern. A radius-based well inventory is not sufficient. The EIA should require well risk ranking based on pressure exposure and leakage consequence, with priority placed on wells inside the modeled pressure front, near faults or high-permeability pathways, completed across multiple zones, plugged or abandoned under older standards, or lacking adequate cementing and abandonment records. This analysis should include active, idle, plugged, abandoned, poorly documented, and unknown wells that penetrate or may communicate with the storage complex or pressure-affected interval. While CARB's draft concepts address corrective action for wells within the surface projection of the storage complex, the Commission's comment is directed at the wells such an approach can omit — those within the pressure-affected interval and those situated on former state oil fields or other Commission lands.

F. Displaced brine, subsidence/rebound, and conflicts with other subsurface uses should be analyzed.

Environmental concerns are not limited to CO₂ leakage. Injection displaces formation fluids and may drive migration of saline brine, hydrocarbons, dissolved constituents, or other fluids through permeable zones, wells, or faults. The EIA should evaluate displaced-brine volumes, migration pathways, receptors, and water-quality effects, including whether pressure-driven fluid movement could reach groundwater, submerged lands, adjacent reservoirs, or public trust resources. Where depleted or compactable formations are proposed for storage, the EIA should evaluate subsidence, rebound, differential movement, causing loads, and impacts to ports, coastal infrastructure, sovereign lands, and legacy oil fields. The EIA should also evaluate conflicts with existing and reasonably foreseeable subsurface uses, including state oil and gas leases, geothermal resources, groundwater, gas storage, produced-water injection, and wastewater injection.

G. The EIA should require agency-usable GIS and subsurface data.

The Commission cannot efficiently screen jurisdictional intersections or evaluate project effects without usable data. The Program EIR should require that project applicants submit GIS files and reservoir-model outputs, in agency-usable formats, showing at minimum: surface facilities; pipelines; storage complex boundaries; modeled CO₂ plume; modeled pressure front; Area of Review; monitoring area; emergency planning zone; wells; faults; caprock/seal boundaries; displaced-fluid pathways; state land boundaries; granted lands; school lands; state mineral interests; the Commission leases and easements; public trust resources; and reasonably foreseeable cumulative CCUS projects or subsurface uses.

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H. CO₂ pipelines require a dedicated CEQA analysis coordinated with SB 614 and OSFM regulations.

The EIA should separately evaluate CO₂ pipeline impacts and should not treat pipeline safety as resolved by the geologic-storage provisions. SB 614 makes OSFM central to intrastate CO₂ pipeline regulation and allows intrastate pipelines transporting CO₂ to or from CCUS projects only after OSFM adopts applicable regulations and project operators demonstrate compliance. The Program EIR should evaluate how CARB's CCUS Program will coordinate with OSFM requirements, including emergency planning zones, sensitive receptor inventories, rupture scenarios, dispersion risk, emergency response, public notification, pipeline shutdown, abandonment, and prohibitions or limitations on converted pipelines.

For the Commission's purposes, the Program EIR should specifically analyze CO₂ pipelines that cross, occupy, underlie, or otherwise affect sovereign tide and submerged lands, granted lands, school lands, public trust resources, ports, bays, estuaries, navigable waters, or existing Commission leases and easements. The EIR should clarify that OSFM safety regulation does not replace Commission authorization for leases, easements, rights-of-way, public trust consistency, title and boundary determinations, or mineral-resource review where the Commission's lands or interests are implicated.

I. Financial assurance and legal instruments should reflect long-term state-land risk.

The Program EIR should evaluate whether financial responsibility and legal-instrument requirements are sufficient to protect state lands and public trust resources over the full post-injection period. Financial assurance should cover long-term monitoring, corrective action, well plugging and abandonment, leakage remediation, emergency and remedial response, induced-seismicity liability, subsidence or rebound impacts, brine-migration remediation, site closure, post-closure care, and damage to public trust or state resources. The EIR should also evaluate the potential for 100-year drilling or extraction restrictions to affect state mineral interests, existing or future leases, geothermal resources, school-land revenue obligations, and the trust corpus.

IV. Comments on CARB's Concepts for Potential Regulations

CARB's Concepts document provides a separate pre-rulemaking track from the CEQA Notice of Preparation. The Commission requests that CARB consider the following comments when developing the proposed regulatory text. These comments are keyed to CARB's proposed section numbers to support CARB's requested format for Concepts comments.

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A. § 95701 - Definitions: Area of Review, Storage Complex, and Pressure Front

The proposed pressure-front concept appears to be linked to pressure sufficient to move fluids into an underground source of drinking water. That framing is too narrow because pressure communication may affect state lands, state mineral interests, existing or idle reservoirs, legacy wells, public trust resources, or jurisdictional boundaries even if an underground source of drinking water is not implicated. CARB should define Area of Review and pressure front to account for the full extent of pressure communication relevant to storage integrity, land and mineral interests, wells, faults, displaced fluids, and agency jurisdiction. The Area of Review should be driven by both modeled plume extent and modeled pressure-front extent, with uncertainty cases and required updates when monitoring shows deviation from prediction.

B. § 95702 and § 95704.1 - Applicability: Offshore and Submerged-Land Settings

Section 95704.1 appears focused on onshore geologic storage project types subject to §§ 95704.2 through 95704.7. CARB should either extend the substantive geologic-storage requirements to offshore, submerged-land, bay, estuary, port, and navigable-water settings, or expressly state how and when those projects will be reviewed. The final regulations should not leave geologic storage beneath sovereign lands or associated offshore/submerged infrastructure outside the substantive monitoring, seismic, financial-responsibility, and legal-instrument framework by default.

C. § 95703 - General Project Reporting: GIS and Subsurface Data

Section 95703 should require agency-usable geospatial and subsurface data submittals. At minimum, project operators should provide GIS files and model outputs showing surface facilities, pipelines, storage complex boundaries, modeled CO₂ plume, modeled pressure front, Area of Review, monitoring area, emergency planning zone, legacy wells, faults, caprock/seal boundaries, displaced-fluid pathways, state land boundaries, granted lands, school lands, state mineral interests, the Commission leases and easements, and affected public trust resources. This data should be updated when models are history-matched or when monitoring indicates material deviation from predicted plume, pressure, seismic, or fluid-migration behavior. Public versions may redact confidential information as appropriate, but agency versions must be sufficient for jurisdictional screening and technical review.

D. § 95704.2 - Subsurface and Ambient CO₂ Monitoring

CARB should require pressure-front modeling and reporting as a deliverable distinct from CO₂ plume tracking. The monitoring plan should include sensitivity analysis for boundary conditions, connected pore volume, transmissibility, compartmentalization, caprock integrity, displaced-brine volume, and migration pathways. Five-year re-

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evaluation should include history matching against monitoring data and recalibration of the Area of Review, monitoring area, operating limits, and financial assurance where observed behavior deviates from model predictions.

E. § 95704.3 - Seismic Monitoring

CARB should require fault-specific transmissibility and reactivation analysis wherever the storage complex, pressure front, or Area of Review intersects mapped or suspected faults. Seismic monitoring should be quantitatively linked to injection rate, reservoir pressure, cumulative injected mass, event magnitude and location, and fault proximity. Monitoring should not be merely informational; it should support enforceable operating thresholds and post-event reassessment. Fault analysis should be required where the storage complex, pressure front, or Area of Review underlies or borders sovereign, submerged, or granted lands.

F. § 95704.4 and § 95704.5 - Emergency Response, Traffic-Light System, Operational Changes, Pressure Management, and Injectivity

CARB's draft concepts already establish a traffic-light system and seismic monitoring; the Commission's comments are directed at the enforceability and state-land specificity those concepts do not yet provide. CARB should make the traffic-light system enforceable, with defined pressure-reduction and shut-in triggers tied to injection rate, reservoir pressure, cumulative injected mass, event magnitude and location, and fault proximity. After a yellow- or red-light event, the regulations should require reservoir and geo-mechanical reassessment before injection resumes or continues at previous rates.

CARB should also require each geologic storage operator to establish a site-specific maximum allowable injection pressure supported by geomechanics, including fracture gradient, minimum principal stress, caprock entry pressure, fault slip tendency, and an adequate safety margin. Step-rate and falloff testing should support the pressure-management plan. Operators should be required to evaluate injectivity decline, including salt precipitation, fines migration, scale, geochemical reactions, relative permeability hysteresis, cooling effects, or formation damage. Where contingency measures such as additional wells, increased pressure, or expanded infrastructure would enlarge the pressure footprint or extend impacts onto or beneath Commission lands, renewed notification and review should be required.

G. § 95704.6 - Financial Responsibility

CARB should require independent, third-party verification of long-term financial responsibility and should constrain reliance on self-insurance or corporate guarantees for 100-year obligations. The coverage scope should include monitoring, corrective action, well plugging and abandonment, emergency and remedial response, leakage remediation, induced-seismicity liability, subsidence or rebound

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remediation, brine-migration remediation, site closure, post-closure care, and damage to public trust or state resources. Cost estimates should be based on risked and conservative scenarios, not theoretical storage capacity or best-case assumptions. Corrective-action cost estimates should include wells within the pressure-affected interval, not only wells within the surface projection of the storage complex. CARB's draft concepts expressly invite comment on whether to require an independent assurance provider to verify project financials; the Commission supports such a requirement.

H. § 95704.7 - Legal Instruments and the 100-Year Restriction

Where the storage complex, pressure front, Area of Review, monitoring area, access requirements, or 100-year drilling or extraction restriction intersects lands or interests under the Commission's jurisdiction, CARB should not deem legal-instrument requirements satisfied without documented Commission consultation and, where required, Commission authorization. CARB should coordinate this requirement with the California Natural Resources Agency framework for governing agreements under SB 905. The regulations should also clarify that release from financial responsibility should depend on performance-based closure criteria, including demonstrated pressure stabilization, confirmed containment, and predictable plume behavior, not the mere passage of time.

I. § 95705 - Unified Permit Application

The unified permit application should not be interpreted to displace or limit the Commission's independent statutory, public trust, leasing, easement, boundary, title, mineral, CEQA responsible-agency, or trustee-agency authority. CARB should require the unified application to identify the Commission's lands, leases, easements, mineral interests, granted lands, public trust resources, and state-land authorizations potentially affected by the capture facility, pipeline, storage complex, pressure front, plume, monitoring area, emergency planning zone, or long-term legal restrictions.

J. Cross-Cutting Requirement: Injectate Quality and Long-Term Well Integrity

The regulations should require CO₂-stream composition limits and analysis of phase behavior, corrosion, density, injectivity, geochemistry, and monitoring effects from impurities such as H₂S, SO_x, NO_x, O₂, N₂, CH₄, water, and other constituents. CARB should also require CO₂-compatible well materials, cement evaluation, mechanical integrity testing, long-term corrosion assessment, and post-closure well-integrity obligations for injection wells, monitoring wells, legacy wells, and plugged wells that penetrate or may communicate with the storage complex or pressure-affected interval.

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V. Requested Revisions and Commitments

The Commission respectfully requests that CARB:

1. Notify the Commission when the EIA is available for public review.
2. Include the Commission on future notices, workshops, and project-level review for CCUS projects that may affect the Commission lands or interests.
3. Ensure that the EIA analyzes geologic storage using the full three-dimensional footprint, including plume, pressure front, Area of Review, wells, faults, displaced fluids, monitoring area, pipelines, and cumulative pressure interactions.
4. Clarify the treatment of offshore, submerged-land, port, bay, estuary, and navigable-water settings in both the EIA and future regulations.
5. Ensure that the EIA and regulatory requirements for CCUS projects preserve the Commission responsible-agency/trustee-agency participation for projects affecting the Commission lands or resources.
6. Coordinate CARB's CCUS program with OSFM's SB 614 intrastate CO2 pipeline regulations.
7. Require GIS and subsurface data submittals sufficient for agency screening of the impacted lands, leases, mineral interests, public trust resources, and jurisdictional boundaries.
8. Strengthen the regulatory concepts to require enforceable reservoir-engineering, monitoring, financial assurance, legal-instrument, and closure standards rather than informational submittals only.

Thank you for considering these comments. Commission staff are available to coordinate with CARB regarding the Commission's jurisdiction, Public Trust Doctrine responsibilities, reservoir-engineering issues, pipeline routes, and future project reviews under the CCUS Program.

Sincerely,

DocuSigned by:

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Peter Regan

Division Chief

Mineral Resources Management Division

On behalf of Matthew Dumlao, PhD
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