



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

Sent electronically only

August 30, 2023

William Chessum  
California Resources Corporation (CRC)  
27200 Tourney Road, Suite 200  
Santa Clarita, CA 913558

**SUBJECT: Administrative Review – Notice of Incomplete Application**  
Carbon TerraVault Holdings LLC (CTV) V Project  
Underground Injection Control (UIC) Permit Application  
Class VI Pre-Construction Permit Application No. R9UIC-CA6-FY23-6.1 to 6.6

Dear William Chessum:

The United States Environmental Protection Agency, Region 9 (EPA), pursuant to 40 CFR §124.3(c), has conducted an administrative review of the subject permit application received by EPA on July 31, 2023 for six (6) proposed Class VI injection wells located in San Joaquin County, California. Our review included redacted materials sent via the Geologic Sequestration Data Tool (GSDT) and unredacted materials sent via an emailed SharePoint link. EPA has determined the application is incomplete. Please see the list of additional information we require in the Enclosure to this letter to make the application administratively complete. The Enclosure has a section requesting additional information that is not required for administrative completeness but should be provided as soon as possible to facilitate our technical review and the overall permitting process.

In addition, the GSDT is now accepting documents containing confidential business information (CBI). Please submit all unredacted application documents to the GSDT along with the information requested in the enclosure by October 13, 2023. If you have any questions about this letter, please contact Kaylee Glenney at (415) 972-3944, or call me at (415) 972-3971.

Sincerely,

David Albright  
Manager, Groundwater Protection Section

Enclosure: Request for Additional Information

cc (via email): Faisal Latif, Carbon Terra Vault Holdings LLC  
Chris Jones, CalGEM Central District  
Alex Olsen, Central Valley Regional Water Control Board  
Janice Zinky, CA State Water Resources Control Board

**ENCLOSURE**  
**Request for Additional Information**

**General Information**

- 40 CFR 144.31 (e)(1)-(6) requires that the application includes a list of the activities conducted by the applicant which requires RCRA, UIC, NPDES, or PSD permits. The application did not include information about RCRA permits. Please confirm these permits are not applicable to this project or update the application to include information about them.
- 40 CFR 144.31 (e)(6) requires that the application includes a list of all permits or construction approvals received or applied or under the following programs:
  - Hazardous Waste Management Program under RCRA
  - UIC Program
  - NPDES
  - PSD Program
  - CAA Nonattainment Program
  - NESHAPS Preconstruction Approval under the CAA
  - Ocean Dumping Permits under MPRSA
  - Section 404 Dredge and Fill Permits
  - Other relevant environmental permits, including State permits

The application did not mention the Hazardous Waste Management Program, NESHAPS Preconstruction Approval, Ocean Dumping Permits, or Section 404 Dredge and Fill Permits. Please confirm these permits or approvals are not applicable to this project or update the application to include information about them.

- 40 CFR 146.82(a)(2) requires that the application includes a map showing the injection wells, the Area of Review (AoR), and the below list of items:
  - Injection wells,
  - Producing wells,
  - Abandoned wells,
  - Plugged wells or dry holes,
  - Deep stratigraphic boreholes,
  - State- or EPA-approved subsurface cleanup sites,
  - Surface bodies of water,
  - Springs,
  - Mines (surface and subsurface),
  - Quarries,
  - Water wells,
  - Other pertinent surface features,
  - State, Tribal, and Territory boundaries, and
  - Roads.

The injection wells, producing wells, and boreholes are not distinguished from one another in the figures provided. In addition, the figure must also show the number or name of all wells. Please update Figure 2.2-1 in the Narrative document to include this information.

### **Geologic Narrative/Site Characterization Information**

- 40 CFR 146.82(a)(3)(iii) requires that the application addresses the following types of data on the injection and confining zone(s):
  - Depth
  - Areal extent
  - Thickness
  - Mineralogy
  - Porosity
  - Permeability
  - Capillary pressure

The areal extent of the injection and confining zones is not discussed in the Narrative document. Please update the application to include this information.

- 40 CFR 146.82(a)(3)(iv) requires that the application addresses the in-situ fluid pressures in the confining zone(s). This isn't discussed in the Narrative document. Please update the application to include this information.

### **Post-Injection Site Care (PISC) and Site Closure Plan**

- 40 CFR 146.93(c) describes EPA's discretionary authority to approve an alternative PISC timeframe other than the 50-year default, if an owner/operator can demonstrate during the permitting process that an alternative timeframe is appropriate and ensures non-endangerment of USDWs. The demonstration must be based on significant, site-specific data and must contain substantial evidence that the geologic sequestration project will no longer pose a risk of endangerment to USDWs at the end of the proposed alternative PISC timeframe. CTV requested an alternative PISC timeframe of 25 years.
- 40 CFR 146.93(c)(1)(vi) requires that the PISC and Site Closure Plan include the results of laboratory analyses, research studies, and/or field or site-specific studies to verify the information required by 40 CFR 146.93(c)(1)(iv) and (v), as follows:
  - A description of the site-specific processes that will result in carbon dioxide trapping including immobilization by capillary trapping, dissolution, and mineralization at the site (40 CFR 146.93(c)(1)(iv)); and
  - The predicted rate of carbon dioxide trapping in the immobile capillary phase, dissolved phase, and/or mineral phase (40 CFR 146.93(c)(1)(v)).

The application did not include verification of this information. Please provide the results of laboratory analyses, research studies, and/or field or site-specific studies to verify the above information.

### **Additional Information Requested but Not Required for Administrative Completeness**

In addition to the items identified above, which are required to address the initial permit application requirements, we are requesting other information necessary for processing the UIC permit application. This information is not necessary for the application's administrative completeness, so the timeline for submittal of this additional information can be extended, if needed, however delay in providing the additional information could result in delays processing the permit.

#### ***Carbon Dioxide Source(s) Information***

EPA's regulations for Class VI permits require the owner or operator, prior to the issuance of a permit for the construction of a new Class VI well, to submit information about the source(s) of the carbon dioxide stream and an analysis of the chemical and physical characteristics of the carbon dioxide stream (40 C.F.R. §§ 146.82(a)(7)(iii) and (iv)). The information provided thus far about potential carbon dioxide sources and estimates of the chemical and physical characteristics of these sources is adequate for administrative completeness of the permit application. However, please note EPA will need identification of the specific carbon dioxide source(s) that are proposed for injection and data on their physical and chemical characteristics, if the specific data is available, before making a permit decision.

#### ***Endangered Species Act***

The Endangered Species Act (ESA) requires EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat. In accordance with 50 CFR Section 402.12, EPA must determine, based on the best scientific and commercially available data, whether there are any potential effects from the proposed project/permit to endangered or threatened species that may be found in the action area.

The application mentioned that CRC has conducted a preliminary review of the Information for Planning and Consultation (IPaC) website and has an existing contract with an environmental consultant who is qualified to develop a report responsive to the ESA requirements pursuant to 50 CFR Section 402.12. To assist with EPA's determination under 50 CFR Section 402.12, in addition to the information and proposed work identified in the Application "Appendix 2 - Applicable Fed Acts," we request CRC prepare a draft Biological Evaluation (BE) and submit it to EPA.

The draft BE needs to:

- Describe all activities that are likely to occur as a result of the federal action (i.e. issuing the permit), including construction and operation of the facility. Refer to 50 CFR Section 402.17(a).
- Define the action area. The action area shall include all areas that will be affected directly or indirectly by the federal action, and not merely the immediate area involved in the action.

- Identify the listed species and critical habitats that may occur in the action area. For the species under the U.S. Fish and Wildlife Service (FWS) jurisdiction, the Information for Planning and Consultation database (IPaC) can be used. If the action area includes areas where species are under National Marine Fisheries Service (NOAA Fisheries) jurisdiction, you will also need a species list from NOAA Fisheries.
- Describe each species and critical habitat that may occur in the defined action area. See the FWS Environmental Conservation Online system for resources related to this item: <https://ecos.fws.gov/ecp/>.
- Describe the potential effects to each species and critical habitat that are likely to occur as a result of the federal action and projects. It is highly recommended to seek technical assistance from the FWS and/or the NOAA Fisheries at an early stage to understand the potential effects to each species and critical habitat.
- Recommend effects determinations for each of the species and critical habitats that may occur in the action area. EPA must determine whether the action may affect each species and critical habitat, and for those species and critical habitats that may be affected, whether adverse effects are likely. EPA will consider recommendations supported by the analysis in your document when making our determinations.

EPA requests CRC work closely with our permitting team and legal team if needed to ensure proper coordination and robust ESA compliance.

### ***National Historic Preservation Act***

The National Historic Preservation Act (NHPA) Section 106 requires a federal agency to take certain steps before it commits to any "undertaking" including the issuance of a permit or license, that has the potential to adversely affect property that is listed, or eligible for listing, in the National Register for Historic Places. The NHPA requires EPA, before issuing a permit, to adopt measures when feasible to mitigate potential adverse effects of the permitted activity and properties listed or eligible for listing in the National Register of Historic Places. The Act's requirements are to be implemented in cooperation with State Historic Preservation Officers and upon notice to, and when appropriate, in consultation with the Advisory Council on Historic Preservation.

Your application notes that CRC has retained a qualified archaeologist to review existing information related to cultural and historic resources in the area underlying the footprint of the proposed project plume. Note that the project impact could affect an area much larger than the surface siting area. The definition of the area of potential effects is provided by 36 CFR § 800.16 and listed below:

Area of potential effects means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

As your application also noted, there are several federally-recognized tribes that will be included in the NHPA Section 106 process. It is essential to coordinate with tribes that may have religious

or cultural connection to historic properties in the area of potential effects of the undertaking. It is important this outreach occurs at an early stage in the NHPA Section 106 process. EPA requests CRC work closely with our permitting team and legal team if needed to ensure proper coordination and robust NHPA compliance.

### ***Considerations for Community Engagement and Environmental Justice***

The permit application contains very significant redactions due to confidential business information (CBI) claims. The redactions prevent the public from determining fundamental project information, such as a map showing the precise location of the proposed injection and monitoring wells. The redacted information also includes the applicable AoR, the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations including the proposed injection and confining zones, all wells within the AoR that require corrective actions, baseline geochemical data on subsurface formations including all USDWs within the AoR, and the proposed operating data including average and maximum injection pressure and rate.

As you are aware, communities and organizations with environmental justice concerns have submitted comments to EPA regarding pending CTV applications for UIC Class VI permits. These groups want to ensure that the public participation process is procedurally fair and that the permits are protective of USDWs. Further, EPA wants to ensure that environmental justice considerations, as appropriate, are incorporated into all aspects of the permitting process in accordance with the [Environmental Justice Guidance for UIC Class VI Permitting and Primacy](#). We strongly believe that communities, including communities with environmental justice concerns, need to be fully informed, as early as possible, about the fundamentals of proposed carbon storage projects to enable equitable public participation in a robust and transparent permitting process.