



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

Sent electronically only

June 28, 2023

Jim Levine
Montezuma Carbon LLC
2000 Powell Street
Suite 920
Emeryville, CA 94608

SUBJECT: Administrative Review – Notice of Incomplete Application
Montezuma NorCal Carbon Hub Project
Underground Injection Control (UIC) Permit Application
Class VI Pre-Construction Permit Application No. R9UIC-CA6-FY23-4

Dear Jim Levine,

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 submitted by Montezuma Carbon, LLC (MC) for one proposed injection well located in Solano County, California. Following the review of your application, received on May 30, 2023, via the Geologic Sequestration Data Tool (GSDT), we determined the application is incomplete. Please see the list of additional information we require in the Enclosure to this letter.

Please submit the requested information by August 28, 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): Miguel Cabrera, CalGEM Northern District
Alex Olsen, Central Valley Regional Water Quality Control Board
Janice Zinky, CA State Water Resources Control Board

ENCLOSURE
Request for Additional Information

General Information

- 40 CFR §144.31(e)(1) requires that the application includes a listing of the activities conducted by the applicant which require RCRA, UIC, NPDES, or PSD permits. The application did not include information about RCRA, NPDES, or PSD permits. Please confirm these programs 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 for 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

Other than the UIC Program, the application did not mention these permits. Please confirm they 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 and the Area of Review (AoR). This should include the number or name and location of the following:
 - 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 map provided in the application did not include the location of abandoned wells, plugged wells or dry holes, deep stratigraphic boreholes, springs, State, Tribal, and Territory boundaries, or roads. Please confirm these features aren't present in the AoR or include them in an updated map.

- 40 CFR 146.82(a)(20) requires that the application includes a list of contacts for States, Tribes, and Territories within the AoR. The application says this list is pending US EPA feedback. Please update the Project Narrative to include key partner contacts, including any contacts associated with additional features identified in response to the above request.

Geologic Narrative/Site Characterization Information

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

The application doesn't discuss what data is available or planned to be collected, to characterize the depth, areal extent, thickness, mineralogy, porosity, permeability, or capillary pressure of the injection zone(s) and confining zone(s). Please update the application to include this information.

- 40 CFR 146.82(a)(3)(iv) requires that the application includes geomechanical and petrophysical information about the confining zone(s), including the following:
 - Fractures
 - Stress
 - Ductility
 - Rock strength
 - In situ fluid pressures

The above information about the confining zone was not included in the application. Please update the Site Characterization portion of the application to include this information.

Planned Well Operations

- 40 CFR 146.82(a)(7)(i) requires that the application includes the proposed average and maximum daily rate and volume. The application provides annual rates instead of daily rates. Please update the application to include this information.

- 40 CFR 146.82(a)(7)(iv) requires that the application includes an analysis of the chemical and physical characteristics of the CO₂ stream. Although MC stated in the application that it is currently considering multiple sources of carbon dioxide for injection, the EPA needs additional information. Please update the application to include estimates of the chemical and physical characteristics of the proposed sources. For the proposed sources, a carbon dioxide study may be conducted using industry-recognized process modeling software to characterize and understand the chemical and physical properties of the carbon dioxide. The modeler should be knowledgeable about the industrial processes of the facility where the carbon dioxide stream will be sourced from. In addition, please note EPA will need identification of the specific source(s) that will provide carbon dioxide for injection and actual data on the physical and chemical characteristics of the injection fluid, if the data is available, before making a permit decision.

Area of Review (AoR) and Corrective Action Plan

- 40 CFR 146.84(b)(2)(iv) requires that the application includes a discussion of how corrective action was/will be conducted. The application states that MC searched online databases to find wells that may create conduits for fluid movement out of the injection zone. Please provide more detail about the well search conducted, including which specific databases were searched. 40 CFR 146.82(a)(4) requires that the application includes a table listing wells within the AoR that penetrate the injection or confining zones. The table must include the following information:
 - Well type
 - Description of the well's construction
 - Date drilled
 - Location
 - Depth
 - Record of plugging or completion

The application did not include a description of the construction, nor records of plugging or completion for the identified wells within the AoR. Please update the application to include this information.

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

- 40 CFR 146.82(a)(17) requires that the application include the differential between pre-injection and predicted post-injection pressures in the injection zone(s). The application states "the preliminary computational reservoir storage complex model for the anticipated operational conditions predicts pressures across the injection zone will remain elevated for a long period after injection stops." Please provide figures and/or plots from the model that support this statement.

Injection Well Construction Plan

- 40 CFR 146.86(b)(1)(ii) requires that the application include the injection pressure, external pressure, internal pressure, and axial loading for the proposed injection well. The application does not include this information and indicates the information is pending final design. Please update the application to include proposed or estimated values for injection pressure, external pressure, internal pressure, and axial loading for the proposed injection well.
- 40 CFR 146.86(b)(1)(ix) requires that the application include the quantity, chemical composition, and temperature of the CO₂ stream. The application indicates this information is pending final design. Please update the application to include proposed or estimated values for the quantity, chemical composition, and temperature of the CO₂ stream.
- 40 CFR 146.86(c) requires that the application include the following information about the tubing and packer:
 - Characteristics of the CO₂ stream and formation fluids
 - Maximum proposed annular pressure
 - Tubing tensile, burst, and collapse strength

The application indicates this information is pending final design. Please update the application to include proposed or estimated values for the above.

- 40 CFR 146.88(e) requires that the application include the following information on continuous recording devices and automatic shutoff devices.
 - The well schematics should show continuous recording devices and automatic shutoff devices to monitor: injection pressure; the rate, volume and/or mass, and temperature of the CO₂ stream; and the pressure on the annulus between the tubing and the long string casing and annulus fluid volume.

The application indicates that this information is pending final design. Please update the application to include these details for the proposed injection well.

Financial Responsibility Demonstration

- 40 CFR 146.85(a)(2) requires that the application demonstrate financial responsibility for the following:
 - Corrective action
 - Injection well plugging
 - PISC and site closure
 - Emergency and remedial response

The application included cost estimates provided by MC and their consultants. Please update the application to include independent third-party cost estimates to perform each activity.

Additional Requests

In addition to the items identified above, which are required to address the 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.

Endangered Species Act

The Endangered Species Act (ESA) requires EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), 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 the 50 CFR Section 402.12, EPA must make a determination, based on the best available information, whether there are any potential effects from the proposed project/permit to endangered or threatened species that may be found in the action area. To assist with that determination, we request Pelican Renewables 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, you can obtain a current report from the Information for Planning and Consultation database (IPaC), <https://ecos.fws.gov/ipac/>. 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 may be useful to seek technical assistance from the FWS and/or the NOAA Fisheries to understand the potential effects to each species and critical habitat. In addition, you may need to hire a consultant or biologist to assist with analysis of potential effects to each species and critical habitat.
- Recommend effects determinations for each of the species and critical habitats that may be 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.

A Biological Evaluation from another project (Laguna County Sanitation District) is provided as an example (see Attachment 1) for reference.

National Historic Preservation Act

The National Historic Preservation Act (NHPA) §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.

To facilitate EPA's consideration of NHPA compliance for the Pelican Renewables proposed project, we request that you identify the Historic Places designated in the National Register for Historic Places (<https://www.nps.gov/subjects/nationalregister/database-research.htm>) in close proximity to the project site. Based on the results of your review of the National Register of Historic Places listings in San Joaquin County, you may need to hire an archaeologist to provide additional analysis or otherwise show how your project will not adversely affect the identified historic places located near the project site. Please provide a list of the Historic Places near the site. Please include any comments or reports made by an archaeologist, if applicable.