Message

From: Ho, Yenhung [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0373CF6F13A849F1BB61BB1D1B64F981-YHO]
Sent: 6/9/2021 3:43:17 PM
To: Shari Ring [Shari.Ring@cadmusgroup.com]
Subject: RE: [EXT] RE: EPA request for updates to application

That's correct. Thank you for checking.

From: Shari Ring <Shari.Ring@cadmusgroup.com>
Sent: Wednesday, June 9, 2021 4:57 AM
To: Ho, Yenhung <Ho.Yenhung@epa.gov>
Subject: RE: [EXT] RE: EPA request for updates to application

Hi Calvin,

I assume there is nothing we need to do at this point, right?

From: Rebecca Hollis <rhollis@cleanenergysystems.com>
Sent: Tuesday, June 8, 2021 10:27 PM
To: Ho, Yenhung <Ho.Yenhung@epa.gov>
Cc: Albright, David <Albright.David@epa.gov>; Natalie Nowiski <NNowiski@slb.com>; Larry Trowsdale <lstrowsdale@cleanenergysystems.com>; Keith Pronske <klpronske@cleanenergysystems.com>; Vivian Rohrback <VRohrback@slb.com>; Shari Ring <Shari.Ring@cadmusgroup.com>
Subject: [EXT] RE: EPA request for updates to application

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Thank you for the feedback. We will review the FR comments and revert ASAP.

Regarding the questions on 'unlanding,' you surmise correctly. The questions are based upon the Gill Ranch Gas Field Rules we located on CalGEM's website; attached here for reference and can be found online here: Geologic Energy Management Field Rules (ca.gov).
We will reach out to CalGEM directly with these questions.

Thanks again and I will be in touch soon.

Best Regards,
-Rebecca

Rebecca Hollis
Director Business Development -

CLEAN ENERGY SYSTEMS

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The Power to Reverse Climate Change

From: Ho, Yenhung <Ho.Yenhung@epa.gov>
Sent: Monday, June 7, 2021 2:06 PM
To: Rebecca Hollis <rhollis@cleanenergysystems.com>
Cc: Albright, David <Albright.David@epa.gov>; Natalie Nowiski <NNowiski@slb.com>; Larry Trowsdale <lstrowsdale@cleanenergysystems.com>; Keith Pronske <klpronske@cleanenergysystems.com>; Vivian Rohrback <VRohrback@slb.com>; Shari.Ring@cadmusgroup.com
Subject: RE: EPA request for updates to application

Hi Rebecca,

Regarding your subsidence questions below, we haven't heard of the term "unlanding" in a geological context and are not sure to what the exemption document you are referring. If the exemption document is a part of the records for the Gill Ranch wells CES found from CalGEM's WellSTAR database, then this is actually a question for CalGEM (and we have provided to you via email a contact at CalGEM for this on April 27,2021).

Regarding your preliminary proposal for financial responsibility (FR), we have the following comments and questions on the proposal.

Pre-Injection FR Coverage
CES proposes to provide FR for pre-injection phase emergency and remedial response (E&RR) in the form of a surety bond and/or corporate guarantee. The FR requirements specify that the instrument(s) must be sufficient to cover the cost of E&RR (that meets the requirements of 40 CFR 146.64), and this "phase" is active from the start of well construction through site closure. CES's proposal would effectively divide the E&RR phase into two sub-phases (pre-injection and injection/post-injection).

- ***How did CES determine the value of E&RR during the pre-injection phase? Please provide documentation of assumptions (e.g., based on your risk register) and planned project activities for this phase of the project.***

Risk-Based FR Coverage
After injection of CO_2 begins, CES proposes funding FR instrument(s) with a base amount of money and adding funding to cash-based instrument(s) as risk increases, as measured by the amount of CO_2 injected into the subsurface. At 40 CFR 146.85(c), the rule requires that the owner or operator have a detailed written estimate, in current dollars, of the cost of performing corrective action on wells in the area of review, plugging the injection well(s), post-injection site care and site closure, and emergency and remedial response.

- ***If EPA approves a risk-based approach to funding FR instruments for this project, the change in FR costs must be based on modeled risks, which may not increase in a linear manner, as presented by CES. Please provide detailed documentation (i.e., year-by-year) regarding how the risks (and associated FR cost estimates) change based on the cumulative amount of CO_2 injected into the subsurface (and not on the probability of an adverse event occurring).***

Using FR Funds to Pay for Post-injection Site Care (PISC) and Site Closure
CES proposes to use the FR funds to pay for PISC and site closure. At 40 CFR 146.85(b), the rule requires that the permittee maintain FR for each phase until it has "fulfilled all of its financial obligations" for that phase. After the completion of specific activities, the owner or operator can request to be released from related aspects of financial coverage, but the owner or operator must retain coverage for all remaining FR activities. Also, CES must meet California FR requirements in addition to the federal FR requirements.

- ***If CES chooses to use common FR instruments to meet other state or federal financial obligations in addition to the Class IV FR requirements, then the Class VI Rule requires that the value of the financial demonstration be enough to cover all such obligations. CES will need to demonstrate this when they submit draft FR instruments for review.***
- ***CES previously indicated that it would provide an updated version of the chart titled "Total Available Collateral Supporting Financial Responsibility by Year" to include additional information about FR coverage requirements. Please provide the chart with the following updates:***
    - ***Add a line that represents the required federal FR coverage at each point in time. If CES uses FR funds to pay for covered activities, EPA must confirm that the value of the FR instrument does not fall below the federal FR coverage requirements at any point in time. That will help clarify how the FR balance compares to other FR obligations at each point in time.***
    - ***EPA understands that CES will use these instruments to cover federal and state FR requirements. If this is the case, please update the chart to identify any state FR coverage values for activities that are not already covered by the federal FR requirements. This will help EPA confirm that CES's proposed approach will cover the combination of federal and state FR requirements.***
    - ***EPA understands that California State requirements for the duration of PISC coverage are different from the federal requirements. Please update the chart to indicate the point in time at which federal PISC requirements expire (i.e., 50 years) and when the California PISC requirements expire.***

Let us know if you have any questions.

Regards,
Calvin

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From: Rebecca Hollis <rhollis@cleanenergysystems.com>
Sent: Thursday, May 27, 2021 3:12 PM
To: Ho, Yenhung <Ho.Yenhung@epa.gov>
Cc: Albright, David <Albright.David@epa.gov>; Natalie Nowiski <NNowiski@slb.com>; Larry Trowsdale <lstrowsdale@cleanenergysystems.com>; Keith Pronske <klpronske@cleanenergysystems.com>; Vivian Rohrback <VRohrback@slb.com>
Subject: RE: EPA request for updates to application

Fixed my response to 2a below.

Thanks again,
-Rebecca

From: Rebecca Hollis
Sent: Thursday, May 27, 2021 2:55 PM
To: Ho, Yenhung <Ho.Yenhung@epa.gov>
Cc: Albright, David <Albright.David@epa.gov>; Natalie Nowiski <NNowiski@slb.com>; Larry Trowsdale <lstrowsdale@cleanenergysystems.com>; 'Keith Pronske (klpronske@cleanenergysystems.com)' <klpronske@cleanenergysystems.com>; Vivian Rohrback <VRohrback@slb.com>
Subject: RE: EPA request for updates to application

Dear Calvin,

Good to hear from you and thank you for following up. I have included responses to your questions within your email below, in blue font. We also had just a few questions for your team that I also included below, red font.

As always, let me know if you have any questions or need anything else at this time.

Thank you,
-Rebecca

Rebecca Hollis
Director Business Development -

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From: Ho, Yenhung <Ho.Yenhung@epa.gov>
Sent: Tuesday, May 18, 2021 4:38 PM
To: Rebecca Hollis <rhollis@cleanenergysystems.com>
Cc: Albright, David <Albright.David@epa.gov>
Subject: RE: EPA request for updates to application

Hi Rebecca,

We look forward to receiving an updated permit application from CES. Please don't hesitate to contact us if CES has any questions.

In addition to our most recent request letter, we need the following data/clarification. Please feel free to provide a response along with the updated application.

1. Please include in the updated permit application the township-range-section where the proposed Mendota_INJ_1 well will be located in.
   - OK. This will be included in the updated application material.
2. Please clarify:
   a. if the CO2 stream for injection will be generated mainly/only from the oxy-combustion process;
   - Yes. The CO2 stream for injection will come from the oxy-combustion system. This will be clarified in the updated application material.
   b. if the CO2 stream will be injected in the supercritical state only; and
   - Yes. The CO2 stream will be pressurized to a supercritical state and injection conditions will be monitored at the well, e.g. pressure, temperature.
   - This will be clarified in the updated application material.
   c. if the address of the CES Mendota site is 400 Guillen Pkwy, Mendota, CA 93640.
   - I can confirm the address of the Mendota plant is: 400 Guillan Park Drive, Mendota Ca 93640. This is per the official recording and public tax information. It appears our application material is incorrect (note Google maps has the street name wrong).
   - This will be corrected in the updated application material.
   - In addition, we will clarify the base coordinate system when utilizing GPS coordinates.

Lastly, do you have an update on the topics of financial assurance, Endangered Species Act, National Historic Preservation Act, and subsidence?

Financial Assurance:

- Received revised report from 3rd party firm (TRC) on cost estimates for ERRP; currently under review
    - Also, conducted analysis using DOE NRAP tools to estimate probability and range of potential leakage
        - Currently under review for consideration in ERR cost estimates
- Working with project team to optimize financial assurances/coverage
- Question: Does EPA have any comments/additional feedback on the preliminary proposal/scheme discuss in December?

ESA

- Finalizing report for 71 acre plant site
    - Plan to submit to EPA with NHPA study for plant site ASAP (estimate early June)
- Proposal in for desktop study received and being evaluated for larger, anticipated 3d seismic area (estimate up to 32 sq miles potential)

NHPA

- Report for 71-acre plant site complete
    - Plan to submit to EPA with ESA study for plant site ASAP (estimate early June)
- Proposal in for desktop study received and being evaluated for larger, anticipated 3d seismic area (estimate up to 32 sq miles potential)

Subsidence

- The team has been researching various options to determine the extent of subsidence in the area by the following:
    - Review of CalGEM WellSTAR data for the Gill Ranch wells including the drilling history and the intent documents.
    - Review of the California DWR public GPS monitor located to the south of Mendota.
    - Review of the CA DWR InSAR (satellite) data to try to understand historic trends of subsidence in the region.
        - Data above indicates that the Mendota site is not seeing the level of subsidence indicated by EPA/CalGEM in their response.
    - On-going conversations with a 3rd party vendor for potential acquisition of past satellite imagery data in the region to understand historic trends. A determination has not been made as to whether to move forward with a study.
    - CES is now in direct contact with Gill Ranch.
    - A preliminary geomechanics study was performed with varying subsidence rates to determine the effect of subsidence on the formation. No significant overburden stress/strain was predicted from the simulated subsidence cases.
- Upon understanding the extent of subsidence, options will be reviewed and evaluated to confirm if valid solutions; includes a review and evaluation of monitoring techniques.
- To support the investigation, CES would like to clarify with EPA/CalGEM:
    - Question: What is meant by "unlanding" as per the exemption document.
    - Question: Are you able to elaborate on how "unlanding" is performed and the expected results?

Thanks,
Calvin

From: Rebecca Hollis <rhollis@cleanenergysystems.com>
Sent: Monday, May 3, 2021 11:26 AM

To: Ho, Yenhung <Ho.Yenhung@epa.gov>
Cc: Albright, David <Albright.David@epa.gov>
Subject: RE: EPA request for updates to application

Thank you, Calvin.
Appreciate you sending this along. Yes, I received the notification through the GSDT as well on Friday.
I have already forwarded to the technical team for review. Will get back to you ASAP with any follow questions/clarification.

Best Regards and happy Monday,
-Rebecca

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Director Business Development -

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From: Ho, Yenhung <Ho.Yenhung@epa.gov>
Sent: Friday, April 30, 2021 10:32 AM
To: Rebecca Hollis <rhollis@cleanenergysystems.com>
Cc: Albright, David <Albright.David@epa.gov>
Subject: EPA request for updates to application

Good morning, Rebecca,

Attached is a copy of EPA's request for updates to CES's Class VI permit application. The request has also been uploaded to the GSDT.

Please let us know if you have any questions about this request.

Regards,
Calvin

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