Message

From: Johnson, Ken-E [Johnson.Ken-E@epa.gov]
Sent: 1/12/2022 6:39:39 PM
To: Durant, Jennah [Durant.Jennah@epa.gov]
CC: Yun, Samuel [Yun.Samuel@epa.gov]; Ussery, Ian [Ussery.Ian@epa.gov]; Friesenhahn, Brody [friesenhahn.brody@epa.gov]
Subject: RE: Class VI inquiry

Jennah- At this point, I would say the Hackberry name is releasable.

Ken

From: Durant, Jennah <Durant.Jennah@epa.gov>
Sent: Wednesday, January 12, 2022 12:38 PM
To: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Cc: Yun, Samuel <Yun.Samuel@epa.gov>; Ussery, Ian <Ussery.Ian@epa.gov>; Friesenhahn, Brody <friesenhahn.brody@epa.gov>
Subject: RE: Class VI inquiry

Thanks, Ken. And the Hackberry name is releasable? I think for the question about the Talos timeline I will refer the reporter back to the company.

From: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Sent: Wednesday, January 12, 2022 10:12 AM
To: Durant, Jennah <Durant.Jennah@epa.gov>
Cc: Yun, Samuel <Yun.Samuel@epa.gov>; Ussery, Ian <Ussery.Ian@epa.gov>; Friesenhahn, Brody <friesenhahn.brody@epa.gov>
Subject: RE: Class VI inquiry

Jennah –

1) In Cameron Parish, the applicant is Hackberry Carbon Sequestration, LLC.
   Here is a public 2021 article link about the project: https://www.naturalgasintel.com/sempra-scaling-back-cameron-lng-expansion-taking-breather-on-port-arthur-but-mexico-top-priority/

2) On the Class VI projects, many entities are attempting to estimate when their projects will be underway (i.e., permit to inject completed) but as you know from our prior emails, these projects have long horizons in reaching a start date of actual injection. **To date, we've had no actual submittals from Talos Energy but we did meet with them in 2021 (I believe – but am checking that with our Class VI tech leads)**. Review times, especially with our existing workload with both Class VI and no migration petitions, are difficult to project reliably. Project start dates for those who haven't submitted anything yet are impossible for us to predict.

   I believe we've now had contacts from 56 unique entities concerning Class VI projects and at least 75 meetings on projects so you as you can see it's becoming increasingly challenging to keep up with every possible project.

Ken

From: Durant, Jennah <Durant.Jennah@epa.gov>
Sent: Wednesday, January 12, 2022 9:16 AM

To: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Subject: RE: Class VI inquiry

Ken, the reporter had a couple follow-up questions. See below. If we can name the Cameron company let me know. Also, regarding the Talos statement, I assume that application is still under administrative review.

Inquiry:
The pending applications – eg Cameron, Louisiana, do not name the companies. Would you be able to provide those?
Can you point us to who has filed the Cameron application?
And there is no mention on the list of pending applications from Talos Energy/Freeport LNG, which said in November they expect to begin injecting carbon by year-end 2024. That's less than three years away!

From: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Sent: Thursday, January 6, 2022 3:58 PM
To: Durant, Jennah <Durant.Jennah@epa.gov>
Subject: RE: One more thing on the Class VI inquiry

Looks good to go to me.

From: Durant, Jennah <Durant.Jennah@epa.gov>
Sent: Thursday, January 6, 2022 3:55 PM
To: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Subject: RE: One more thing on the Class VI inquiry

OK, thank you. How about this for a response:

> EPA Region 6 has not issued any Class VI well project permits. Region 6 is reviewing three permit applications at this time, two of which are in review for administrative completeness. A table summarizing permits status for applications which are administratively complete can be found here: https://www.epa.gov/uic/class-vi-wells-permitted-epa An overview of EPA's Class VI well permitting process can be found here: https://www.epa.gov/sites/default/files/2021-03/documents/class_vi_permit_application_outline_-_final_508_002.pdf

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From: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Sent: Thursday, January 6, 2022 3:32 PM
To: Durant, Jennah <Durant.Jennah@epa.gov>
Subject: RE: One more thing on the Class VI inquiry

Jennah –

The two remaining permits have not cleared administrative review completeness yet. Both applicants are still addressing application information deficiencies. The other one was in much better shape in terms of document structure and key information so the review team cleared it. If an application has been received but is still in admin review it won't appear on the website. "Pending" simply means it is deemed administratively complete and pending completion of technical review.

The technical review process will take much longer than admin part which is still lasting for several months (due to the sheer volume of information that has to be screened).

Ken

From: Durant, Jennah <Durant.Jennah@epa.gov>
Sent: Thursday, January 6, 2022 3:11 PM
To: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Cc: Brown, Jamesr <brown.jamesr@epa.gov>
Subject: RE: One more thing on the Class VI inquiry

Thanks, this is helpful. The table of publicly available permit info only shows one R6 project, but below you cite three permits. How can we account for the other two?

From: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Sent: Thursday, January 6, 2022 10:35 AM
To: Durant, Jennah <Durant.Jennah@epa.gov>
Cc: Brown, Jamesr <brown.jamesr@epa.gov>
Subject: RE: One more thing on the Class VI inquiry

Jennah – Some of the items below explain and describe the process and are publicly accessible:

1. Here is a very detailed EPA public outline of the Class VI permitting process: https://www.epa.gov/sites/default/files/2021-03/documents/class_vi_permit_application_outline_-_final_508_002.pdf
   Unfortunately, the outline is highly technical.

2. Class VI requirements summary: https://www.epa.gov/uic/class-vi-wells-used-geologic-sequestration-co2#well_reqs

3. Here is Class VI Rule summary: https://www.epa.gov/uic/federal-requirements-under-underground-injection-control-uic-program-carbon-dioxide-co2-geologic

4. Here is an older EPA Class VI presentation in Kansas by R7 on the Class VI process (focus on slides 4-6): https://www.kgs.ku.edu/PRS/IMSCSH/pdfs/ccus_conference_3/Kurt_Hildebrandt.pdf

Let me know if this helps or if you need additional information.

Ken

From: Durant, Jennah <Durant.Jennah@epa.gov>
Sent: Thursday, January 6, 2022 9:07 AM
To: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Cc: Brown, Jamesr <brown.jamesr@epa.gov>
Subject: RE: One more thing on the Class VI inquiry

Thank you, Ken. Is there anything on EPA's website that explains or describes the process?

From: Johnson, Ken-E <Johnson.Ken-E@epa.gov>
Sent: Wednesday, January 5, 2022 5:28 PM
To: Durant, Jennah <Durant.Jennah@epa.gov>
Cc: Brown, Jamesr <brown.jamesr@epa.gov>
Subject: One more thing on the Class VI inquiry

Jennah –

Of the 3 permit applications under review in Region 6, only one has reached administrative completeness and entered into a long technical review. The other two are still in administrative completeness review. The publicly available table shows the project application for Cameron Parish is "pending" which it has made through administrative completeness and is now in technical review. Technical reviews are, as I previously mentioned, expected to take a significant period of time.

If that permit makes it through the technical review, it will go through public notice and comment and the resulting permit, if issued, would just be for a **permit to construct** the well (not to begin injection). Then there is another stage of permitting review after **the permit to construct** is issued that would involve reviewing that the information from the drilling, logging, and coring the well that will be used to update the information in the initial permit to construct. The updated technical information is then passed through another review period and public notice/comment followed by a **permit to inject** where injection will actually be started. When the well(s) begin to operates there will ongoing monitoring data that will be used **update thae permit during its operational life**. There is also **a post site closure permitting process** when operations cease.

As you can see this is an incredibly detailed and tightly checked permitting process. Hope this provides some clarity. Nothing is expected to happen quickly.

Ken Johnson, PE

Ground Water / UIC Section Chief,
Environmental Engineer, and
R6 Land Ban No Migration Petitions and Class VI Permits Coordinator

US EPA Region 6 Office
Ground Water/UIC Section
Mail Code: 6WDDG
1201 Elm Street
Suite 500
Dallas, TX 75270

Email: johnson.ken-e@epa.gov
Phone: 214-665-8473
Fax: 214-665-2191
[redacted]

UIC Webpages:
http://www.epa.gov/uic/underground-injection-control-epa-region-6-ar-la-nm-ok-and-tx
No Migration Petitions:
http://www.epa.gov/uic/guidance-documents-completing-class-i-injection-well-no-migration-petitions
Managing and Minimizing Potential of Injection-Induced Seismicity from Class II Disposal: Practical Approaches: http://www.epa.gov/uic/underground-injection-control-national-technical-workgroup-final-issue-papers
Class VI Injection Wells:
https://www.epa.gov/uic/federal-requirements-under-underground-injection-control-uic-program-carbon-dioxide-co2-geologic
https://www.epa.gov/uic/final-class-vi-guidance-documents
Monitoring Injection Wells—Basic Hall integral Method:
https://www.iris.edu/hq/inclass/animation/monitoring_injection_wellsbasic_hall_integral_method
For Class VI applicants, EPA is a regulatory agency and not a research agency. We will not pass on any privileged or commercially valuable information. We will not suggest locations nor supply information. We will answer reasonable questions. It is up to the applicants to research, collect and model scenarios based on their own site-specific data and conditions to meet EPA regulatory standards. This does not prevent us from cautioning against certain locations

which have been previously shown to be potentially unsuitable reservoirs through various investigations in other well class permitting actions. You will find many of your answers in the official Guidance documents on the EPA webpage.