Request for Additional Information
[Capio Sherburne CCS (R06-LA-0012)] - [Request #A-1]

Instructions: Populate the "Response" column with answers/responses to each comment/question below, then upload the completed responses to Field #3 in the "Information Requests" reporting module of the GSDT. If necessary, upload attachments or references in Field #4 of the module and/or update information within other GSDT modules. ***To allow reviewers to quickly locate and review changes/updates, clearly identify the location within the application where edits for each response were made (e.g., Site Characterization, Section 2.7.4, p. 53, updated paragraph 2).***

Item #	Associated Regulation(s)	Comment/Question	Response
All Sections			
1	40 CFR 146.82(a)(21)	**Comment:** Please provide a digital copy of all references cited throughout the application. One folder/zip file containing references for all application sections/modules is acceptable.	A digital copy of available references will be uploaded to the GSDT. A table listing the references used in the application will be uploaded along with a zip file of available pdfs. No updates to the application modules have been included with this reponse.
Site Characterization			
2	40 CFR 144.31(e)(6)	**Background:** No information is provided regarding permits or construction approvals received or applied for under the programs cited in the referenced regulation, including any required state permits. **Comment:** Please provide information for all permits or construction approvals received or applied for under the listed programs as well as any permits or construction approvals that are anticipated for the project. If no other permits or approvals are anticipated, please indicate as such.	A table with anticipated permits for the Class VI well has been included. Also included are the anticipated permits for the pipeline and CO2 source. ***Site Characterization, Section Project Background and Contact Information section pg. 2 of 83, updated paragraph 4 and Table 2-4 pgs 35 & 36***
3	40 CFR 146.82(a)(2)	**Background:** Figure 2-8 (pdf pp. 42/455) of the Site Characterization narrative appears to be the most complete map of the project area, including the injection well and AOR. The map contains artificial penetrations (APs), but APs are not labeled with a name and/or unique identifying number (e.g., API or LDNR serial number), and APs are not differentiated based on type (e.g., water, P&A, producing, injection, etc.). Other features (e.g., water bodies, parish or other boundaries, major roads) are also not labeled, and no narrative discussion is included indicating that searches for subsurface cleanup sites (e.g., Superfund/CERCLA, hazardous waste/RCRA, brownfields, leaking underground storage tanks) have been conducted and no sites located.	Figures 2-8 and 3-44 have been updated to include LDNR state serial numbers, differentiated well symbols, and land features. Also included in the figures is the maximum pressure buildup as predicted by the model. Please note that model results indicate that at no time in the modeling was pressure sufficient to drive brine in a hypothetical artificial penetration outside of the storage complex. A search for state or EPA-approved subsurface cleanup sites did not reveal any in the AoR. The nearest site that was identified is located approximately 1 mile to the west.

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		Additionally, Fig. 2-8 indicates that only the plume boundary is shown rather than both the plume and pressure front or a composite of the two. **Comment:** Please provide at least one complete map of the project area that contains all elements as required in the referenced regulation, including identification and unique labeling of all APs within the AOR. Ensure all other required features are accurately labeled and the map is of sufficient detail and resolution to permit delineation of individual features (e.g., APs). Also update the narrative and map (if necessary) to include details of searches for subsurface cleanup sites and the results of those searches, including if no such sites were identified. Additionally, please include either a composite outline of both the plume and pressure front or separate outlines for each. If the "CO_2 Plume" outline shown in Fig. 2-8 (and/or other figures) is a composite outline, please correct the legend(s) to indicate as such.	***Site Characterization, Section Project Background and Contact Information section p. 2 of 83, updated paragraph 5 and Figure 2-8 pg 45 of 83***
4		**Background:** Multiple figures (e.g., Site Characterization narrative Figs. 2-1, 2-4, 2-5, 2-7, etc.) show only the Sherburne lease outline and do not include an outline of the AOR (i.e., combined plume and pressure front – see Item 3 above). However, Fig. 2-8 shows that the outline of the CO_2 plume extends beyond the lease boundary. When combined with the outline of the pressure front, this AOR would be expected to extend even further beyond the boundary of the lease. **Comment:** For all maps, it is highly recommended that both the lease boundary and the AOR (as a composite of both the plume and pressure front) be included to allow for easier analysis, particularly since the AOR boundary extends beyond the lease boundary.	The AoR has also been added to figures 2-1, 2-4, 2-7, and 2-12 to 2-34. ***Site Characterization, Figures pgs 38, 41, 44, 49 – 71 of 83***
5	40 CFR 146.82(a)(20)	**Background:** A list of contacts for states, tribes, and territories within the AOR was not provided. The application indicates that the project is not within tribal boundaries, but Louisiana state contacts are still required. **Comment:** Please update the application to include contacts for the state of Louisiana.	Contact information for LDNR has been added to the application. ***Site Characterization, Section Project Background and Contact Information p. 2 of 83, updated paragraph 4***
AOR/Corrective Action			
6	40 CFR 146.82(a)(4)	**Background:** Table 3-5 of the AOR/CAP narrative (pdf pp. 13/895) provides information on the 11 wells identified with the AOR, including location, well status, total depth (TD), and some plugging information (e.g., amount of	Table 3-5 has been updated to include additional information which includes the requested information.

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	40 CFR 146.84(c)(2)	casing pulled). However, the table does not include other well construction information needed to evaluate the listed wells, including, but not limited to, length of casing strings, casing and hole sizes, plug lengths and depth ranges, and sacks of cement used during plugging. Additionally, at least one completion date was located in the provided well records for a well whose completion date was listed as "NA" in Table 3-5. **Comment:** Please update Table 3-5 to include all relevant well construction and other information for all wells listed.	***AoR and CAP, Table 3-4 p 12***
7	40 CFR 146.82(a)(4), 40 CFR 146.84(c)(2), 40 CFR 146.82(a)(21), 40 CFR 146.84(d)	**Background:** Regarding well records and information, the AOR/CAP narrative (pdf pp. 9) indicates that, "Information was captured from publicly available well records and logs from the Louisiana Department of Natural Resources (SONORIS) website, the Gulf Coast Geological Log Library, and a commercial vendor TGS…". However, a detailed explanation of AP identification procedures and AP records searches is not provided, and there appears to be no indication that an exhaustive AP records search was conducted, including searches of LDNR's microfiche library, other commercial maps, scout tickets, etc. Since LDNR has confirmed to EPA that well records exist outside of SONRIS, including a comprehensive library of microfilm/microfiche records kept at LDNR's offices, well records compiled solely from SONRIS are considered incomplete and do not satisfy 40 CFR 146.84(c)(2) and 40 CFR 146.84(d). EPA's Underground Injection Control (UIC) Program Class VI Well Area of Review Evaluation and Corrective Action Guidance document (EPA 816-R-13-005, May 2013), which supports 40 CFR 146.84, discusses two critical narratives that detail the technical efforts for: (1) identifying all APs in the area of review, and (2) the AP records data collection process associated with the AOR APs to assess their conditions concerning the impact of the proposed Class VI action. The procedures and protocols for this are discussed in Chapter 4 of the guidance document found at https://www.epa.gov/sites/default/files/201507/documents/epa816r13005.pdf. **Comment:** Please provide information for parts (1) and (2) above detailing how the AOR AP locations were found and how each AP's records were compiled. The updated information should include detailed steps taken to ensure the identification of all APs within the AOR, and it should include a detailed description of steps taken to conduct an exhaustive records search,	Capio has conducted and documented a search for records of artificial penetrations (APs) in the AoR area. Capio has thoroughly researched known APs through the Louisiana Department of Natural Resources (LDNR) SONRIS information system database. The statewide well location information was downloaded from SONRIS and plotted with GIS software. An online records search for wells within and near the lease area was conducted in SONRIS. In addition, the Gulf Coast Geological Log Library and TGS, Inc. were used to search for well logs in the area of the AoR. This search provided well logs that were not available through SONRIS, but that were for wells whose locations were included in SONRIS. In addition, Capio used Geomap, Inc. proprietary structure maps to assess if other wells were in the area and no other wells were found. A review of historical aerial photos for years 1952, 1966, 1969, 1978, 1983, 1989, 1994, 1998, 2004, 2007, 2010, 2015, and 2019 and topography maps for years 1939, 1955, 1959, 1968, 1970, 1994, 2012, 2015, 2018, and 2020 do not indicate additional wells were drilled within the AoR. One additional clearing was observed north of the proposed Class VI well located along the west side of Iron Gate Road. However, based on the aerial photos and topographical maps the clearing appears to have been used as a tank battery.

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		including searches beyond LDNR's online SONRIS database, the Gulf Coast Geological Log Library, or TGS.	Capio will conduct a detailed review of LDNR data files including microfilm and microfiche for the AoR and surrounding area. The LDNR maintains microfilm/microfiche records in the Office of Conservation, Geological Division at the LDNR headquarters in Baton Rouge, Louisiana. Capio will review all records from the land sections within the AoR. In addition, Capio will research other available sources of historical information including scout tickets and other commercial maps and historical publications. Capio also will plot LIDAR data obtained from the Louisiana Department of Transportation and Development to assess the presence of former roadways, drilling pads, or other developed areas within the area and will compare these to known features. Capio will map any potential features and will develop a plan to assess the physical conditions and characteristics of these areas. ***AoR and CAP, Section Corrective Action updated/added paragraph 2-5 pgs 8 &9***