
THIRD READING

Bill No: SB 438
Author: Caballero (D), et al.
Amended: 3/30/23
Vote: 21

SENATE NATURAL RES. & WATER COMMITTEE: 9-0, 3/28/23
AYES: Min, Allen, Becker, Eggman, Grove, Hurtado, Laird, Limón, Padilla
NO VOTE RECORDED: Seyarto, Dahle

SENATE ENVIRONMENTAL QUALITY COMMITTEE: 6-0, 4/19/23
AYES: Allen, Dahle, Limón, Menjivar, Nguyen, Skinner
NO VOTE RECORDED: Gonzalez

SENATE APPROPRIATIONS COMMITTEE: Senate Rule 28.8

SUBJECT: Carbon sequestration: Carbon Capture, Removal, Utilization, and Storage Program

SOURCE: Author

DIGEST: This bill clarifies that the incidental and unintentional production of residual oil from a geologic sequestration well does not violate the ban on enhanced oil recovery on Carbon Capture, Removal, Utilization, and Storage projects.

ANALYSIS:

Existing law:

- 1) Requires the State Air Resources Board, on or before January 1, 2025, to adopt regulations for a unified permit application for the construction and operation of carbon dioxide capture, removal, or sequestration projects to expedite the issuance of permits or other authorizations for the construction and operation of those projects. (Health and Safety Code (HSC) §39741.2)

- a) A state agency is required to use the unified permit application when issuing a permit or other authorization for the construction and operation of a carbon dioxide capture, removal, or sequestration project, as specified.
- 2) Prohibits a well operator from injecting a concentrated carbon dioxide fluid produced by a carbon dioxide capture, removal, or sequestration project into a Class II injection well for purposes of enhanced oil recovery, as provided. (PRC §3132)
- 3) Defines a “Class II well” as one that mirrors the definition in Section 144.6 of Title 40 of the Code of Federal Regulations. (PRC §3130)

This bill clarifies that the incidental and unintentional production of residual oil from a geologic carbon sequestration well does not violate the ban on enhanced oil recovery on Carbon Capture, Removal, Utilization, and Storage projects.

Specifically, this bill:

- 1) Provides that any incidental and unintentional residual oil produced at the surface from a geologic carbon sequestration well resulting from the injection of a concentrated carbon dioxide fluid into a geologic carbon sequestration well during the execution of a carbon dioxide capture, removal, or sequestration project is not considered enhanced oil recovery, as provided.
- 2) Prohibits the production of carbon dioxide by a carbon dioxide capture, removal, or sequestration project.
- 3) Requires any oil produced from a geologic sequestration well to be reported to the State Air Resources Board and the United States Environmental Protection Agency within 60 days of its occurrence, as specified.
- 4) Defines a Class VI geologic carbon sequestration well, as provided.
- 5) Provides that no reimbursement to local agencies and school districts for certain state-mandated costs is required, as specified.

Background

The emissions of greenhouse gases (GHGs) into the atmosphere is a strong contributor to global warming and climate change. Climate models predict and recent experience has shown that the impacts of climate change in the state include heat waves, drought, wildfire, sea level rise, extreme weather, flooding, and other catastrophic events that threaten public and environmental health and safety.

To address climate change, the state has established ambitious GHG emissions reductions goals, among other goals promoting or requiring decarbonization. The California Climate Crisis Act declares state policy to achieve net zero GHG emissions no later than 2045, and to achieve and maintain net negative GHG emissions thereafter (AB 1279, Muratsuchi, Chapter 337, Statutes of 2022). Current planning scenarios by the State Air Resources Board (i.e. the 2022 Scoping Plan Update) identify the need to utilize carbon capture, utilization, and sequestration (CCUS) projects to remove and sequester 20 million metric tons of CO₂ by 2030 and 100 million metric tons of CO₂ by 2045 to achieve the state's carbon neutrality goals.

Among the best known types of CCUS projects are those that provide for the injection of concentrated carbon dioxide fluids into deep underground geologic reservoirs for permanent/quasi-permanent sequestration. Scientific experts estimate that there are many possible locations statewide where underground geologic reservoirs are suitable for carbon sequestration. The wells used to inject into these reservoirs are Class VI Underground Injection Control (UIC) program wells, which are permitted by the US EPA in California. There are seven project applications for approximately 30 Class VI permits pending before US EPA Region IX.

AB 1279 was one of seven bills proposed by Governor Newsom as part of a "climate package" near the end of the 2021/2022 Legislative session to further advance the state's decarbonization efforts. Six of the seven bills passed the Legislature and were signed into law.

Another of the climate package bills was SB 905 (Caballero/Skinner, Chapter 359, Statutes of 2022), which sought to promote the use of carbon capture, removal, utilization, and storage (CCRUS) technologies by requiring the Air Resources Board to establish a CCRUS program, and to adopt regulations by January 1, 2025 for a model unified permit program for the construction and operation of CCRUS projects.

SB 905 included numerous other provisions including a prohibition on the use of concentrated carbon dioxide from carbon dioxide capture, removal, or sequestration project for enhanced oil recovery, among others.

Enhanced oil recovery (EOR) is the application of heat or pressure to an oil reservoir to facilitate the recovery of oil. In general, a fluid, such as water or steam, is injected into the oil reservoir using an injection well and then the oil/water mix is produced using the same well or another one. Injection wells used

for oil and gas production are a different class of UIC well than those used to inject concentrated carbon dioxide fluids for permanent geologic storage. Oil and gas production-related injection wells are Class II UIC wells. As noted above, SB 905, as well as SB 1314 (Limón, Chapter 336, Statutes of 2022), another climate package bill, prohibit the use of CCUS/CCRS for EOR (or CO₂-EOR).

After SB 905 passed the concurrence vote in the Senate, Senator Caballero submitted a Letter to the Journal noting, among other things, the possibility that residual subsurface oil may be unintentionally expelled when a concentrated carbon stream is injected into a geologic reservoir for sequestration and that SB 905 did not intend to capture incidental and unintentional residual oil expulsion in its definition of EOR.

Comments

Inadvertent oil production from wells servicing underground geologic storage reservoirs. Depending upon the location of an underground geologic storage reservoir for carbon sequestration, it is possible that there may be co-located hydrocarbon deposits. Further, it is also possible that repair, operation, and maintenance of an injection well servicing an underground geologic storage reservoir will also result in the inadvertent yield of hydrocarbons at the surface. Therefore, there is an argument for a narrowly tailored clarification of the existing CO₂-EOR prohibition to provide for inadvertent hydrocarbon production associated with the use of only those injection wells servicing the geologic storage reservoir. This bill does not apply to injection wells used for oil and gas production. The required notification to the State Air Resource Board and the regional US Environmental Protection Agency office will help to identify whether incidental and unintentional production occurs. There are only two Class VI geologic carbon sequestration wells currently permitted in the country (in presumably different geology given the location), and it is unknown if any hydrocarbons are produced by these wells.

Integrity of geologic carbon sequestration reservoirs. Existing federal and state regulations require the integrity of geologic carbon sequestration reservoirs. In the event of carbon dioxide leakage, injection operations are required to be suspended. In addition, any Low Carbon Fuel Standard (LCFS) program credits could be invalidated and the project's certification under LCFS terminated.

Related/Prior Legislation

SB 905 (Caballero/Skinner, Chapter 359, Statutes of 2022) directed the establishment of a Carbon Capture, Removal, Utilization, and Storage Program at the Air Resources Board, among numerous other additional provisions.

SB 1314 (Limón, Chapter 336, Statutes of 2022) prohibited the use of CO₂ from carbon capture projects for enhanced oil recovery operations to produce oil and gas.

AB 1279 (Muratsuchi, Chapter 337, Statutes of 2022) enacted the California Climate Crisis Act and declares state policy to achieve net zero GHG emissions no later than 2045, and to achieve and maintain net negative GHG emissions thereafter.

SB 27 (Skinner, Chapter 237, Statutes of 2021) required the Air Resources Board to add carbon sequestration targets to the state's climate change scoping plan, among other things.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: Yes

SUPPORT: (Verified 5/2/23)

California Carbon Solutions Coalition
California State Association of Electrical Workers
California State Pipe Trades Council
Calpine Corporation
Coalition of California Utility Employees
Southern California Gas Company

OPPOSITION: (Verified 5/2/23)

Asian Pacific Environmental Network
Center for Biological Diversity
Center on Race, Poverty & the Environment
Central California Asthma Collaborative
Central California Environmental Justice Network
Central Valley Air Quality Coalition
Indigenous Environmental Network
Leadership Counsel for Justice and Accountability
Little Manila Rising
Physicians for Social Responsibility- Los Angeles Chapter

Physicians for Social Responsibility- San Francisco Bay Chapter
Sierra Club California
Silicon Valley Youth Climate Action
Sunflower Alliance

ARGUMENTS IN SUPPORT: According to the author, “On September 16th, 2022, Governor Newsom signed into law SB 905, as part of the historic climate package, establishing breakthrough policy for Carbon Capture Removal, Utilization, and Storage (CCRUS) application. Since then, there have been several provisions brought to my attention that require clarification in order to avoid hindrance of current projects, and unintentional penalties.”

“Senate Bill 438 builds upon SB 905 (2022) in an effort to clarify intent and ensure proper implementation. Specifically, the bill ensures that residual oil that is inadvertently and unintentionally expressed is not penalized. SB 438 is consistent with last year’s efforts and will allow California to continue its work in carbon emission reduction as intended.”

ARGUMENTS IN OPPOSITION: The Center on Race, Poverty & the Environment in a joint opposition letter raise concerns about “unintended consequences” and “modifying and potentially weakening last year’s SB 905 (Caballero), a hard-fought compromise at the heart of the climate package negotiations.” They raise concerns about undermining the CO₂-EOR prohibition by authorizing inadvertent oil production from wells serving geologic sequestration reservoirs. They argue “The existing code already prohibits an operator from injection carbon dioxide ‘for purposes of enhanced oil recovery.’ Thus, unintentional oil production is already allowed. As such, it is unclear what the effect of this change would be. At best, this change [is] surplusage to reassure skittish investors in order to drive an increase in the swarm of incoming CCUS projects. At worst, redefining unintentionally produced oil as not enhanced oil recovery may have broader impacts...”

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