STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF APRIL 20-21, 2023
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ITEM NUMBER: **8**

SUBJECT: **Update - Active Oilfield Program in the Central Coast Region**

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KEY INFORMATION

Location: Twenty-Two Active Oilfields Region-Wide
Type of Discharge: Class II Underground Injection Control (UIC) and Waste Discharge to Land

ACTION: **Information/Discussion**

SUMMARY

This is an informational item to provide a general update on activities related to the Central Coast Regional Water Quality Control Board (Central Coast Water Board) Active Oilfield Program. The Active Oilfield Program includes one Senior Water Resource Control Engineer and five Engineering Geologists with a primary focus on reviewing aquifer exemption applications and underground injection control projects, administering waste discharge requirements for the management of petroleum impacted soils produced at active oilfield facilities, and coordinating with State Water Board Oil and Gas Monitoring Programs,[1] the California Geologic Energy Management Division (CalGEM)[2] and the United States Environmental Protection Agency (US EPA).

DISCUSSION

Active Oilfield Program Background

Oilfields have the potential to impact groundwater and surface water. Groundwater impacts may result from discharges to groundwater associated with improperly

[1] https://www.waterboards.ca.gov/water_issues/programs/groundwater/sb4/
[2] https://www.conservation.ca.gov/calgem

operating injection projects, infiltration from impoundments, or oil spills. Surface water impacts are primarily associated with discharges of oil and/or produced water.[3]

In recent years, oil and gas production in California has received increased interest from the state legislature, US EPA, state and local agencies, and the public. This increased interest is a result of heightened concern about the impact of oil and gas production and associated water disposal practices on groundwater quality. Additionally, there are concerns about the impact of oilfield operations on public health in communities adjacent to oilfields. Consequently, the state legislature has adopted various regulations for the oversight of oil and gas production with an emphasis on protecting groundwater.

The primary environmental issues of concern in the Active Oilfield Program include:

1. Underground Injection Control (UIC) – oversight of the injection of fluids underground for the purposes of disposal or enhanced oil recovery
2. Aquifer exemptions – needed under certain circumstances as noted below prior to the approval of injection projects
3. Well stimulation and hydraulic fracturing
4. Management and beneficial reuse of petroleum-impacted soils
5. Disposal of produced water via ponds and sumps
6. Health protection zones and sensitive receptors
7. Orphaned assets (i.e., oil and gas production infrastructure such as wells, pipelines, facilities, berms, well pads, etc.).

These issues are often interrelated and complex, requiring the coordinated oversight and authorities of multiple agencies including the CalGEM, the State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (Regional Water Boards) – collectively referred to as the Water Boards, the California Air Resources Board, the US EPA, and local agencies.

This staff report discusses the above issues along with an overview of the governing regulatory requirements including recent legislation, and current and pending actions, with an emphasis on the roles of CalGEM and the Water Boards.

Active Oilfields in the Central Coast Region

There are twenty-two active onshore oilfields in the Central Coast Region. Oil production began in the state in the early 1900's, and California is currently the seventh-largest producer of crude oil in the United States.

Production of oil and gas has occurred across the Central Coast Region, from Santa Clara County, south to the Santa Barbara coast, and east to the Cuyama Valley. Oilfields in the Central Coast Region range in size from large fields covering several thousand-acres, to very small fields with only a handful of wells. The largest oilfields in the region, in terms of production, are San Ardo (Monterey County) and Cat Canyon

[3] Produced water is the formation water that is pumped up along with hydrocarbons.

(Santa Barbara County). Numerous operators are active within the region, and it is not uncommon for multiple operators to be active within the same oilfield.

Regulatory Authority

The California Public Resources Code (commencing with section 3000)[4] governs oil and gas activities in California and establishes CalGEM as the principal state agency charged with regulating the drilling, operation, maintenance, and abandonment of oil and gas wells. CalGEM's regulatory authority includes, but is not limited to: (1) issuing permits or approvals for oil and gas activities, such as the drilling or abandonment of wells; (2) investigating the environmental conditions and inspecting facilities associated with oil and gas production activities and preparing related reports; (3) ordering and/or undertaking tests or remedial work; and (4) issuing enforcement orders for violations of applicable oil and gas law and permits or approvals.

In September 1982, the Division of Oil, Gas and Geothermal Resources (DOGGR, now CalGEM) received primacy from the US EPA pursuant to the provisions of Section 1425(a) of the federal Safe Drinking Water Act. This gave CalGEM the authority to regulate Class II wells in the state. Class II wells are used to inject oil and gas related production fluids into the subsurface (40 C.F.R. § 144.6(b)).[5]

In 1988, CalGEM and the State Water Board signed a Memorandum of Agreement (MOA)[6] to formalize how the two agencies would administer the Class II UIC program. The MOA was updated[7] in 2018.

Underground Injection Control

One of the main issues associated with oil and gas production is how to manage produced water. Produced water is the term used for formation water that is extracted along with hydrocarbons. The amount of water produced per well varies. On average in California, 8-10 barrels of water are produced for every barrel (42 gallons) of oil that is produced. Once separated from the oil, produced water typically contains elevated concentrations of total dissolved solids (TDS), metals, and petroleum hydrocarbons.

Historically, operators discharged produced water to surface waters, ponds, or sumps. Beginning in the 1930s, underground injection wells became commonly used to dispose of produced water, injecting it back into deep subsurface formations for disposal or for enhanced oil recovery (EOR). Underground injection is now the preferred produced water disposal method. In some instances, the produced water is recycled for other purposes, however this is rare due to the typically high concentrations of TDS and other contaminants (metals, hydrocarbons).

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[4] https://www.conservation.ca.gov/index/Documents/CALGEM-SR-1%20Web%20Copy.pdf
[5] https://www.govinfo.gov/content/pkg/CFR-2013-title40-vol24/pdf/CFR-2013-title40-vol24-part144.pdf
[6] https://www.conservation.ca.gov/calgem/for_operators/Documents/MOU-MOA/MOA_SWRCB_UIC_1988.pdf
[7] https://www.conservation.ca.gov/calgem/for_operators/Documents/MOU-MOA/2018.07.31_Revised_MOA_with_the_State_Water_Board.pdf

The Safe Drinking Water Act established a regulatory mechanism known as the Underground Injection Control (UIC) Program. The UIC Program is intended to protect underground sources of drinking water (USDW) from damage resulting from the injection of produced water or other fluids.

In 1982, the US EPA delegated primacy authority to CalGEM to implement the Class II UIC Program in California. Under the 1988 and 2018 MOA between CalGEM and the State Water Board, CalGEM and the Water Boards coordinate to oversee Class II UIC projects. The Water Boards review aspects of UIC projects pertaining to the protection of groundwater quality and beneficial uses. The state UIC regulations[8] were most recently updated and revised in 2019.

There are six classes of UIC wells, however the focus of the Active Oilfields Program are Class II wells, which inject fluids associated with oil or natural gas production. Class II wells can be subdivided into three general categories:

- EOR wells, which inject steam or water with the goal of mobilizing and enhancing oil recovery.
- Water disposal wells, which inject produced water into subsurface formations for the purposes of disposal.
- Hydrocarbon storage wells, which inject hydrocarbons (typically natural gas) for short to medium term storage.

Before an injection well can receive injection, or before a new injection project is approved, state and federal regulations require that an Area of Review (AOR) occur. The AOR evaluates whether fluid injection will impact a USDW. The AOR process evaluates the proposed injection fluid, volumes and pressures of injectate, and the mechanical integrity of the proposed injection well and nearby wells that might be conduits for injected fluids to migrate into a USDW.

Over the past three years, Active Oilfield Program staff have coordinated with CalGEM to review over 220 individual AORs. The majority of these reviews have been for non-expansion wells, which are injection wells located within the boundary of a previously approved injection project. Furthermore, the majority of the AORs are for cyclic-steam injection, which involves the cyclical injection of steam into oil-bearing zones for the purpose of heating the reservoir, followed by oil extraction utilizing the same wells.

Aquifer Exemptions

Under the Safe Drinking Water Act, injection of fluids into a USDW is prohibited. Under 40 Code of Federal Regulations (CFR) 144.3[9], a USDW is defined as an aquifer or its portion that:

1. Supplies any public water system; or

[8] https://www.conservation.ca.gov/calgem/general_information/Documents/UIC_regs_workshop/Final%20Text%20of%20the%20UIC%20Regulations%20(Clean).pdf
[9] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-144/subpart-A/section-144.3

2. Contains a sufficient quantity of groundwater to supply a public water system, and
    a. Currently supplies drinking water for human consumption; or
    b. Contains fewer than 10,000 mg/L TDS; and
3. Is not an exempted aquifer.

This definition is conservative in protecting groundwater. Therefore, operators seeking to operate Class II injection wells typically need to have the proposed injection zone designated as an exempted aquifer. Under 40 CFR 146.4 an aquifer can be granted an exemption by the US EPA when:

(a) It does not currently serve as a source of drinking water; and

(b) It cannot now and will not in the future serve as a source of drinking water because:

1. It is mineral, hydrocarbon, or geothermal energy producing, or can be demonstrated by permit application to contain minerals or hydrocarbons that, considering their quantity and location, are expected to be commercially producible;
2. It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;
3. It is so contaminated that it would be economically impractical to render it fit for human consumption;
4. It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or

(c) The TDS content of the groundwater is more than 3,000 and less than 10,000 mg/L and it is not reasonably expected to supply a public water system.

In addition, California Public Resources Code (PRC) 3131(a)[10] requires that, for an aquifer exemption:

1. The injection of fluids will not affect the quality of water that is, or may reasonably be, used for any beneficial use.
2. The injected fluid will remain in the aquifer or portion of the aquifer that would be exempted.

The 1982 MOA between the US EPA and CalGEM[11] contained a list of exempted aquifers, which are often referred to as primacy-era exemptions.

Water Boards Coordination with CalGEM

Historically, the Water Boards had limited involvement and coordination with CalGEM for the oversight of UIC projects. In 2011, the US EPA audited the state's Class II UIC

[10] https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=3131
[11] https://www.conservation.ca.gov/calgem/for_operators/Documents/MOU-MOA/MOA_EPA_UIC_1982.pdf

Program and identified substantial deficiencies. The US EPA audit[12] identified a significant number of CalGEM approved injection projects injecting into zones without approved aquifer exemptions, and therefore were not in compliance with the Safe Drinking Water Act or applicable California water quality statutes and policies.

The results of the audit prompted two significant responses.

1. Senate Bill 83[13] in 2015, required, among other things, that CalGEM coordinate with the Water Boards on the technical review of aquifer exemption applications.
2. In 2015, CalGEM and the State Water Board submitted a proposal to the US EPA to bring the UIC Program into compliance with the Safe Drinking Water Act and to jointly review proposed aquifer exemptions and UIC projects. That plan is still being implemented, and there is ongoing regular communication and coordination between CalGEM, the Water Boards, and the US EPA.

Since 2015, CalGEM and the Water Boards have been working to review and comment on aquifer exemption applications. In general, these applications seek to expand existing primacy-era exemptions.

CalGEM and the Water Boards have reviewed aquifer exemption applications for ten oilfields in the Central Coast Region. Of these, five have been forwarded to the US EPA for review with three subsequently approved by the US EPA. The application for the Cat Canyon Oilfield is currently undergoing CalGEM and Water Boards review.

The aquifer exemption applications are large and complex documents, and in most instances, the applications undergo substantial revisions based on feedback from the Water Boards and CalGEM through multiple review cycles. This iterative review process is a substantial portion of the Active Oilfield Program staff workload.

Beginning in 2021, the State Water Board determined that a conduit analysis must accompany all aquifer exemption applications if the proposed exempted zone is overlain by a USDW. A conduit analysis involves reviewing well bores in the proposed exemption area to identify potential conduits that could allow fluid to migrate out of the exempted aquifer and into a USDW. Active Oilfield Program staff, in close collaboration with State Water Board and CalGEM staff, are currently working on the conduit analysis for the Cat Canyon Oilfield aquifer exemption application.

Given their technical complexity and unique individual conditions, this staff report does not provide detailed specifics for each of the Central Coast aquifer exemption applications. The applications and supporting documents are all made publicly available on CalGEM's website[14] as part of CalGEM's and the State Water Board's public hearing process. Responses to public comments and interagency letters are also available on

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[12] https://www.conservation.ca.gov/index/Documents/DOGGR%20USEPA%20consultant%27s%20report%20on%20CA%20underground%20injection%20program.pdf

[13] http://www.leginfo.ca.gov/pub/15-16/bill/sen/sb_0051-0100/sb_83_bill_20150624_chaptered.html

[14] https://www.conservation.ca.gov/calgem/Pages/Aquifer_Exemptions.aspx

CalGEM's website. Additionally, Water Board's aquifer exemption-related correspondence is available on GeoTracker.[15]

Well Stimulation and Hydraulic Fracturing

Well stimulation is the practice of injecting fluids and additives at extremely high pressures to improve oil recovery. The pressures are sufficient to fracture the reservoir rock, and thus the practice is commonly called hydraulic fracturing or "fracking". Well stimulation is regulated by CalGEM and the State Water Board under regulations strengthened in 2013 with the passage of Senate Bill 4.[16] Injection of acidic fluids into oil-bearing formations to increase hydrocarbon production also falls under these regulations. It should be noted that there is a clear regulatory distinction between well stimulation (hydraulic fracturing and acid stimulation) and much more common EOR techniques (i.e., water flood, steam flood, and cyclic steam injection).

Well stimulation was developed in the 1950's and in recent years the practice has generated increased public interest. However, well stimulation has never been widely employed in the Central Coast region and is not anticipated to be used in the region. Furthermore, in 2021 Governor Newsom directed CalGEM to phase out hydraulic fracturing in California by January 2024.

Management & Beneficial Reuse of Petroleum-Impacted Soils

On May 28, 2020, the Central Coast Water Board adopted General Order No. R3-2020-0006[17] (General Order) to regulate the management and beneficial reuse of petroleum-impacted soils in active oilfields in the Central Coast region. The General Order establishes requirements for the discharge of crude-oil impacted soils to waste pile management facilities and the beneficial reuse of these soils for the construction of oilfield infrastructure, such as access roads and berms.

Oil exploration, production, and delivery generate large volumes of waste soils at active oilfields. Waste soils are defined as all crude-oil impacted soils generated on active oilfield leases. Sources of waste soils include, but are not limited to tank bottom sludges, soils impacted by spills, and produced sands.

To manage waste soils, operators often use waste pile management facilities for the temporary storage of waste soils prior to beneficial reuse or disposal. Beneficial reuse projects are defined as the practice of using waste soils in the construction of oilfield infrastructure such as, but not limited to, road pavement, berms, and well pads. If waste pile management facilities and beneficial reuse projects are constructed and managed

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[15] https://geotracker.waterboards.ca.gov/
[16] http://www.leginfo.ca.gov/pub/13-14/bill/sen/sb_0001-0050/sb_4_cfa_20130628_114518_asm_comm.html
[17] https://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/2020/r3_2020_0006_general_order.pdf

properly, with comprehensive and clearly defined management practices to contain wastes and minimize erosion, they do not pose a significant threat to water quality.

Currently there are eight waste pile management facilities in the Central Coast Region operated by five oilfield operators. Active Oilfield Program staff continue to administer the program which includes the review of technical reports and annual monitoring reports, engaging with enrollees, and conducting regular site inspections.

Disposal of Produced Water via Ponds and Sumps

As previously discussed, hydrocarbon production generates a significant quantity of produced water. The produced water is typically poor quality and unsuitable for other beneficial uses.

Many oilfields in the Central Coast Region have surface impoundment features, primarily designated for emergency overflow conditions. These impoundments are almost all lined and used for temporary storage rather than disposal. If these facilities are properly operated and maintained, the risk to water quality from lined impoundments is not significant. Active Oilfield Program staff are considering a process to formally regulate lined produced water impoundments within the Central Coast Region. In considering potential requirements, the Central Coast Water Board will coordinate with oilfield operators to identify priority measures to minimize threats to water quality from surface impoundments.

Health Protection Zones & Sensitive Receptors (Senate Bill 1137)

On September 16, 2022, Governor Newsom signed Senate Bill 1137 (SB 1137)[18] into law. This bill generally prohibits CalGEM from issuing well permits within a health protection zone of 3,200 feet from a sensitive receptor. Certain exceptions are allowed, such as preventing or responding to a threat to public health, safety, or the environment, complying with a court order, or to plug and abandon a well.

Sensitive receptors are defined as:

1. A residence, including a private home, condominium, apartment, and living quarter.
2. An education resource, including a preschool, school maintaining transitional kindergarten, kindergarten, or any of grades 1 to 12, daycare center, park, playground, university, and college. Where a university or college is the only sensitive receptor within 3,200 feet of the operator's wellheads or production facilities, the university or college is not a sensitive receptor if the operator demonstrates to the division's satisfaction that no building with nominal daily occupancy on the university or college campus is located within 3,200 feet of the operator's wellheads or production facilities.
3. A community resource center, including a youth center.
4. A health care facility, including a hospital, retirement home, and nursing home.

[18] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1137

5. Live-in housing, including a long-term care hospital, hospice, prison, detention center, and dormitory.
6. Any building housing a business that is open to the public.

SB 1137 also includes limits on disruptive noise and light, dust and particulate migration, and the release of gases from wells and storage tanks. Of particular note to the Water Boards, SB 1137 requires operators to contact property owners and tenants and offer to test water wells or surface water on their property, before commencing any work in a health protection zone that requires a CalGEM permit. The sampling will consist of a baseline sample before the work occurs, and a follow-up sample when the work is completed. Operators are also required to notify the relevant Regional Water Board before collecting a sample so that staff can witness the sampling. The results of any baseline and follow-up water quality testing shall be provided by the operator to the State and Regional Water Boards, the surface property owner, and/or the requesting tenant.

The initial provisions of SB 1137 went into effect on January 1, 2023. However, industry groups successfully filed a petition to stay the bill until a ballot initiative is voted on during the next California general election in 2024.

Orphaned Assets

Active Oilfield Program staff provide input to CalGEM staff regarding water quality issues associated with the orphaned asset removal and management activities. Orphaned assets are oil and gas production infrastructure (wells, pipelines, facilities, berms, well pads, etc.) for which the operator is unknown or insolvent. Orphaned assets are expected to become a larger issue as the state transitions from fossil fuels towards clean energy.

In 2019, HVI Cat Canyon Inc. (HVICC) declared bankruptcy. In the ensuing bankruptcy proceedings, approximately 210 idle wells and associated facilities were orphaned in the Cat Canyon, Santa Maria Valley, and Casmalia Oilfields in Santa Barbara County. These wells and associated facilities became the responsibility of the state. CalGEM recently started a project to plug and abandon wells and decommission associated oilfield facilities. The work is financed by federal infrastructure funds combined with state funds. Plugging and abandonment work is scheduled to commence in 2023, however complete restoration of the leases will take several years and is likely to include assessment and remediation activities. Active Oilfield Program staff and Site Cleanup Program staff are supporting CalGEM in a consulting capacity to oversee the assessment and remediation activities.

Inter-Agency Coordination and Public Participation

Active Oilfield Program staff work collaboratively with State Water Board and CalGEM staff during almost every aspect of their work, including reviewing aquifer exemption applications and UIC projects, orphaned asset management, and other oil production activities with a nexus to water quality. There are monthly standing meetings between

Active Oilfield Program staff and staff from the State Water Board, CalGEM, and the US EPA. These meetings provide an interagency forum to discuss and further our collective reviews of aquifer exemption applications and UIC projects. In addition to regularly scheduled interagency meetings, Active Oilfield Program staff engage with State Water Board and CalGEM staff on a near-daily basis in an exchange of UIC project-related information. Staff also work directly with oil operators and stakeholders when evaluating AORs and related UIC issues. Active Oilfield Program staff have established mutually beneficial working relationships with other partner agencies to facilitate oversight of oil and gas operations and to protect water quality.

The aquifer exemption review process includes opportunities for the public to provide comments on proposed aquifer exemptions. CalGEM is the lead agency and conducts the public process, including public hearings for each aquifer exemption. Representatives from the US EPA, State Water Board, and CalGEM participate and present findings and recommendations during the public hearing and at each hearing there is an opportunity for members of the public to submit verbal questions and comments. There is also a minimum 30-day comment period to allow the public to provide written comments. CalGEM staff, with support from Water Boards staff, respond to all public comments before an application is submitted to the US EPA.

Human Right to Water

California Water Code section 106.3, subdivision (a) states that it is the policy of the State of California "that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitation purposes." On January 26, 2017, the Central Coast Water Board adopted Resolution No. R3-2017-0004[19], which affirms the realization of the human right to water and the protection of human health as the Central Coast Water Board's top priorities.

In coordination with the Water Boards, the United States Geological Survey (USGS) is implementing a Regional Groundwater Monitoring Program[20] to evaluate the impact of oilfield activities on beneficial uses, prioritizing the monitoring of groundwater that is or has the potential to be a source of drinking water. Active Oilfield Program staff support this effort and are actively following the results of the research. The results of this research will help shape policy and inform decisions that ensure the human right to water for current and future generations of Californians, and residents of the Central Coast Region.

Environmental Justice

Environmental Justice principles call for the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income in the development, adoption, implementation, and enforcement of all environmental laws, regulations, and policies that affect every community's natural resources and the places people live,

[19] https://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/2017/2017-0004_hrtw_fnl.pdf
[20] https://www.waterboards.ca.gov/water_issues/programs/groundwater/sb4/regional_monitoring/

work, play, and learn. The Central Coast Water Board implements regulatory activities and water quality projects in a manner that ensures the fair treatment of all people, including underrepresented communities. Underrepresented communities include but are not limited to Black, Asian, Hispanic/Latino/a/e, California Native American Tribes, Indigenous and other people of color, disadvantaged communities (DACs), severely disadvantaged communities (SDACs), economically distressed areas (EDAs), Tribes, environmentally disadvantaged communities (EnvDACs), and members of fringe communities.[21] Furthermore, the Central Coast Water Board is committed to providing all stakeholders the opportunity to participate in the public process and provide meaningful input to decisions that affect their communities.

As described above, CalGEM is the lead agency for conducting public outreach and implementing the public process for aquifer exemption and UIC projects. Based on 2016 census data, 61 disadvantaged community (DAC) census block groups are within one-mile of an active oilfield lease or fee property. If oilfield activity results in impacts to surface water or groundwater quality, staff will help facilitate outreach and education to inform affected parties and connect them with available resources, especially disadvantaged communities. Active Oilfield staff are developing oil and gas public outreach materials (fact sheet and FAQ document) based on materials developed by the Los Angeles Regional Water Quality Control Board. Active Oil Field staff will update the materials as necessary to provide Central Coast Region specific information and will coordinate with State Water Board's Office of Public Participation to finalize the materials. The public outreach materials will be used to provide oil and gas related information to communities that could be impacted by oilfield activities.

Climate Change

The Central Coast faces the effects of climate change for the foreseeable and distant future. To proactively prepare and respond, the Central Coast Water Board has launched the Central Coast Water Board's Climate Action Initiative, which identifies how the Central Coast Water Board's work relates to climate change and prioritizes actions

[21] Disadvantaged Community: a community with an annual median household income that is less than 80% of the statewide annual median household income (Public Resources Code section 80002(e)); Severely Disadvantaged Community: a community with a median household income of less than 60% of the statewide average. (Public Resources Code section 80002(n)); Economically Distressed Area: a municipality with a population of 20,000 persons or less, a rural county, or a reasonably isolated and divisible segment of a larger municipality where the segment of the population is 20,000 persons or less with an annual median household income that is less than 85% of the statewide median household income and with one or more of the following conditions as determined by the department: (1) financial hardship, (2) unemployment rate at least 2% higher than the statewide average, or (3) low population density. (Water Code section 79702(k)); Tribes: federally recognized Indian Tribes and California State Indian Tribes listed on the Native American Heritage Commission's California Tribal Consultation List; EnvDACs: CalEPA designates the top 25 percent scoring census tracts as DACs. Census tracts that score the highest five percent of pollution burden scores but do not have an overall CalEnviroScreen score because of unreliable socioeconomic or health data are also designated as DACs (refer to the CalEnviroScreen 3.0 Mapping Tool or Results Excel Sheet); Fringe Community: communities that do not meet the established DAC, SDAC, and EDA definitions but can show that they score in the top 25 percent of either the Pollution Burden or Population Characteristics score using the CalEnviroScreen 3.0.

that improve water supply resiliency through water conservation and wastewater reuse and recycling; mitigate for and adapt to sea level rise and increased flooding; improve energy efficiency; and reduce greenhouse gas production. The Climate Action Initiative is consistent with the Governor's Executive Order B-30-15 and the State Water Board's Climate Change Resolution No. 2017-0012.

Climate change refers to observed changes in regional weather patterns such as temperature, precipitation, and storm frequency and size. At the local scale, within urbanized areas, climate change may directly impact groundwater and surface water supply; drainage, flooding, and erosion patterns; and ecosystems and habitat. The State Water Board's Resolution No. 2017-0012, "Comprehensive Response to Climate Change," requires a proactive response to climate change in all California Water Board actions, with the intent to embed climate change consideration into all programs and activities. Aligning with Resolution No. 2017-0012, General Order No. R3-2020-0006 regulates the discharge of wastes related to beneficial reuse of waste soils on-site at active oilfields. Supporting the beneficial reuse of waste soils on-site will reduce carbon emissions by decreasing the volume of material and the fuel required to transport material off-site for disposal.

In 2020, Governor Newsom issued Executive Order N-79-20[22] requiring sales of all new passenger vehicles to be zero-emission by 2035. Additionally, in 2021 Governor Newsom released a state energy policy that requires a complete end to oil and gas production in the state by 2045. In 2022, recognizing the importance of supporting California's clean energy transition and protecting California communities, Governor Newsom partnered with the state legislature to pass a comprehensive package of legislation addressing climate change, including SB 1137 discussed previously. These actions by the Governor and the state legislature will have significant impacts on climate change, as well as the regulatory framework which shapes the work of the Active Oilfield Program.

CONCLUSION

The Central Coast Water Board's Active Oilfield Program regulates, in coordination with the State Water Board, CalGEM and USEPA, oilfield activities that have the potential to impact surface or groundwaters. Active Oilfield Program staff will continue to evaluate their work through the lenses of human right to water, environmental justice, and climate change in an effort to identify and implement strategies that effectively address these important priorities.

[22] https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf?emrc=9f8f26