

CALIFORNIA
STATE OIL AND GAS SUPERVISOR
ANNUAL REPORT
2021

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EXECUTIVE SUMMARY

Commencing in January 2020, the Division of Oil, Gas, and Geothermal Resources (DOGGR) became the California Geologic Energy Management (CalGEM) Division and began implementing major policy and programmatic changes. That work included a renewed mission, prioritizing protecting public health, safety, and the environment in its oversight of the oil, natural gas, and geothermal industries, while working to help California achieve its climate change and clean energy goals.

It is from this perspective of growth and change that the Department of Conservation (DOC), through CalGEM, presents this 2021 State Oil and Gas Supervisor's Report. This report is developed pursuant to Public Resources Code (PRC) section 3108 (see Appendix B for statutory language), which requires:

- The total amounts of oil and gas produced in each county in the state during the previous calendar year;
- The total cost of the division for the previous fiscal year; and
- The total amount delinquent and uncollected from any assessments or charges levied pursuant to this chapter.

In addition to these requirements, the report provides organizational background for CalGEM, enforcement statistics, permit data, and geothermal operation data.

Oil Production

Oil production continued to drop in 2021, totaling 137.2 Million Crude Oil Barrel Units (MMbbl) (about 376,000 barrels per day), a decrease of 7.7 percent from the 2020 total of 148.2 MMbbl (about 406,227 barrels per day). The decrease in oil production was due in large part to two key factors: (1) the drop in oil price, likely as a result of decreased demand for oil during the COVID-19 pandemic, and (2) an ongoing natural decline in production. California oil production peaked in 1985 and has been declining since then at an average of 2.2 percent per year.

In 2021, according to the U.S. Energy Information Administration, California ranked seventh among the oil producing states, behind Texas, New Mexico, North Dakota, Alaska, Colorado, and Oklahoma.

Natural Gas Production

Natural gas production includes associated gas, that is, dissolved gas produced with oil, and non-associated gas, that is, dry gas that was not dissolved in oil and produced as gas. Net natural gas production also continued to decrease in 2021, and associated gas production decreased from about 149.2 billion cubic feet in 2020 to about 121.5 billion cubic feet in 2021. The Elk Hills oil field continued to contribute the greatest percentage of natural gas to California's total, at 58 percent of total.

Geothermal Production

California is the largest producer of geothermal energy in the United States. There are 2,693 megawatts (MW) of electricity coming from 40 geothermal power plants, enough electricity for about 2.7 million homes according to the California Energy Commission. In 2021, geothermal sources produced 11,116 gigawatt- hours net (GWh), 5.94 percent of the state's power mix and approximately equal to 2020 production. According to the U.S. Energy Information Administration, geothermal generated in California represents 70 percent of the country's net geothermal power generation that is produced across seven western states.

Enforcement

The CalGEM Office of Enforcement was created in July 2018, and has jurisdiction over all of CalGEM's regulated entities, including oil, gas, and geothermal operators. The Office of Enforcement enforces California's oil and gas laws and regulations and takes action to prevent damage from industry activities, issuing civil penalties as restitution for actual or potential damages to life, health, property, or natural resources.

In 2021, CalGEM's Office of Enforcement issued 43 enforcement orders, including civil penalty fines totaling \$1,520,550. A total of 213 wells were ordered to be plugged and abandoned. The orders issued generally required operators to remediate field violations or otherwise unsafe conditions at their facilities, plug and abandon wells, and/or pay civil penalties. The State Oil and Gas Supervisor may also issue emergency orders to address a life, health, safety, property, or natural resources concern.

Additionally in 2021, CalGEM recorded 84,519 operations and witnessed 65,805 shall and may-witness operations across the state. These operations are grouped into inspections for a total of 60,792 inspections. These inspections resulted in 1,789 notices of violation issued.

Budget

Program funding for CalGEM is derived from three main assessments and fees, including:

1. An oil and gas assessment paid annually by all oil and gas operators (Division 3, Chapter 1, Article 7 of the PRC),
2. An annual well fee levied on operators of high-temperature geothermal resource wells and drilling fees charged to geothermal operators for drilling new wells or re-drilling abandoned wells (Division 3, Chapter 4, Section 3724.5 of the PRC), and
3. An annual charge levied upon operators of underground natural gas storage facilities (Division 3, Chapter 1, Article 7, section 3403.5 of the PRC).

CalGEM's total resources for Fiscal Year (FY) 2020/2021 is \$127,180,000, which includes \$119,758,000 in assessment fee revenue.

CalGEM's 2021 Financial Statement can be found at Appendix C.

1. ORGANIZATIONAL BACKGROUND

CalGEM prioritizes the protection of public health, safety, and the environment in its oversight of the oil, natural gas, and geothermal operations in California. To do that, CalGEM uses science and sound engineering practices to regulate the drilling, operation, maintenance, and permanent closure of energy resource wells. CalGEM also regulates certain pipelines and facilities associated with production and injection wells. These regulatory duties include conducting inspections, witnessing, reviewing tests and test results, and permitting and reviewing operations.

When CalGEM was established in 1915 (then known as the Department of Petroleum and Gas), the initial focus of regulation was the protection of oil and gas resources in the state from production practices that could harm the ultimate level of hydrocarbon recovery. Early CalGEM regulations included well spacing requirements and authority to limit production rates. However, those regulations and the focus of CalGEM have evolved and come to include the protection of public health, safety, and the environment.

CalGEM has grown significantly since it was established in 1915 and has taken major steps to ensure it is able to handle challenges in a manner consistent with public expectations for a modern, efficient, collaborative, and science-driven regulatory agency. In 2019, the mission of CalGEM changed to include protecting public health and safety, environmental quality, and the reduction and mitigation of greenhouse gas emissions associated with the development of hydrocarbon and geothermal resources in a manner that meets the energy needs of the state.

CalGEM Districts

Effective 2021, CalGEM operates out of three districts to best serve the needs of the state: Northern, Central (formerly Inland), and Southern Districts. Each district has its own regional offices where staff are available to assist the public and stakeholders. A larger map is available in Appendix A, and for more information about CalGEM visit the webpage at <https://www.conservation.ca.gov/calgem>.



2. CALIFORNIA OIL AND GAS PRODUCTION

2.1. Oil Production

2021 State Oil Production (MMbbl/year) * <i>Without Federal Outer Continental Shelf (OCS) Production</i>					
Year	2017	2018	2019	2020	2021
State OnShore	163.4	159.6	153.3	138.5	128.9
State OffShore	11.3	10.6	9.4	9	8.3
Total	174.7	170.2	162.7	147.5	137.2

*MMbbl is equal to one million barrels

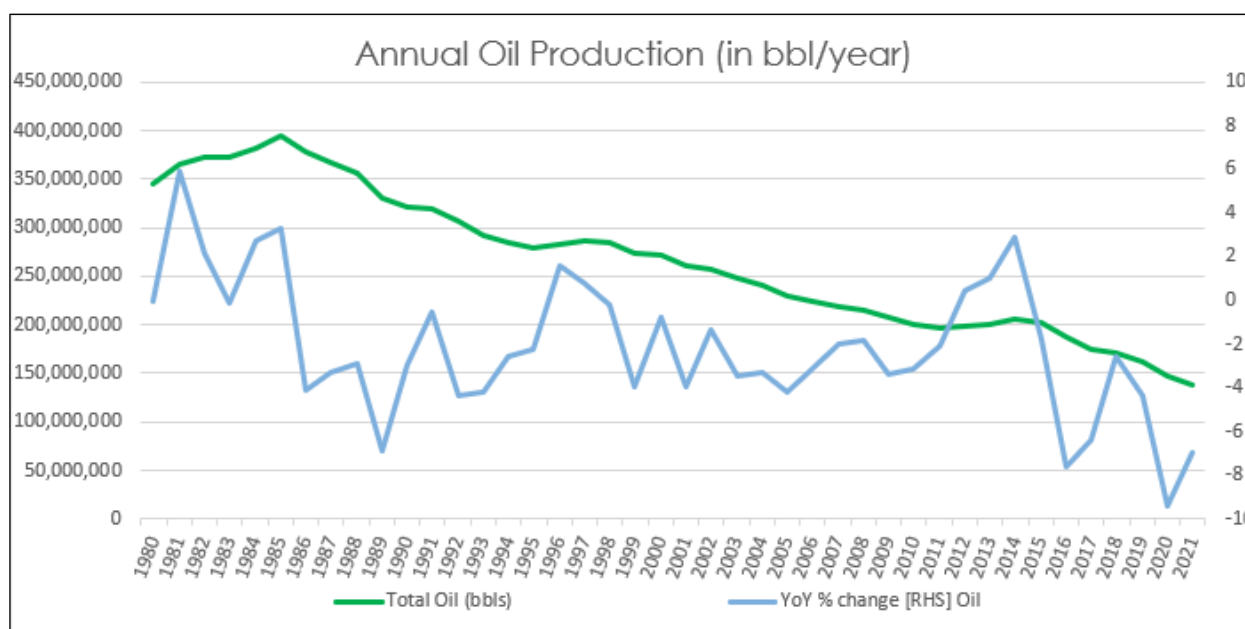


Figure 1: bbl/year, representing a little over one million bbl/day. The blue line represents the year over year percentage change in production. Since the peak in 1985, year over year oil production has increased only during 5 years: 1996, 1997, 2012, 2013 and 2014. The average decline rate since the peak in 1985 is 3 percent, with an acceleration in the decline since 2015. The sharpest decline occurred in 2021 and 2016.

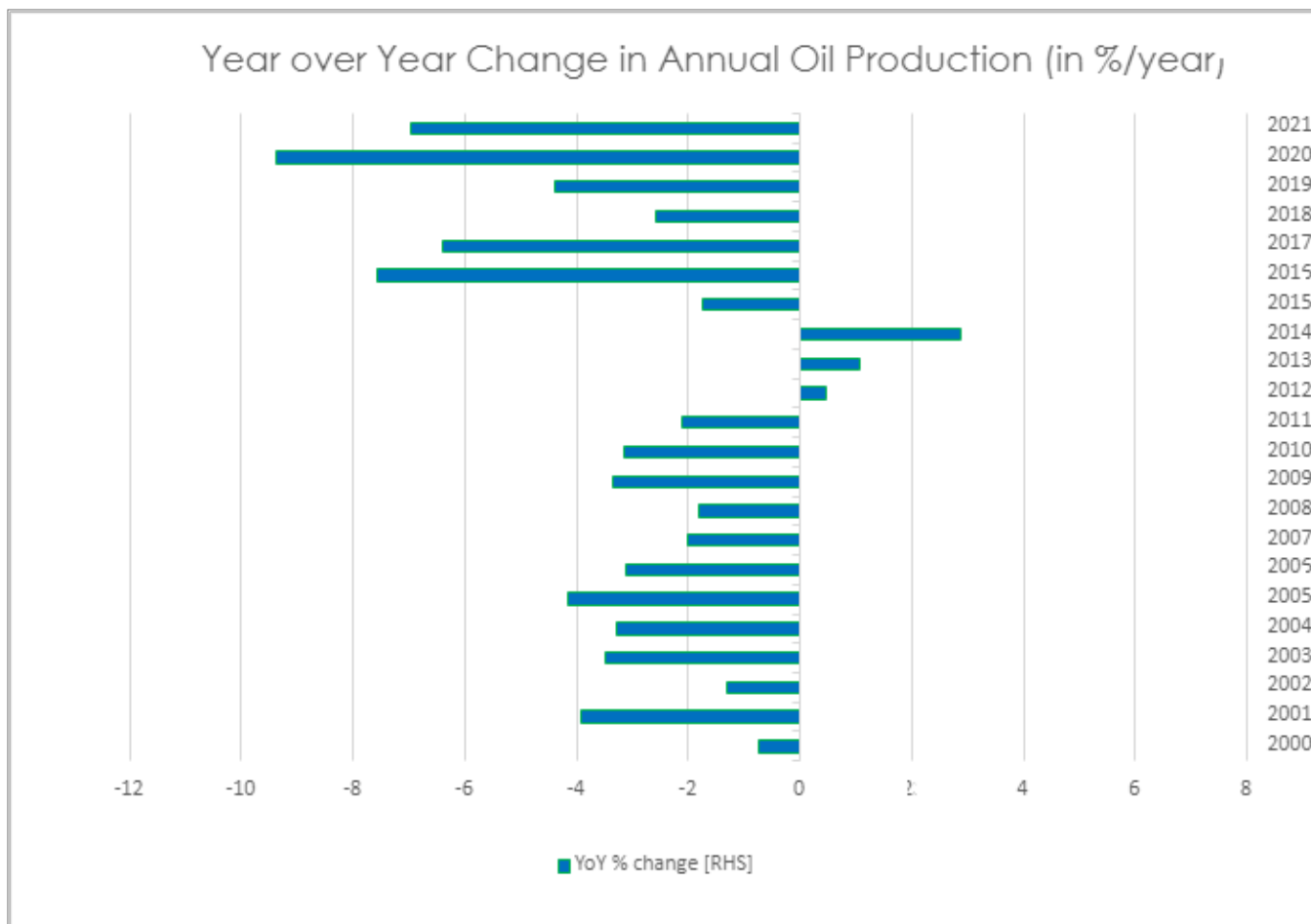


Figure 2: Year over year change in oil production. The cumulative oil production drop since 2015 is 32 percent, representing about a third of the oil production.

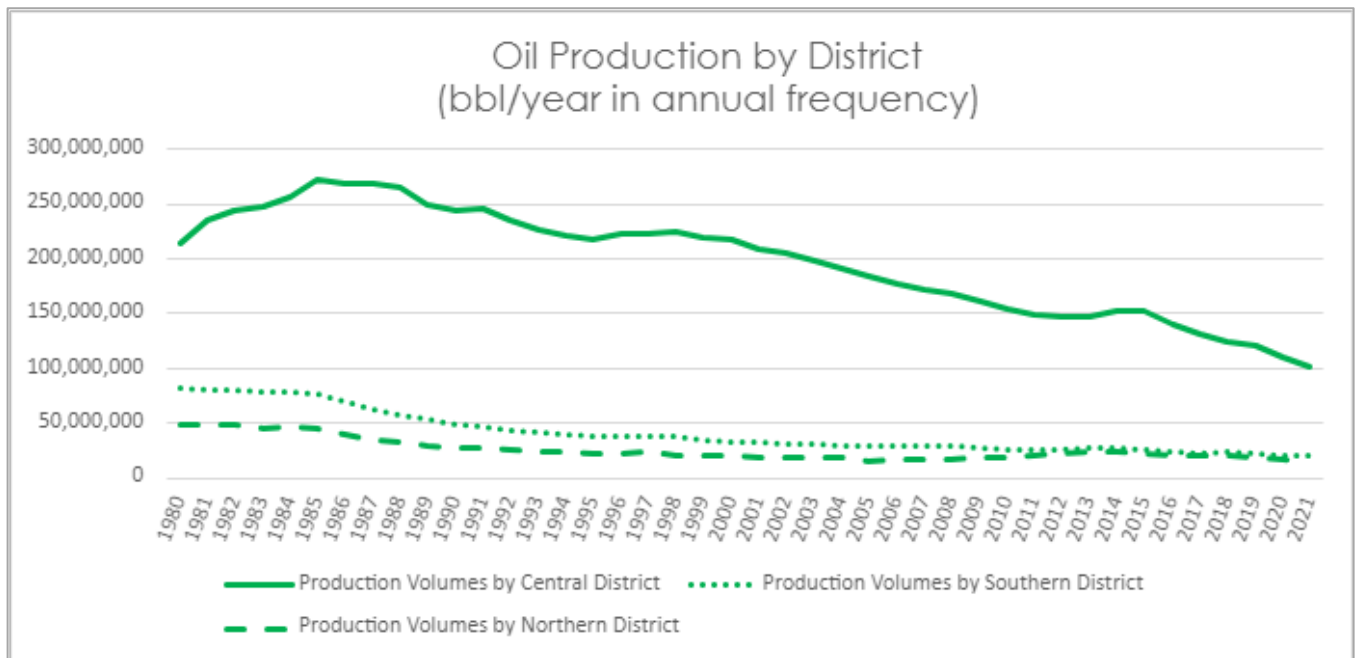


Figure 3: Oil production by district in barrels per year in annual frequency. Central District annual oil production peaked in 1985 at 271,427,951 bbl/month.

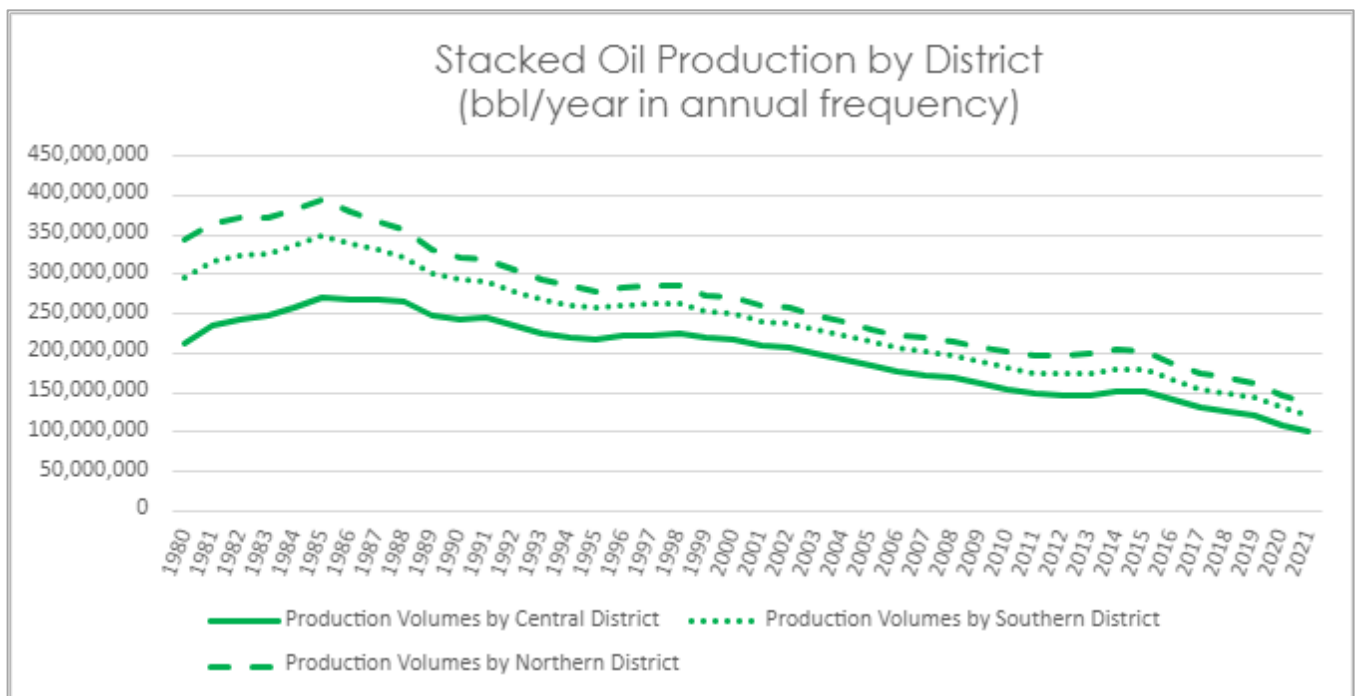


Figure 4: Stacked oil production by district in barrels per year in annual frequency. Notice the peak in annual production in 1985 at 394,867,377 bbl/year.

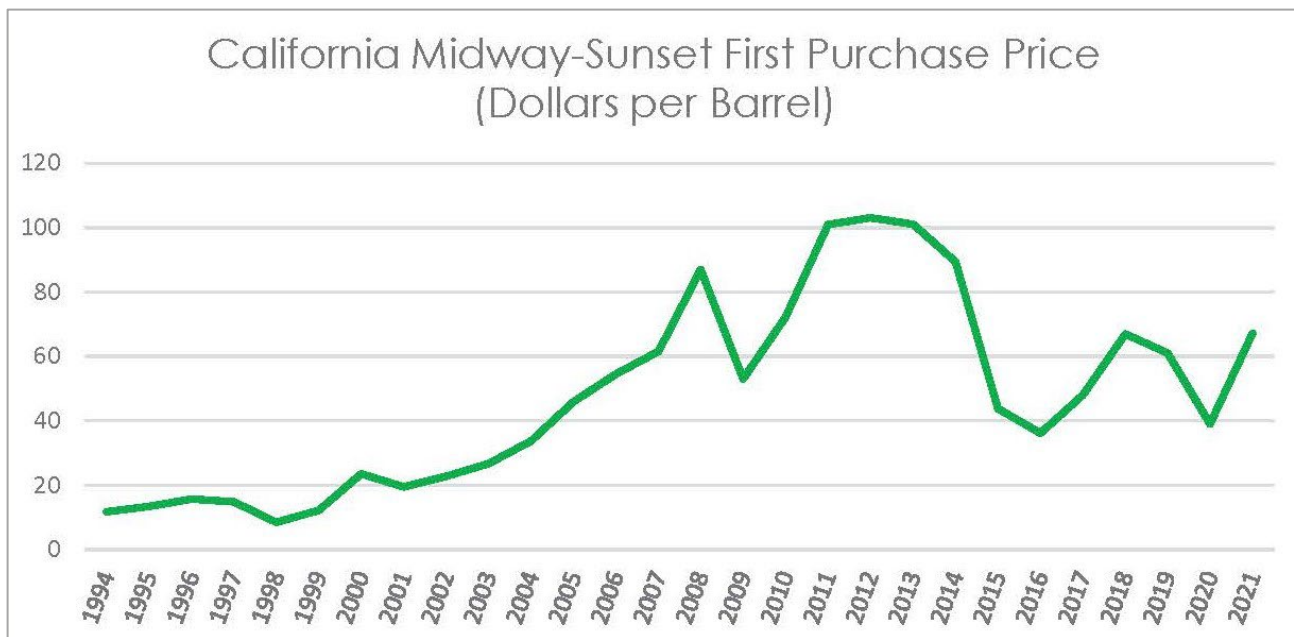


Figure 5: Midway-Sunset Oil price. Source: United States Energy Information Administration (EIA)
<https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=F005006143&f=A>

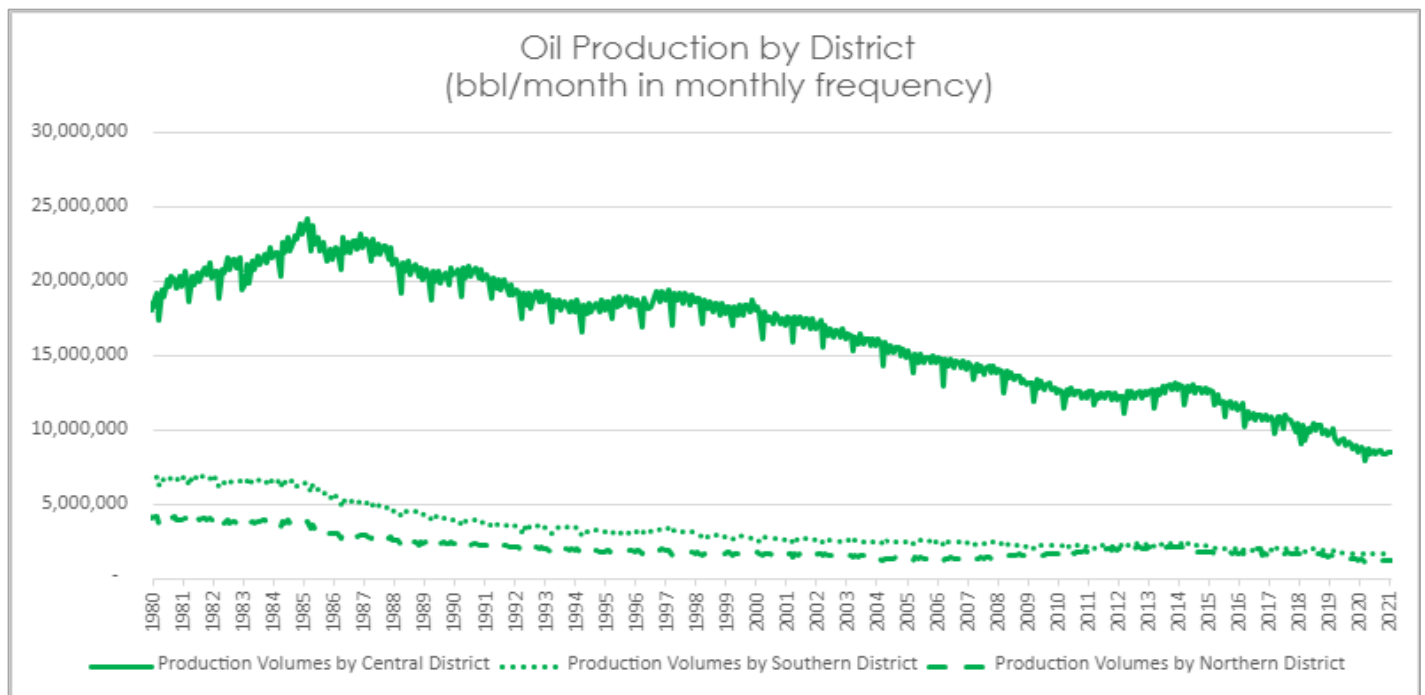


Figure 6: Oil production by district in barrels per month in monthly frequency. It is important to note that Central District monthly production peaked in January 1986 at 24,237,148 bbl/month.

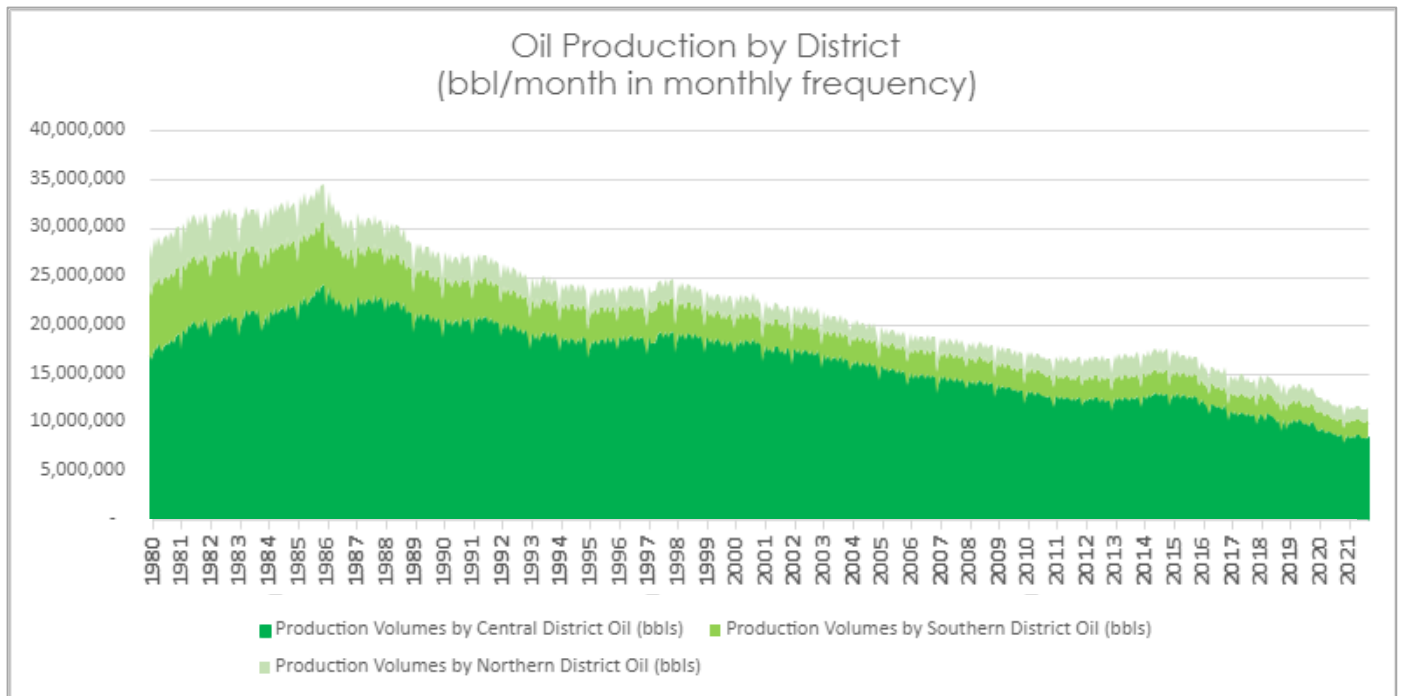


Figure 7: Stacked oil production by district in barrels per month in monthly frequency. The monthly production peaked in January 1986 at 34,492,179 bbl/month.

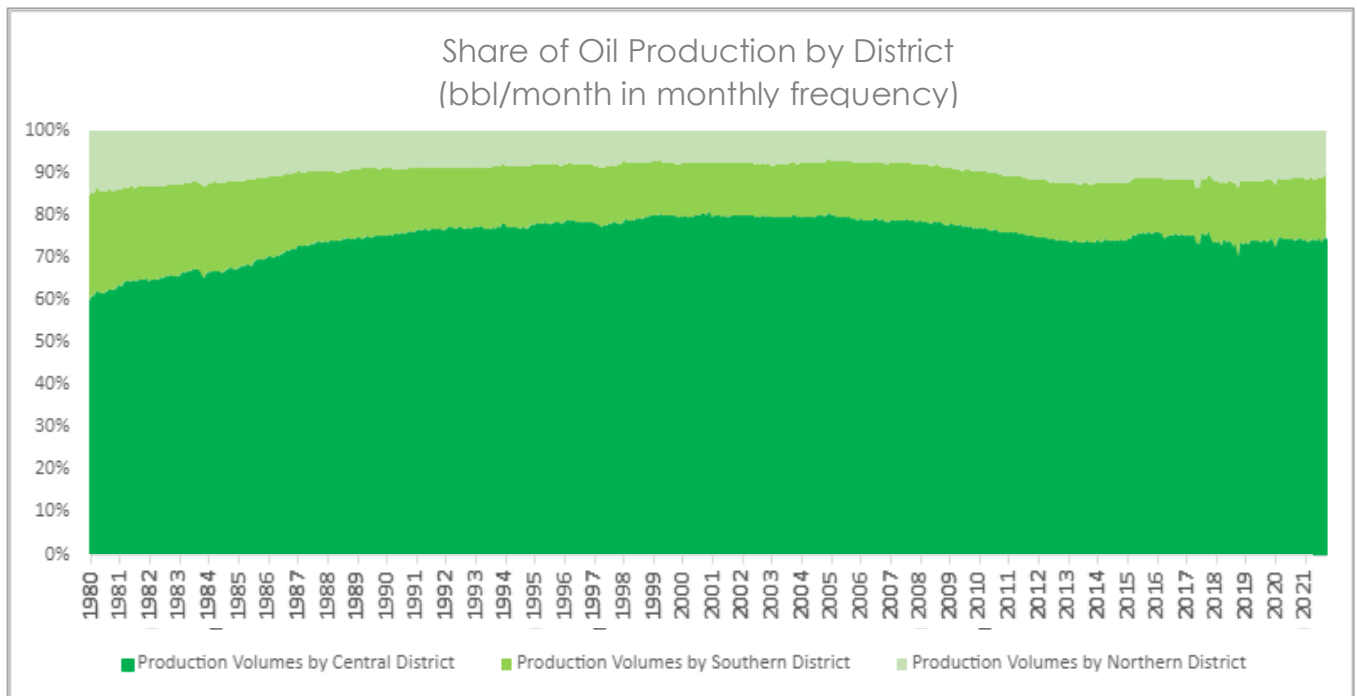


Figure 8: Share of oil production by district in barrels per month in monthly frequency. The Central District share of monthly oil production increased from about 60 percent in 1980 to about 80 percent by 2000. The share of oil production from Southern District decreased the most between 1980 and 2021.

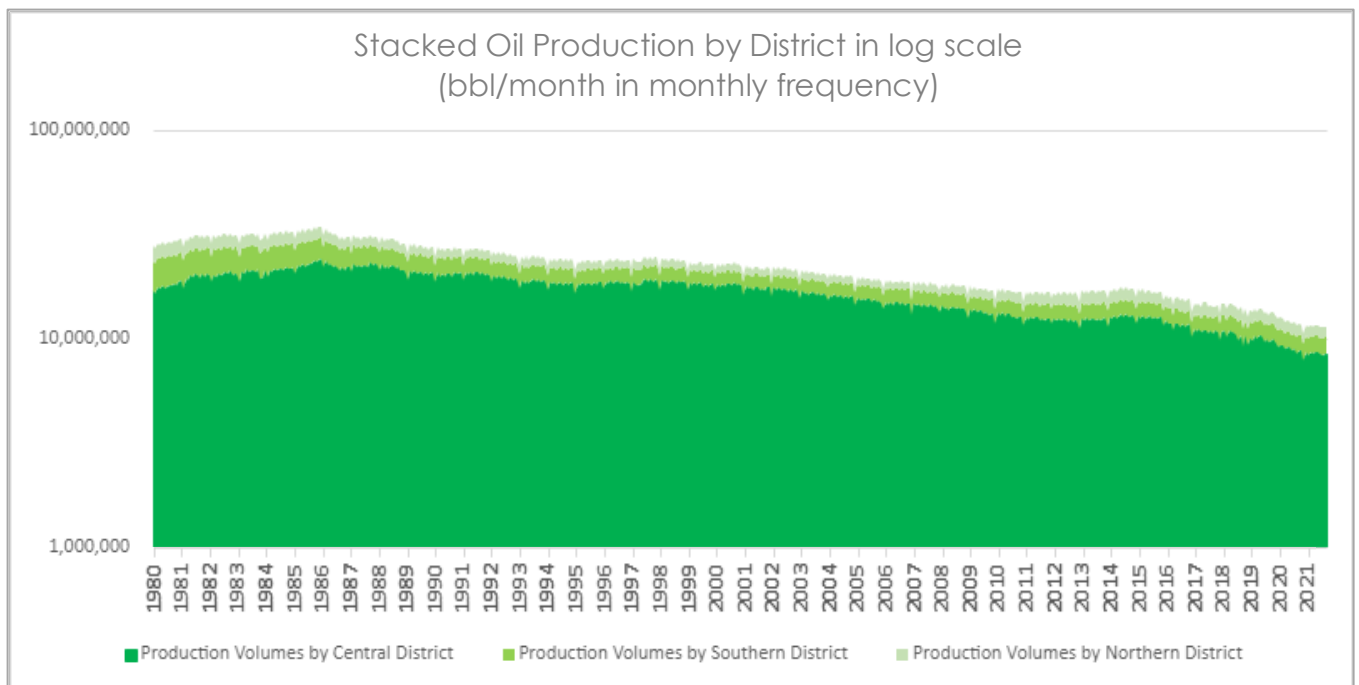


Figure 9: Stacked oil production by district in barrels per month in monthly frequency in logarithmic scale. Notice a sharper decline in production starting in 2014.

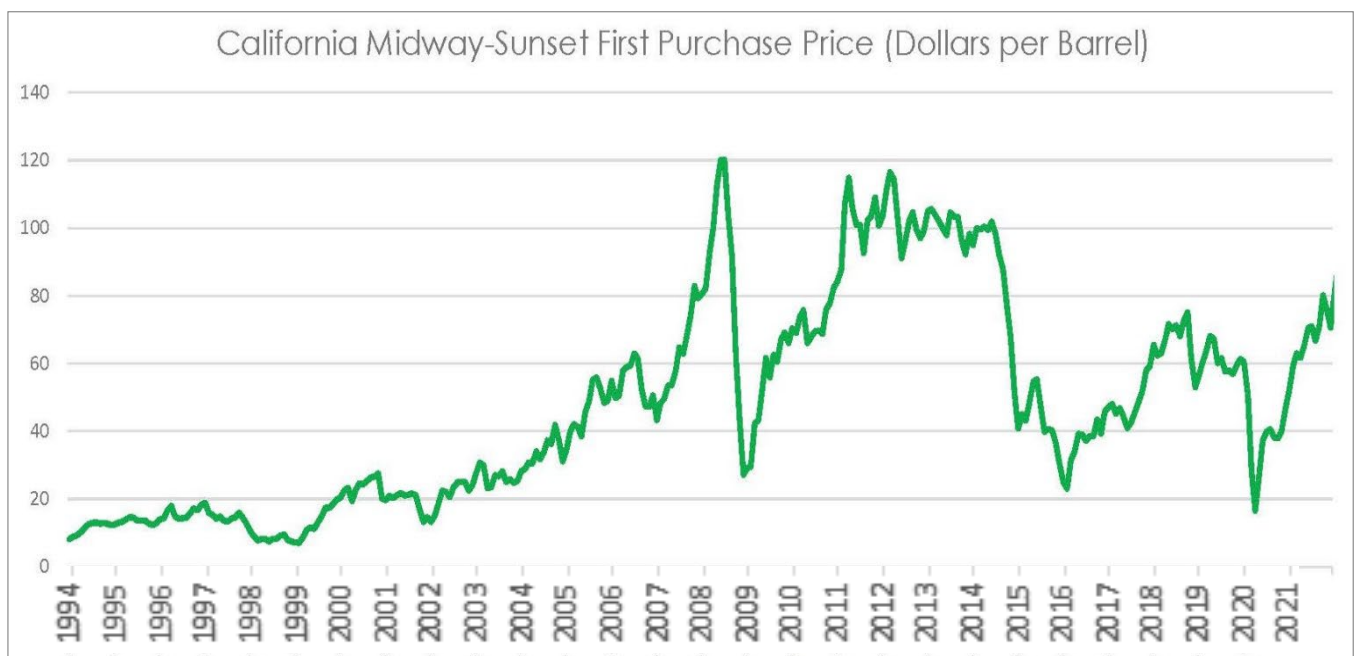


Figure 10: Midway-Sunset Oil price. Source: Energy Information Administration
<https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=F005006143&f=M>

2021 Oil Production from the Ten Largest Fields (MMbbl/year) <i>Without Federal OCS Production</i>					
Field Name	2017	2018	2019	2020	2021
Midway-Sunset	22.3	22.1	21.4	20.2	18.9
Belridge, South	21.2	20.8	20	18.4	16.8
Kern River	21.9	17.2	17.8	16.3	15
Cymric	16.4	15.9	13.2	11.8	12.1
Wilmington	11.6	14	13.1	12.3	11.5
Lost Hills	9.5	9.8	9.3	8.7	8
San Ardo	7.2	8.4	8.3	7.4	5.9
Elk Hills	9.1	8.6	7.7	6.3	6.2
Coalinga	6.6	6.3	5.8	5.5	4.9
Poso Creek	4.4	5.1	5.4	4.8	3.8

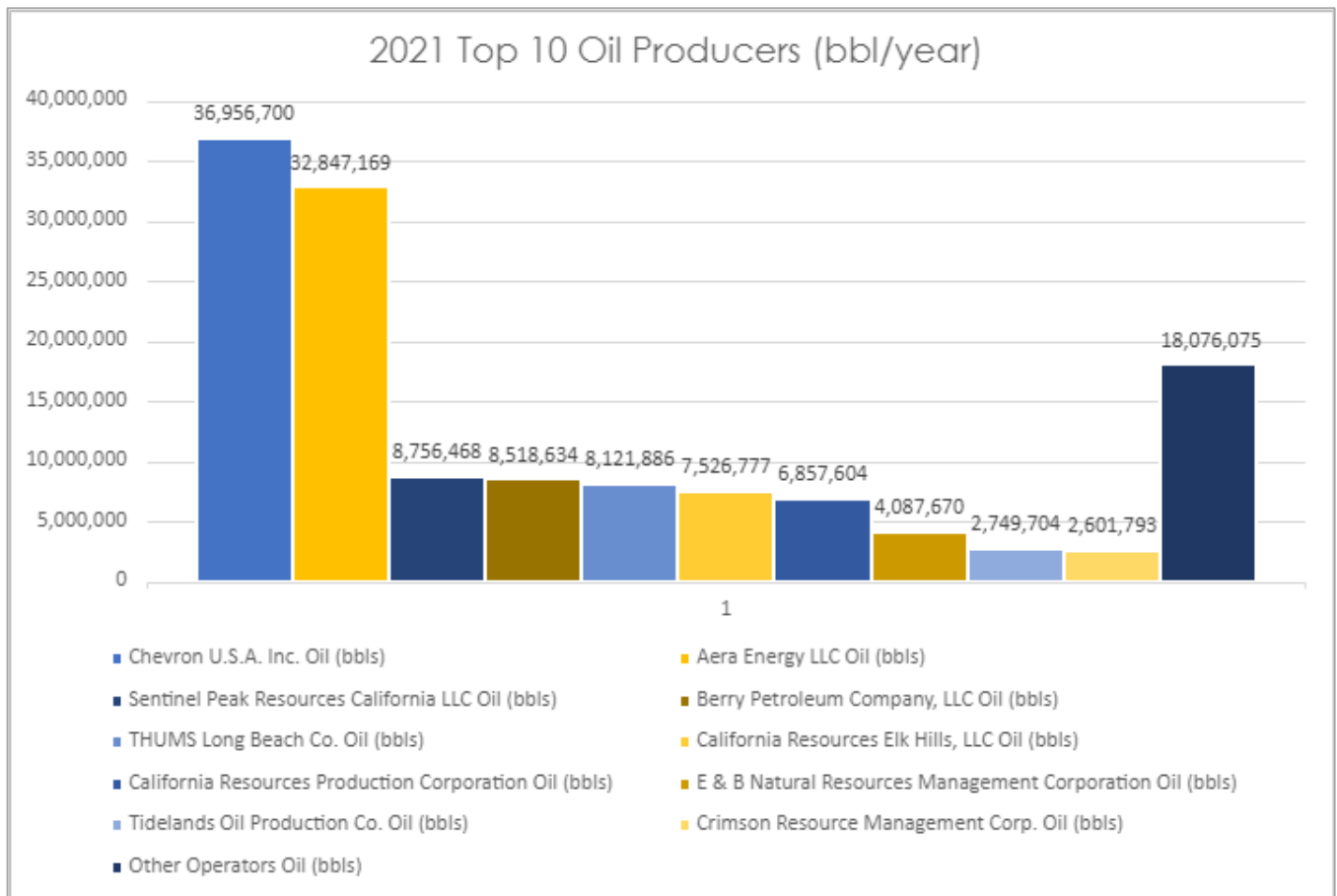


Figure 11: 2021 top 10 oil producers in bbl/year. 87 percent of the oil production came from the top 10 operators in 2021, with Chevron and Aera representing more than half of the total oil production.

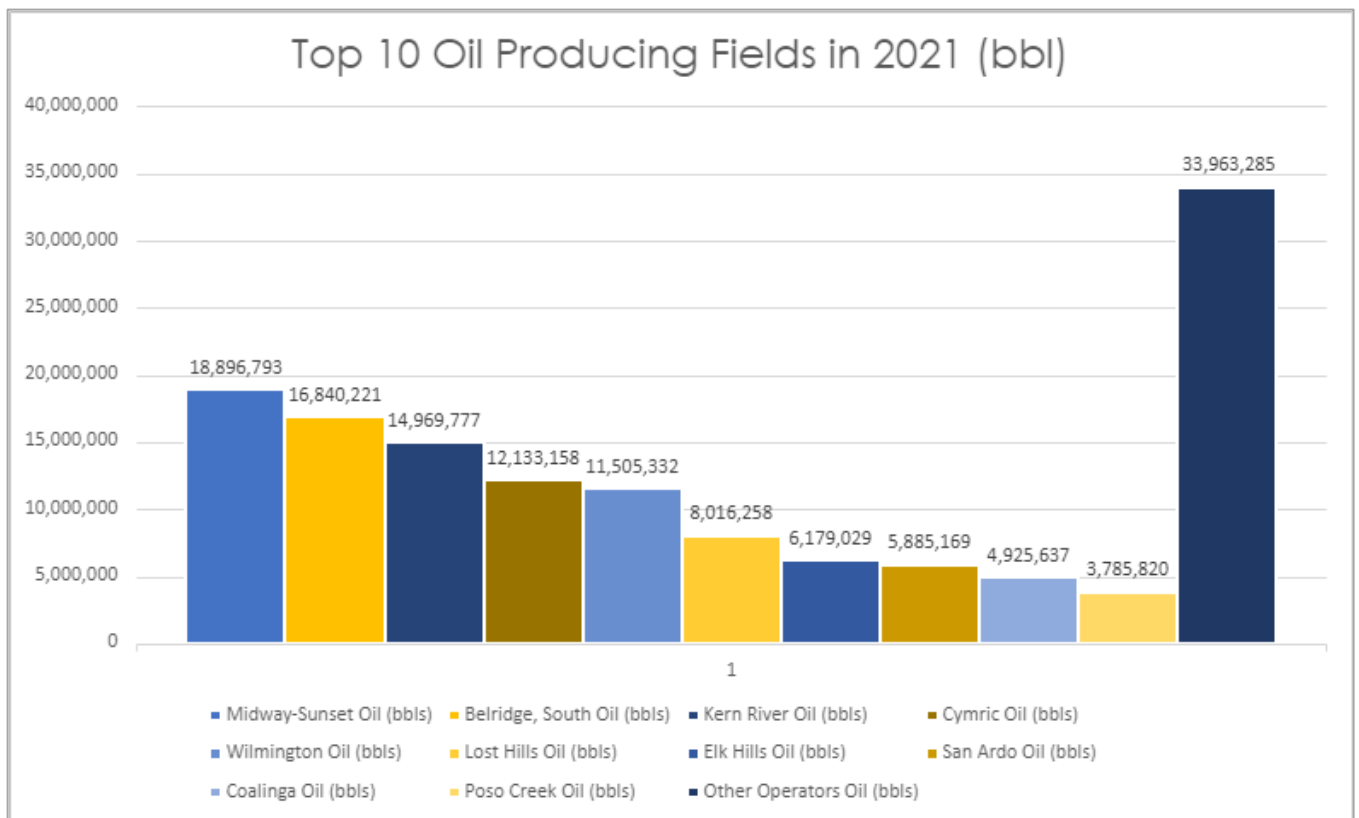


Figure 12: 2021 top 10 oil producing fields in bbl/year. 87.5 percent of the oil production came from the top 10 producing fields in 2021, with Midway Sunset, Belridge South and Kern River representing more than a third of the total oil production (37 percent).

2.2. Gas Production

State-Associated and Non-Associated Gross Gas Production (2017-2021) (in Billion cubic feet (Bcf)) <i>Without Federal OCS Production</i>					
Year	2017	2018	2019	2020	2021
Total Associated	171.2	159.8	149	136.6	111
Total Non-Associated	20.3	18.5	16.6	12.6	10.5
Total	191.5	178.3	165.6	149.2	121.5

State Onshore and Gross Gas Production (2017-2021) (Bcf) <i>Without Federal OCS Production</i>					
Year	2017	2018	2019	2020	2021
Total Onshore	187.3	175.4	162.8	145.4	118.1
Total Offshore	4.2	2.9	2.8	3.8	3.4
Total	191.5	178.3	165.6	149.2	121.5

2021 Gross Associated Gas Production from the Ten Largest Fields (Bcf/year) <i>Without Federal OCS Production</i>	
Field Name	Gross Gas Production
Elk Hills	54.4
Buena Vista	10.4
Belridge, South	6.3
Lost Hills	4.3
Wilmington	4.1
Midway-Sunset	3.2
Asphalto	3.1
Ventura	2
Cymric	2
Belridge, North	1.9

2021 Gross Non-Associated Gas Production from the Ten Largest Fields (Bcf/year) <i>Without Federal OCS Production</i>	
Field Name	Gross Gas Production
Rio Vista Gas	2.4
Grimes Gas	1.6
Willows-Beehive Bend Gas	1.5
Sutter Buttes Gas	1.1
Union Island Gas	0.35
Sycamore Gas	0.33
Elk Hills	0.27
Malton-Black Butte Gas	0.25
Tompkins Hill Gas	0.25
Grimes, West, Gas	0.22

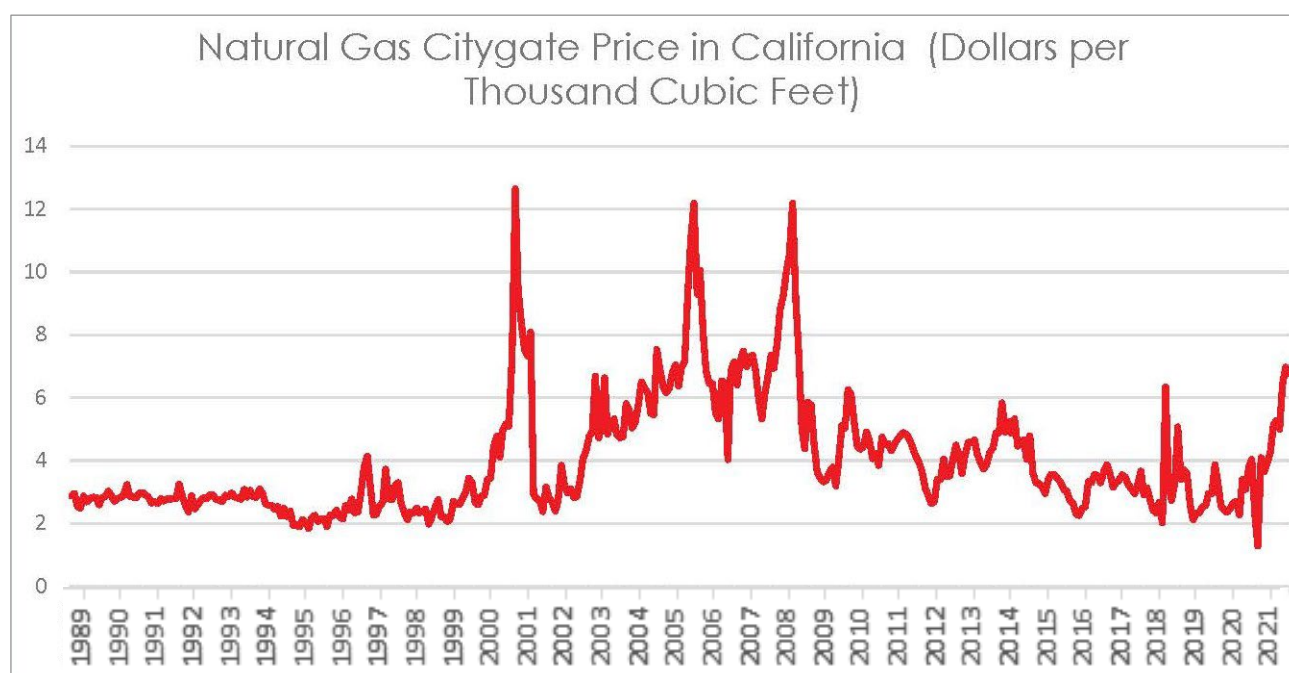


Figure 13: Natural gas Citygate price in California (the term “Citygate” refers to the point or measuring station at which a distributing gas utility receives gas from a natural gas pipeline company or transmission system). Source: <http://www.eia.gov/dnav/ng/hist/n3050ca3m.htm>

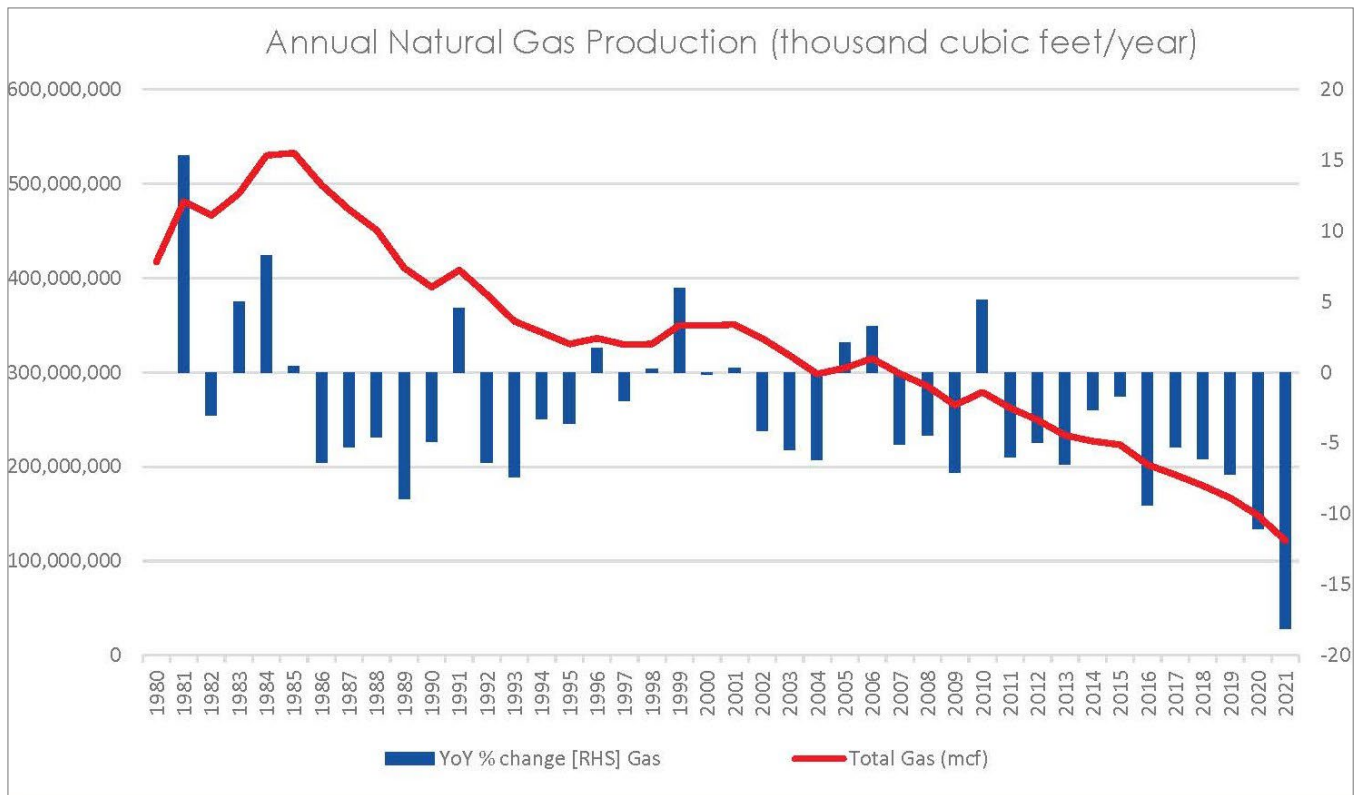


Figure 14: California natural gas production in thousand cubic feet (mcf) per year in annual frequency. Notice yearly natural gas production peaked in 1985 at 532,762,210 mcf/year, equivalent to 1.5 bcf/day. The blue bars represent the year over year percentage change in production. Since the peak in 1985, year over year oil production has increased only during 8 years: 1991, 1996, 1999, 2000, 2001, 2005, 2006 and 2010. The average decline rate since the peak in 1985 is 3 percent with an acceleration in the decline since 2011, with the steepest decline in history in 2021 with an 18 percent decline. The cumulative natural gas production drop since 2015 is 46 percent vs 32 percent decline for the oil production drop.

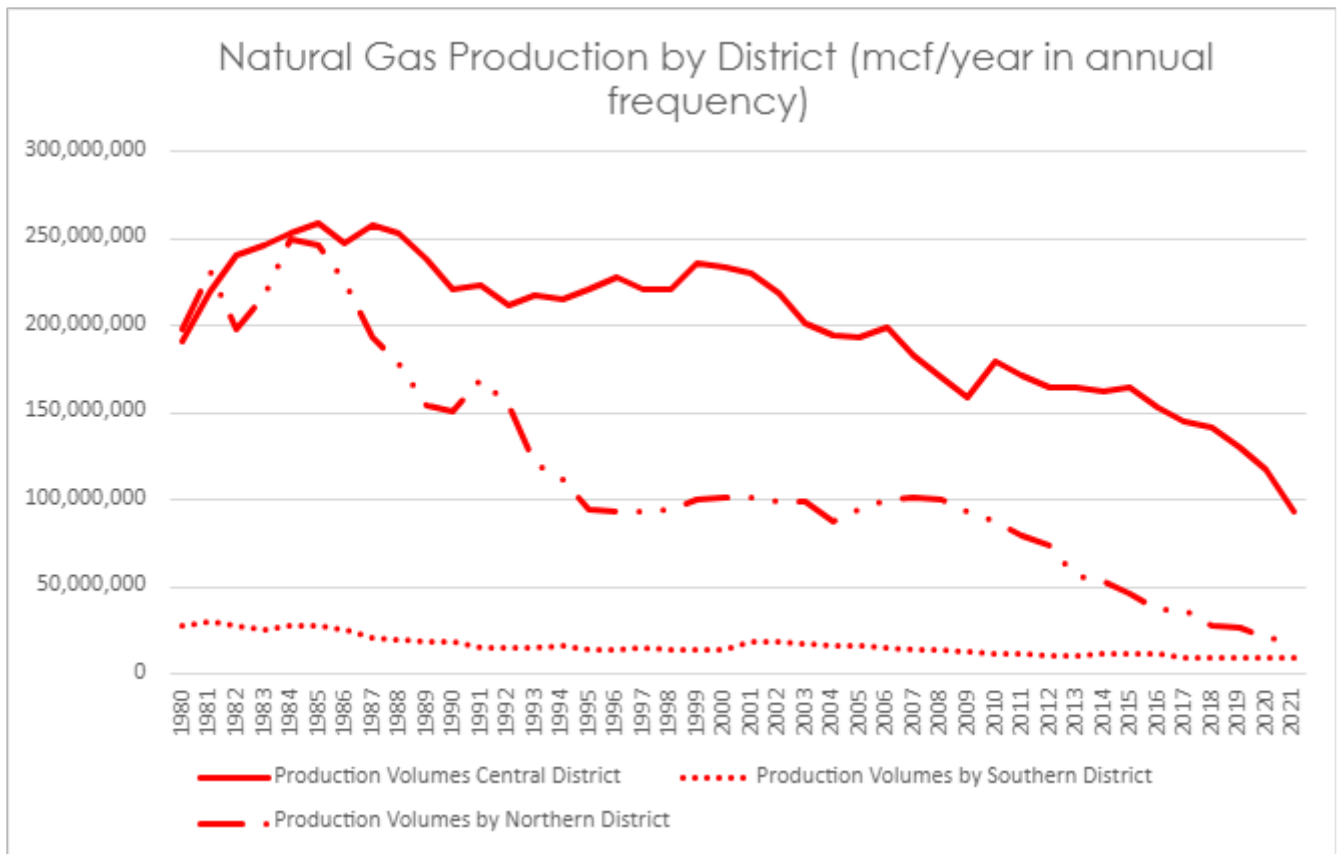


Figure 15: Natural gas production by district in thousand cubic feet per year in annual frequency. Natural gas production in Northern District dropped drastically since 2008.

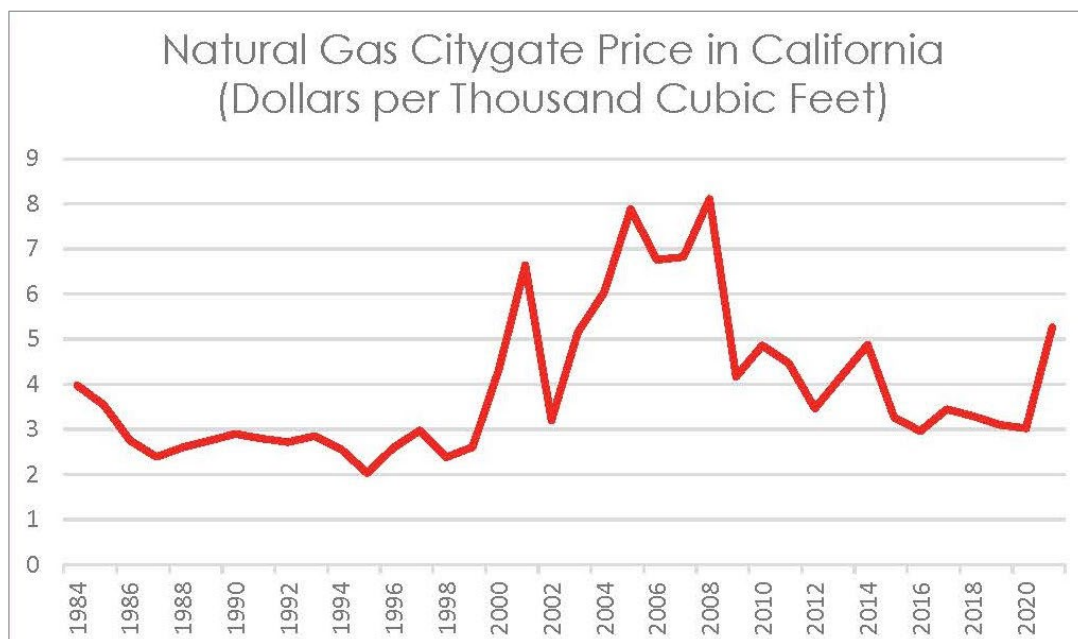


Figure 16: Natural gas Citygate price in California on an annual frequency. Source: EIA <http://www.eia.gov/dnav/ng/hist/n3050ca3a.htm>

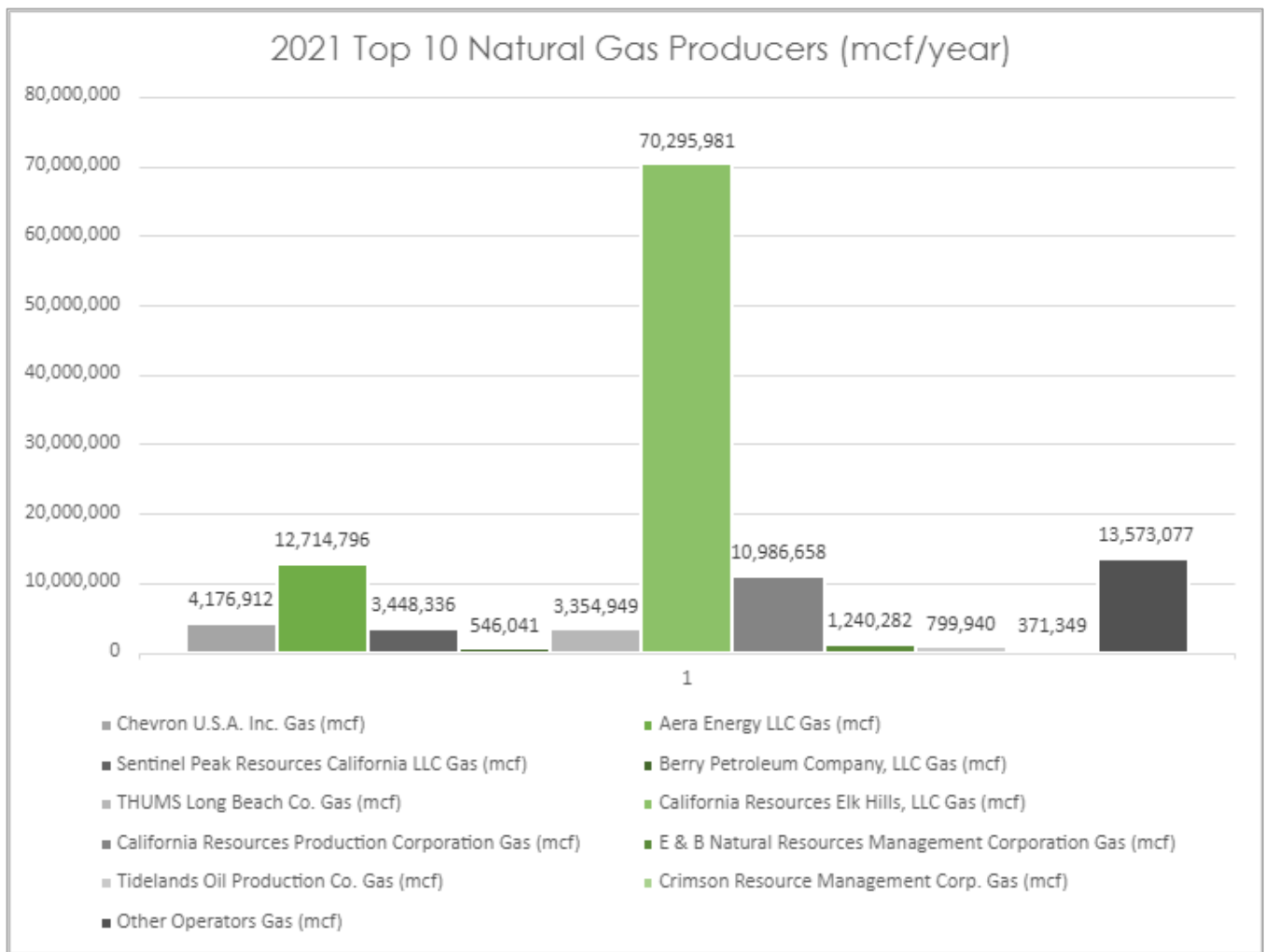


Figure 17: 2021 top 10 natural gas producers in mcf/year. 89 percent of the natural gas production came from the top 10 operators in 2021 with California Resources Elk Hills representing 58 percent of the total natural gas production in California in 2021.

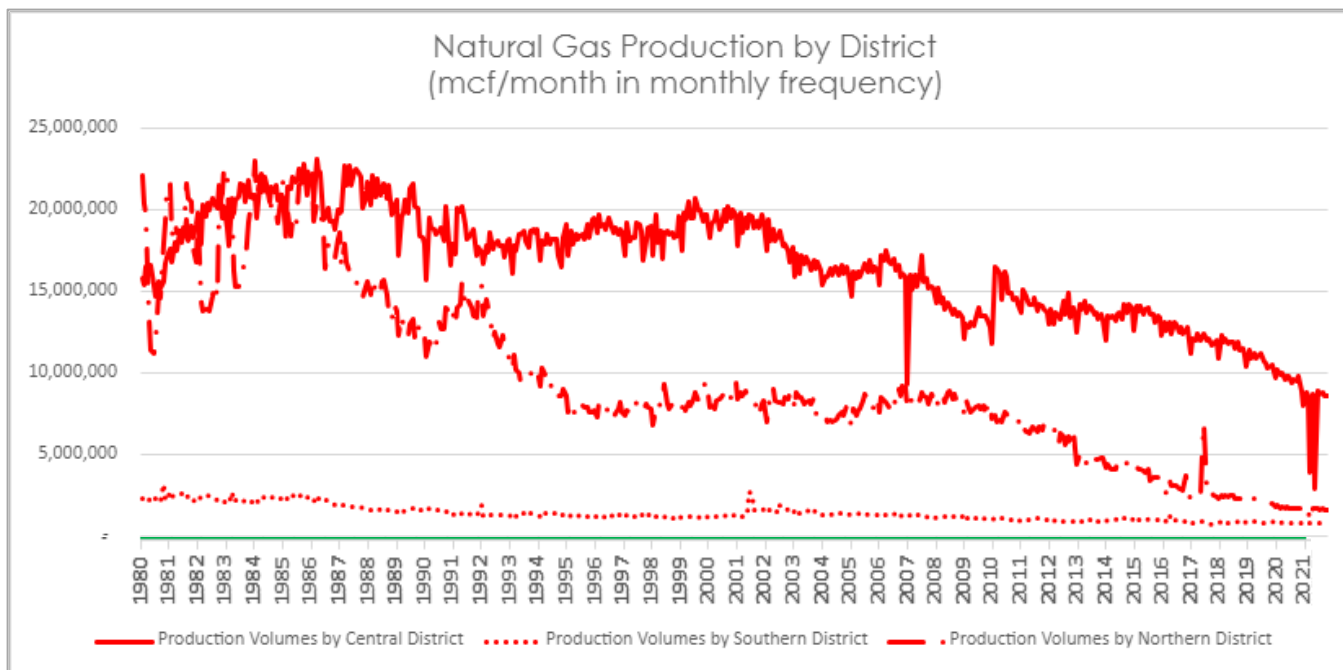


Figure 18: Natural production by district in thousand cubic feet per month in monthly frequency. Notice Central District monthly production peaked in March 1986 at 23,123,380 mcf/month. Natural Gas production in Northern District was higher than in Central District in the early 1980s. Natural Gas production in Northern District dropped drastically from an average of 20,830,974 mcf/month in 1984 to 1,581,479 mcf/month in 2021. Notice the two troughs in May and July 2021: CalGEM's investigations revealed incomplete natural gas production data submission by California Resources Elk Hills, LLC and California Resources Production Corporation for the periods of May and July 2021.

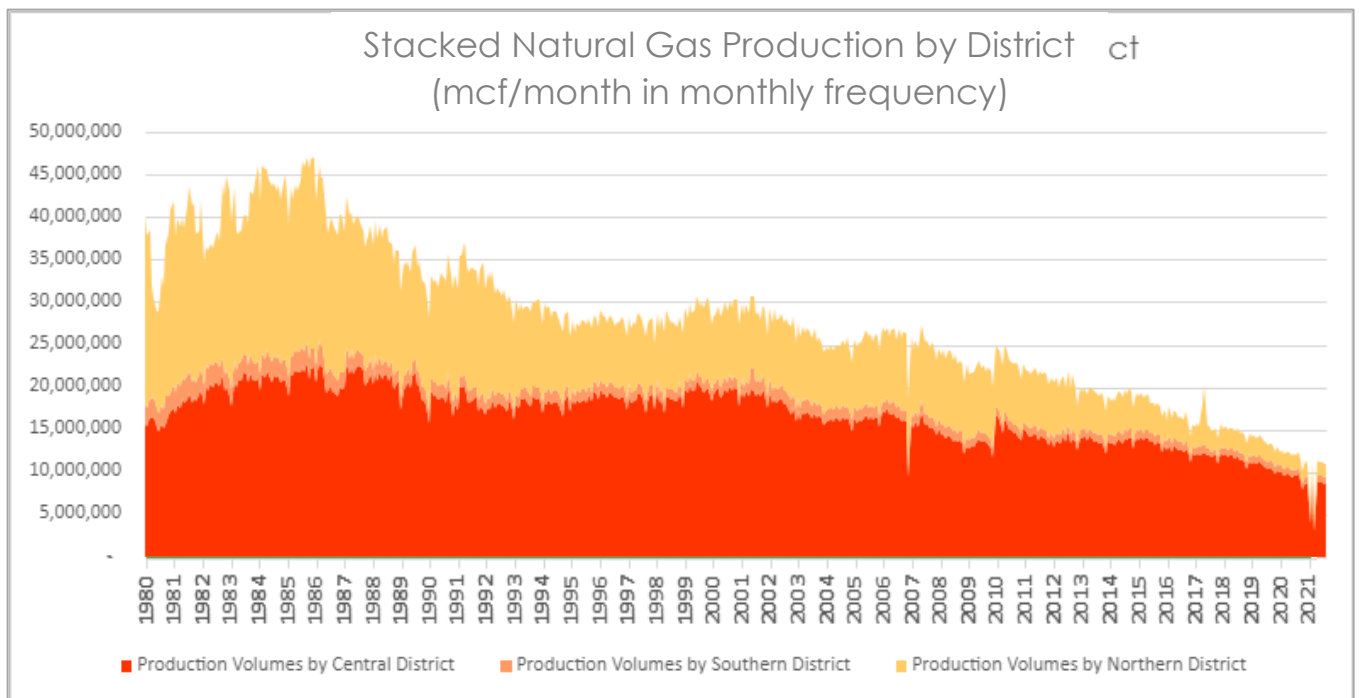


Figure 19: Stacked natural gas production by district in thousand cubic feet per month in monthly frequency. Notice the peak in monthly production in January 1986 at 47,016,136 mcf/month. Notice the two troughs in May and July 2021: CalGEM's investigations revealed incomplete natural gas production data submission by California Resources Elk Hills, LLC and California Resources Production Corporation for the periods of May and July 2021.

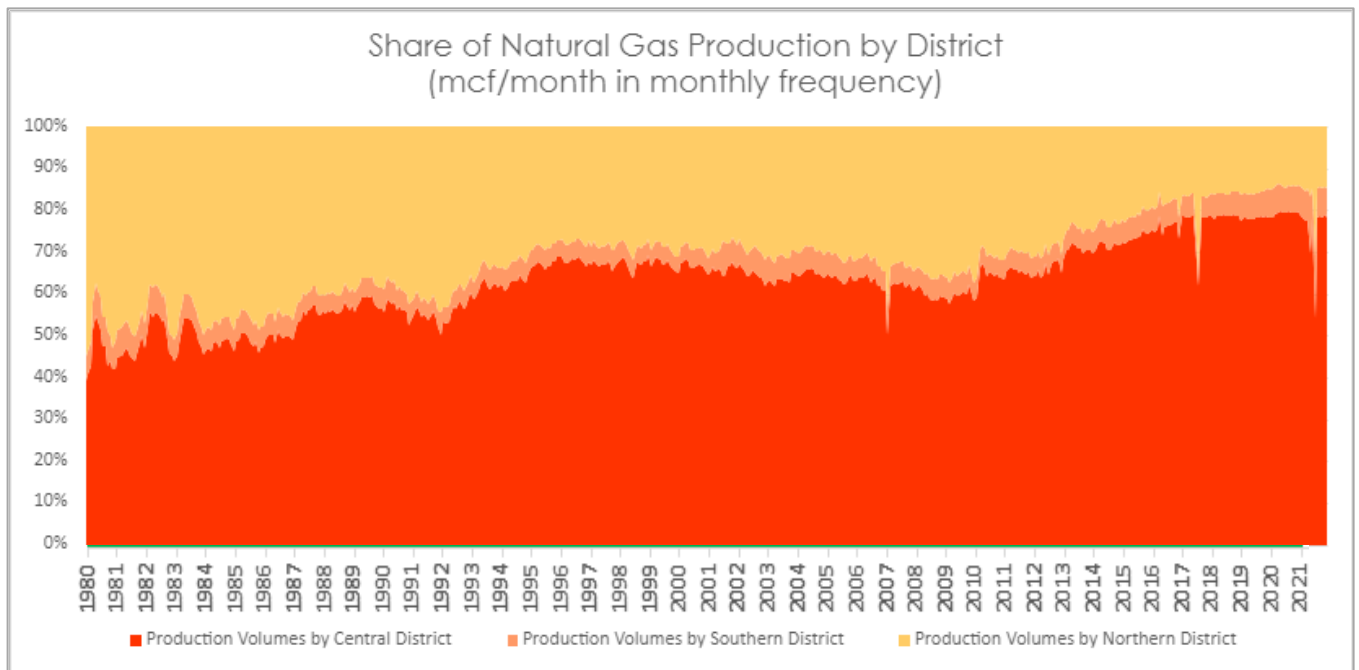


Figure 20: Share of natural gas production by district in thousand cubic feet per month in monthly frequency. Notice Central District monthly natural gas production increased from about 35 percent in late 1980 to about 70 percent in 2021. The shares of natural gas production from Northern District decreased in two stages in 1993-1996 and in 2010-2015. Notice the two troughs in May and July 2021: CalGEM's investigations revealed incomplete natural gas production data submission by California Resources Elk Hills, LLC and California Resources Production Corporation for the periods of May and July 2021.

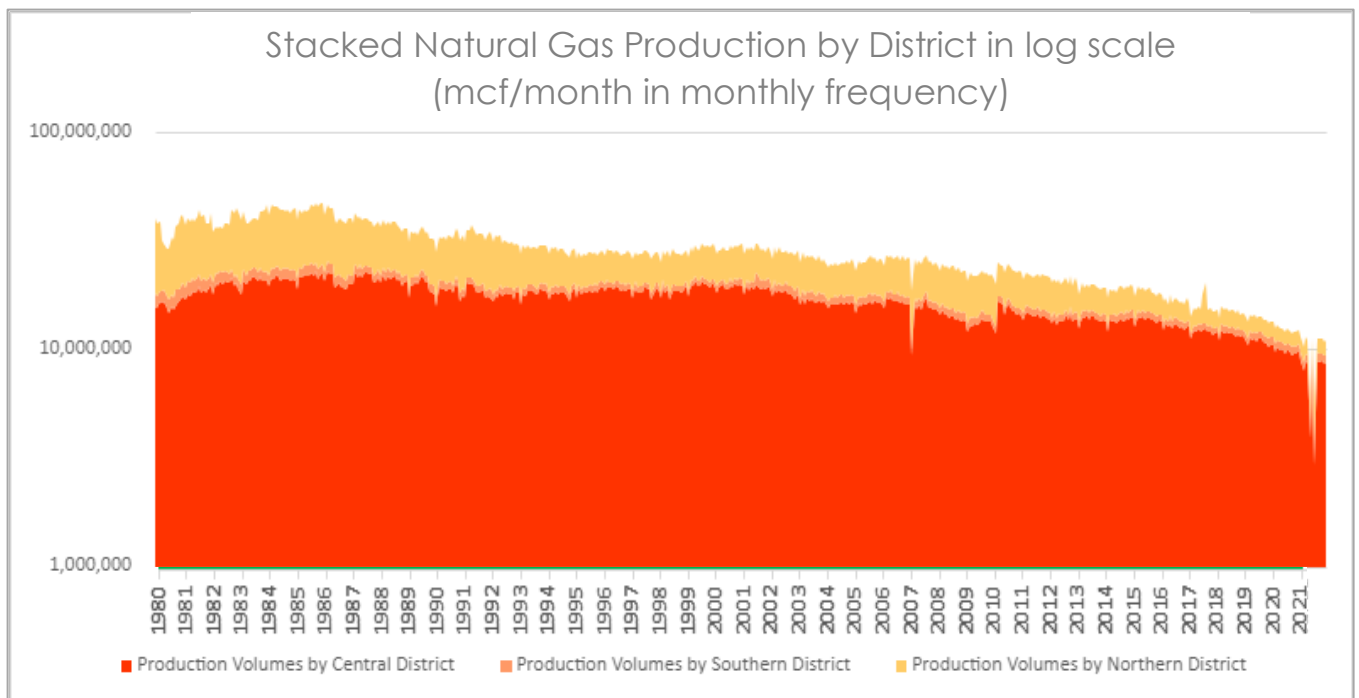


Figure 21: Stacked natural gas production by district in thousand cubic feet per month in monthly frequency in logarithmic scale. Notice the two troughs in May and July 2021: CalGEM's investigations revealed incomplete natural gas production data submission by California Resources Elk Hills, LLC and California Resources Production Corporation for the periods of May and July 2021.

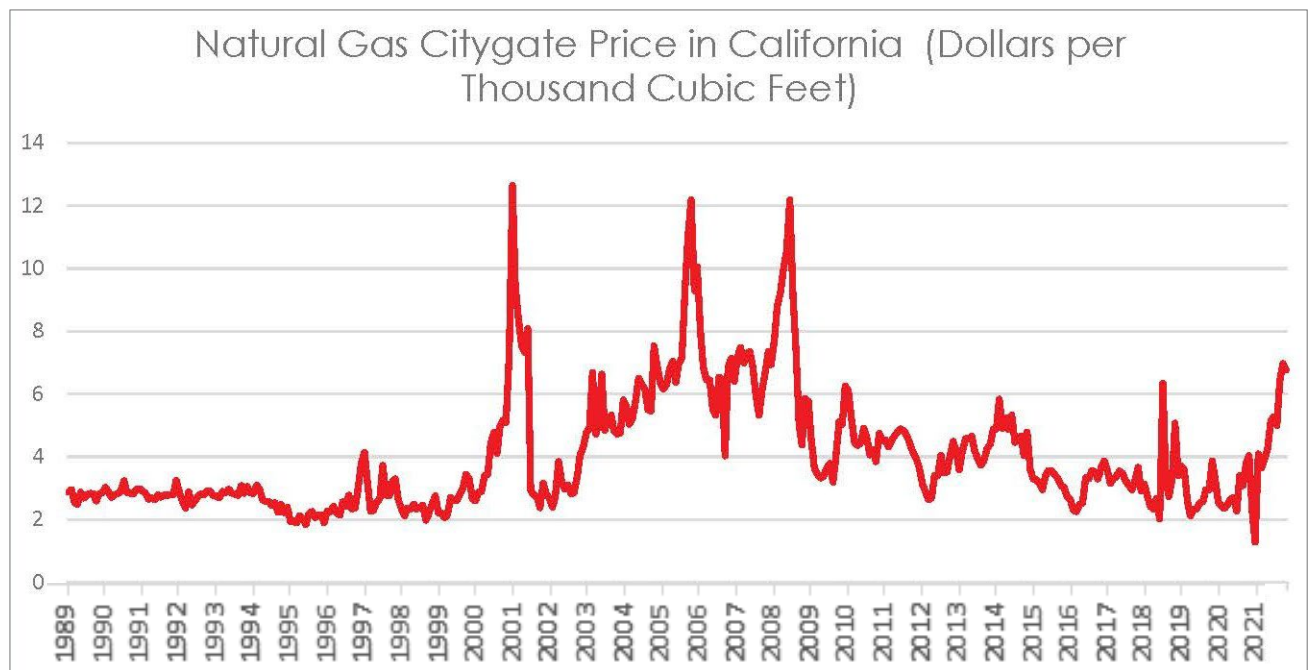


Figure 22: Natural gas Citygate price in California. Source:
<http://www.eia.gov/dnav/ng/hist/n3050ca3m.htm>

2.2.1. Underground Gas Storage

2021 State Gas Storage by District			
	Gas Injected (Bcf)	Gas Withdrawn (Bcf)	Net (Bcf)
Northern District	163.2	173.5	-10.2
Southern District	3.4	3.1	0.3
Grand Total	166.6	176.6	-9.9

NOTE: No gas storage exists in the Central District.

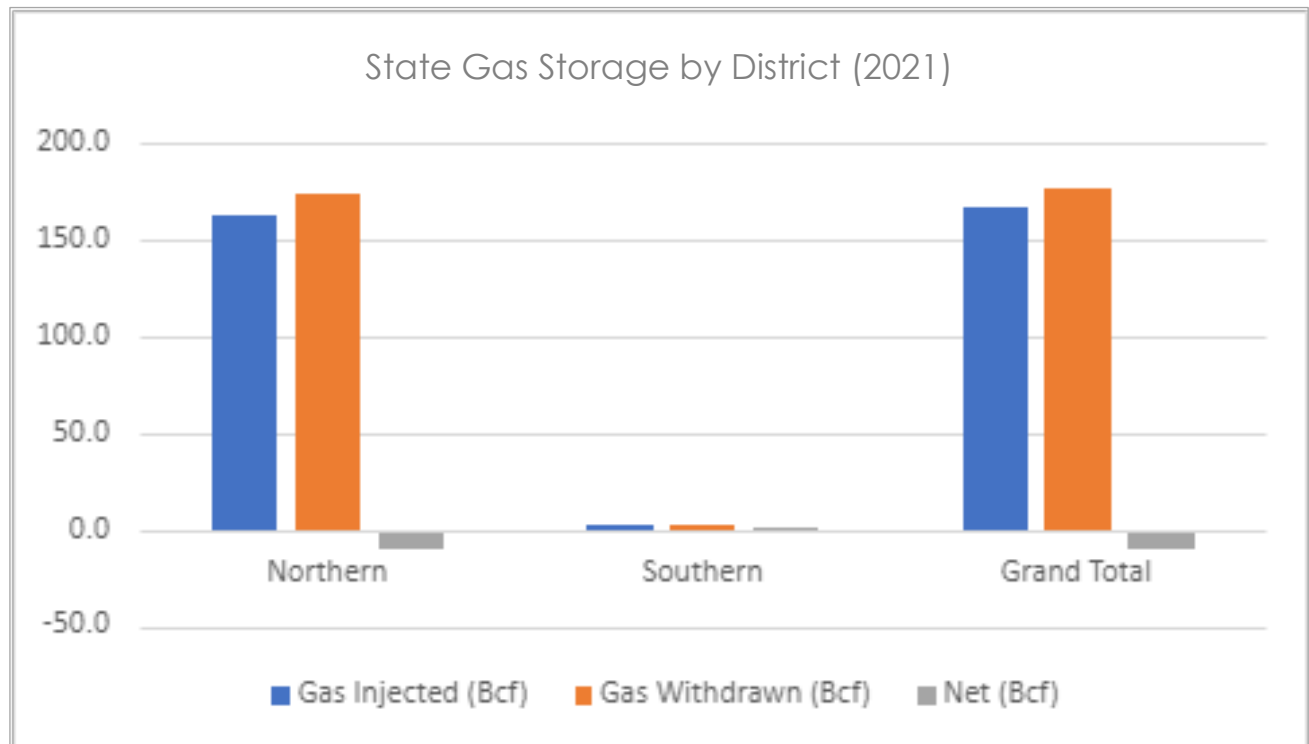


Figure 23: 2021 Underground Gas Storage volume by district.

2.3. Additional 2021 Data and Information on Oil and Gas Operations in California

The table below lists the injection volumes between 2017 and 2021. Water disposal operations increased between 2020 and 2021, while water flood, steam flood, cyclic steam and gas injection decreased between 2020 and 2021. There has been no recorded air injection over the past five years.

Injection Volumes (MMbbl or Bcf*) <i>without Federal OCS Injection</i>					
Year	2017	2018	2019	2020	2021
Water Flood	1,619.6	1,575.9	1,511.9	1,582.9	1,491.8
Water Disposal	694.3	718.8	741.2	733.2	787.3
Steam Flood	395.9	398.7	376.1	345.9	331.4
Cyclic-Steam	133.2	286.6	231.3	243.8	220.7
UGS Gas Injection*	152.9	129.8	211.0	177.1	166.6
Gas Injection*	43.6	40.5	37.8	35.1	29.6
Air Injection *	0.0	0.0	0.0	0.0	0.0

*Gas and air volumes in Bcf.

California New Well Operations in 2021							
Year	2015	2016	2017*	2018	2019	2020	2021
Wells Drilled⁺	1,016	759	996	1,976	852	693**	696**
Wells Completed⁺	1,346	1,111	1,108	1,564	1,071	783***	865***
Footage Drilled (ft)⁺	2,022,697	1,587,498	2,085,937	4,821,253	2,278,447	1,630,526***	2,048,105***
Drilling Notices Filed⁺	4,976	3,917	1,258*	2,530	3,184	2,374	1,080
Rework Notices Filed	3,082	1,715	2,547	2,416	2,112	1,691	1,791
Abandonment Notices Filed⁺⁺	2,120	1,798	2,153	2,786	3,324	3,935	4,394

*2017 Drilling Notices Filed has been amended. There are no records of the source of the initial numbers.

** Based on spud dates in pending and approved well summaries. Previous dates reflected information from approved summaries only.

*** Completion dates extracted from pending and approved summaries. Previous dates reflected information from approved summaries only.

+ Includes new drill, sidetrack and deepen.

++ Includes abandonment and re-abandonment.

¹ Spudding is the process of beginning to drill a well in the oil and gas industry. A larger drill bit is initially used to clear a surface hole, which is then lined with casing and cement to protect groundwater.

California Oil, Associated Gas, and Water Production by District and Field in 2021			
District and Field	Oil and Condensate Produced (bbl)	Gross Gas Produced (Mcf)	Water Produced (bbl)
Central District			
Onshore			
Ant Hill	13,792	479	1,326,494
Antelope Hills	65,938	11,436	704,509
Antelope Hills, North	121,453	9,585	2,864,318
Any Field	287,162	739,023	1,304,246
Asphalto	175,122	3,117,607	8,308,713
Beer Nose	10,031	3,477	298
Belgian Anticline	28,061	51,348	66,682
Bellevue	26,847	14,888	709,313
Bellevue, West	27,760	28,948	55,909
Belridge, North	1,402,281	1,855,090	27,599,098
Belridge, South	16,840,221	6,317,041	288,625,533
Blackwells Corner	9,587	-	45,495
Bowerbank	185	-	466
Buena Vista	859,307	10,435,899	35,379,132
Burrel	15,935	16,179	807,612
Burrel, Southeast	-	-	-
Cal Canal Gas	18,986	55,824	133,062
Calders Corner	-	-	-
Camden	-	-	-
Canal	4,777	3,617	52,431
Canfield Ranch	62,145	55,757	409,483
Carneros Creek	2,022	-	18,573
Chico-Martinez	12,107	-	123,275
Cienaga Canyon	9,344	37,935	177,491
Coalinga	4,925,637	493,645	61,107,630
Coalinga, East, Extension	-	-	-
Coles Levee, North	90,210	70,064	161,957
Coles Levee, South	38,162	225,753	15,990
Comanche Point	10,543	-	500,646
Cymric	12,101,868	2,065,538	133,499,389
Deer Creek	29,223	-	2,579,432
Deer Creek, North	310	-	2,119
Devils Den	8,509	-	42,115
Dyer Creek	5,388	-	510,642
Edison	511,734	61,148	8,786,328
Edison, Northeast	-	-	-
Elk Hills	6,179,029	54,667,253	88,760,793
Fruitvale	405,368	157,815	6,647,849
Greeley	115,110	171,718	2,403,056

Guijaral Hills	5,088	3,841	54,033
Helm	16,868	-	144,188
Jacalitos	77,678	32,709	208,462
Jasmin	103,882	-	20,726,775
Jerry Slough (ABD)	-	-	-
Kern Bluff	9,346	-	721,221
Kern Front	2,549,283	64,181	147,075,512
Kern River	14,948,895	721,948	240,894,036
Kettleman City (ABD)	-	-	-
Kettleman Middle Dome	14,765	17,409	56,691
Kettleman North Dome	113,303	175,779	2,370,837
Kreyenhagen (ABD)	-	-	-
Landslide	4,793	-	39
Los Lobos	302	-	-
Lost Hills	8,014,413	4,295,710	107,753,946
Lost Hills, Northwest	9,966	10,832	270,848
McDonald Anticline	30,019	3,669	736,298
McKittrick	3,728,282	674,816	45,505,849
Midway-Sunset	18,881,678	3,223,557	174,878,131
Monument Junction	21,218	38,000	150,574
Mount Poso	964,123	15,017	48,336,811
Mountain View	65,280	29,030	288,077
Paloma	11,618	85,752	5,873
Pioneer	2,255	3,650	1,010
Pleasant Valley	-	-	-
Pleito	325,788	168,290	635,192
Poso Creek	3,784,963	361,154	173,733,952
Pyramid Hills	43,344	6,565	123,529
Railroad Gap	72,178	1,488,608	1,375,111
Raisin City	59,413	33,473	2,377,442
Rio Bravo	156,821	331,538	5,262,871
Rio Viejo	88,717	29,338	91,374
Riverdale	22,143	3,174	59,865
Rose	135,354	56,712	678,514
Rosedale	16,203	-	43,214
Rosedale Ranch	77,771	52,037	3,899,944
Round Mountain	2,334,695	227,656	178,558,290
San Emidio Nose	8,516	7,512	3,836
San Joaquin	-	-	-
Semitropic	21,947	12,225	22,765
Shafter, North	308,934	204,741	1,303,734
Stockdale	85,453	26,617	31,179
Strand	2,299	1,995	1,646
Tejon	61,682	26,899	5,144,803
Tejon Hills	3,487	393	53,247
Tejon, North	14,826	87,891	30,116

Temblor East (ABD)	-	-	-
Temblor Ranch	-	-	-
Ten Section	44,638	26,094	1,668,637
Trico Gas	-	-	-
Tulare Lake	-	-	-
Union Avenue	41,917	14,824	225,991
Valpredo	-	-	-
Van Ness Slough	-	-	-
Wasco	-	-	-
Welcome Valley	-	-	-
Wheeler Ridge	39,162	24,239	92,528
White Wolf	7,480	3,627	3,508
Yowlumne	137,086	110,127	2,367,857
Northern District			
Offshore			
Elwood, South, Offshore	-	-	-
Rincon	-	-	-
Onshore			
Afton Gas	-	-	-
Aliso Canyon	88,882	165,497	574,267
Any Field	19,017	62,842	1,148,236
Arbuckle Gas	-	2,104	6
Arroyo Grande	485,623	464,654	9,135,853
Bardsdale	89,168	90,363	43,433
Barham Ranch	42,523	101,010	82,649
Big Mountain	1,463	46	3,477
Bitterwater	2,147	-	-
Bounde Creek Gas	-	71,459	1,305
Brentwood	36,414	12,503	46,408
Brentwood, East, Gas	-	-	-
Buckeye Gas	-	129,623	66
Bunker Gas	-	-	-
Butte Sink Gas	-	-	-
Butte Slough Gas	-	130,879	228
Cabrillo	9,346	28,867	32,583
Cache Creek Gas	-	-	-
Canada Larga	-	-	-
Careaga Canyon	2,428	19,603	243,658
Cascade	77,212	139,812	130,269
Casmalia	52,219	10,865	1,782,073
Castaic Hills	8,824	1,905	8,417
Cat Canyon	1,607,181	955,378	11,538,691
Chaffee Canyon	484	14,525	218
Chowchilla Gas	-	-	-
Clarksburg Gas	-	-	-
Collegeville, East, Gas	-	-	-

Compton Landing Gas	-	6,286	-
Conway Ranch Gas	-	-	-
Cuyama, South	143,248	57,580	15,299,771
Del Valle	18,589	10,600	130,164
Denverton Creek Gas	21	7,933	237
Dunnigan Hills Gas	-	-	-
Durham Gas	-	-	-
Dutch Slough Gas	-	-	-
East Islands Gas	-	-	-
Eureka Canyon	-	-	-
Everglade Gas	-	-	-
Fillmore	572	160	4,042
Four Deer (ABD)	7,582	22,451	254,823
French Camp Gas	-	133,558	1,168
Gill Ranch Gas	-	52,734	9,503
Goleta	-	-	-
Grimes Gas	-	1,561,436	29,392
Grimes, West, Gas	-	218,661	1,397
Grizzly Bluff Gas	-	21,656	12
Half Moon Bay	46	-	-
Hasley Canyon	23,163	17,643	57,155
Hollister	-	-	-
Holser	12,432	9,079	7,749
Honor Rancho	15,360	5,512	235,975
Hood-Franklin Gas	-	-	-
Hopper Canyon	-	-	-
Howells Point Gas	-	-	-
Jesus Maria	-	-	-
King Island Gas	-	19,109	-
Kirby Hill Gas	-	-	6,873
Kirk Gas	-	63,959	369
Kirkwood Gas	-	-	-
Knights Landing Gas	-	-	-
La Goleta Gas	25	-	798
La Honda	-	-	-
Lathrop Gas	-	132,164	10,021
Lindsey Slough Gas	156	118,804	2,177
Little Butte Creek Gas	-	-	-
Livermore	3,545	237	13,295
Lodi Gas	-	-	8,888
Lompoc	218,722	146,335	19,636,591
Lone Star Gas	-	67,651	1,119
Lone Tree Creek Gas	-	-	-
Los Alamos	6,280	4,370	395
Los Medanos Gas	-	17,914	38
Lynch Canyon	49,358	-	3,626,577
Maine Prairie Gas	-	-	-

Malton-Black Butte Gas	-	247,341	7,070
McCool Ranch	-	-	-
McDonald Island Gas	-	-	3,856
McMullin Ranch Gas	-	-	-
Medora Lake Gas	-	-	-
Merrill Avenue Gas	-	-	-
Millar Gas	-	-	-
Moffat Ranch Gas	-	52,774	372
Monroe Swell	10,634	-	25,018
Montalvo, West	72,305	38,269	233,469
Moody Gulch (ABD)	-	-	-
Moon Bend Gas	-	122,864	3,935
Moorpark West	3,683	1,744	3,490
Morales Canyon	-	-	-
Newhall	-	-	-
Newhall-Potrero	-	-	-
Nicolaus Gas	-	-	-
Oak Canyon	15,111	8,838	71,500
Oak Park	1,512	68	3,436
Oakdale Gas	-	-	-
Oakridge	71,457	26,050	446,803
Oat Mountain	68,557	66,156	98,685
Oil Creek	-	-	-
Ojai	244,567	870,489	347,831
Orcutt	739,803	655,419	30,225,619
Orland Gas	-	-	-
Oxnard	91,608	72,270	105,187
Paris Valley	-	-	-
Pierce Road Gas	-	-	-
Piru Creek (ABD)	-	-	-
Placerita	309,186	-	16,923,904
Pleasant Creek Gas	-	-	-
Princeton Gas	-	-	-
Putah Sink Gas	-	-	-
Ramona	23,812	36,359	22,036
Ramona, North	-	-	-
Rancho Capay Gas	-	70,322	8
Rice Creek Gas	-	167,972	2,642
Rice Creek, East, Gas	-	128,435	226
Rincon	160,073	159,259	1,637,871
Rindge Tract Gas	-	-	-
Rio Vista Gas	2,753	2,363,413	66,610
River Island Gas	-	-	-
Robbins Gas	-	-	-
Roberts Island Gas	-	-	-
Russell Ranch	38,910	52,518	1,269,826
Ryer Island Gas	-	34,271	-

Sacramento Airport Gas	-	-	-
San Ardo	5,885,169	873,457	140,548,295
San Miguelito	211,713	160,246	1,948,140
Santa Clara Avenue	12,306	6,035	25,946
Santa Maria Valley	65,015	57,477	1,411,994
Santa Paula (ABD)	-	-	-
Santa Susana	-	-	-
Sargent	15,759	15,374	13,459
Saticoy	26,766	21,537	50,910
Sespe	285,699	722,190	255,211
Shiells Canyon	31,710	83,002	418,228
Simi	-	-	-
South Mountain	266,289	424,000	224,008
Stegeman Gas	-	-	-
Sugarfield Gas	-	-	-
Suisun Bay Gas	-	50,654	3,196
Sutter Buttes Gas	-	1,139,613	23,775
Sutter City Gas	-	133,771	2,977
Sycamore Gas	-	335,024	11,288
Sycamore Slough Gas	-	2,056	-
Tapia	8,445	344	294,120
Tapo Canyon, South	-	-	-
Tapo Ridge	-	-	-
Tapo, North	-	-	-
Temescal	35,825	13,102	82,065
Thornton, W.-Walnut Grove Gas	-	-	-
Timber Canyon	32,607	104,181	8,794
Tisdale Gas	-	113,575	3,396
Todhunters Lake Gas	-	10,223	5
Tompkins Hill Gas	-	246,997	3,852
Torrey Canyon	43,639	65,493	37,997
Union Island Gas	-	348,995	10,642
Vallecitos	8,903	15,336	19,742
Van Sickle Island Gas	-	-	-
Ventura	3,203,022	1,990,912	38,739,603
Vernalis Gas	-	42,954	195
Wayside Canyon	7,426	7,105	50,984
West Butte Gas	-	52,413	1,276
West Mountain	2,310	2,578	2,158
Wild Goose Gas	-	-	129
Williams Gas	-	37,654	207
Willow Slough Gas	-	-	-
Willows-Beehive Bend Gas	-	1,538,104	39,399
Winchester Lake Gas	-	-	-
Winters Gas	-	-	-

Zaca	175,535	19,920	7,050,600
Southern District			
Offshore			
Belmont Offshore	548,551	225,836	14,873,219
Huntington Beach	714,516	219,427	31,370,655
Wilmington	7,075,640	2,978,307	429,252,972
Onshore			
Any Field	-	-	-
Bandini	8,608	54	32,909
Beverly Hills	312,651	539,248	5,281,747
Brea-Olinda	950,786	559,104	7,529,619
Cheviot Hills	30,525	41,194	114,207
Chino-Soquel	607	-	-
Coyote, East	68,263	-	645,722
Dominguez	1,104	-	504
El Segundo	16,043	4,445	278,173
Esperanza	1,412	442	1,134
Howard Townsite	11,338	22,433	1,774
Huntington Beach	784,460	208,575	28,980,239
Hyperion	10,878	-	1,242
Inglewood	1,580,073	808,837	111,178,493
Las Cienegas	137,742	84,637	2,312,529
Long Beach	1,163,821	878,960	25,739,711
Long Beach Airport	5,976	1,250	69,726
Los Angeles City	8,233	9,601	72,989
Los Angeles Downtown	30,448	-	523,589
Los Angeles, East	158	-	-
Mahala	5,076	36,500	678
Montebello	246,815	125,995	19,572,598
Newport	-	28,372	-
Newport, West	29,165	16,298	411,689
Old Wilmington (ABD)	5,439	306	4,575
Olive	34,180	5,755	129,685
Playa Del Rey	45,240	-	765,838
Potrero (ABD)	-	-	-
Prado-Corona	-	-	-
Richfield	172,865	29,676	3,105,955
Rosecrans	81,060	30,755	1,048,638
Rosecrans, South	12,126	12,939	58,390
Salt Lake	35,989	34,376	200,284
Salt Lake, South	11,179	33,997	1,033,746
San Vicente	171,173	150,668	604,647
Sansinena	189,132	404,594	183,146
Santa Fe Springs	328,250	2,017	17,804,667
Sawtelle	68,541	1,929	63,199
Seal Beach	360,917	278,461	7,148,148
Torrance	230,357	54,862	4,556,072

Walnut	7,727	4,802	32,585
Whittier	94,010	219,203	146,303
Wilmington	4,433,240	1,135,250	230,447,757
Grand Total	137,100,479	121,508,319	3,094,171,987

2021 Summary California Oil, Associated Gas, and Water Production			
	Oil and Condensate Produced (bbl)	Gross Gas Produced (Mcf)	Water Produced (bbl)
Coastal District			
Offshore	0	0	0
Onshore	101,882,027	93,368,692	1,841,698,434
Northern District			
Onshore	15,194,139	18,950,523	306,893,798
Southern District			
Offshore	8,338,708	3,423,570	475,496,846
Onshore	11,685,605	5,765,534	470,082,909
Grand Total	137,100,479	121,508,319	3,094,171,987

2021 California Condensate, Non-Associated Gas, and Water Production by District and Field			
District and Field	Oil and Condensate Produced (bbl)	Gross Gas Produced (Mcf)	Water Produced (bbl)
Central District			
Onshore			
Antelope Hills	-	2,555	-
Belgian Anticline	-	16,106	-
Bowerbank	-	-	-
Buena Vista	-	69,887	-
Cal Canal Gas	18,986	55,824	133,062
Canal	-	-	-
Coles Levee, North	-	-	1
Elk Hills	-	274,924	-
Kettleman North Dome	-	-	-
Monument Junction	116	1,244	7,356
Paloma	-	-	-
Railroad Gap	-	-	-
Rio Bravo	-	28,582	403,639
Semitropic	-	-	-
Strand	-	-	-
Ten Section	-	-	-
Trico Gas	-	-	-
Northern District			
Afton Gas	-	-	-
Any Field	-	43,607	1,447
Arbuckle Gas	-	2,104	6
Bounde Creek Gas	-	71,459	1,305
Brentwood, East, Gas	-	-	-
Buckeye Gas	-	129,623	66
Bunker Gas	-	-	-
Butte Sink Gas	-	-	-
Butte Slough Gas	-	130,879	228
Cache Creek Gas	-	-	-
Chowchilla Gas	-	-	-
Clarksburg Gas	-	-	-
Collegeville, East, Gas	-	-	-
Compton Landing Gas	-	6,286	-
Conway Ranch Gas	-	-	-
Cuyama, South	-	-	-
Del Valle	252	-	28,703
Denver-ton Creek Gas	21	7,933	237
Dunnigan Hills Gas	-	-	-
Durham Gas	-	-	-

Dutch Slough Gas	-	-	-
East Islands Gas	-	-	-
Everglade Gas	-	-	-
French Camp Gas	-	133,558	1,168
Gill Ranch Gas	-	52,734	5
Grimes Gas	-	1,561,436	29,392
Grimes, West, Gas	-	218,661	1,397
Grizzly Bluff Gas	-	21,656	12
Hollister	-	-	-
Hood-Franklin Gas	-	-	-
Howells Point Gas	-	-	-
King Island Gas	-	19,109	-
Kirby Hill Gas	-	-	-
Kirk Gas	-	63,959	369
Kirkwood Gas	-	-	-
Knights Landing Gas	-	-	-
La Goleta Gas	-	-	-
Lathrop Gas	-	132,164	10,021
Lindsey Slough Gas	156	118,804	2,177
Little Butte Creek Gas	-	-	-
Lone Star Gas	-	67,651	1,119
Lone Tree Creek Gas	-	-	-
Los Medanos Gas	-	17,914	38
Maine Prairie Gas	-	-	-
Malton-Black Butte Gas	-	247,341	7,070
McMullin Ranch Gas	-	-	-
Medora Lake Gas	-	-	-
Merrill Avenue Gas	-	-	-
Millar Gas	-	-	-
Moffat Ranch Gas	-	52,774	372
Montalvo, West	-	-	-
Moon Bend Gas	-	122,864	3,935
Nicolaus Gas	-	-	-
Oakdale Gas	-	-	-
Onshore			
Orland Gas	-	-	-
Pierce Road Gas	-	-	-
Princeton Gas	-	-	-
Putah Sink Gas	-	-	-
Rancho Capay Gas	-	70,322	8
Rice Creek Gas	-	167,972	2,642
Rice Creek, East, Gas	-	128,435	226
Rindge Tract Gas	-	-	-
Rio Vista Gas	2,753	2,363,413	66,610
River Island Gas	-	-	-
Robbins Gas	-	-	-

Roberts Island Gas	-	-	-
Ryer Island Gas	-	34,271	-
Sacramento Airport Gas	-	-	-
Stegeman Gas	-	-	-
Sugarfield Gas	-	-	-
Suisun Bay Gas	-	50,654	3,196
Sutter Buttes Gas	-	1,139,613	23,775
Sutter City Gas	-	133,771	2,977
Sycamore Gas	-	335,024	11,288
Sycamore Slough Gas	-	2,056	-
Tapia	-	-	-
Thornton, W.-Walnut Grove Gas	-	-	-
Tisdale Gas	-	113,575	3,396
Todhunters Lake Gas	-	10,223	5
Tompkins Hill Gas	-	246,997	3,852
Union Island Gas	-	348,995	10,642
Van Sickle Island Gas	-	-	-
Vernalis Gas	-	42,954	195
West Butte Gas	-	52,413	1,276
Williams Gas	-	37,654	207
Willow Slough Gas	-	-	-
Willows-Beehive Bend Gas	-	1,538,104	39,399
Winchester Lake Gas	-	-	-
Winters Gas	-	-	-
Southern District			
Offshore			
Wilmington	-	-	-
Onshore			
Los Angeles Downtown	-	-	-
Prado-Corona	-	-	-
Seal Beach	-	9,704	-
Wilmington	-	-	-
Grand Total	22,284	10,497,786	802,819

Summary 2021 California Condensate, Non-Associated Gas, and Water Production			
	Condensate Produced (bbl)	Gross Gas Produced (MCF)	Water Produced (bbl)
Central District			
Onshore	544,058	449,122	19,102
Northern District			
Onshore	258,761	10,038,960	3,182
Southern District			
Offshore	0	0	0
Onshore	0	9,704	0
Grand Total	802,819	10,497,786	22,284

2021 California Gas Storage by District and Field			
District and Field	Gas Injected (Mcf)	Gas Withdrawn (Mcf)	Net Gas (Mcf)
Northern District			
Onshore			
Aliso Canyon	28,537,173	23,718,314	4,818,859
Gill Ranch Gas	10,045,216	12,349,034	(2,303,818)
Honor Rancho	19,606,840	17,166,825	2,440,015
Kirby Hill Gas	14,774,609	11,882,979	2,891,630
La Goleta Gas	7,388,244	7,172,663	215,581
Lodi Gas	11,436,772	7,063,525	4,373,247
Los Medanos Gas	4,428,660	9,279,993	(4,851,333)
McDonald Island Gas	18,661,351	27,833,190	(9,171,839)
Princeton Gas	7,667,583	7,898,550	(230,967)
Wild Goose Gas	40,673,162	49,042,977	(8,369,815)
Southern District			
Onshore			
Playa Del Rey	3,365,636	3,087,513	278,123
Grand Total	166,585,246	176,495,563	(9,910,317)

2021 California Steam and Water Injection by District and Field					
District and Field	Cyclic Steam (bbl)	Steamflood (bbl)	Water Disposal (bbl)	Waterflood (bbl)	Total Water Injected (bbl)
Central District					
Onshore					
Ant Hill	-	-	1,540,485	-	1,540,485
Antelope Hills, North	-	323,243	2,428,965	-	2,752,208
Any Field	-	-	165,966	246,874	412,840
Asphalto	295,001	71,103	1,019,211	-	1,385,315
Belgian Anticline	-	-	-	6,999	6,999
Bellevue	-	-	707,021	-	707,021
Bellevue, West	-	-	11,664	-	11,664
Belridge, North	-	-	313,519	35,909,959	36,223,478
Belridge, South	16,486,092	60,220,473	146,283,973	99,145,649	322,136,187
Blackwells Corner	-	-	45,253	-	45,253
Buena Vista	-	-	11,010,826	28,948,201	39,959,027
Burrel	-	-	797,612	-	797,612
Cal Canal Gas	-	-	133,064	-	133,064
Canfield Ranch	-	-	318,716	-	318,716
Chico-Martinez	24,678	-	764	-	25,442
Coalinga	14,407,683	26,172,623	2,937,408	10,643,517	54,161,231
Coalinga, East, Extension	-	-	12,564,482	-	12,564,482
Coles Levee, North	-	-	-	78,222	78,222
Coles Levee, South	-	-	18,704	-	18,704
Comanche Point	-	-	500,646	-	500,646
Cymric	36,991,701	21,817,546	1,707,890	138,159	60,655,296
Deer Creek	-	-	1,761,072	-	1,761,072
Devils Den	-	-	1,320	-	1,320
Edison	11,172,924	997,507	6,520,061	240,328	18,930,820
Elk Hills	-	-	39,035,929	67,210,844	106,246,773
Fruitvale	144,885	-	8,574,907	93,238	8,813,030
Greeley	-	-	2,405,154	-	2,405,154
Helm	-	-	4,100	-	4,100
Jacalitos	-	-	-	450,200	450,200
Jasmin	-	-	126,050	-	126,050
Kern Bluff	-	-	721,197	-	721,197
Kern Front	434,589	16,316,680	791,503	-	17,542,772
Kern River	6,545,587	45,250,803	10,079,928	-	61,876,318
Kettleman North	-	-	-	2,373,883	2,373,883

Dome					
Landslide	-	-	-	38	38
Lost Hills	920,034	20,544,478	15,858,998	50,328,477	87,651,987
Lost Hills, Northwest	10,275	-	501,343	-	511,618
McDonald Anticline	-	-	782,498	-	782,498
McKittrick	5,976,529	14,297,087	62,277,375	-	82,550,991
Midway-Sunset	86,348,234	57,210,676	81,584,672	-	225,143,582
Mount Poso	-	-	49,190,865	4,286,269	53,477,134
Mountain View	-	-	217,638	14,335	231,973
Paloma	-	-	9,374	-	9,374
Pleito	-	-	830,491	-	830,491
Poso Creek	5,513,427	30,385,430	126,977,024	99,986	162,975,867
Pyramid Hills	-	-	-	123,469	123,469
Raisin City	-	-	782,354	-	782,354
Rio Bravo	299,004	-	-	4,963,863	5,262,867
Rio Viejo	-	-	161,466	-	161,466
Rose	-	-	729,363	-	729,363
Rosedale	-	-	9,965	-	9,965
Rosedale Ranch	-	-	3,912,367	-	3,912,367
Round Mountain	5,781,561	9,076,839	55,299,749	111,558,775	181,716,924
Shafter, North	-	-	1,684,372	-	1,684,372
Tejon	-	-	369,216	5,039,592	5,408,808
Tejon Hills	-	-	20,554	29,604	50,158
Tejon, North	-	-	-	38,841	38,841
Ten Section	-	-	1,752,274	-	1,752,274
Union Avenue	-	-	313,093	-	313,093
Wheeler Ridge	-	-	195,934	19,084	215,018
Yowlumne	-	-	2,362	1,875,678	1,878,040
Northern District					
Offshore					
Elwood, South, Offshore	-	-	15,644	-	15,644
Onshore					
Any Field	-	-	83	-	83
Aliso Canyon	-	-	509,572	209,065	718,637
Any Field	-	-	15,428,267	-	15,428,267
Arroyo Grande	-	2,677,731	1,599,789	-	4,277,520
Bardsdale	-	-	-	5,760	5,760
Barham Ranch	-	-	87,310	-	87,310
Cabrillo	-	-	36,428	-	36,428
Careaga Canyon	-	-	243,358	-	243,358
Cascade	-	-	-	130,272	130,272
Casmalia	-	-	1,747,267	-	1,747,267
Cat Canyon	13,506,732	-	9,359,466	1,033,390	23,899,588

Cuyama, South	-	-	-	14,479,186	14,479,186
Del Valle	-	-	105,195	-	105,195
Four Deer (ABD)	-	-	254,823	-	254,823
Gaviota Offshore Gas (ABD)	-	-	26,657	-	26,657
Gill Ranch Gas	-	-	3,983	-	3,983
Grimes Gas	-	-	118,249	-	118,249
Hasley Canyon	-	-	-	62,804	62,804
Holser	-	-	7,552	-	7,552
Honor Rancho	-	-	223,087	-	223,087
Livermore	-	-	13,300	-	13,300
Lodi Gas	-	-	10,266	-	10,266
Lompoc	-	-	25,718,750	-	25,718,750
Lynch Canyon	238,463	159,817	1,031,107	-	1,429,387
McCool Ranch	-	-	1,531,066	-	1,531,066
Montalvo, West	-	-	129,947	82,141	212,088
Oak Canyon	-	-	71,496	-	71,496
Oak Park	-	-	6,908	-	6,908
Oakridge	-	-	-	493,710	493,710
Ojai	-	-	307,410	-	307,410
Orcutt	1,471,831	-	3,623,388	24,936,925	30,032,144
Oxnard	98,832	-	103,210	-	202,042
Placerita	3,855,870	1,452,203	10,226,180	-	15,534,253
Ramona	-	-	52,768	-	52,768
Rincon	-	-	13,411	1,421,318	1,434,729
Rio Vista Gas	-	-	119,439	-	119,439
Russell Ranch	-	-	-	1,269,986	1,269,986
San Ardo	9,230,699	24,408,788	48,753,929	22,191,014	104,584,430
San Miguelito	-	-	-	2,692,639	2,692,639
Santa Maria Valley	-	-	812,929	1,229,052	2,041,981
Sargent	-	-	31,176	-	31,176
Saticoy	-	-	-	57,402	57,402
Sespe	-	-	234,237	-	234,237
Shiells Canyon	-	-	508,822	-	508,822
South Mountain	-	-	-	113,688	113,688
Sutter City Gas	-	-	75,648	-	75,648
Tapia	-	-	382,940	-	382,940
Temescal	-	-	82,067	-	82,067
Vallecitos	-	-	84,168	-	84,168
Ventura	-	-	-	43,215,233	43,215,233
Zaca	-	-	7,182,599	-	7,182,599
Southern District					
Offshore					
Belmont Offshore	-	-	-	12,860,873	12,860,873

Huntington Beach	-	-	-	12,815,291	12,815,291
Wilmington	706,854	-	136,555	451,983,456	452,826,865
Onshore					
Beverly Hills	-	-	164,024	2,063,002	2,227,026
Brea-Olinda	-	-	30,927	6,396,588	6,427,515
Cheviot Hills	-	-	11,551	-	11,551
Coyote, East	-	-	-	664,700	664,700
El Segundo	-	-	32,900	-	32,900
Huntington Beach	-	-	-	48,473,501	48,473,501
Inglewood	-	-	-	113,574,331	113,574,331
Las Cienegas	-	-	-	1,715,914	1,715,914
Long Beach	-	-	-	20,000,899	20,000,899
Long Beach Airport	-	-	40,245	-	40,245
Los Angeles Downtown	-	-	-	556,244	556,244
Montebello	-	-	-	19,833,439	19,833,439
Playa Del Rey	-	-	25,416	-	25,416
Richfield	-	-	-	3,024,719	3,024,719
Rosecrans	-	-	-	670,465	670,465
San Vicente	-	-	-	733,300	733,300
Sansinena	-	-	-	175,703	175,703
Santa Fe Springs	-	-	-	11,580,308	11,580,308
Sawtelle	-	-	-	10,666	10,666
Seal Beach	-	-	-	1,707,011	1,707,011
Torrance	-	-	8,373	3,964,854	3,973,227
Wilmington	191,760	-	989	241,511,626	241,704,375
Grand Total	220,653,245	331,383,027	787,315,608	1,491,804,559	2,831,156,439

Summary 2021 California Steam and Water Injection					
	Cyclic Steam (bbl)	Steamflood (bbl)	Water Disposal (bbl)	Waterflood (bbl)	Total Water Injected (bbl)
Central District	191,352,204	302,684,488	655,990,737	423,864,084	1,573,891,513
Northern District	28,402,427	28,698,539	130,873,891	113,623,585	301,598,442
Southern District	898,614	0	450,980	954,316,890	955,666,484
Grand Total	220,653,245	331,383,027	787,315,608	1,491,804,559	2,831,156,439

Oil, Gas & Water Production and Well Count by County (2021)							
	Well Count		Oil Production	Gas Production			Water Production
County	Active	Inactive*	Oil & Condensate Produced (Bbl)	Associated Gross Gas Produced (Mcf)	Non-Associated Gross Gas Produced (Mcf)	Total Gross Gas (Mcf)	Water Produced (Bbl)
Alameda	5	3	3,545	237		237	13,295
Butte	17	5	0		0	0	129
Colusa	152	186	0		1,641,774	1,641,774	30,276
Contra Costa	21	25	36,418	12,503	74,372	86,875	47,414
Fresno	1,754	1,610	5,202,947	1,158,598	0	1,158,598	66,832,030
Glenn	181	120	0	0	1,754,529	1,754,529	42,325
Humboldt	26	26	0		268,653	268,653	3,864
Kern	36,649	21,205	96,498,929	91,548,862	449,122	91,997,984	1,770,832,876
Kings	140	206	112,189	157,204	0	157,204	602,309
Lassen		1	0		0	0	0
Los Angeles	2,410	1,806	10,179,415	5,269,727	9,704	5,279,431	446,648,498
Los Angeles Offshore	716	303	7,492,323	3,121,720	0	3,121,720	441,995,375

Madera	14	15	0		105,508	105,508	9,875
Merced		2	0		0	0	0
Monterey	673	383	5,945,161	873,457		873,457	144,199,890
Orange	757	495	2,147,080	874,049		874,049	42,009,953
Orange Offshore	60	36	846,384	301,850		301,850	33,501,471
Riverside		3	0	0	0	0	0
Sacramento	69	124	2,749	0	1,779,378	1,779,378	58,769
San Benito	16	25	11,050	15,336	0	15,336	19,742
San Bernardino	24	14	5,683	36,500		36,500	678
San Joaquin	116	106	0		676,781	676,781	34,770
San Luis Obispo	188	146	538,376	539,742		539,742	10,300,964
San Mateo		21	46.35745391	0		0	0
Santa Barbara	873	1,292	3,104,164	2,145,586	0	2,145,586	89,630,280
Santa Barbara Offshore		25	0	0		0	0
Santa Clara	11	14	15,759	15,374		15,374	13,459
Solano	56	152	177		739,238	739,238	19,356
Stanislaus		2	-		-	-	-

Sutter	211	194	-		2,517,241	2,517,241	50,602
Tehama	86	63	-		469,103	469,103	8,325
Tulare	69	17	29,533	-	-	-	2,581,551
Ventura	1,245	1,704	4,928,550	4,939,787	-	4,939,787	44,683,905
Ventura Offshore		25	-	-		-	-
Yolo	7	63	-		12,279	12,279	5
Yuba		1	-		104	104	-
Total	46,546	30,418	137,100,479	111,010,533	10,497,786	121,508,319	3,094,171,987

* Inactive Wells = "idle", "Long-term Idle" and "Plugged Only" (abandoned not included) wells.

3. GEOTHERMAL ENERGY

On June 30, 2021, the California Public Utilities Commission issued Decision 21-06-035 requiring procurement of 1,000 megawatts of new geothermal resources to be on-line by 2026 to address mid-term reliability needs of the electrical grid within the California Independent System Operator's operating system. If this is to be achieved, hundreds of new production and injection wells will be required to support meeting this goal.

Hot geothermal brine, at temperatures above the boiling point of water at the altitude of occurrence, flows from wells through pipelines to the power plant where steam is extracted to generate electricity. The remaining brine is injected back into the geothermal reservoir to maintain the geothermal system.

Low-temperature wells (PRC section 3703.1) produce fluids that have a temperature lower than the boiling point of water at the altitude of occurrence; these wells are typically not hot enough to generate electricity with current technology. They are used for direct use heating in commercial and non-commercial applications. Other types of wells in geothermal projects, such as temperature gradient and observation wells, are used to determine the extent of a geothermal reservoir and to monitor reservoir behavior during utilization.

The Salton Sea geothermal field is one of the state's largest, and much of the brine associated with geothermal energy production in this region includes lithium. Lithium demand is expected to grow, driven largely by increasing demand for lithium-ion batteries in electric vehicles and energy storage projects for the electricity sector. As geothermal energy production increases, the lithium available in the Salton Sea region could support California's renewable energy and climate goals.

3.1. California Geothermal Production: Snapshot

California is the largest producer of geothermal energy in the United States. There are 2,693 megawatts (MW) of electricity coming from 40 geothermal power plants, enough electricity for about 2.7 million homes according to the California Energy Commission. In 2021, geothermal sources produced 11,116 gigawatt-hours net (GWh), 5.94 percent of the state's power mix. An additional 700 GWh of geothermal power was imported from Nevada. According to the U.S. Energy Information Administration, geothermal power from California represents 70 percent of the country's net geothermal power generation that is produced across seven western states including Hawai'i.

3.2. CalGEM's Geothermal Regulatory Role

CalGEM supervises the drilling, operation, maintenance, and plugging and abandonment of high and low temperature geothermal wells, including injection wells, for the discovery and production of geothermal resources in such a manner as to

safeguard life, health, property, and the public welfare, and to encourage maximum economic recovery (Pub. Resources Code, §§ 3700, 3714.)

Large geothermal projects require injection wells so that geothermal fluid can be returned to the reservoir after the heat energy has been removed. Geothermal injection wells are one of approximately 30 types of wells in the Class V program in US EPA's Underground Injection Control program. CalGEM does not have primacy but has a memorandum of understanding with US EPA Region IX to oversee these injection projects. Reinjection of geothermal fluids ensures the sustainability of a geothermal reservoir. In The Geysers geothermal field, in Lake and Sonoma Counties, treated effluent sourced from nearby population centers is injected as disposal and supplements the existing geothermal fluid, further mining the heat from the hot rocks in the reservoir. This has sustained production in The Geysers as seen in Figure 27.

In 2021, CalGEM issued 26 permits for The Geysers and 27 permits in Imperial County.

3.3. Number of High Temperature Wells and their Locations

There are 563 high temperature geothermal wells located on state and private lands, of which 349 are in The Geysers in Lake and Sonoma Counties and operated primarily by Calpine Corporation. Imperial County is home to 194 wells, the majority owned by Cal Energy Operating Corporation, Ormat Technologies Inc., and Energy Source. The remaining 20 wells are scattered in Lassen, Modoc, and Mono Counties.

3.4. Geothermal Assessments

CalGEM's geothermal program is supported by an annual well assessment. The last three years assessments are as follows:

Fiscal Year	Assessment Amount	Total Wells	\$/Well
2019/20	\$ 915,726	551	\$1662
2020/21	\$ 1,256,002	557	\$2255
2021/22	\$ 1,668,169	563	\$2963

3.5. Geothermal Production and Injection Information

The following graphs and tables show the production and injection volumes over the last five years in Imperial County (including Brawley, Heber, and the Salton Sea fields), Mono County (the Casa Diablo field), and Lake and Sonoma Counties (The Geysers field). These are the largest high temperature geothermal fields in the state.

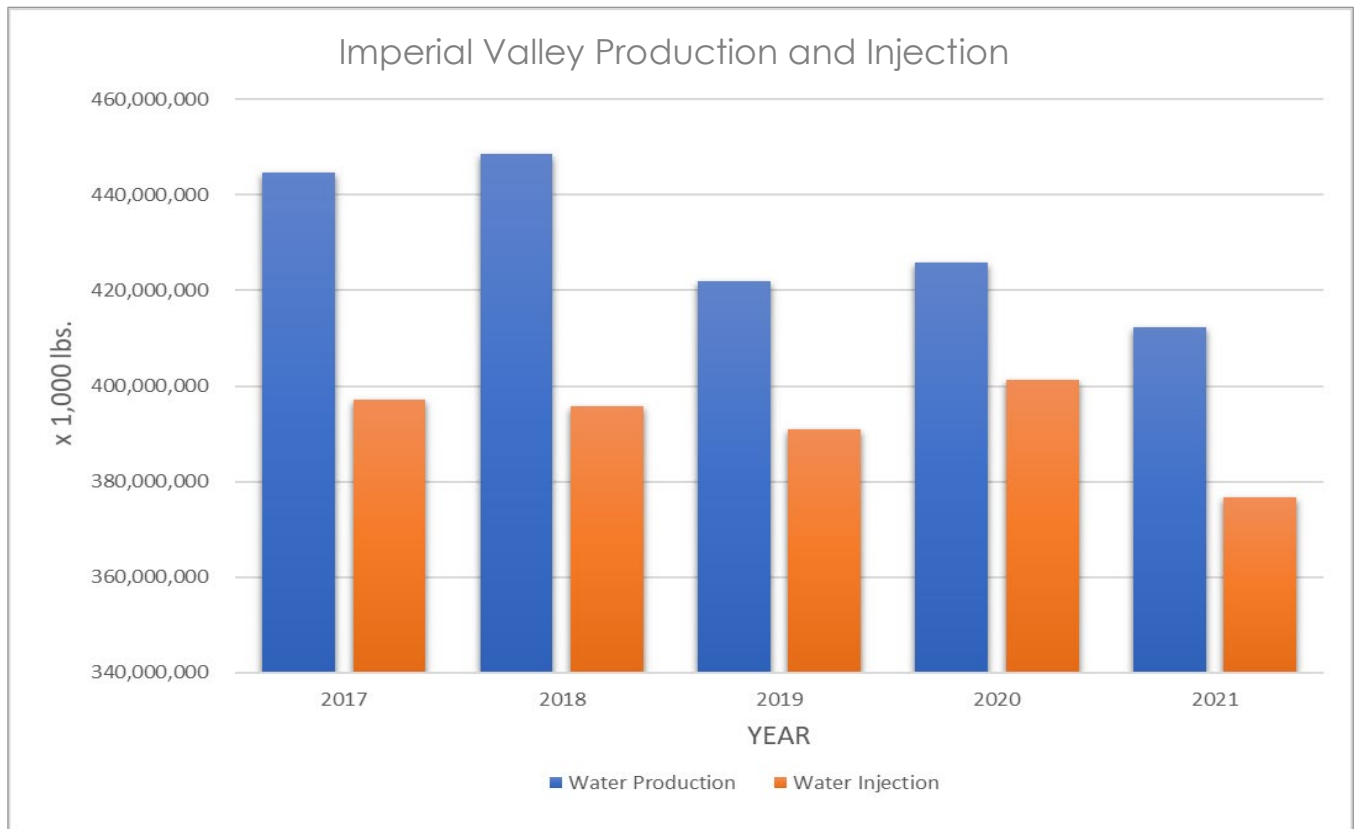


Figure 24: High Temperature Geothermal Fields – North Brawley, Heber and the Salton Sea

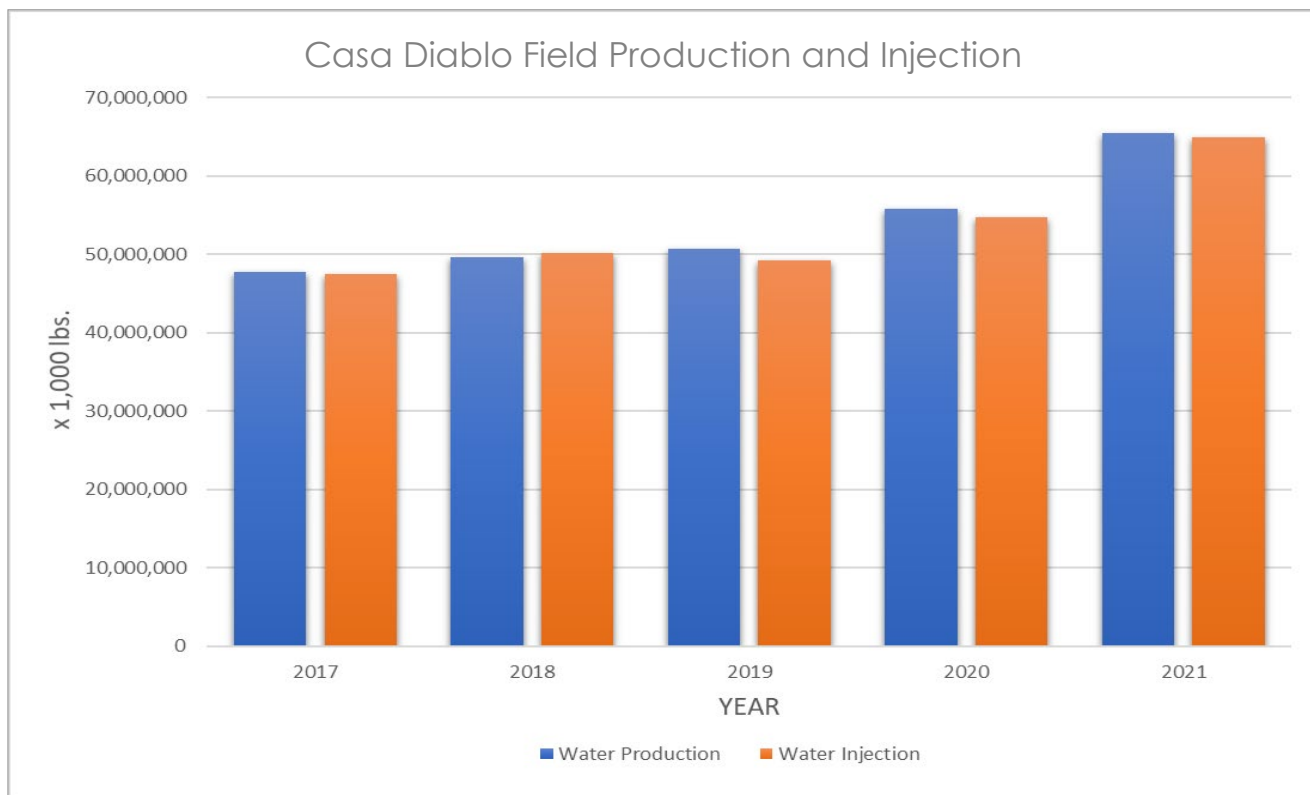


Figure 25: Casa Diablo High Temperature Geothermal Field in Mono County, CA

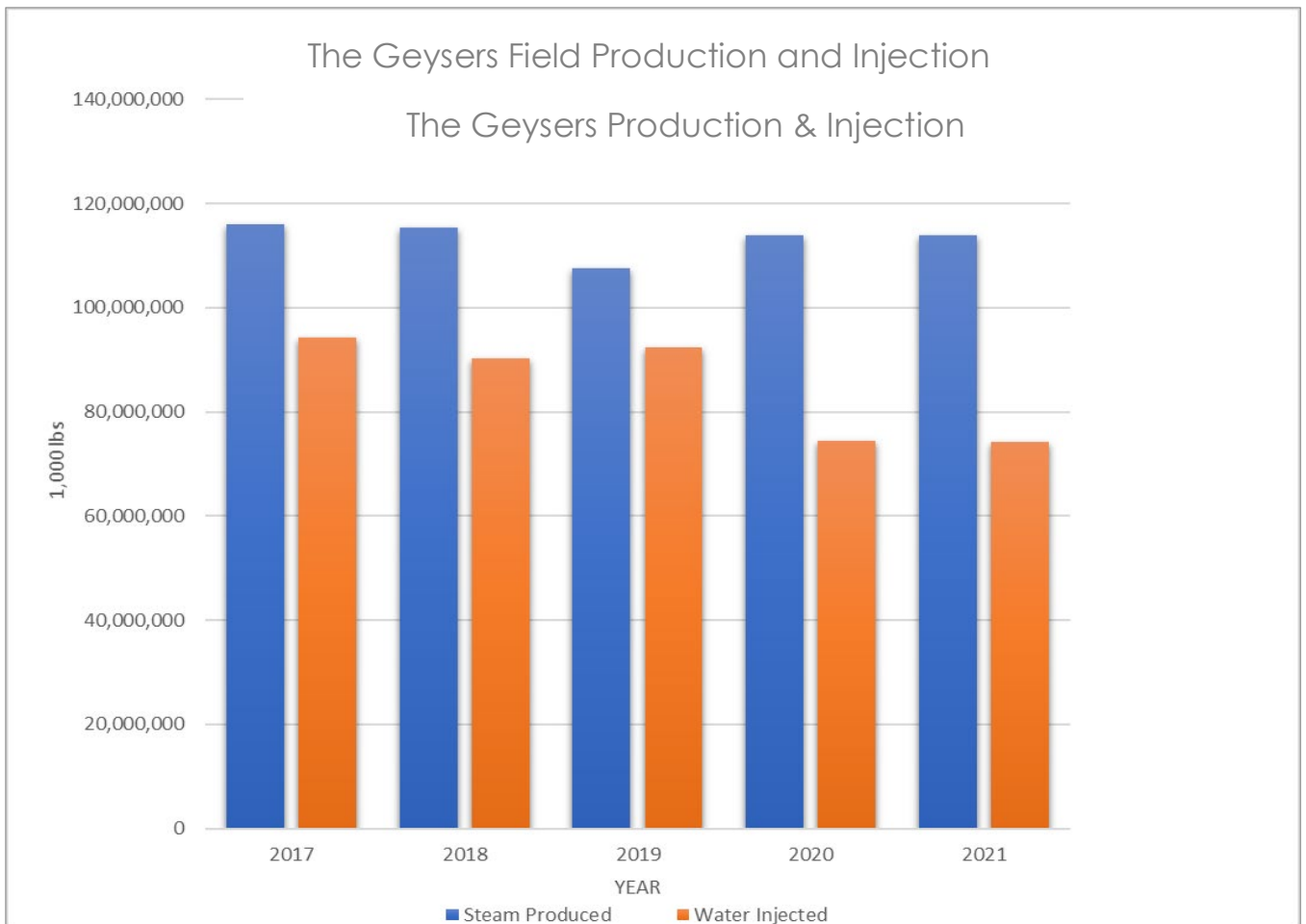


Figure 26: The Geysers produces only steam, and the field is located in Lake and Sonoma Counties.

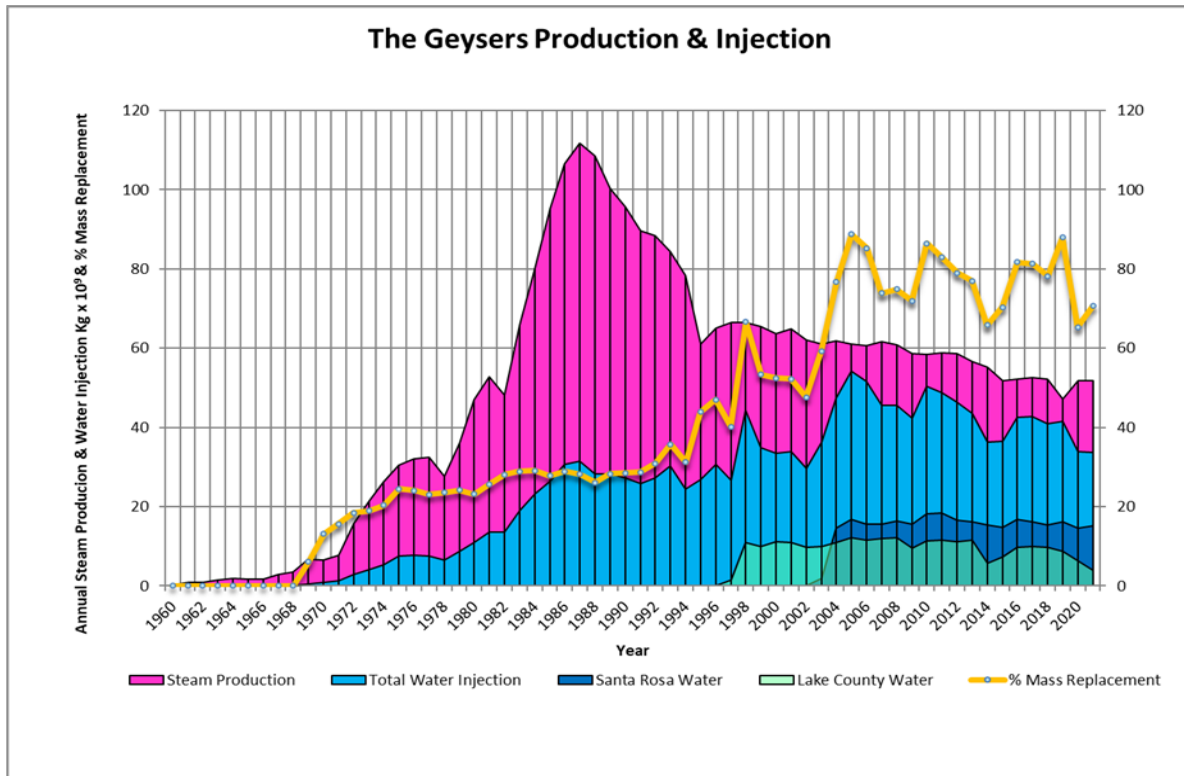


Figure 27: The Geysers has two successful wastewater injection projects helping sustain the field.

2021 Production and Injection by Field		
	Production (lbs. x 1,000)	Injection (lbs. x 1,000)
Brawley field	14,020,567	14,996,308
Heber field	141,845,384	144,394,285
Salton Sea field (2 operators)	256,317,548	217,206,502
Imperial County Total	412,183,499	376,597,095
Casa Diablo Field (Mono County)	55,876,399	54,759,366
The Geysers (Lake and Sonoma Counties)	113,802,678 (steam)	74,388,298
Geothermal Total	595,412,929	530,528,174

Permits (Notice of Intention) by District		
	Northern District	Southern District
	The Geysers	Imperial
Drilling Permits Issued	8	3
Supplemental Permits	5	4
Rework Permits Issued	11	19
Plugging & Abandonment	2	1
Work Completed		
Wells Drilled	2	0
Wells Reworked	4	12
Plugging & Abandonment	2	1 ¹

NOTES:

1: One low temperature well

4. ENFORCEMENT

4.1. Background on the Office of Enforcement

The Office of Enforcement was created in 2018, to facilitate the statewide enforcement of California's oil and gas laws and regulations. The newly formed statewide Enforcement Program takes enforcement actions to prevent damage to life, health, property, and natural resources.

California's PRC provides authority for the State Oil and Gas Supervisor to order remedial work necessary for the protection of public health and safety and/or the environment, plugging and abandonment orders and civil penalty orders, among others. PRC sections 3236 and 3359 make it a misdemeanor to fail to comply with an order issued by the State Oil and Gas Supervisor or the oil and gas laws and regulations. CalGEM administers its regulatory requirements to ensure, to the greatest extent possible, appropriate protections for the public and environment. CalGEM also seeks to deter violations and ensure that violators do not receive an unfair business advantage compared to operators who comply with their regulatory obligations. Appropriate penalties for violations attempt to offer assurance of equity between those who comply with regulatory requirements and those who violate them. Appropriate enforcement also improves public confidence and trust.

Starting in 2019, CalGEM has been referring non-compliance violations to prosecuting agencies. Upon conviction of a misdemeanor, the PRC authorizes a fine of not less than one hundred (\$100) and not more than one thousand (\$1,000), or imprisonment not exceeding six months, or both fine and imprisonment for each offense.

Enforcement staff works closely with the broader CalGEM team to identify and verify possible violations and take actions to bring violators into conformity with the law and prevent harm to the public, property, and/or the environment. Violations can range from minor issues such as missing records to more significant issues such as failing to perform safety equipment tests, spills, or falsifying records. Enforcement and CalGEM staff assess evidence and the severity of the impacts, and, as appropriate, take corrective measures that can include administrative orders and civil penalties. Depending on the severity of the violation, an operator can be assessed a penalty up to \$25,000 per day per incident (geothermal violations are limited to \$5,000 per day).

Administrative civil penalties collected from operators are deposited in an Oil and Gas Environmental Remediation (OGER) account. Funds in the OGER account are available for appropriation by the state legislature for plugging and abandoning (permanently sealing) oil and gas wells, decommissioning facilities, and/or remediating sites that otherwise might pose a danger. The State Oil and Gas Supervisor has the discretion to permit operators to offset up to 50 percent of assessed penalties on supplemental environmental projects (known as SEPs).

4.2. Enforcement Orders

In 2021, CalGEM's Office of Enforcement issued 43 enforcement orders, including \$1,520,550 in civil penalties. A total of 213 wells were ordered to be plugged and abandoned (P&A). The orders issued generally required operators to remediate field violations or otherwise unsafe conditions at their facilities, P&A wells, and/or pay civil penalties. The State Oil and Gas Supervisor may also issue emergency orders to address a life, health, safety, property, or natural resources concern. One of these was issued in 2021: Order 1209 was an order to a specific operator to perform remedial work. All orders can be viewed on CalGEM's Orders Issued webpage:

https://www.conservation.ca.gov/calgem/Pages/Division_Orders.aspx.

The CalGEM Office of Enforcement issued 29 civil penalty orders regarding pipeline management plans in 2021. Operators were required to submit pipeline management plans by October 1, 2019. Beginning in 2020 and continuing throughout 2021, civil penalty orders were issued to operators that were not compliant. Seven of the 29 orders were paid in 2021, while other orders were paid the following year. Orders not complied with were referred to a P&A order, or referred to their respective District Attorney, Attorney General, or the State Controller's Office.

The most significant fine issued by the CalGEM Office of Enforcement in 2021 was a civil penalty order to Nasco Petroleum, LLC regarding injection over maximum allowable surface pressure and injection without approval. The penalty totaled \$1,449,000 and was appealed. The final outcome is pending.

A significant P&A order was issued in 2021. The operator HVI Cat Canyon Inc. was determined by CalGEM to have deserted a majority of their wells. At a total of 210 wells, this is the largest P&A order issued by the CalGEM Office of Enforcement. These deserted wells are now eligible for a state funded plugging and abandoning project.

Overview of CalGEM Enforcement Activities 2021	
Operations Recorded	84,519
Inspections	60,792
Notices of Violation (NOV)	1,789
NOVs Returned to Compliance (At time of publication)	1,027
Total Orders Issued	43
Plug and Abandon (P&A) Orders	4
Number of wells in P&A Orders	213
Civil Penalty Orders	32
Civil Penalty Fines issued	\$1,520,550
Orders Appealed	6

4.3. Enforcement Outcomes

Orders from previous years produced results for 2021. In 2021, CalGEM received a total of \$100,500 in civil penalties. Of this total, \$51,000 came from civil penalties that were issued in 2020, and \$49,500 came from civil penalties that were issued in 2021. There were 18 wells that were plugged and abandoned in 2021 because of previous years' orders. Of the 18 wells, 8 came from orders that were issued in 2018, and 10 came from orders that were issued in 2019.

Summary of 2021 Enforcement Actions						
ORDER NO.	ORDER TYPE	OPERATOR	CALGEM DISTRICT	DOCUMENT TITLE	DATE MAILED	CIVIL PENALTY AMOUNT / WELLS TO P&A
1188	Civil Penalty	Cooper & Brain, Inc.	Southern	Order to Pay Civil Penalty (Pipeline Management Plan)	2/1/2021	\$2,500
1189	Civil Penalty	Diversified Resources, LLC	Northern-Sacramento	Order to Pay Civil Penalty (Pipeline Management Plan)	2/1/2021	\$500

1190	Civil Penalty	Harold L. Leasure	Southern	Order to Pay Civil Penalty (Pipeline Management Plan)	2/1/2021	\$500
1191	Civil Penalty	Guzman Energy Inc.	Southern	Order to Pay Civil Penalty (Pipeline Management Plan)	2/16/2021	\$500
1192	Civil Penalty	Caltico Oil Corporation	Northern-Ventura	Order to Pay Civil Penalty (Pipeline Management Plan)	2/12/2021	\$1,500
1193	Civil Penalty	Vaca Energy	Northern-Ventura	Order to Pay Civil Penalty (Pipeline Management Plan)	2/16/2021	\$550
1194	Civil Penalty	EcoTech EOR, LLC	Northern-Sacramento	Order to Pay Civil Penalty (Pipeline Management Plan)	2/24/2021	\$500
1195	P&A	Rincon Island Limited Partnership	Northern-Ventura	Order to Plug and Abandon Wells, Decommission Attendant Facilities and Restore Well Site	3/18/2021	2 Wells
1196	P&A	Thompson and McNickels	Northern-Sacramento	Order to Plug and Abandon Well, Decommission Attendant Facilities	5/19/2021	1 Well
1197	Re-abandonment	Tunnel Oil Company	Northern-Ventura	Order to Re-abandon Well and Restore Well Site	5/19/2021	n/a
1198	Civil Penalty	Nasco Petroleum L.L.C.	Southern	Order to Pay Civil Penalties	5/26/2021	\$1,449,000
1199	Civil Penalty	Vesta Oil and Gas LLC	Northern-Sacramento	Order to Pay Civil Penalty (Pipeline Management Plan)	6/11/2021	\$1,500

1200	Civil Penalty	KB Oil & Gas	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	6/11/2021	\$2,000
1201	Civil Penalty	Allied Western Petroleum	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	7/9/2021	\$1,500
1202	Civil Penalty	Freedom Oil Company, LLC	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	7/9/2021	\$1,000
1203	Civil Penalty	Golden Valley Energy, LLC	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	7/9/2021	\$1,000
1204	Civil Penalty	Griffin Resources, LLC	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	7/9/2021	\$2,500
1205	Civil Penalty	Hartley Natural Resource Development	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	7/9/2021	\$1,000
1206	Civil Penalty	Havens Oil Co	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	7/9/2021	\$850
1207	Civil Penalty	L P Oil Company Inc.	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	7/9/2021	\$700
1208	Cease and Desist	Royale Energy	Northern-Sacramento	Order to Cease and Desist Operations	8/20/2021	n/a
1209	Emergency	Thomas R. Banks	Southern	Emergency Order to Perform Remedial Work	7/21/2021	n/a
1210	Civil Penalty	Hunt Enterprises	Southern	Order to Pay Civil Penalty (Pipeline Management Plan)	7/23/2021	\$500

1211	Civil Penalty	B&L Pump & Supply Company	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	7/30/2021	\$500
1212	Civil Penalty	Sherman Havens	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	8/13/2021	\$1,500
1213	Civil Penalty	Aera Energy	Central	Order to Pay Civil Penalty (Well Stimulation Treatment)	8/20/2021	\$30,000
1214	Civil Penalty	California Resources Elk Hills, LLC	Central	Order to Pay Civil Penalty (Well Stimulation Treatment)	8/20/2021	\$10,000
1215	Re-abandonment	Cache Oil Co	Southern	Order to Re-abandon Well and Restore Well Site	9/2/2021	n/a
1216	Re-abandonment	W. J. McCarthy - Wally Dennis	Southern	Order to Re-abandon Well and Restore Well Site	9/2/2021	n/a
1217	P&A	HVI Cat Canyon Inc	Northern-Ventura	Order to Plug and Abandon Wells, Decommission Attendant Facilities and Restore Well Site	9/13/2021	210 Wells
1218	P&A	Canoga Oil Co.	Southern	Order to Plug and Abandon Wells, Decommission Attendant Facilities, Re-abandon Wells, and Restore Well Site (P&A and Re-abandonment)	10/4/2021	n/a
1219	Civil Penalty	Sacramento Energy	Northern-Sacramento and Central	Order to Pay Civil Penalty (Pipeline Management Plan)	10/12/2021	\$1,550

1220	Civil Penalty	Nahabedian Exploration Grp, LLC	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	10/12/2021	\$550
1221	Civil Penalty	Verjill Oil CO, LLC	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	10/25/2021	\$800
1222	Remedial	E.N. Hruska & G.H. Pruitt	Northern-Sacramento	Order to Perform Remedial Work	10/29/2021	n/a
1223	Civil Penalty	Brittany Oil Co	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	11/24/2021	\$500
1224	Civil Penalty	Zynergy LLC	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	12/6/2021	\$1,650
1225	Civil Penalty	Dwayne's Engineering	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	12/6/2021	\$750
1226	Civil Penalty	Tetra Oil Co	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	12/9/2021	\$1,050
1227	Civil Penalty	Valid Energy Group	Central	Order to Pay Civil Penalty (Pipeline Management Plan)	12/7/2021	\$2,100
1228	Civil Penalty	Sunset Exploration Inc	Northern-Sacramento	Order to Pay Civil Penalty (Pipeline Management Plan)	12/9/2021	\$500
1229	Civil Penalty	AA Production Services	Northern-Sacramento	Order to Pay Civil Penalty (Pipeline Management Plan)	12/16/2021	\$1000
1230	Remedial	Nasco Petroleum LLC	Southern	Order to Perform Remedial Work	12/27/2021	n/a

APPENDIX A: CalGEM Boundaries and Offices



APPENDIX B: Public Resources Code section 3108

On or before the first day of October of each year the supervisor shall make public, for the benefit of all interested persons, a report in writing showing:

- a) The total amounts of oil and gas produced in each county in the state during the previous calendar year.
- b) The total cost of the division for the previous fiscal year.
- c) The total amount delinquent and uncollected from any assessments or charges levied pursuant to this chapter.

The report shall also include such other information as the supervisor deems advisable.

APPENDIX C: Financial Statement for Fiscal Year 2020/2021

(Numbers in Thousands)

3046 OIL, GAS, AND GEOTHERMAL ADMINISTRATIVE FUND	
BEGINNING BALANCE	-6,911
Prior Year Adjustments	13,971
Adjusted Beginning Balance	7,060
REVENUES	
Assessment fee revenue	119,758
Investment Income	231
Miscellaneous Revenue	1
Escheat-unclaimed checks, Warrants, Bonds, and Coupons	8
Settlements and Judgements	62
Transfer from Fund 8505 (Corona Virus Relief Fund)	60
Total Revenues	120,120
Total Resources	127,180
EXPENDITURES	
(0540) Secretary of the Natural Resources Agency	53
(3046) Department of Conservation	80,445
(3900) Air Resources Board	2,348
(3940) State Water Resources Control Board	13,693
(3980) Office of Environmental Health Hazard Assessment	394
(8880) Financial Information System for California	
(9892) Supplemental Pension Payment	893
(9900) Statewide General Administrative Expenditure (Pro Rata)	5,501
Total Expenditures	103,327
FUND BALANCE	23,853
0275 HAZARDOUS AND IDLE-DESERTED WELL ABATEMENT FUND	
BEGINNING BALANCE	13,088
Prior Year Adjustments	
Adjusted Beginning Balance	13,088
REVENUES	
Idle well fees	4,702
Investment Income	35
Total Revenues	4,737

Transfers and Loans	-10,000
Total Resources	7,825
EXPENDITURES	
(3046) Department of Conservation	303
(9900) Statewide General Administrative Expenditure (Pro Rata)	8
Total Expenditures	311
FUND BALANCE	7,514
0890 FEDERAL TRUST FUND	
UNDERGROUND INJECTION CONTROL	
Total Federal Dollar Expenditures	402
2020 EPA Multipurpose Grant	
Total Federal Dollar Expenditures	30
2020 PIPELINES AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION	
Total Federal Dollar Expenditures	1,178
0890 Total:	1,610

APPENDIX D: Historical List of State Oil and Gas Supervisors

Supervisor	Start Date	End Date
Douglas Ito	Sep. 2023	current
Gabe Tiffany (acting)	Jan. 2023	Sep. 2023
Uduak-Joe Ntuk	Oct. 2019	Jan. 2023
Jason Marshall (acting)	July 2019	Oct. 2019
Ken Harris	Dec. 2015	July 2019
Steve Bohlen	June 2014	Nov. 2015
Pat Perez (acting)	Mar 2014	June 2014
Tim Kustic	Jan 2012	Feb 2014
Elena Miller	Sep. 2009	Nov. 2011
Hal Bopp	Oct. 2003	July 2009
William Guerard Jr.	Jan. 1993	Sep. 2003
K.P. Hendersen (acting)	Jan 1992	Dec.1992
M. G. Mefferd	1984	Dec. 1991
Simon Cordova (acting)	1983	1984
M. G. Mefferd	1977	1983
Harold Bertholf	1976	1976
J.F. Matthews	1971	1975
F.H. Kasline	1968	1970
E.R. Murray-Aaron	1962	1967
E.H. Musser	1954	1961
R.D. Bush	1924	1953
R.E. Collom	1921	1923
R.P. McLaughlin	1915	1920

APPENDIX E: List of Operators Delinquent for Calendar Year 2021

	Operator Name	Current Balance
1	25 Hill Properties, Inc.	\$1,412.05
2	3MB Oil & Gas, LLC	\$309.52
3	Allied Western Petroleum	\$691.13
4	Amrich Energy, Inc.	\$2,494.78
5	Anterra Services Inc.	\$966.04
6	Atlantic Oil Company	\$2,197.37
7	B5 Holdings LLC	\$23.07
8	Bentley Family Limited Partnership	\$6,912.69
9	Binion Exploration & Development	\$46.13
10	Breitburn Operating LP	\$217,078.58
11	Bruce A. Holmes	\$5,901.96
12	C & M Oil Co. & Investments	\$12,553.67
13	Caballero Operations LLC	\$23,961.82
14	California Hydrocarbons Corporation	\$12.23
15	California Petroleum Group Inc.	\$11,806.80
16	Cbase Corporation	\$13,439.58
17	Citadel Exploration Inc.	\$511.20
18	City of Huntington Beach (Fire Dept.)	\$1,077.45
19	Daybreak Oil and Gas, Inc.	\$30,110.99
20	Diversified Resources, LLC	\$1,836.81
21	Dwayne's Engineering	\$268.18
22	First Oil and Gas Company	\$1,716.76
23	Fourstar Resources LLC	\$2,355.02
24	Golden Valley Energy, LLC	\$245.11
25	Grapevine Energy, LLC	\$91,471.78
26	Griffin Resources, LLC	\$27,506.19
27	Hathaway LLC	\$114,652.37
28	HVI Cat Canyon, Inc.	\$267,188.31
29	Incremental Oil and Gas USA Holdings Inc.	\$11,524.78
30	Joro Inc.	\$15,053.83
31	Kelpetro Operating, Inc.	\$9,070.17
32	Kem Enterprise, Inc.	\$475.81
33	Kern Front-Section 35-Partners	\$8,742.21
34	LDD Energy, LLC	\$519.07
35	Little Creek Properties, Inc.	\$2,424.92
36	Lobo Operations LLC	\$1,378.93
37	Mitchell Oil	\$3,335.48
38	Morrison Oil Co., LLC	\$1,932.07
39	Mountain View Resources, LLC	\$19,416.57
40	New Opportunity Exploration, Inc.	\$2,365.50

41	Optima Conservation Resources Exploration, LLC	\$2,363.75
42	P&M Oil Company, Inc.	\$8,510.73
43	Pacific Energy Resources, Inc.	\$814.17
44	Petrogulf Corporation	\$4,217.59
45	PowerDrive Energy Services Company, LLC	\$27,539.74
46	Premier Resource Management	\$355.65
47	R&R Resources, LLC	\$816.09
48	R. J. Bellevue	\$7,886.46
49	Remora Operating CA, LLC	\$4,971.87
50	Sacramento Energy, Inc.	\$2,360.79
51	Shadow Wolf Energy, LLC	\$8,745.28
52	Summit Energy, LLC	\$8,745.37
53	Team Operating LLC	\$361,869.53
54	Temblor Petroleum Co. LLC	\$58,690.83
55	Tetra Oil Company	\$556.56
56	The Nahabedian Exploration Group, LLC	\$1,326.50
57	Thomas R. Banks	\$6,115.35
58	Towne Exploration Company, LP	\$992.69
59	Vaca Energy, LLC	\$3,229.73
60	Valid Energy Company	\$5,259.86
	TOTAL	\$1,430,355.47

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