CALIFORNIA
AIR RESOURCES BOARD

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2021 Annual Enforcement Report

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Acronyms

AECD	Auxiliary Emission Control Device
AB 617	California Assembly Bill 617 (approved July 26, 2017)
AFI	Area Focused Investigation
ALPR	Automated License Plate Reader
AMP	Aftermarket Parts
AQ Web	Air Quality Webinar
ATCM	Airborne Toxic Control Measure
BARCT	Best Available Retrofit Control Technology
CalEPA	California Environmental Protection Agency
CalGEM	California Geologic Energy Management Division
CARB	California Air Resources Board
CCR	California Code of Regulations
CHP	California Highway Patrol
CNC	Certificate of Noncompliance
COGR	California Oil and Gas Regulation
COVID-19	Coronavirus Disease of 2019
CTVRP	Cargo Tank Vapor Recovery Program
DAC	Disadvantaged Community
DMV	Department of Motor Vehicles
DTSC	Department of Toxic Substances Control
EDVS	Enforcement Data Visualization System
EJ	Environmental Justice
EO	Executive Order
ERC	Emission Reduction Credit
FLEC	Field Laboratory Emission Cell
GVWR	Gross Vehicle Weight Rating
HD I/M	Heavy-Duty Inspection and Maintenance
HDVIP	Heavy-Duty Vehicle Inspection Program
HEST	High Emission Screening Tracker
IRP	International Registration Plan
LCFS	Low Carbon Fuel Standards
LFM	Light Fibrous Material
LLC	Limited Liability Corporation
LMR	Landfill Methane Regulation
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding

MRR	The Regulation for the Mandatory Reporting of Greenhouse Gas Emissions
MY	Model Year
NFA	No Further Action
Non-DAC	Non-Disadvantaged Community
NO_x	Oxides of Nitrogen
NOV	Notice of Violation
NSR	New Source Review
OBD	On-Board Diagnostic
OGV	Ocean-Going Vessel
OHRV	Off-Highway Recreational Vehicle
OS	Out-of-State
PEAQS	Portable Emissions AcQuisition System
PERP	Portable Equipment Registration Program
PM	Particulate Matter
PSIP	Periodic Smoke Inspection Program
RCW	Regulated California Waters
RECLAIM	Regional Clean Air Incentives Market
RMP	Refrigerant Management Program
SCAQMD	South Coast Air Quality Management District
SDAPCD	San Diego Air Pollution Control District
SEP	Supplemental Environmental Project
SF6	Sulfur Hexafluoride
SIMW	Spark-Ignition Marine Watercraft
SJVAPCD	San Joaquin Valley Air Pollution Control District
SORE	Small Off-Road Engine
SPCN	Specially Constructed
STEP	Streamlined Truck Enforcement Process
T50	Temperature at which 50 percent of gasoline volume boils away
T90	Temperature at which 90 percent of gasoline volume boils away
TRU	Transport Refrigeration Unit
TRUCRS	Truck Regulation Upload, Compliance, and Reporting System
TSE	Tactical Support Equipment
U.S. EPA	United States Environmental Protection Agency
VEE	Visible Emissions Evaluation
VOC	Volatile Organic Compound

Executive Summary

The California Air Resources Board (CARB) is a world leader in the development and implementation of regulations that reduce emissions and protect public health. As a result of these efforts, air quality in California has improved dramatically over the past 50 years, and many regulatory approaches first adopted in California now help reduce emissions worldwide.

Despite these successes, the COVID-19 pandemic exposed continued inequities that are sobering and emphasized just how much more we need to do to protect public health. More than 90,000 Californians have died from COVID-19. At the time of this report, Black, Latino, and Native Hawaiian/Pacific Islander populations accounted for a disproportionate number of those deaths relative to their populations in the state.[1] In California, we know communities of color and low-income communities are exposed to higher levels of air pollution.[2,3] The increased frequency of environmental and socio-economic stressors experienced by these populations likely contributes to the elevated death rates they experience.[4]

Mobile sources, such as cars, trucks, and off-road equipment, and stationary sources all contribute to these disparities in air pollution exposure. CARB regulations require extensive control technologies to minimize emissions from these sources, and CARB enforcement programs are designed to ensure these requirements are met so that public health and the environment are protected. Our goal is clean air for all Californians.[5]

In 2021, we reviewed our own programs, assessing compliance rates in key programs to evaluate how well our enforcement programs are working, and where our programs may be improved. This report describes results of this work and actions we are taking to improve our enforcement programs, especially in low-income communities and communities of color.

This report also highlights our enforcement successes last year. In 2021 we:

- Inspected nearly 12,000 vehicles and marine vessels, with 80 percent of them in disadvantaged communities.
- Conducted 18 mobile PEAQS deployments, screened 14,967 vehicles and issued 224 citations.
- Coordinated and conducted multiagency inspections at 11 oil and gas facilities, 9 of which were located in disadvantaged communities.
- Diverted $6.8 million to myriad Supplemental Environmental Projects, including those that strategically place green barriers downwind of major pollution sources and provide high efficiency air filtration systems to schools.
- Settled a major case with Albertsons, with penalties of $5.1 million, for violating several requirements of the Refrigerant Management Program that regulates greenhouse gas emissions from large stationary refrigeration systems.
- Settled 2,746 cases and citations for $18,270,417.

1 *State of California COVID-19 Dashboard*

2 United States Environmental Protection Agency, "*Study Finds Exposure to Air Pollution Higher for People of Color Regardless of Region or Income*," September 20, 2021.

3 Harvard T.H. Chan School of Public Health, "*Racial, ethnic minorities and low-income groups in U.S. exposed to higher levels of air pollution*," January 12, 2022.

4 Andrea Pozzer et al., "*Regional and global contributions of air pollution to risk of death from COVID-19*," Cardiovascular Research 116, no. 14 (December 2020): 2247-2253.

5 CARB, *CARB Vision & Roadmap*, 2021, .

Introduction

CARB's vision is a future where all Californians breathe healthy and clean air, benefit from actions to address climate change, and where race is no longer a predictor of life outcomes.[6] To meet air quality standards and climate goals, address environmental and racial inequities, and to protect public health, CARB conducts research, develops plans, adopts and implements regulations, and distributes incentives. It is CARB Enforcement Division's role, in partnership with many other CARB staff, to then ensure emission reductions envisioned at adoption of a regulation are actually achieved in practice. While it is the responsibility of industry to meet regulatory requirements, we work to ensure that regulated industries are aware of, and understand, the requirements of each regulation. CARB's enforcement program is designed to protect public health by ensuring compliance with CARB regulatory requirements and increasingly, by working with communities to address longstanding local issues.

Not only does the Enforcement Division work with industry to bring entities into compliance, Enforcement staff also work alongside those impacted by the sources of air pollution CARB regulates. Balancing both sides of this enforcement coin can be challenging given the large and varied number of pollution sources in the state, as well as the wide range of impacts we are seeing in local communities. Therefore, as we implement an enforcement program, the Enforcement Division has several key goals:

- Prioritize work in disadvantaged communities where it is most needed to help address longstanding environmental injustices.
- Assess compliance rates; prioritize enforcement programs; maintain an active enforcement presence to provide a fair, consistent, and level playing field across industries; and deter noncompliance.
- Publish information about our enforcement programs to provide transparency in our enforcement process and accountability to both regulated parties and the public.

Enforcement is a collaborative effort within and outside of CARB. CARB regulatory and laboratory staff often identify and participate in investigations of potential noncompliance. Once violations are verified, the Enforcement Division works with the Legal Office to negotiate and settle cases. Enforcement staff also collaborates with various other agencies such as the United States Environmental Protection Agency (U.S. EPA), the California Environmental Protection Agency (CalEPA) and its Boards, Departments, and Offices, tribal partners, local prosecutors' offices, and California's local air districts on multi-media, multi-faceted investigations.

Our enforcement programs reflect the broad array of CARB regulatory programs focused on vehicles, engines, fuels, consumer products, and stationary sources. Enforcement staff also implement equipment registration programs at the state level and work to ensure the effectiveness of local air district permitting and enforcement programs. Enforcement programs fall into several categories:

- **Enforcement of Diesel Fleet Rules**
  CARB regulations establish technology and equipment maintenance requirements that diesel fleet operators and vehicle owners must meet to legally operate in California. These regulations apply to truck, bus, off-road equipment, transportation refrigeration unit, cargo handling equipment, commercial harbor craft, and ocean-going vessel owners and operators in California. Staff inspects equipment and issues citations or investigates fleets for compliance and enforces where violations are identified.

6 CARB, *CARB Vision & Roadmap*, 2021.

- **Enforcement of Vehicle and Engine Certification Requirements**
  CARB regulations establish requirements that vehicles and engines must meet to be legally sold in California. Staff investigates violations related to vehicles and engines that fail to meet these standards, including the use of improper test procedures and defeat devices.
- **Enforcement of Product Requirements**
  CARB regulations establish requirements that products, such as chemically formulated products, composite wood products, indoor air cleaners, and fuels, must meet to be legally sold in California. Staff investigates violations related to products that fail to meet these standards, including emissions exceedances and improper labeling.
- **Enforcement of Climate Programs at Stationary Sources**
  CARB regulations establish reporting and equipment maintenance requirements that apply to stationary sources. Programs include mandatory greenhouse gas reporting that supports the Assembly Bill 32 Greenhouse Gas Inventory and Cap-and-Trade Program, refrigerant management, landfill methane, and oil and gas regulations. Staff inspects facilities, conducts audits to identify violations, and either refers violations to local air districts for enforcement or enforces them directly.
- **Equipment Registration Programs**
  Staff implements registration programs for portable equipment including portable engines, woodchippers, cargo tanks, and other equipment. CARB enforces cargo tank regulations directly; local air districts enforce regulations regarding equipment registered in the Portable Equipment Registration Program.
- **Local Air District Support and Oversight**
  Staff provides training programs and offers support to local air district inspectors in conducting enforcement work. CARB also reviews district permitting programs to ensure that they are sufficient to meet state ambient air quality standards and enforcement programs to ensure that they are reasonable. Enforcement staff are currently reviewing programs in several air districts.

Each year the Annual Report provides an opportunity to assess our programs and determine what improvements could be made to better achieve our goals. This year, the report provides a thorough analysis of compliance rates for many of our programs to evaluate their effectiveness. This analysis has led to a rethinking of our work in disadvantaged communities, and we describe below how CARB is redesigning our enforcement work to be more responsive to community needs. Additionally, we discuss our work by program type and the status of compliance in each program. Finally, we close with a discussion of Enforcement Division's plans and goals for the remainder of 2022 and beyond.

Compliance Rates

Enforcement Division began assessing compliance rates several years ago to help identify which programs are doing well and which programs need more focused enforcement to ensure emissions reduction and health protective goals are achieved. In past years, we have focused this analysis on two of CARB's key programs–the Truck and Bus Regulation and the At-Berth (Shore Power) Regulation. Compliance rates for these programs are calculated industry-wide, using independent data sources to identify the universe of vehicles or equipment units subject to the regulations and which of those vehicles or equipment units are compliant. Analyses of compliance rates are used to focus enforcement efforts directly on noncompliant vehicles and fleets.

This year, we are expanding our analysis to more programs using uniform and repeatable tracking methods so compliance can be assessed and reported annually. Through this expanded assessment, our goal is to document lessons learned and to adjust our enforcement programs to increase enforcement efforts in programs and locations with lower compliance rates. These continuous improvement efforts will ultimately help improve air quality and better ensure a level playing field across each industry.

To assess program-specific compliance rates, we are using inspection data contained in CARB's Enforcement Data Visualization System (EDVS).[7] EDVS is a publicly available, map-based tool that displays CARB's enforcement activities from 2015 to 2021. Enforcement staff update EDVS annually to improve transparency by making information on enforcement activities available in a user-friendly, accessible, and timely way. Users can filter, sort, and view results from field inspections and case settlements by enforcement program, year, and location. Location-specific results can be viewed at the statewide, air district, and community level or via a user-defined boundary. By allowing the public to track enforcement activities over space and time, EDVS promotes CARB's efforts to ensure transparency and accountability in our enforcement programs.

Compliance Analysis

Data incorporated into EDVS can be used to calculate compliance rates for each of CARB's programs and subprograms by comparing the number of violations found to the overall number of inspections conducted. These calculated compliance rates are informative in assessing program-specific compliance rates, especially when compared over time. However, the compliance rates assessed here will also vary based on where and when inspections are conducted each year. As a result, we are characterizing compliance rates into three bins: high, medium, and low. The compliance rates calculated using this quantitative method may also be biased or incomplete because in some programs staff can preferentially target inspections for noncompliance. These qualitative ratings are included in Table 1 below. Since this is our first year evaluating and summarizing these data in a report, we are primarily presenting 2021 data. Results of previous years' compliance rates can be visualized by program and location in EDVS.

Data included in EDVS originates primarily from inspections. Enforcement staff conduct inspections for programs over which CARB directly enforces and for programs which we assist or help coordinate with air district enforcement. This year's compliance analysis is focused on the programs where CARB has primary enforcement responsibility, which are organized into five main program categories: consumer products, fuels, heavy-duty vehicles, railroad and marine, and vehicle and engine certification. Within each of these programs is a myriad of subprograms, each with their own compliance rates and trends.

7 CARB, "*Enforcement Data Visualization System*," updated 3rd quarter 2021.

Table 1 shows compliance rates by program compiled from inspection data in EDVS. Compliance rates are provided for all inspections and for disadvantaged communities (DAC). These compliance rates do not incorporate information obtained through other avenues, such as in-use compliance testing, that may find noncompliance that cannot be identified through inspection. Compliance rates above 95 percent are considered high, rates between 85 percent and 95 percent are considered medium, and rates below 85 percent are considered low. Compliance rates are considered "biased" when inspectors can effectively target inspections for noncompliance and are considered to be "undetermined" when the inspection sample size is less than 20 inspections, or when laboratory/audit results are not yet available. In the case of undetermined or biased data, a previous year's, or range of previous years', data are provided to assess compliance. More information is available in Appendix M.

Table 1. Compliance Rates by Program

Program	Year(s)	Total Compliance Rate	Compliance Rate in DACs	Qualitative Rating
Consumer Products				
Consumer & Aerosol Coating Products	2018-2020	86%	89%	Medium
Fuels				
Diesel	2021	99%	100%	High
Gas	2021	100%	100%	High
Renewable	2021	100%	100%	High
Diesel Vehicles and Equipment – In-Use				
Drayage	2021	100%	100%	High
HDVIP - Diesel Exhaust Fluid	2021	100%	100%	High
HDVIP - Emission Control Label	2021	91%	91%	Medium
HDVIP - Smoke Opacity	2021	84%	84%	Low, Biased
HDVIP - Tampering	2021	93%	92%	Medium
Idling	2021	97%	97%	High
Off-Road	2021	89%	86%	Medium
Public Agencies & Utilities	2015-2019	97%	97%	High
Smart-Way	2021	97%	100%	High
Solid Waste Collection	2018-2020	78%	93%	Low
Transportation Refrigeration Unit	2019-2020	51%	52%	Low, Biased
Truck & Bus	2021	96%	99%	High

Program	Year(s)	Total Compliance Rate	Compliance Rate in DACs	Qualitative Rating
Rail and Marine				
Cargo Handling Equipment	2021	100%	100%	High
Commercial Harbor Craft	2021	100%	100%	High
Ocean-Going Vessel Fuel	2021	99%	99%	High
Shore Power	2020	91%	90%	Medium
Transportation Refrigeration Unit Generator Set	2021	100%	100%	High
Vehicles and Engines Certification				
Vehicles	2021	95%	98%	High
Dealer & Fleet Tampering	2021	98%	99%	High
Motorcycles	2018-2020	96%	100%	High
Off-Highway Recreational Vehicles	2021	96%	100%	High
Portable Fuel Containers	2021	100%	100%	High
R-134a Refrigerant Cans	2021	86%	87%	Medium
Recreational Marine Engines	2019-2020	100%	100%	High
Small Off-Road Engines[8]	2021	99%	100%	High

Overall, all programs have very similar compliance rates in DACs relative to the rest of the state, and most programs have compliance rates exceeding 95 percent. Although this indicates CARB's regulatory programs are largely working as intended and achieving the emissions benefits envisioned when the programs were adopted, CARB continues to look beyond these high-level indicators for ways to improve programs and outcomes.

Several programs have compliance rates that are considered low. The Airborne Toxic Control Measure (ATCM) for Transportation Refrigeration Units (TRU) has a low compliance rate due to challenges enforcing the ATCM including the large number of TRUs operating in California from fleets based outside of the state. The compliance rate may also be biased because inspections are preferentially targeted in areas, such as DAC agricultural areas, where noncompliance and community exposure to air pollutants are both high. CARB adopted an update to the rule in early 2022, which includes provisions designed to help improve its enforceability. As this updated program is implemented, we will increase enforcement to improve compliance rates.

8 In-use compliance testing for Small Off-Road Equipment has found approximately a 40 percent failure rate. More information can be found in the Small Off-Road Equipment section below.

Compliance with CARB's Truck and Bus Regulation, which requires trucks to be equipped with modern emissions controls, now has very high compliance rates. A relatively small fraction of trucks are high emitters, as measured by low or medium compliance rates for visual opacity and tampering. The opacity compliance rate observed in inspections (84 percent) is likely biased low as field staff target trucks that have visual smoke emissions and therefore are more likely to fail the test. An extensive study of opacity failure rates was conducted as part of development of CARB's Heavy-Duty Inspection and Maintenance (HD I/M) Program, which the Board approved for adoption in 2021. The study found that the compliance rate was closer to 93.5 percent, or medium compliance. We believe this is likely a more accurate estimate of an industry-wide compliance rate because it is based on the large, randomized sample used for testing, unlike our targeted field inspections.

Going forward, we will be tracking compliance rates annually and using this information to determine how programs can be improved for efficiency and effectiveness.

Building Equity in Enforcement Programs

In 2021, we began hearing from communities that they were still being impacted by emissions sources operating in their community and that more enforcement was needed. This was surprising given relatively high compliance rates in DACs. We began talking with communities to hear and better understand their concerns. Through these conversations, we came to realize that our efforts have been successful to a point, but the harm communities are experiencing is still not fully addressed. Pockets of noncompliance are still present in several areas of the state, and even where vehicle and equipment operations are compliant, it's often the sheer volume of vehicle operation in communities that may impose cumulative impacts that are not addressed by current regulations.

CARB's Enforcement Division has been working to address environmental injustice in DACs by focusing a variety of efforts in these communities, including direct enforcement of CARB regulations, and administering a Supplemental Environmental Projects (SEP) program to improve public health, reduce pollution, increase environmental compliance, and bring public awareness to neighborhoods most burdened by environmental harm.

While enforcement is not a tool that can solve all problems, there is room for us to expand the scope of support we can provide in these communities. We are working to expand our efforts in 2022 by building collaborative processes with communities to better prioritize our work and deriving lessons learned to develop better approaches and policies that benefit all DACs across the state.

In the next few sections, we will describe in more detail our focused efforts in 2021 to ensure compliance with CARB regulations in DACs through complaint response, area focused investigations (AFI), multi-media enforcement initiatives, and administration of the SEP program. We will then describe the lessons we learned from these efforts and from the more in-depth conversations we had with these communities and we will further describe our approach to expanding our work in DACs to better solve community problems.

Working to Address Community Concerns

In 2021, the Enforcement Division continued to deploy resources into DACs. Of the 11,964 diesel vehicles that Enforcement staff inspected, 9,610 occurred in DACs. In addition, 96 percent of marine and railyard inspections occurred in DACs. In total, 80 percent of heavy-duty diesel inspections in 2021 were in or benefited DACs (see Appendix B). Additional details on inspections conducted and overall compliance rates in DACs can be found in Appendix M.

In addition, we continued to triage and respond to complaints received from concerned residents about air quality issues they were experiencing in their communities. We further focused enforcement in DACs using an AFI strategy based on complaints and other available data, and through participation in multi-media enforcement initiatives. We provided dedicated support to CARB's Office of Community Air Protection and local air districts in the development and implementation of enforcement plans as part of the Community Air Protection Program established in response to California Assembly Bill 617 (AB 617). Finally, we diverted approximately $6.8 million to SEPs benefitting DACs. Each of these community enforcement efforts are described in further detail below.

Supporting Implementation of Assembly Bill 617

CARB Enforcement staff supports the implementation of the Community Air Protection Program, which was established by CARB in response to AB 617. This program aims to reduce exposure to air pollutants in Board selected communities most impacted by pollution sources. Each AB 617 community develops a Community Emissions Reduction Program, which includes enforcement strategies to help ensure regulations achieve their expected emissions reductions. CARB Enforcement is active in all 17 AB 617 communities.[9]

Enforcement staff are currently working with air district staff and community steering committee members to draft enforcement strategies in the AB 617 communities of Arvin-Lamont, Richmond, and South Los Angeles. As part of this work, Enforcement staff also develops outreach and educational materials intended to increase public participation in identifying and reporting potential emissions violations.

Complaints

Air pollution complaints from the public are an important tool to help identify noncompliance with air quality regulations. Enforcement staff receives complaints from the public by phone, email, and online reporting. Complaints that fall under CARB's authority are referred internally for investigation and those that fall under local jurisdiction are referred to the local air districts for investigation. Enforcement staff then documents CARB's and air districts' investigations and findings. When appropriate, Enforcement staff may participate in complaint investigations with air district staff. For complaints that are not related to air pollution, staff work with the reporting party to ensure the complaint is routed to the proper regulatory agency for investigation and resolution.

Heavy-Duty Diesel Vehicle Complaints

Many complaints received by CARB are related to CARB's heavy-duty diesel and fleet programs. In 2021, CARB received 1,083 heavy-duty diesel program related complaints that include allegations such as tampering with vehicle emissions systems, failure to report or reporting of false information in CARB compliance databases, smoking commercial vehicles, and noncompliant off-road equipment.

To improve complaint response and resolution efficiencies for all heavy-duty diesel complaints received, staff triages all complaints by conducting a preliminary investigation to help prioritize complaints for further investigation based on factors such as sufficiency of information available, egregiousness, and proximity to areas heavily burdened by multiple pollution sources.

The triage process results in every diesel vehicle complaint undergoing evaluation, and reporting parties are frequently contacted to obtain further information or explain relevant regulations. Each complaint is then assigned to a follow-up action depending on the egregiousness and type of complaint. The follow up actions include on-site inspections, company audits, warning letters, or no further action if there is insufficient information or no violations were found.

Using the new triage process in 2021, CARB sent field staff to 28 locations where on-site inspections were deemed most appropriate, 15 investigations resulted in audits, 15 investigations found no compliance issues, and 88 preliminary investigations were determined to require no further action due to insufficient information from the complainant.

Ensuring air pollution complaints are quickly and appropriately addressed is a high priority for CARB. This is especially true for chronic issues identified by residents in communities that are disproportionately impacted by pollution. One of Enforcement's goals is to empower community members to report actionable complaints. To do this, Enforcement staff conduct presentations and trainings on how to file complaints and what information to include. Suggestions for actionable

9 CARB, *Community Air Protection Program Communities*, 2022.

complaints include providing as many details as possible about the situation and providing contact information so we can follow up and get the details we need. By empowering community members to file detailed information about their concerns, Enforcement staff can more effectively address and resolve those concerns.

Additional *information and resources for reporting a complaint* can be found online.

Community Enforcement

Area Focused Investigations (AFI) of Diesel Trucks and Equipment

To better target our efforts in areas where they are needed most, staff is using an AFI strategy that concentrates enforcement in AB 617 and other DACs, including those surrounding freight hubs and distribution centers. These locations are regularly exposed to a large fraction of the emissions resulting from the activities of diesel equipment used by companies and are often considered DACs by CalEnviroScreen.[10]

The AFI strategy begins with data analysis and background research to identify potential noncompliance in communities. Enforcement resources are then deployed into the community to inspect selected fleets at facilities and on-road heavy-duty diesel vehicles, TRUs, and off-road diesel equipment operating in the area. Roadside vehicle inspections can be supplemented by the deployment of CARB's own mobile plume-capture system called the Portable Emissions AcQuisition System (PEAQS) to screen the highest emitting vehicles for further inspection. PEAQS is an emission screening system that obtains a real-time snapshot of each truck's exhaust emissions including black carbon, carbon dioxide, and oxides of nitrogen (NO_x) as it passes through the device's detection area. PEAQS includes an Automated License Plate Reader (ALPR) camera to help pair the exhaust emissions reading with a specific vehicle. PEAQS can be deployed as an unattended platform at stationary locations or as a mobile platform in conjunction with field enforcement staff.

West Oakland

In August 2021, staff from CARB's Enforcement Division, Office of Community Air Protection, and Office of Environmental Justice met with the West Oakland Environmental Indicators Project for a community-led enforcement tour of West Oakland. West Oakland was one of the first communities identified through the AB 617 Community Air Protection Program. Some of the concerns raised during the tour included illegally parked trucks and cargo equipment on local streets, illegal parking yards near residential neighborhoods, idling trucks near sensitive receptors such as schools and residences, idling trucks queuing at the Port of Oakland, and emissions from stationary sources near residences.

Debriefing with the West Oakland Environmental Indicators Project team after the enforcement tour

CARB staff conducted an AFI event in September 2021 following the community tour of West Oakland. The event included the deployment of PEAQS, roaming vehicle inspections, and facility inspections. Over the two-day event, CARB screened 403 trucks with PEAQS, conducted 55 vehicle inspections, and issued 6 citations. CARB staff also obtained on-board diagnostic (OBD) data from 29 trucks to ensure they were well-maintained and operating as intended. Finally, 3 of the facility inspections conducted during the event resulted in follow-up investigations currently ongoing.

10 OEHHA, *CalEnviroScreen 4.0*, October 20, 2021.

Portside Environmental Justice Neighborhoods and International Border Communities

In November 2021, CARB staff held a three-day AFI enforcement event in the Portside Environmental Justice (EJ) Neighborhoods Community and the International Border Community in San Diego County. Based on research conducted prior to the event, staff inspected 25 facilities, 131 heavy-duty diesel vehicles, 39 TRUs and 46 pieces of off-road equipment. Staff referred 7 fleets for streamlined evaluation of compliance with opacity limits in the Periodic Smoke Inspection Program (PSIP) and 3 fleets for more comprehensive fleet-wide audits. Staff also issued 2 citations for a noncompliant TRU and tampering.

Roadside inspection at the Otay Mesa border

At the same time, another team of CARB staff deployed PEAQS at 3 inspection points at the Otay Mesa California Highway Patrol (CHP) inspection facility. CARB staff inspected vehicles identified as high emitters for compliance with CARB regulations including querying and recording results from the trucks' OBD systems and performing opacity testing. Staff screened 998 vehicles with PEAQS, 29 of which were identified for further inspection and 18 were issued citations.

In addition to the AFI activities in Otay Mesa, diesel inspections continued at the Calexico and Otay Mesa commercial border crossings throughout the year. A mobile PEAQS system was also deployed at both border crossings in 2021 to screen high emitting vehicles for further inspection at the roadside. Mobile PEAQS deployments are summarized in Appendix B-5.

As a supplement to the AFI activities in the Portside EJ Neighborhoods Community, ocean-going vessel (OGV) fuels inspections are routinely conducted to ensure ships at port are using cleaner fuel and shore power audits are conducted to ensure vessels are plugged into electricity at berth. In 2021, 34 vessel fuels inspections were conducted at the Port of San Diego and 3 violations were discovered. Enforcement staff also conducted 3 shore power audits, all of which were compliant.

Enforcement of California's Oil and Gas Regulation

Oil and natural gas extraction and processing are a significant source of air emissions such as methane, volatile organic compounds (VOC), carcinogens, and toxic air contaminants such as hydrogen sulfide, toluene, xylene, benzene, and formaldehyde. CARB is responsible for regulating greenhouse gas (GHG) emission sources from oil and gas facilities. In 2017, CARB adopted the California Oil and Gas Regulation (COGR) to reduce fugitive and vented methane emissions from new and existing oil and gas facilities. The regulation requires owners and operators of oil and gas facilities to regularly conduct leak detection and repair of applicable equipment, repair emission exceedances, keep records of these actions, and report certain information to CARB or local air districts. Local air districts are responsible for regulating criteria pollutant emissions such as sulfur dioxide and ozone forming VOCs from oil and gas processes.

Through Memoranda of Agreements (MOA) with CARB, local air districts may enforce most provisions of COGR in their respective California region. CARB also retains authority to directly enforce COGR in coordination with local air districts and is responsible for providing support and oversight to local air districts to ensure consistency and overall compliance with regulation requirements. Currently, 17 local air districts have entered into MOAs with CARB (see Appendix K). CARB also has responsibility to enforce COGR at oil and gas facilities in districts without MOAs.

Joint agency inspection at a vapor recovery unit

As part of our enforcement efforts, CARB leverages resources through interagency collaboration, data, and technology to help target inspections at oil and gas facilities with excess emissions. For example, data from aircraft and satellite flyovers is used to look for possible large methane leaks over a broad area. This data along with facility reported data show higher than expected methane emissions throughout the state. Using this information, we conduct joint inspections with local air districts and California Geologic Energy Management Division (CalGEM) to find the locations of potential leaks on identified facilities. CARB uses inspection equipment, including optical gas imaging (i.e., forward looking infrared radar) cameras and gas monitors to find and confirm leak sources and measure the concentrations of methane and hydrogen sulfide leaks. CARB also collaborates with other agencies, such as CalEPA, CalGEM, U.S. EPA, and local air districts through the CalEPA Environmental Justice Task Force to address community concerns.

Despite these efforts, in the past 5 years CARB has received over 170 complaints from many communities, raising concerns about the operations of stationary and mobile sources at oil and gas facilities, many of which are located directly next to sensitive receptors in the community. Nearby residents have expressed numerous concerns such as, toxic air and VOCs emissions, large yellow and black smoke plumes, piles of contaminated dirt, buried oilfield drilling sumps, improper oil spill disposal, and abandoned wells and sites that results from oil and gas operations. Community members report having experienced adverse health impacts ranging from asthma and nosebleeds to cancer. Given the ongoing nature of the complaints CARB is receiving, there is a need for CARB to take a more active role in investigating these complaints in coordination with local air districts to help address community impacts from these operations.

In 2021, CARB staff was able to join air district staff on 11 oil and gas inspections in 9 DACs (see Table 2). Four of these inspections were based on complaints from the local community. Nine facilities were inspected as part of the CalEPA Environmental Justice Task Force initiative, and 2 oil and gas facilities were inspected as part of CARB's oversight responsibilities. The inspections revealed that 8 of the 11 facilities were noncompliant and had 28 exceedances. Of the 8 noncompliant sites, 4 had leaks that were resolved within the regulation timeframe. The other 4 had exceedances that were referred to the appropriate air district for enforcement action. CARB staff is following up on the unresolved exceedances with ongoing interagency investigations.

Table 2. 2021 CARB Oil & Gas Inspections

Oil & Gas Facility	Air District	Community	Number of Exceedances Found	Status
Sentinel Peak Resources, Jefferson Site	South Coast	S. Los Angeles / AB 617	2	Resolved within regulation timeframe
Royale Energy Inc.	Sac Metro	Walnut Grove	0	No exceedance found
CRC North Shafter	San Joaquin Valley	Shafter / AB 617	2	Resolved within regulation timeframe
JP Oil	San Joaquin Valley	Shafter / AB 617	4	Resolved within regulation timeframe
Termo	San Joaquin Valley	Arvin / AB 617	3	Referred to air district
Petro Capital Resources	San Joaquin Valley	Arvin / AB 617	0	No exceedance found
CRC Elk Hills	San Joaquin Valley	Tupman	5	Resolved within regulation timeframe
Chevron Cymric	San Joaquin Valley	McKittrick	6	Referred to air district
Aera MOCO	San Joaquin Valley	Taft	0	No exceedance found
Berry Petroleum	San Joaquin Valley	Fellows	3	Pending
Chevron Lost Hills	San Joaquin Valley	Lost Hills	3	Referred to air district

In 2022, CARB will coordinate with local air districts to inspect oil and gas facilities in South Kern and South Los Angeles Counties where residents have a long and troubled history with urban oil drilling. CARB will support these AB 617 communities to help address and resolve their concerns on environmental health impacts related to oil and gas operations.

There is a need for Enforcement to conduct more in-depth investigations into oil and gas operations to help directly answer complaints and concerns raised by local communities. This is based on the volume of complaints CARB is receiving related to oil and gas operations, higher than expected methane emissions based on various data sources, and findings from our inspections conducted in 2021. To meet this need, CARB is working closely with communities to develop specific action plans to investigate concerns and identify potential strategies to resolve issues.

CalEPA Metal Shredder Initiative

CalEPA has established metal shredders as an enforcement priority due to the potential impacts these operations can have on neighboring communities. CARB staff collaborates with U.S. EPA, Department of Toxic Substances Control (DTSC), and the local air districts to provide technical support to CalEPA in this initiative.

There are nine metal shredding facilities in California, most of which are located close to homes and businesses in DACs. These facilities use large hammermill shredders to process end-of-life vehicles, appliances, and other forms of scrap metal to facilitate the separation and sorting of recyclable content. Millions of tons of metals are processed annually, generating a great deal of waste known as metal shredder aggregate, shredder fluff, or light fibrous material (LFM).

LFM can migrate beyond the property line of the facility into the adjacent neighborhoods and waterways. DTSC has determined that LFM may contain hazardous components and contaminants. These toxic particulates can contaminate the soil, groundwater, and air. Materials shredded may also contain VOCs that are released during shredding and material separation processes. Only the facilities in the South Coast air basin have sophisticated emission capture and control systems in place to minimize these emissions.

Green Team Youth Ambassadors tree planting in Fresno

CARB staff participated in joint inspections with U.S. EPA and air district inspectors of nearly all the metal shredders permitted to operate in California. Violations were identified at one shredder facility: SA Recycling's (SA) Bakersfield facility had two above-ground waste fuel storage tanks that were being operated without first obtaining a permit to operate from the district. After the inspection, SA requested authority to construct additional emission control equipment at its facility. That documentation established that the Bakersfield facility was a major source operating without a federal Title V permit to operate. The San Joaquin Valley Air Pollution Control District (SJVAPCD) issued a NOV to SA for operating a major source of air pollution without a federal operating permit.

CARB staff is working with each air district with metal shredder facilities to ensure that these facilities are appropriately permitted and well controlled. If air pollution violations are identified, CARB staff will work with the air districts, DTSC, and U.S. EPA to take appropriate enforcement actions and bring the facilities into compliance.

Supplemental Environmental Project Program

CARB recognizes that, while enforcement actions and penalties play an important role in deterring environmental violations, they alone do not address the environmental harm that communities suffer because of these violations. One way that CARB addresses environmental harm is through the SEP Program. SEPs are community-based projects funded by a portion of penalties received during CARB's settlement of enforcement actions. CARB's SEP Program funds projects designed to improve public health, reduce pollution, increase environmental compliance, and bring public awareness to neighborhoods most burdened by environmental harm.

The SEP Policy[11] prioritizes projects that benefit DACs across the state. The Policy includes:

- A public process to solicit potential SEPs from DACs (allowing the amount of the SEP to be up to 50 percent of the settlement penalties).
- An annual list of SEPs (see Appendix G) that may be selected to settle a portion of an enforcement action.
- Consideration for the relationship between the location of the violation and the location of the proposed SEP, with priority given to projects in DACs.

Examples of projects funded through the SEP Program include the installation of school air filtration systems, community air monitoring, tree plantings, and the implementation of youth programs. In 2021, 16 projects received funding for over $6.8 million. Below are examples of SEP projects funded in 2021. Appendix G-2 provides details of all SEP projects funded from enforcement cases settled in 2021.

11 CARB, *Supplemental Environmental Projects Policy*, 2016.

As of 2021, Tree Fresno has planted over 260 trees through the "Fresno TREES" SEP across 5 different sites in the region. Located along heavily trafficked roadways and within communities facing high pollution burdens, these trees provide vegetative barriers that reduce highway pollutant exposure for school students and residents in the Fresno community. Tree Fresno has also partnered with the Fresno Metro Black Chamber of Commerce on the Green Team Youth Ambassadors Project (or Green Team), which aims to engage youth and community leaders in West Fresno to identify locally led solutions to reduce climate change and air pollution impacts in the region. In 2021, the Green Team participated in tree plantings and nature tours as part of their curriculum.

The "ID of Diesel Hotspots in LAUSD and Posting No Idling Signs" SEP received funding to identify and map facilities within the Los Angeles Unified School District's boundries that may pose a threat to public health due to high diesel emissions. California Safe Schools worked with the City of Los Angeles and Department of Transportation to post "No-Idling" signs in locations prone to increased truck or bus idling. The information was also shared with regulatory officials for policy development and enforcement input.

No idling sign in Torrance, California

Lessons Learned from CARB's Community Enforcement Efforts

Through our enforcement efforts in 2021, and in prior years, we have learned that the environmental issues DACs face are challenging to address. Sometimes, community concerns can be addressed through direct enforcement because the concerns are driven by noncompliant operation of vehicles, equipment, or stationary sources. CARB programs are designed to be health protective from an emissions perspective and compliance rates are generally high and consistent in DACs versus non-disadvantaged communities (non-DACs). But even with higher compliance rates, we hear from community members that regulated sources are still causing a cumulative impact that is significant even when all sources are compliant with current regulations. For example, we have learned that there is a high volume of truck traffic in neighborhoods that are not always designed for truck traffic, and often have residences adjacent to streets with high truck traffic. Cumulative emissions, noise, vibration, unsafe parking conditions, and idling of trucks near houses are all significant concerns. Furthermore, industrial facilities like factories and landfills sometimes create ongoing odors or visible emissions and communities are concerned about possible exposures and health effects from these emissions. These cumulative impacts are caused by past land-use and zoning decisions and policies that will require time and creativity to address.

Expanding Community Enforcement Approach

In an effort to address these impacts experienced by communities, Enforcement has begun developing a community-based approach that builds on the fundamental idea that part of achieving environmental justice is making sure we are partnering directly with community members across the state to truly understand community issues more holistically. Rather than solely focusing on our traditional enforcement programs in a community, we can instead bring our expertise and labor as part of a team collaborating with community members as partners to investigate and document community concerns more broadly and work together to identify strategies that may help to solve the problems community members are experiencing.

We aim to provide a broader array of assistance through this approach. This will include our traditional mobile source inspections, vehicle idling assessments, and audits, as well as odor investigations, local agency coordination, stationary source inspections in collaboration with air district enforcement staff, and training on complaints submittals. We can engage in interagency collaboration on multi-media issues, like toxics issues, and we will continue to expand our SEP programs. Learning and training can and should go both ways so CARB staff will also be available for training by communities if they so choose.

Finally, CARB will provide a report to each community documenting our understanding of concerns and issues, the results of our enforcement work, the lessons learned from our work in the community, and the next steps that we think could be taken to address underlying community issues. Each of these reports will be posted to our website. In addition, every year we will summarize the lessons we have learned in our Annual Enforcement Report and engage in a community-driven process to continue prioritizing communities and projects where we can have maximum impact both at the individual community level, and across all DACs in the state.

In late 2021, we began working with several communities to pilot this expanded approach. Below are examples of how we have put this approach into action.

Del Amo Action Committee representatives from the community of Del Amo in south Los Angeles, designated a disadvantaged community by CalEnviroScreen, raised concerns about air pollution from the operation of both stationary and mobile sources, particularly related to the oil and gas industry, toxicity from Superfund sites and the chlorine industry, and increased warehouse truck traffic, that are a problem because they are sited directly up against sensitive receptors in the community. The community has conducted extensive truck counts and cataloged warehouses and industrial facilities of interest in the community. CARB, in collaboration with community members, is developing a community-driven enforcement plan that investigates specific community issues and identifies potential next steps to address them.

In Stockton, a selected AB 617 community in the San Joaquin Valley, CARB is using data to inform and target enforcement, and provide outreach. CARB has begun to verify areas of concern by documenting actual truck volumes, usage patterns, and diesel compliance rates using PEAQS, ALPR cameras, inspections, and surveys by CARB staff and community members. CARB will work and cross-train in coordination with community members to conduct truck counts, allowing us to ground-truth the data and target fleets for incentives, inspections, and potential truck route mitigation.

We are also developing community-specific projects in South Los Angeles and West Oakland as part of AB 617. Our goal is to develop co-designed and co-led projects that empower communities, focus on community identified priorities, leverage enforcement, and result in community investigations that help us understand how to develop stronger enforcement approaches and regulatory policies to address unique environmental concerns in individual communities, and common environmental concerns across many communities.

Enforcement staff conducting a smoke opacity test

Diesel Fleet Enforcement Programs

Mobile sources including cars, trucks, ships, and off-road equipment continue to contribute a majority of smog-forming NO_x[12] and the largest portion of GHG emissions[13] in California. They are also a significant source of toxic air contaminants such as diesel particulate matter (PM) and formaldehyde that directly impact community health[14]. Over the last 50 years, CARB has adopted increasingly stringent programs designed to reduce harmful emissions from these sources, improving air quality and reducing climate pollutants. In addition to new regulatory standards to reduce diesel emissions for newly manufactured diesel-fueled engines and vehicles, CARB has adopted a suite of regulations requiring retrofit, turnover, and/or ongoing maintenance of existing in-use diesel-fueled vehicles and engines to accelerate and maximize diesel emissions reductions as soon as possible. Industry-wide compliance with these programs is critical to ensuring intended emissions reductions are achieved in practice and broad environmental and public health benefits are delivered, especially in the communities that continue to bear the brunt of poor air quality.

Truck and Off-Road Fleet Regulations

Truck and Bus Regulation Compliance

In 2008, CARB adopted the Truck and Bus Regulation requiring heavy-duty diesel trucks that operate in California to replace older engines with cleaner engines certified to lower diesel PM and NO_x emissions standards on a phased-in schedule based on the model year (MY) of the engine. Compliance with this regulation results in some of the most significant reductions in harmful diesel emissions from these sources. However, achieving compliance over the years has been challenging due to the high volume of vehicles subject to these requirements. Despite the challenge, CARB has been successful in increasing compliance rates of trucks operating in the state.

Using the Department of Motor Vehicles (DMV) and other data sources (see Appendix I), Enforcement estimates that overall compliance rates for heavy-duty trucks operating in California have increased from 74 percent in 2017 to 94 percent in 2021. More specifically, compliance rates for California-registered heavy-duty trucks increased from 77 percent in 2017 to 98 percent in 2021 and compliance rates for out-of-state registered heavy-duty trucks increased from 73 percent in 2017 to 93 percent in 2021. We believe the compliance rate for out-of-state trucks is likely higher than 93 percent because the compliance rate calculation includes all trucks registered in fleets operating in California, and not a comprehensive list of individual trucks that actually operated in California. Compliance rates observed in vehicle registration data (Appendix I) are consistent with what we see in the field as evidenced by the inspection data found in EDVS, which show a compliance rate of 78 percent in 2017 increasing to 96 percent in 2021 (Appendix M). In addition, EDVS data show an estimated 99 percent compliance rate with the Truck and Bus Regulation in DACs and a 93 percent compliance rate in non-DACs. The dramatic improvement in compliance rates in the Truck and Bus Regulation over the past 5 years is a testament to the hard work of CARB staff across the agency conducting outreach, implementing new laws, and streamlining enforcement.

California Registered Vehicles

Enforcement staff have employed a variety of strategies to increase compliance rates for California registered and non-California registered trucks. For California registered vehicles, increased compliance has resulted with the help of DMV through their implementation of requirements that heavy-duty trucks demonstrate compliance with the Truck and Bus Regulation before issuing

12 CARB, *"Criteria Pollutant Emission Inventory Data,"* 2017.
13 CARB, *"Current California GHG Emission Inventory Data,"* 2019.
14 CARB, *"California Toxics Inventory,"* November 2013.

vehicle registration. CARB has also enhanced outreach efforts to inform truck owners of regulation requirements, and CARB Enforcement staff implemented a streamlined truck enforcement process (STEP) in 2019 that has proven to be better suited for the high volume of trucks subject to these requirements.

STEP works by using data analysis tools to identify noncompliant vehicles and fleets, notifying those fleets of noncompliant operation, and then following up with violations and penalties if fleets do not bring their vehicles into compliance. If the vehicle owner chooses not to pay penalties or bring their vehicle into compliance, DMV registration holds are placed on the vehicle and the owner is unable to register the vehicle until the penalty is paid and the truck is compliant. Since 2018, staff have sent more than 40,000 notices of noncompliance through this process. In 2021, staff used STEP to take enforcement action on 5,891 noncompliant vehicles making up the remaining 2 percent of noncompliant California-registered vehicles. Of these, 4,998 vehicles to date are going through the enforcement process and will be brought into compliance. The remaining vehicles are targeted for enforcement action in 2022.

Out-Of-State Registered Vehicles

To maintain a level playing field between trucks registered in California and trucks registered in other states, staff conducts field inspections at border crossings and throughout the state. These inspections are supplemented using PEAQS systems equipped with ALPR cameras that are deployed at border crossings and major thoroughfares. ALPR data collected from these sites allow CARB staff to identify which heavy-duty diesel vehicles are entering and operating in California. When we identify an out-of-state fleet that is potentially noncompliant, CARB staff either pursues the case directly or refers the case to another agency for enforcement.

CARB has an ongoing partnership with the U.S. EPA Region 9 to pursue investigations of fleets registered outside of California, identified as operating in California, and potentially operating out of compliance with the Truck and Bus Regulation. CARB has similarly developed a Memorandum of Understanding (MOU) with environmental prosecutors' offices in Southern California to pursue enforcement action against noncompliant out-of-state fleets that operate in their counties. This partnership is in the early stages and will continue to build in 2022.

Enforcement of Smoke Opacity Requirements

The Heavy-Duty Vehicle Inspection Program (HDVIP) and Periodic Smoke Inspection Program Regulations ensure engines are well-maintained and diesel emissions continue to be controlled as originally certified throughout the life of the vehicle by limiting the amount of smoke that can be emitted from a truck's exhaust stack. Under HDVIP, trucks are subject to roadside inspections by CARB staff, whereas PSIP requires owners of heavy-duty vehicles to perform annual smoke opacity tests, maintain test records, and make records available to CARB staff upon request.

Historically, compliance with roadside smoke opacity testing has been high at 100 percent compliance between 2015 and 2019. However, a new opacity requirement came into effect in 2020, lowering the allowable smoke opacity limit for most heavy-duty trucks in California to 5 percent. As a result, for the past 2 years, field inspectors have seen a decrease in compliance to 94 percent in 2020 and 84 percent in 2021. Another contributing factor is Enforcement Division's increased use of PEAQS. This system helps flag high emitting trucks for further inspection where a roadside opacity test can be conducted.

Building on the success of using STEP for the Truck and Bus Regulation, Enforcement staff expanded the approach in 2021 to ensure compliance with PSIP requirements by sending notices to fleets subject to the regulation requiring them to submit their periodic smoke test information. Fleets that complete their yearly testing and demonstrate smoke emissions below opacity limits are determined to be compliant. Fleets that have not performed the required testing or demonstrate smoke emissions above opacity limits are subject to penalties and follow-up testing to demonstrate

compliance. CARB began implementation of STEP for PSIP in September 2021 and have evaluated compliance for over 1,500 vehicles. Of those, 861 vehicles were noncompliant with the regulation, resulting in more than $60,000 in penalties.

Inspections of Heavy-Duty Diesel Vehicles and Equipment

To ensure compliance with HDVIP and other applicable diesel fleet requirements, 10,165 diesel fleet vehicles and pieces of equipment were inspected by CARB Enforcement statewide in 2021, although some COVID-19 restrictions continued. This resulted in 1,136 citations issued for noncompliance. Seventy-eight percent of these inspections occurred in DACs. Many of the vehicles inspected were first screened by CARB's mobile PEAQS system which was deployed in a variety of locations in 2021 to target the highest emitting vehicles for further inspection. Additional details on 2021 heavy-duty diesel inspections can be found in Appendices B-2 through B-4.

Inspections of diesel vehicles and equipment for compliance with CARB requirements are also conducted by local air districts pursuant to MOUs entered into with CARB, as shown in Appendix K. The San Diego Air Pollution Control District (SDAPCD) has signed such an agreement. SDAPCD conducted a total of 6,701 inspections in 2021, nearly double the inspections completed in 2020, and issued 426 citations for noncompliance. These inspections are listed in Appendix B-4, including the total diesel inspections described in this report.

Implementation of Stationary PEAQS Units

In addition to mobile PEAQS deployments, CARB has also been maintaining unattended PEAQS platforms at stationary locations to ensure compliance with HDVIP's smoke opacity requirements. Staff is using STEP to notify owners of vehicles identified as high emitters by a stationary PEAQS unit and request that the vehicle owner test their vehicle for smoke opacity. Alternatively, they may download the vehicle's OBD data and send the information to CARB within a specified timeframe to demonstrate compliance. If a vehicle's opacity test shows an exceedance, the owner must repair the vehicle, perform a follow-up test, and provide the repair information and passing test to CARB to demonstrate compliance. This process, known as the High Emitter Screening Program, was designed as an additional method to ensure compliance with CARB's current regulations, to gather more information on high emitters and relate those emissions to OBD or opacity data, and as a precursor to identifying high emitters in the HD I/M program as described below. Initial pilots of this program began in late 2021. Please see Appendix B-6 for more detailed statistics on this program.

PEAQS Technology Improvements

CARB staff continues to evaluate and refine the PEAQS technology to maximize its effectiveness. For example, during initial deployments of CARB's PEAQs systems, staff demonstrated that emissions from trailer TRUs, which are trailer-mounted cooling units powered by a separate diesel engine, are difficult to differentiate from the truck's emissions. To separate out these vehicles for further analysis, staff developed a machine learning tool to automatically detect the presence of a TRU in a video or photo. The tool is now deployed with our stationary PEAQs systems and initial results show that it can predict the presence of a TRU with more than 80 percent accuracy. Additional data collection and the use of multiple photo frames or video will increase the accuracy of the tool over time.

Accurate measurement of an emissions plume requires differentiating not only TRU emissions but emissions from other vehicles, as well as accurately attributing a plume to a vehicle. Recent updates to the tool increased the number of vehicles detected and initial data suggest that the tool is more accurate in detecting the targeted emissions plume. Additional enhancements to PEAQs are ongoing as we learn from current deployments and strive to make the system as robust, scalable, and flexible as possible.

Gearing Up for the Heavy-Duty Inspection and Maintenance Program

At the December 2021 hearing, the Board approved a first-of-its-kind comprehensive inspection and maintenance program for heavy-duty trucks and buses to ensure their emissions control systems are well-maintained, function properly, and effectively reduce emissions throughout their full operating lives. The HD I/M Regulation expands on existing HDVIP and PSIP requirements by requiring more comprehensive periodic testing and inspections to ensure proper control of both PM and NO_x emissions. The HD I/M Regulation is the largest near-term NO_x emissions reduction regulation approved by CARB since the Truck and Bus Rule in 2008 and is a critical measure to achieve CARB's State Implementation Plan commitments in the San Joaquin Valley and the South Coast.

CARB Enforcement staff reading OBD data during a roadside inspection

HD I/M will be applicable to all heavy-duty combustion-powered vehicles over 14,000 pounds gross vehicle weight rating (GVWR) including out-of-state and out-of-country vehicles operating in California. The regulation requires these vehicles to be tested initially twice per year and then four times per year after three years for vehicles equipped with OBD systems. The periodic testing will be complemented by the deployment of a statewide roadside emissions monitoring network (e.g., PEAQS) to detect high emitting vehicles operating in real time and flag them for immediate follow-up compliance testing. The program will begin with roadside emissions monitoring in January 2023, and periodic testing will phase in during 2024.

Implementation of the roadside emissions monitoring and follow-up compliance testing for HD I/M will be an expansion of CARB's ongoing deployment of PEAQS for HDVIP compliance. The expansion of this approach to HD I/M requires ongoing collaboration between CARB and CHP to deploy additional PEAQS units throughout California and to coordinate enforcement efforts given CHP's own statutory authority to enforce HD I/M requirements.

CARB is also working with several other State partners to implement HD I/M requirements. Enforcement staff are working with DMV to ensure only compliant vehicles are allowed to register in California, with the California Department of Food and Agriculture to coordinate continued use of agriculture inspection stations for siting unattended PEAQs systems, and with the Bureau of Automotive Repair to gain insights on enforcing Smog Check programs in general.

Off-Road and Transportation Refrigeration Unit Enforcement

Off-road engines and TRUs are another significant source of harmful diesel emissions, especially when operation of these engines is congregated at a particular location such as a distribution center or construction site, resulting in the potential for health risks to those that live and work nearby. To control emissions from these sources, CARB adopted the TRU ATCM in 2004 and the In-Use Off-Road Diesel-Fueled Fleets Regulation in 2008. CARB has actively enforced these regulations since their adoption through a combination of field inspections and comprehensive audits of fleet records to gain compliance with regulation requirements and ensure the intended emissions reductions are achieved in practice.

Transport Refrigeration Units

CARB conducts TRU generator set inspections at ports and railyards which include TRUs installed on shipping containers, trailers, and railcars. Compliance at these locations is generally much higher than the on-road inspections described above, with a 100 percent compliance rate over the past 3 years. This is likely because most TRUs at ports and railyards are used by large shipping and logistics companies who are more easily able to invest in new equipment than independent owner/operators.

TRUs from on-road sources are largely inspected through targeted inspections at facilities, during roadside heavy-duty vehicle inspections, and during roaming field inspections. CARB conducts targeted enforcement of TRUs operating in agricultural regions during harvest seasons when there are significantly more trucks and TRUs operating in the area. In 2021, CARB conducted 843 TRU inspections and issued 522 citations for on-road truck TRUs. Seventy-five percent of these TRU inspections occurred in DACs.

Statewide TRU compliance rate estimates for on-road trucks based on field inspection data show TRU compliance rates average around 51 percent. The majority of TRU citations were issued for non-

A line of TRU generator sets during an inspection at the ports

emission related violations such as reporting and labeling violations. These compliance rates may not be representative of statewide TRU compliance rates because field inspectors are able to visually identify many noncompliant TRUs from a distance, resulting in noncompliant TRUs being more likely to be inspected. As for DACs, compliance rates are slightly higher at an average 52 percent than in non-DACs at an average 48 percent.

Moving forward, CARB will continue to target noncompliant TRUs operating in California and provide outreach to regulated parties in preparation for the 2022 TRU amendment that will include new requirements for labeling, and reporting for certain facilities and out-of-state TRUs operating in California.

In-Use Off-Road Equipment

CARB conducted 911 inspections of off-road equipment throughout the state in 2021 and issued 98 citations. SDAPCD holds an MOU with CARB to enforce on off-road equipment and conducted additional off-road inspections in their region in 2021. Many of the off-road inspections occurred at either major or minor construction sites throughout the state, including in DACs. Compliance rates have remained relatively steady over the last 7 years, with an estimated compliance rate of 83 percent for 2021. The data also do not show a difference in compliance rates between DACs and non-DACs. Because off-road equipment is transported to work sites, the equipment is highly mobile and often originates elsewhere.

A piece of off-road equipment at a construction site

Noncompliance in off-road is often due to reporting violations, especially with smaller fleets, and can be due to a lack of knowledge of the regulation or deliberate non-registration of equipment that would be out of compliance. During inspections, CARB staff share educational materials on the applicable regulations and explain how to bring the fleet into compliance. To increase compliance rates going forward, CARB intends to conduct more inspections both to address noncompliance and to increase awareness of CARB's regulations.

Enhancing Enforceability Through Regulatory Amendments

The compliance estimates for both the TRU and Off-Road programs support the need for regulatory mechanisms to incentivize higher compliance with emissions requirements and to help level the playing field between compliant fleet owners and noncompliant fleet owners.

In February 2022, CARB adopted amendments to the TRU ATCM that improve enforceability by adding new requirements for owners and operators to register all TRUs that operate in California, whether or not they are based in California, and to affix compliance labels to all TRUs to clearly identify which TRUs are compliant, and which are not. The amendments also include requirements for refrigerated warehouses and distribution centers to register with CARB, and to either report all TRU activity at their facility to CARB on a quarterly basis or allow only compliant TRUs to operate at their facility. Potential amendments to the In-Use Off-Road Regulation are exploring concepts to increase compliance rates.

Protecting Vulnerable Port Communities

Marine ports are a major source of air pollution and pose a health risk to surrounding communities. Emission sources located at ports such as OGVs, commercial vessels, cargo handling equipment, and locomotives are soon slated to pass on-road vehicles as the largest mobile source of NO_x emissions in the state.[15] Two of CARB's regulations aimed at reducing emissions from these sources through implementation and enforcement are the At-Berth Regulation and the Ocean-Going Vessel Fuels Regulation.

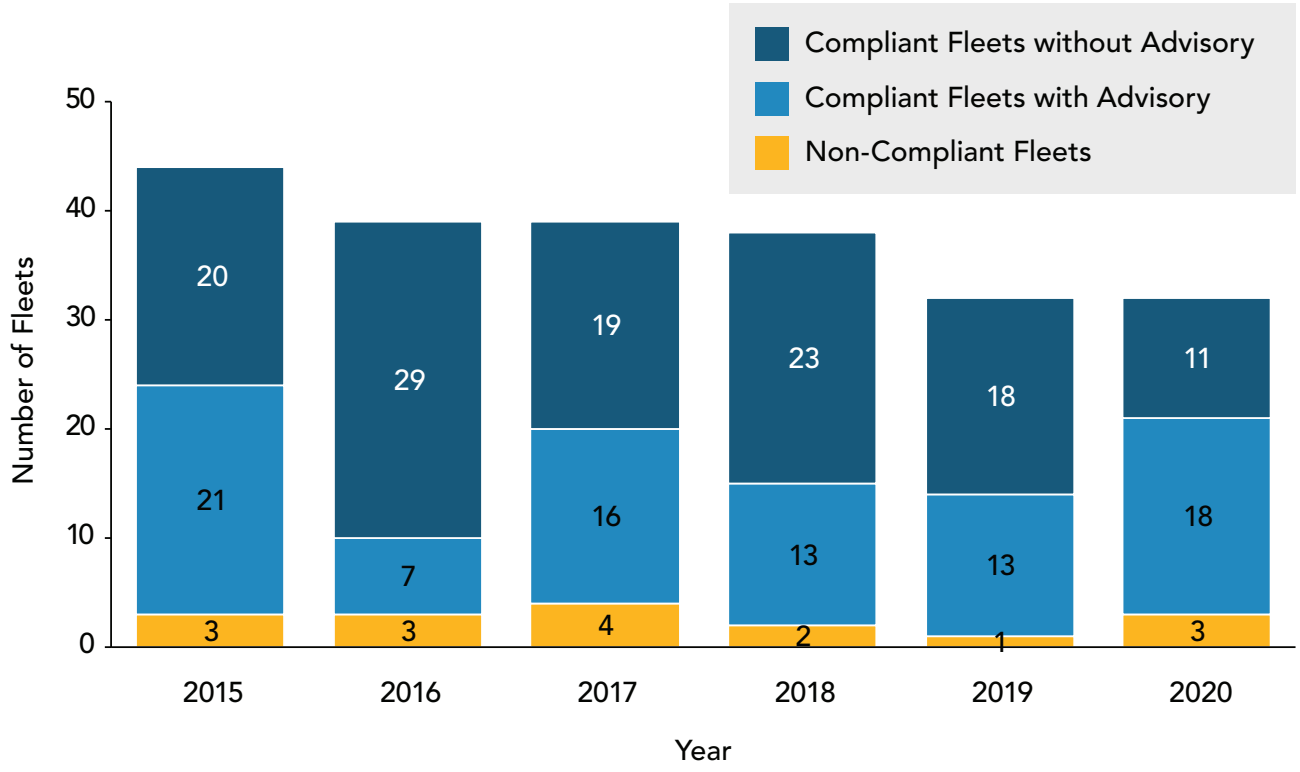
Shore Power Enforcement

California's At-Berth Regulation (commonly known as the Shore Power Regulation) targets NO_x and diesel PM emissions from certain types of OGVs including container, refrigerated cargo, and cruise ships at California's 6 largest ports. The regulation has been phased in over time with regulated fleets currently required to reduce their annual power generation by 80 percent and operate their engines for 3 hours during 80 percent of their visits. Options for vessel operators include shutting down a vessel's engines and plugging into the cleaner electric power grid or using a CARB approved alternative technology such as a barge-based capture and control system that reduces an equivalent amount of vessel emissions. A regulatory Advisory was written in 2017 to assist vessel operators with certain events beyond their control that impact their ability to comply.

Currently, fleets submit annual visit reports the first quarter after each compliance year. For this reason, compliance analysis of the At-Berth Regulation is always 1 year behind. CARB evaluates every visit made by a regulated fleet by conducting a detailed audit to determine the fleet's compliance status. Many of the fleets faced with the inability to connect for reasons beyond their control rely on the Advisory to comply. Ninety percent of the fleets in 2020 were able to comply with the At-Berth Regulation but 56 percent of fleets required advisory relief to do so, as seen in Figure 1. Annual reports for the 2021 fleets were received the first quarter of this year and Enforcement staff are currently auditing them for compliance. The At-Berth Regulation has shown a medium to high compliance rate since implementation, with between 90 to 97 percent of fleets complying each year since 2015. Being a port-centered regulation, most audits occur on behalf of DACs and it is in these port DACs where the compliance rate remains high (95 percent average over 6 years).

15 CARB, September 2021 Public Workshop for Cargo Handling Equipment and Ocean-Going Vessels Emissions Inventories, Workshop Presentation, September 21, 2021, https://ww2.arb.ca.gov/sites/default/files/2021-09/admin_draft_carb_che_ogv_inventory_sept_22_2021_workshop_final_ada.pdf.

Figure 1. Statewide Compliance Status for At-Berth Power Reduction Requirement 2015-2020



There were three major events that significantly affected vessel fleets in 2020 including COVID-19 emergencies, the loss of an alternative technology option, and energy grid emergencies. Worldwide COVID-19 impacts caused early and lasting effects on the shipping and passenger vessel industries. In early 2020, container and cargo vessel operations were nearly shut down due to the global spread of COVID-19. When some port restrictions began to lift toward the end of 2020, the container industry responded with record growth.[16]

Vessel at berth with a capture and control barge attached to it

Another problem fleets faced in 2020 was the strain on California's electric grid due to extreme heat and fires. This resulted in 2 Emergency Proclamations being issued, calling for ships at berth to refrain from plugging into shore power to ease the strain on the electrical grid. The orders resulted in 53 vessels not connecting to shore power and an estimated savings of over 10,000 megawatt-hours of grid power, but increased emissions by roughly 160 tons of NO_x and 3 tons of PM in mostly DACs during acute heat waves.

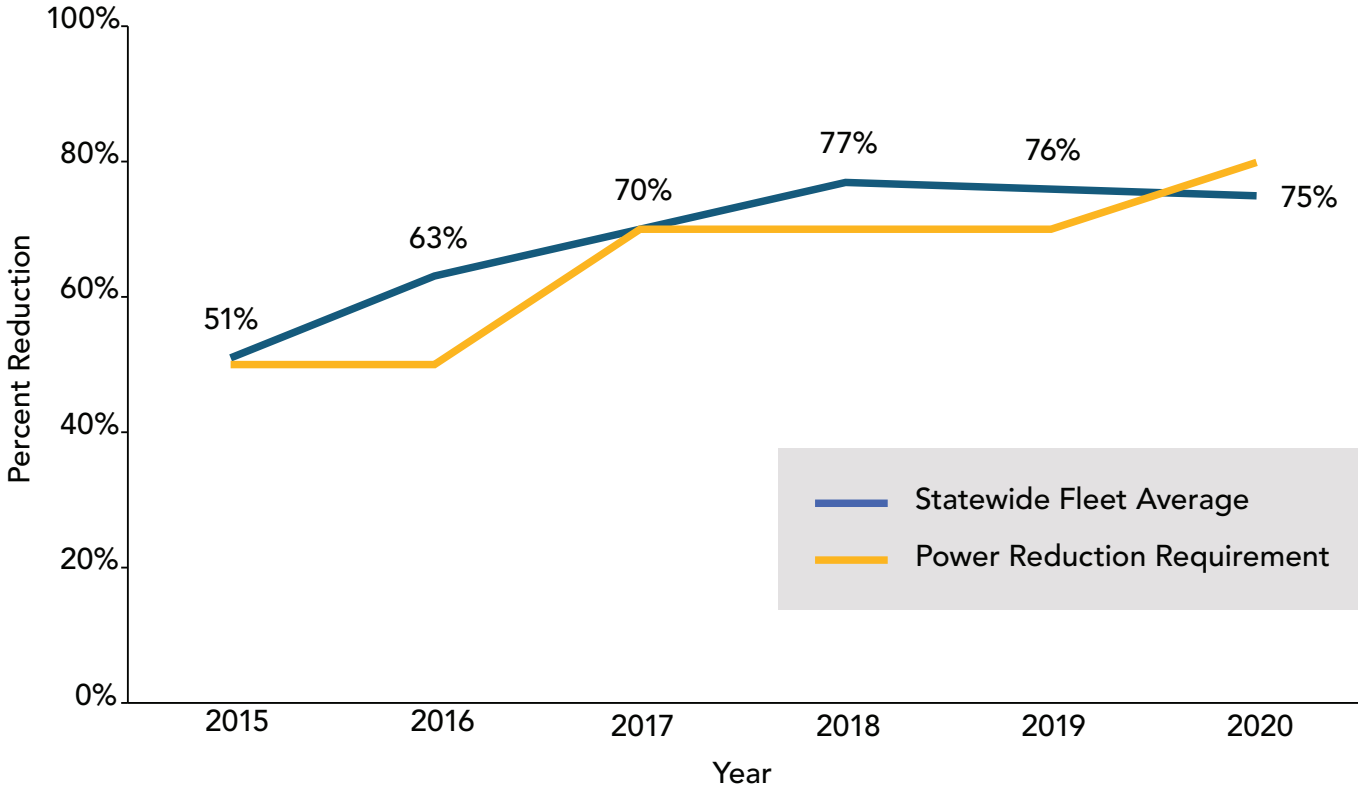
The third hurdle came in November 2020 when CARB revoked an Executive Order (EO) for a CARB approved barge-based capture and control system. The company, Advanced Environmental Group (AEG), had not resolved issues concerning equipment failure, mandatory reporting, and

16 *Port of Los Angeles, "November Cargo Volume Increases 22% at Port of Los Angeles,"* December 2020.

uncontrolled/insufficiently controlled visits, despite requests by CARB to do so. The absence of the AEG barge left only one alternative control system running in the Port of Los Angeles/Port of Long Beach at a time when demand for such systems was increasing. CARB is actively working with additional companies to bring more alternative technology options to California ports.

Three power reduction requirements have been phased-in since adoption of the Shore Power Regulation: 50 percent in 2014, 70 percent in 2017, and 80 percent taking effect in 2020. Until 2020, the industry as a whole was able to meet or exceed the power reduction requirement. As illustrated in Figure 2, compliance has historically been near the requirement level in the first year of each regulatory increase due to the time it takes to adjust their fleets to comply (see years 2015 and 2017). We see the same trend in 2020, however, fleets statewide only achieved a 75 percent power reduction, 5 percent below the requirement. This also illustrates how the unique circumstances of 2020 impacted compliance.

Figure 2. Percent Reduction in OGV Auxiliary Diesel Engine Use While At Berth in California, Measured in Megawatt Hours 2015-2020



As anticipated, the number of advisory requests increased from 2019 to 2020. The most significant increases came in the emergency event and alternative technology categories. The higher number of emergency requests was a result of the unique challenges facing the fleets in 2020, as mentioned above. The increase in alternative technology requests can be linked to the increased number of fleets using this option as a means to comply. We believe the increased demand for alternative technology was mainly due to industry responding to the supply chain surge by bringing new services and extra vessels into California.

We have also heard from many different shipping companies trying to find vessels already equipped with shore power on the open market that there is a worldwide shortage of such vessels. This has caused many fleets to hire or charter non-shore power equipped ships and rely on an alternative control technology. Despite the revocation of the EO late in 2020, barge use doubled from 2019 showing the benefits of having such alternative technologies to help fleets reduce their at-berth emissions when shore power vessels are not available.

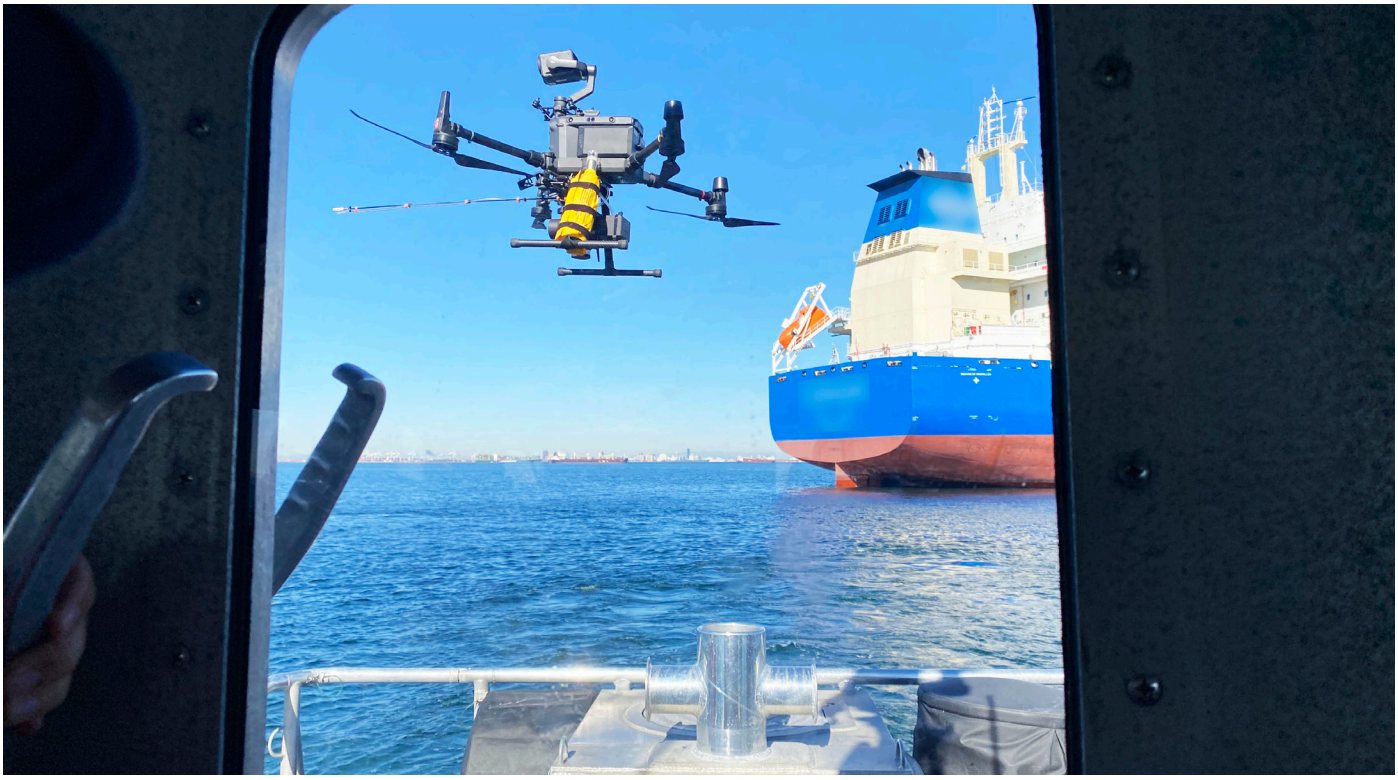
Ocean-Going Vessel Fuels Enforcement

CARB requires OGVs to use 0.1 percent sulfur, distillate grade fuel within Regulated California Waters (RCW), or 24 nautical miles of shore, under the Ocean-Going Vessel Fuel Regulation. CARB staff have traditionally sampled fuel to determine compliance with the fuel sulfur limit using specified regulatory test methods. However, we have found a small, yet significant percentage of vessels that enter RCW operating on contaminated fuels that may comply with this sulfur limit, but do not meet the specifications of a distillate grade fuel, resulting in increased emissions of toxic PM from these engines. To ensure compliance with all regulatory requirements related to OGV fuel, in 2021, enforcement staff began performing further analysis of fuel samples collected to determine if they meet the requirements of a distillate marine grade fuel in addition to meeting sulfur limits. To date, this has proved to be a successful component of our sample analysis procedures and has been incorporated into every violation found in 2021.

In 2021, due to COVID-19 and an abundance of vessels in anchorage near California ports, CARB enforcement staff contacted many OGV management companies requesting that they provide specified vessel records to be audited by CARB staff to ensure compliance with regulatory requirements. Staff supplemented these audits by conducting in-person inspections of 740 vessels and issuing 5 NOVs for failure to comply with the requirements of the OGV Fuel Regulation.

Compliance with the OGV Fuel Regulation has increased from 97 percent in prior years to 99 percent in 2021. Because these vessels operate at seaport facilities located adjacent to DACs, high compliance rates with the OGV Fuel Regulation means emissions from these sources are considerably reduced, thereby directly impacting the air quality in these port adjacent communities.

In pursuit of gathering additional information to further reduce emissions from OGVs operating within RCW, CARB has been exploring the use of drones to monitor emissions from ships to help target enforcement efforts on noncompliant vessels. In 2021, CARB staff, with the assistance of other organizations including the United States Coast Guard, has performed several drone exercises analyzing emissions from OGVs at anchor, and underway, off the Southern California coast. These projects are ongoing and will continue in 2022.



Drone used to analyze ocean-going vessel emissions while at-anchor and underway

Vehicle and Engine Certification Enforcement

CARB's certification requirements set stringent emission standards for new vehicles and engines to reduce emissions and achieve California's air quality attainment goals. Many of the mobile source programs establish emission standards for the combustion emissions related to the vehicle/engine operation in addition to fuel evaporative emissions that can occur during both operation and non-operation or storage of a vehicle. Evaporative emission standards set limits that result in reduced emissions of smog-forming compounds, such as benzene and other hydrocarbons, thereby improving air quality in California.

Spark-Ignition Marine Watercraft Program

The Spark-Ignition Marine Watercraft (SIMW) Program is a CARB mobile source program that requires certification of recreational boats and evaporative systems in watercraft to reduce smog-forming emissions in California. In 2015, CARB adopted the SIMW Regulations that became effective in 2018 and required SIMW manufacturers to certify the evaporative systems for their 2018 MY and newer watercraft. Enforcement of these requirements typically begins with field inspections of boats or marine engines being offered for sale at marine retail locations and dealerships throughout California, where proper labeling is used to determine compliance. In 2021, staff conducted 88 inspections and found 8 violations, showing a 91 percent compliance rate consistent with compliance rates we have seen in this program over the past 5 years. The majority of these inspections take place in non-DACs where marine retail locations and dealerships are primarily located.

An example of a Spark-Ignition Marine Watercraft

Vehicle and Engine Certification Violations

Light-duty cars and trucks contain emissions control systems that must be evaluated during the certification review process. In recent years, CARB staff has identified strategies that are electronically programmed in some vehicles' computers to strategically pass an emissions test, which is illegal. To address this issue, CARB certification staff are devoting more time to reviewing Auxiliary Emission Control Devices (AECD) during the certification review process. An AECD is any element of design that senses parameters such as temperature, engine speed, or any other parameter for the purpose of activating or deactivating the operation of any part of the emission control system. As part of this AECD review process, staff is making sure that none of these AECDs are potential defeat devices that are reducing the effectiveness of the emission control system during normal vehicle operation. Some AECDs are necessary and can be approved by CARB after review.

Staff is committed to investigating potential defeat devices and undisclosed AECDs that may exist on not only light-duty vehicles, but on medium- and heavy-duty vehicles as well as off-road engines.

While some defeat devices may be identified during the upfront certification process, many are identified after a vehicle or engine has been certified.

For this reason, CARB In-Use Compliance Staff is increasing compliance testing to see if the data submitted during certification translate to the emissions seen during on-road driving and off-road vehicle operation. With the opening of CARB's new state-of-the-art laboratory in Riverside, CARB has increased capacity for in-use testing and certification, and will have more opportunities to test engine and chassis certified products. While certification is a necessary first step in getting emissions compliant vehicles or engines into California, those vehicles or engines must remain compliant throughout their useful life. In-use compliance and enforcement testing are critical to making sure that happens. Several enforcement cases are under investigation.

Truck being prepared for in-use compliance chassis testing

Specially Constructed Motor Vehicles

An additional area of concern the Enforcement Division has been reviewing involves Specially Constructed (SPCN) motor vehicles. These vehicles are built for private use, not for resale, and typically by hobbyists or enthusiasts from used or new materials, including kits, and not constructed by a licensed manufacturer or remanufacturer. In 2001, Senate Bill 100 (SB 100) was adopted to relax Smog Check requirements for up to 500 newly registered SPCN motor vehicles each year. While SB 100 provided for a Smog Check Referee inspection to determine Smog Check requirements for the qualifying SPCN motor vehicles, it did not change California certification requirements for new motor vehicles or new motor vehicle engines. CARB adopted regulations in 2011 and 2018 to provide a certification pathway for complete replica motor vehicles, as well as engine packages. In reviewing some industry practices recently, Enforcement has found areas of concern regarding certification requirements. Enforcement staff is coordinating with other California agencies that have roles in SPCN motor vehicles and is working to provide further awareness and clarity about certification requirements for SPCN motor vehicles.

A specially constructed motor vehicle

Catalytic Converters

Key emission controls, such as catalytic converters, are critical to maintaining certified emissions levels for vehicles. CARB's aftermarket catalytic converters program requires manufacturers to demonstrate durability, robustness, and quality of each product to receive a CARB EO and to ensure proper operation and continued emissions compliance.

To ensure the integrity of CARB's aftermarket catalytic converter program and address concerns regarding illegal installations and tampering, Enforcement is focusing on and prioritizing this area. CARB inspected eight automotive exhaust repair facilities in EJ areas such as Stockton and West Sacramento to focus on catalytic converter installations and tampering. CARB is also looking into possible counterfeit products representing themselves as those with CARB EOs. No immediate violations for tampering or installation of used, stolen, or non-certified parts have been discovered to this point. Continued efforts in this area are planned to promote visibility, compliance, and support deterrence of catalytic converter theft. Staff will continue to follow up on administrative issues found, as well as target more automotive exhaust repair facilities in EJ areas to determine compliance and address tampering concerns.

Small Off-Road Engines

Small off-road engines (SORE) are spark-ignition engines rated at or below 25 horsepower. There are approximately 15.4 million engines in this category in California. These engines are primarily used in lawn and garden equipment, commercial utility equipment, specialty vehicles like scooters, and golf carts. CARB adopted emissions standards for SORE in 1990 and was the first agency in the world to control emissions from these engines. This includes the emissions of raw fuel that evaporate from the engines, even when they are powered off. SORE have become, a significant source of pollution in California. In fact, these small engines emit more criteria pollutants (non-methane hydrocarbons, carbon monoxide, NO_x) than passenger vehicles under 8,500 pounds, which are the most common vehicles operating on California public highways.[17]

A pressure washer which is considered SORE

SORE are required to be certified for each model year, and SORE evaporative components require certification every four years unless there is a material change in the component that would require a new certification sooner.

CARB uses a few different approaches for determining compliance with SORE requirements, including in-person inspections at retail and warehouse locations and in-use compliance testing to ensure compliance with emissions standards. In the last 5 years, CARB staff have conducted 1,179 SORE inspections statewide and found 5 violations, which is more than a 99 percent compliance rate. There was no distinguishable difference in compliance rates for SORE being sold in DACs versus non-DACs. However, when tested for compliance with the exhaust and evaporative standards, the compliance rate is significantly lower. Since model year 2015, CARB staff have performed compliance testing on 36 evaporative families and found 14 failures, for a failure rate of approximately 40 percent.

Most of the SORE violations are identified through CARB's in-use compliance testing program. CARB conducts compliance testing of evaporative and exhaust emissions from production engines and equipment provided by manufacturers. The test results are compared to the emissions listed in the certification application and, if already certified, the emissions listed in the CARB EO. Engines with emissions greater than these limits are potentially noncompliant.

17 CARB, *"SORE – Small Engine Fact Sheet,"* October 14, 2021.

In 2021, CARB reached a settlement with American Honda Motor Co., Inc. (Honda) for manufacturing engines that did not meet CARB's SORE evaporative emissions standards discovered during in-use compliance testing. This was the second enforcement action against Honda in the past two years for the same violations, which the settlement reflects through increasing per unit violations each year. The case settled for a total penalty of $6.9 million.

In December 2021, the Board approved amendments to the SORE Regulations that will require most newly manufactured SORE to be zero emission starting in 2024. The shift to zero emission equipment in the SORE industry is anticipated to reduce smog-forming emissions by 72 tons per day and will help California meet stringent federal air quality standards. As the SORE sector moves to electric, enforcement of SORE regulatory requirements will evolve as CARB moves away from traditional laboratory compliance testing and focusing more on ensuring that the zero-emission manufacturing, warranty, and durability requirements are met.

Aftermarket Parts Enforcement

The aftermarket parts (AMP) industry consists of manufacturers, distributors, retailers, installers, and end users that offer parts or systems for both on- and off-road vehicles that enhance the performance of the vehicles. While most AMP are cosmetic in nature, and thus legal for sale in California, some other AMP could negatively affect an original equipment manufacturer emissions control system. Through review and issuance of a CARB EO, CARB makes a determination that certain modifications to original equipment manufacturer emission control systems do not increase motor vehicle emissions, and are therefore exempt from California's anti-tampering laws. During the CARB exemption process, AMP manufacturers supply emission test data and an engineering evaluation that their parts or systems will not increase emissions.

A noncompliant aftermarket part (blue super charger)

CARB enforcement staff is often made aware of AMP noncompliance through tips it receives from the public, industry competitors, or anonymous complaints. CARB also works closely with U.S. EPA on a regular basis to target industry-wide noncompliance. For example, U.S. EPA informed CARB of potential issues with some of the AMPs being sold by Dynojet Research, Inc. (Dynojet). This was very concerning as Dynojet previously settled with CARB for $1 million dollars in 2007. CARB's investigation revealed that Dynojet sold and offered for sale the Power Commander and Dynatek Ignition System without first receiving exemptions through CARB's AMP program. CARB referred the case to the Attorney General's Office, which resulted in a stipulated judgment in the amount of $2.1 million.

R-134a Refrigerant Cans

R-134a refrigerant is currently the most popular refrigerant used in the air conditioning systems of today's cars and trucks. Containers of do-it-yourself R-134a refrigerant can be purchased to refill vehicle air conditioning systems at most auto parts or hardware stores. However, R-134a refrigerant contains hydrofluorocarbon compounds, a group of greenhouse gases that contribute to the growing problem of climate change. To legally sell R-134a refrigerant cans in California, refrigerant manufacturers must receive CARB certification that the refrigerant can's self-sealing valves do not exceed the allowable leakage rate. Furthermore, to encourage recycling, rather than indiscriminate disposal of spent refrigerant cans that may still have remaining R-134a gas in them, California consumers must pay a $10 deposit that is refundable once the spent can is returned to the store of purchase. Details of the deposit program are required to be labeled directly on certified cans, and consumers must be provided with in-store educational materials that describe the program and proper refilling procedures.

CARB has been very active the past 8 years inspecting many auto parts stores throughout California for compliance with the refrigerant can regulation. In 2021, inspectors visited 163 stores and issued NOVs to 27 stores resulting in an 83 percent compliance rate. The violations were primarily for failure to provide required educational materials, with 1 store found to be selling uncertified cans. This program has also seen generally equal or higher compliance rates in DACs compared to non-DACs.

Cans of R-134a in a California store

Enforcement of Product Requirements

Chemically Formulated Consumer Product Enforcement

Chemically formulated consumer products include many categories of products that are purchased and brought into consumers' homes. Product types in this category include cleaning supplies, aerosols, deodorants, and hair products, among others. These products are purchased by enforcement staff and then tested for VOCs contained in the products. The lab test results help staff determine which products need to be further investigated to determine compliance.

Examples of consumer products tested by CARB

As the pandemic continued in 2021, the demand for cleaning and disinfecting products increased. In-person inspections were limited in 2021 due to ongoing COVID-19 restrictions, but staff increased online investigations by researching leads from online advertisements, social media, and other sources which allowed staff to conduct more targeted inspections of specific product categories. In total, staff resolved 27 NOVs for a total of $1,128,475 in penalties for selling noncompliant chemically formulated products such as general-purpose cleaners, multi-purpose solvents, and hair products. Of those 27 settlements, 12 were considered cleaning products totaling more than $400,000 in penalties. Many of the cleaning products coming into the California marketplace were supplied by companies not familiar with CARB's regulatory requirements. Staff is working on developing outreach materials to help address this issue. Staff is also planning focused outreach and inspections in DACs to ensure chemically formulated products sold into these communities are compliant.

Additionally in 2021, staff began assessing compliance rates for different categories of consumer products to understand trends in compliance that will help identify product categories where greater enforcement is needed. Statewide compliance rates for this program are assessed by purchasing products in as many categories as possible and determining their compliance status. Overall, between 2017 and 2020, staff has seen a compliance rate between 87 percent and 94 percent. Compliance rates for 2021 are not yet available as samples collected are still being tested.

Indoor Air Cleaning Devices

To protect the public from unhealthy levels of ozone emissions, indoor air cleaning devices must be certified by CARB before they can be legally sold in California. Due to a dramatic growth in wildfires and concerns about COVID-19 transmissibility, California has seen an increase in sales of indoor air cleaning devices as well as the types of devices offered for sale. To meet the growing demand by consumers, manufacturers are designing devices that are specifically intended to destroy the SARS-CoV-2 virus. Approximately 1,500 indoor air cleaning devices were newly certified in 2021, which is nearly double the number of devices certified in 2020.

Example of an indoor air cleaning device

While indoor air cleaners are required to be certified in order to be sold in California, uncertified devices are allowed to be sold outside of California. Most enforcement cases are a result of complaints, referrals, inspections, or other information provided during other investigations. This means that almost all the indoor air cleaners investigated by enforcement staff are found to be noncompliant. Additionally, a list of all certified devices are available on CARB's website, which means enforcement staff can easily check if a device they are investigating is compliant with the certification requirements.

The pandemic has accelerated the shift to online retail, and marketing for indoor air cleaners has responded accordingly with a number of devices being sold that have not been certified by CARB. In 2021, staff assessed a total of $104,365 in penalties from three companies for selling uncertified indoor air cleaning devices in California. Most inspections in 2021 were conducted in response to complaints from the public and were completed online by inspecting websites and social media posts offering indoor air cleaners for sale. While it is the responsibility of the manufacturer to certify the devices, all entities in the supply chain can be held responsible for selling uncertified indoor air cleaners in California.

Composite Wood Product Enforcement

The FLEC screening tool with composite wood products for testing

Unlike chemically formulated consumer products that have a limited lifespan, composite wood products are often permanently installed within households in the form of flooring or cabinetry. Noncompliant composite wood products can emit formaldehyde over long periods of time so compliance with regulatory formaldehyde limits is critical.

Enforcement works closely with other CARB divisions to coordinate on determining compliance with the emissions limits of the regulation. Composite wood Enforcement staff verify compliance through one of two approaches, or a combination thereof. The first approach is a desk audit, which requires CARB staff to choose several products from a composite wood product retailer or distributor and then audit the documentation for those products without purchasing said products. During the desk audit, staff verify that reasonable prudent precautions were taken by all entities in the supply chain that provide the composite wood materials. This includes verifying the product was produced in a third-party certified mill and products and invoices are properly labeled.

The second approach to verify compliance is a facility inspection at a retailer, manufacturer, or distributor. During a facility inspection, staff conduct preliminary emission tests with a Field Laboratory Emission Cell (FLEC) screening tool. The FLEC indicates whether the product has potentially noncompliant formaldehyde emissions. After an inspection, CARB will request that the facility provide documentation to demonstrate reasonable prudent precautions were taken to ensure composite wood products are compliant.

With the preliminary results CARB obtains from the FLEC screening tool, CARB can estimate emissions compliance rates for each inspection. In 2021, CARB inspected 51 products from retailers in AB 617 communities and observed a 73 percent formaldehyde emissions compliance rate. Those inspections also led to cases with distributors who sold the noncompliant composite wood products to the retailers.

When we look at compliance rates for products that are purchased, we typically see a much lower compliance rate because enforcement staff typically purchase products they already suspect are noncompliant. In 2017, staff purchased 80 products to be tested for emissions compliance and 83 percent of those products came back compliant. Between 2018 and 2019, staff purchased 41 products. This significant drop in products purchased was because staff started using the FLEC to screen products in the field for potential noncompliance. Of those products purchased, 10 percent were compliant. This shows the FLEC is a valuable screening tool in making staff inspections more effective and efficient. In 2020 and 2021, staff sent only 10 products to the lab due to the constraints of COVID-19. Of those products purchased, 50 percent were compliant.

Fuels Enforcement

Motor Vehicle Fuel Standards

California's Standards for Motor Vehicle Fuels are designed to reduce emissions from evaporation and consumption of gasoline and diesel fuel and are a major part of California's smog control programs. CARB's fuels enforcement programs set stringent standards for California fuel that produce cost-effective emission reductions from motor vehicles. These programs set specifications for sulfur, aromatics, oxygen, benzene, T50, T90, olefins, and Reid Vapor Pressure, and established a Predictive Model for the certification of alternative formulations.

Fuels enforcement relies on field inspections that include collection and analyses of fuel samples throughout the distribution system. Through 2021, CARB has maintained a compliance rate of 98 percent across the industry. Refineries, terminals, and imports were found to have 95, 100, and 99 percent compliance rates with California fuels regulations respectively. Collected fuel samples are representative of about 2.4 percent of the fuel sold in California in 2021. The fuels program has improved efficiency in collecting fuel samples through a new retain sample agreement with importers and producers implemented in 2021. Through this agreement, the regulated parties arrange to have samples collected and held for 30 days for CARB. This alleviates limitations imposed by staff availability and potential COVID-19 restrictions. CARB's fuel enforcement programs provide a powerful deterrent to noncompliance and help ensure industry continues to take appropriate precautions to comply with regulatory requirements.

In 2021, CARB settled three cases involving violations of the fuel regulations. Of these three cases, two were discovered through routine sampling, and the third was a self-disclosure by the regulated party. The three cases totaled $376,000 in penalties, with $185,000 allocated to SEPs.

Enforcing the Low Carbon Fuel Standard

CARB's Low Carbon Fuel Standards (LCFS) requirements are designed to reduce GHG emissions by reducing the fossil carbon content of fuels. The goal of enforcement is to maintain market confidence and ensure that no party can gain an unfair advantage through illicit practices. CARB staff have conducted several audits of facilities both within and outside of California to ensure GHG reduction credits granted by LCFS are real and compliant. Enforcement works closely with CARB program staff to identify irregularities, conduct inspections, and review reporting information. Additionally, in 2020, third-party verification was implemented for LCFS to provide additional assurance of reported claims in carbon intensity reductions.

In January 2021, CARB conducted an audit of BP Biofuels (also known as BP Bunge) due to discrepancies in the party's reported transport mode. CARB reviewed documents submitted for 2 sugarcane ethanol mills located in Brazil. BP Biofuels submitted a total of 23 quarterly reports in which the actual transport mode deviated from the reported mode. CARB alleged that BP Biofuels was liable for violations of LCFS for using a pathway that was not certified. BP Biofuels agreed to pay a total of $270,000 in penalties to resolve these violations.

Stationary Climate Programs

Short-lived climate pollutants are powerful climate forcers that have relatively short atmospheric lifetimes. These pollutants include greenhouse gases such as methane, hydrofluorocarbons, and sulfur hexafluoride (SF6). Methane is more than 25 times as potent as carbon dioxide at trapping heat in the atmosphere and contributes to about 20 percent of global emissions.[18] Fluorinated gases, especially hydrofluorocarbons, are the most potent, longest lasting type of GHGs emitted by human activities and are the fastest growing source of GHG emissions both in California and globally. Reductions of short-lived climate pollutants are paramount because they are among the most harmful to both human health and global climate.[19] Legislative directives require CARB and other State agencies to reduce overall methane emissions by 40 percent below 2013 levels by 2030. The Refrigerant Management Program (RMP) and Landfill Methane Regulation (LMR) are two regulations CARB has adopted to ensure achievement of emissions reductions targets.

Refrigerant Management Program

RMP was adopted to reduce hydrofluorocarbon emissions from stationary, non-residential refrigeration equipment that uses high-global warming potential refrigerants. RMP is a critical regulation for California's greenhouse gas reduction targets and climate goals.

In 2021, CARB staff conducted 102 investigations and 9 on-site facility inspections (see Appendix E), identifying violations in more than 40 percent of cases. One notable case settled was with The Albertsons Companies, Inc. (Albertsons), the largest retail grocery chain in the state, for violations of RMP across all of its stores between 2016 and 2018. The company agreed to a total penalty of $5.1 million, of which $2.55 million funded two SEPs for upgraded air filtration systems at schools. The magnitude of this penalty reassures a level playing field for all retail grocery chains in California that have made investments to comply with regulatory requirements. Furthermore, Albertsons' compliance plan ensures the company will continue to follow provisions of RMP.

A refrigeration system visited during an inspection

18 *"Importance of Methane,"* United States Environmental Protection Agency, June 30, 2021.
19 CARB, *Proposed Short Lived Climate Pollutant Strategy* (April 2016).

Landfill Methane Regulation

Methane emissions from municipal solid waste landfills contribute to about 20 percent of the total methane emissions in California.[20] LMR was adopted in 2010 to reduce methane at these sites by requiring owners and operators of landfills with more than 450,000 tons of waste-in-place to install and operate gas collection and control systems, conduct quarterly surface emissions monitoring, mitigate exceedances within a certain timeframe, keep records, and report annually to CARB. Twenty-three air districts have signed MOUs with CARB to implement and enforce LMR.

Air districts also implement stricter air pollution control measures to meet State Implementation Plan requirements. There is overlap between LMR and local VOC emission control rules regarding instrumentation used and types of control technologies that are deployed. For example, the installation of a gas collection control system may be required at a landfill to meet LMR requirements which will also have implications on VOC measurements at a local air district. Coordination among CARB and local inspectors is important to better understand the implications of the emissions found under both LMR and local rules. In accordance with MOUs, exceedances are referred to local air districts for follow-up to ensure emissions are mitigated within the timeframe required by the regulation. Enforcement staff continue to work with air districts to reduce leaks and to ensure compliance with air quality requirements.

In 2021, we conducted 15 landfill inspections in coordination with air districts to ensure compliance with LMR. Of the 15 sites inspected, 9 had methane exceedances higher than what is allowed under the regulation. We inspected on average 30 wells at each landfill. Approximately 12 percent of the gas wells inspected had methane readings above the 500 parts per million standard set in the LMR.

We are in the process of developing new tools to make inspections more efficient, increasing the number of landfills that can be inspected throughout the year. One of these new tools is a mobile monitoring platform from CARB's Research Division to scan for methane emissions at landfills. The mobile monitoring platform has a sensor that measures the density of the methane in ambient air. Landfills can cover hundreds of acres including hundreds of gas collection wells that need to be monitored during an inspection. This screening tool helps locate areas with higher methane concentrations, shortens inspection time and helps inspectors focus their efforts on more critical parts of the landfill.

CARB inspectors detecting methane at a landfill gas collection well

20 *"Landfill Methane Regulation,"* California Air Resources Board, February 15, 2022.

Equipment Registration Programs

Portable Equipment Registration Program

The Portable Equipment Registration Program (PERP) enables owners and operators of portable engines and other types of portable equipment to register their units under a single statewide PERP registration. The statewide registration allows equipment owners to operate portable equipment throughout California without having to obtain individual permits from local air districts. PERP operates as a revenue neutral program. CARB collects inspection fees for new and renewed PERP registrations and distributes them the following year to each of the 35 local air districts to enforce State portable equipment regulations.

Equipment registered under the Portable Equipment Registration Program

PERP collected $10.4 million in registration and inspection fees in 2021 (see Appendix D), $4.7 million of which were district inspections fees for initially registered and renewed PERP registrations. This amount will be distributed to the local air districts in the first part of the 2022/23 fiscal year. In 2021, 25 local air districts reported inspecting a statewide total of 5,600 new or renewed PERP engines and equipment units. The PERP regulation requires owners and operators to arrange an inspection with the local district after new or renewed registrations are issued.

Several regulatory deadlines under the PERP Regulation occurred in 2021 which removed lower tiered, higher emitting engines to further reduce diesel PM emissions in the state and provided a schedule that allows for better planning, implementation, and enforcement. As each phase-out date approaches, CARB continues to coordinate with registrants and local air districts to maintain and ensure compliance with these requirements.

PERP is primarily enforced by each of the 35 local air districts; however, CARB is responsible for enforcement of PERP's administrative requirements. CARB exercised its PERP enforcement authority when CARB staff initiated an investigation into George L. Throop, Co. (Throop) after becoming aware of an altered Statewide Portable Equipment Registration document. CARB and South Coast Air Quality Management District (SCAQMD) staff conducted a joint inspection at Throop's Pasadena location and found the cement silo with the false PERP registration. In addition, operations records of the silo were not provided when requested by the joint inspection team. Throop later cooperated with investigators and provided the requested records. In November 2021, CARB reached a $46,400 settlement with Throop for PERP violations, half of which funded the Fresno TREES SEP.

In the coming year, CARB looks forward to working cooperatively with local air districts to better understand how PERP registered units are inspected, and elevate the importance of inspecting equipment in DACs.

App Tracker

Over the past two years, PERP registrations were primarily processed using mail services and physical applications. The challenges encountered with the COVID-19 pandemic and in-office limitations, as well as mail delivery issues, prompted the program to develop and implement an electronic-based application tracking tool known as App Tracker. PERP staff have been coordinating with internal and external parties in an on-going effort to develop and evaluate requirements for the electronic App Tracker. In addition, Enforcement staff is continuing its cross-divisional collaboration efforts to develop additional modules to include online applications and electronic payments that will ultimately make the entire program electronic. While this effort is still in the development stage, CARB anticipates the solutions will provide significant relief from mail delays and in-office limitations experienced by both staff and PERP registrants. In the meantime, CARB expects processing times to continue decreasing throughout 2022 as staff becomes more familiar with the new electronic processes and moves away from the handling of paper-based applications.

Cargo Tank Vapor Recovery Program

Cargo tanks are used for the transportation of gasoline from bulk loading terminals to the gasoline dispensing facilities or gas stations. Annually, cargo tanks must be certified by CARB and the vapor recovery system on each tank tested to prevent excess VOCs and toxic air contaminant emissions from venting to the atmosphere during the loading or unloading of gasoline.

Cargo Tank Vapor Recovery Program (CTVRP) staff oversees the cargo tank certification process which requires the submittal of a 48-hour test notification to CARB, completion of the annual test procedures, submittal of passing test results, and submittal of a completed certification application and fee. In 2021, CTVRP staff reviewed and processed 6,429 applications for certification of vapor recovery systems on cargo tanks.

CTVRP staff also periodically witness cargo tank testing to ensure the tests are conducted in accordance with the testing protocol. CTVRP staff maintained a field presence in 2021 and continued to witness testing despite the ongoing COVID-19 pandemic. Staff witnessed 49 cargo tank annual certification tests resulting in 2 case settlements for violations related to the venting of gasoline vapors directly into the atmosphere during the pre-test cleaning process. Cargo tank fueling racks and maintenance and testing facilities are primarily located in DACs, and therefore enforcement of CTVRP provides public health protection in many of the underserved areas in the state.

In addition to enforcement activities, staff continued to develop a Compliance Assistance Program consisting of training, outreach, and an industry self-inspection program. The purpose of this program is to increase awareness of regulation requirements and to maximize compliance. The Compliance Assistance Program, which will be entirely online, is scheduled to launch in the early summer of 2022.

A cargo tank unloading fuel

Air District Support and Oversight

California state law gives the 35 local air districts primary authority to regulate stationary sources for criteria pollutants. However, CARB has an important role in providing support to districts with training and enforcement. State law also authorizes CARB to review district permitting programs to ensure that they are sufficient to meet state ambient air quality standards, as well as district enforcement programs to ensure that they are reasonable. To carry out these functions, state law requires air districts to provide CARB with requested information utilized in normal operation of the district or required by a State or Federal statute or regulation. In addition, CARB has direct enforcement authority, especially over climate programs, many of which impact stationary sources. Stationary source-focused programs in CARB's Enforcement Division are implemented consistently with legal authority through training and support, program review, and direct enforcement.

For the first time, data regarding stationary source inspections were added to EDVS this year, giving the public access to where district support inspections have taken place and the outcome of those inspections.

Training and Support

One of the Enforcement Division's goals is to ensure consistent and effective enforcement in all air districts and at CARB by providing training that helps to improve inspection and investigation skills and increase stationary source knowledge. We achieve this through a combination of online and live trainings. In 2021, we offered 54 live (in-person and virtual) sessions reaching just over 2,000 students.

In 2021, enforcement staff began a major revamp of the online Air Quality Training Program and launched three new online courses. The Air Quality Training Program is a 10-year-old online training course used by both CARB and local air districts for onboarding new staff. The course is comprised of 10 modules that includes, among other topics, the history and science of air pollution and control. It is intended for new, entry-level air quality inspectors and regulatory agency staff, and other environmental specialists in business and government. Additionally, much of the training is informative for community members and the public. The course is being overhauled primarily due to outdated functionality and is expected to be complete by summer 2022. Staff also launched three new online trainings in 2021: Variance/Hearing Board Training, How to Comply with the Refrigerant Management Program, and Writing Enforceable Permits.

District Support

The Enforcement Division is responsible for providing broad oversight of and support to California's air districts. Enforcement staff works with air districts to ensure their stationary source rules and enforcement programs support California's efforts to achieve state and federal ambient air quality standards and minimize emissions of toxic air contaminants in accordance with applicable state and federal requirements. A significant focus is placed on supporting air districts as they address chronic violators and sources of public nuisances, especially within communities that already face a disproportionate burden from pollution. Enforcement works collaboratively with the local air districts to ensure that businesses located within these communities are meeting regulation requirements, including the expedited deployment of best available retrofit control technologies (BARCT).

Enforcement staff also helps coordinate the sharing of information between local, state, and federal agencies and investigate industries with significant histories of noncompliance, especially where those industries operate across air district jurisdictional boundaries. CARB expects this multi-media enforcement coordination work to become increasingly important as agencies renew and reinvigorate their goals of addressing the cumulative impacts of industrial pollution.

Permit Evaluation & Support

The Enforcement Division is also responsible for providing a broad range of stationary source permit support services to districts throughout the state, including conducting analysis of air district rules, regulations, variances, and policies as required by state law. Enforcement staff continued work on three program reviews of district operations in 2021 as follows:

San Diego Air Pollution Control District Program Review

California Assembly Bill 423[21] requires CARB to perform an audit of SDAPCD to evaluate key district programs and identify areas for potential improvement. CARB staff prepared an Interim Staff Report, which was released in June 2021, to inform the public and SDAPCD of how CARB was going to perform the review in advance of the final report.

As part of the review, Enforcement staff completed the New Source Review (NSR) permitting section of the interim report.[22] Enforcement staff assembled and edited various sections of the report from other CARB divisions, ran a public workshop discussing the interim report, reviewed data provided by SDAPCD, completed a confidential survey submitted to SDAPCD engineering staff, performed detailed reviews of 58 NSR permitting actions, and conducted inspections of 49 facilities with air district staff. The final report will be released this summer.

South Coast Air Quality Management District RECLAIM Transition

Pursuant to directives listed in control measure CMB-05 of the 2016 Final Air Quality Management Plan and in AB 617, Regional Clean Air Incentives Market (RECLAIM) Program facilities are now subject to an expedited implementation schedule to install additional BARCT. [23], [24] As a result, the NO_x RECLAIM Program implemented by SCAQMD is transitioning to a command-and-control regulatory structure. The transition of facilities in RECLAIM to command-and-control is a complex process with a number of policy items and rule amendments that will be addressed through an ongoing rulemaking process.

CARB staff is supporting this transition through participation in several workgroup meetings with SCAQMD and U.S. EPA to discuss the various regulatory issues and steps associated with the transition. This work will be ongoing in 2022.

San Joaquin Valley Air Pollution Control District ERC Program Review Follow-Up

Enforcement staff reviewed SJVAPCD's Emission Reduction Credit (ERC) program, including the equivalency determination, in the context of the broader district program for reducing emissions from stationary sources including New Source Review, permitting, and regulatory requirements. A final report was issued in June 2020. [25]

Enforcement staff continued to work cooperatively with the district on the implementation of various ERC program improvements discussed in this report. This work included attending and participating in public meetings and workshops related to the district's ERC equivalency program and working directly with the district and U.S. EPA to provide feedback on changes to the equivalency demonstration and report. Enforcement staff will continue to evaluate and support district efforts to ensure their programs are enforceable and achieve their intended goals.

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21 Assembly Bill 423 (Gloria, Stats. of 2019, ch. 744).

22 CARB, *"Update on the California Air Resources Board's Review of the San Diego Air Pollution Control District,"* June 2021.

23 Assembly Bill 617 (C. Garcia, Stats. of 2017, ch. 136).

24 SCAQMD, *"Final 2016 Air Quality Management Plan,"* March 2017.

25 CARB, *"Review of the San Joaquin Valley Air Pollution Control District Emission Reduction Credit System,"* June 2020.

Conclusion

In 2021, CARB Enforcement Division was able to rebound from COVID-19 and increase the total number of inspections and our work in pollution-burdened communities from the year prior. We aim to continue this trend through 2022.

CARB is continuously working to enhance its enforcement practices. One important aspect of this is our efforts to promote environmental justice. We envision a more individualized, collaborative, and transparent approach as the way to achieve CARB's vision of clean air for all Californians. Enforcement is also working on improving and expanding myriad other programs such as Supplemental Environmental Projects, community trainings, PEAQS, catalytic converters, the Alternative Diesel Fuel program, and the Compliance Assistance Program. We are also keen to continue to build interagency partnerships and build on our work with local air district program reviews.

Finally, Enforcement will continue to support CARB regulatory staff in the development and implementation of new regulations and regulatory amendments. Upcoming examples include the Advanced Clean Fleets, At-Berth, Commercial Harbor Craft, HD I/M, Locomotive, Off-Road Equipment, Small Off-Road Engines, and Transportation Refrigeration Units Regulations. Enforcement staff greatly appreciates the partnerships we have internally with other program Divisions on the development of new regulations and amendments to ensure they are enforceable, thereby maximizing emissions reductions.

Appendices

Appendix A

2021 Enforcement Program Statistics

Program	Category	Total Closed Enforcement Actions	Judgments Penalties Assessed[26]	Settlements Penalties Assessed[26]	Total Penalties Assessed
Certifications	Indoor Air Cleaners	3	–	$104,365	$104,365
Certifications	Vehicles[27]	1	–	$1,489,970	$1,489,970
Certifications	Engines	4	–	$7,013,296	$7,013,296
Certifications	Recreational Marine Engines	2	–	$276,000	$276,000
Certifications	Parts[28]	5	–	$233,196	$233,196
Certifications	Portable Fuel Containers	1	–	$2,372	$2,372
Fuels	Fuels Specifications	3	–	$376,000	$376,000
Fuels	Low Carbon Fuel Standard	2	–	$270,000	$270,000
Fuels	Cargo Tank and Vapor Recovery	1	–	$30,000	$30,000
Stationary Sources	Consumer and Aerosol Coating Products	28	–	$1,427,425	$1,427,425
Stationary Sources	Composite Wood Products	4	–	$45,500	$45,500
Stationary Sources	Refrigerant Management	8	–	$5,129,500	$5,129,500
Stationary Sources	Sulfur Hexafluoride	2	–	$441,500	$441,500
Stationary Sources	Landfill Methane Control	–	–	–	–
Diesel	Diesel Fleet Investigations	20	–	$477,685	$477,685
Diesel	STEP Program	1,902	–	$444,700	$444,700
Diesel	Ports and Marine	1	–	$10,500	$10,500
Portable Equipment Registration	Portable Equipment Registration	1	–	$46,400	$46,400
Subtotal	Enforcement Cases	1,988	–	17,818,409	17,818,409
Citation Program	Cargo Tank	5	–	$ 2,500	$ 2,500
Citation Program	Dealer and Fleet Tampering	2	–	$ 1,500	$ 1,500
Citation Program	Vehicle & Parts	7	–	$20,500	$20,500
Citation Program	Heavy-duty Diesel Inspection	744	–	$427,508	$427,508
Citation Program	Subtotal of Enforcement Citations	758	–	$452,008	$452,008
Total	Enforcement Actions	2,746	–	$18,270,417	$18,270,417

26 The amounts shown include penalties assessed for all Case Investigation and Resolution Programs and penalties collected, including delinquent account collections, for all Field Inspection Programs (see Appendix B).
27 Program Category Vehicles include Off-Highway Recreational Vehicle Program.
28 An aftermarket part is issued an Executive Order, providing exemption from California anti-tampering law, if the part satisfies a CARB engineering evaluation. Certification parts includes both performance add-on/modified parts, as well as R-134a canned refrigerants. For more information visit *CARB's Aftermarket, Performance, and Add-On Parts Regulations* webpage.

Appendix B-1

2021 Field Operations Statistics

Program Category	Product Samples Tested	Inspections Completed	Citations and NOVs Issued	Pending Citations and NOVs on 01 Jan 2022	Rescinded, Compliant, or NFA	Closed	Total	Pending Citations and NOVs on 31 Dec 2021	Penalties Assessed
OceanGoing Vessel Program	–	737	5	–	1	1	2	3	$10,500
Commercial Harbor Craft Program	–	72	–	2	1	–	1	1	–
Shore Power Program	–	33	3	1	1	–	1	3	–
Cargo Handling Equipment Program	–	386	–	–	–	–	–	–	–
TRU Program (see also Heavy–duty Diesel Field Inspection Programs)	–	571	–	–	–	–	–	–	–
Total – Marine Programs	–	1,799	8	3	3	1	4	7	$10,500
Vehicles (CNC, NON–CNC, OHRV)	–	142	11	20	–	8	8	23	$1,510,470
Dealer and Fleet Citations (Tampering)	–	110	2	10	–	2	2	10	$1,500
Recreational Marine Engines (watercraft)	–	3	–	6	–	2	2	4	$276,000
Engines	17	183	6	7	–	4	4	9	$7,013,296
Parts	–	–	4	26	3	4	7	23	$173,196
Do–it–yourself Canned Refrigerants	–	199	28	12	–	1	1	39	$60,000
Portable Fuel Containers	–	164	–	25	1	1	2	23	$2,372
Total – Vehicle and Parts Programs	17	801	51	106	4	22	26	131	$ 9,036,834
Consumer and Aerosol Coating Products	142	–	27	6	–	27	27	6	$1,402,425
Composite Wood Products	5	–	5	–	–	4	4	1	$ 45,500
Indoor Air Cleaners	2	–	5	2	–	3	3	4	$104,365
Total – Consumer Product Programs	149	–	37	8	–	34	34	11	$1,552,290

Program Category	Product Samples Tested	Inspections Completed	Citations and NOVs Issued	Pending Citations and NOVs on 01 Jan 2022	Rescinded, Compliant, or NFA	Closed	Total	Pending Citations and NOVs on 31 Dec 2021	Penalties Assessed
Refineries	50	4	–	2	–	2	2	–	$299,000
Terminals	1	1	–	1	–	1	1	–	$77,000
Service Stations	25	22	–	–	–	–	–	–	–
Marine Vessels	275	34	1	–	–	–	–	1	–
Railcars	39	2	–	–	–	–	–	–	–
Other	19	3	–	–	–	–	–	–	–
Reformulated Gasoline Certifications	–	3,460	–	–	–	–	–	–	–
Red–Dyed Diesel Fuel	–	574	–	–	–	–	–	–	–
Total – Fuels Programs	409	4,100	1	3	–	3	3	1	$376,000
LCFS Site Audits	–	2	1	–	–	–	–	1	–
LCFS Paper Audits	–	13	2	2	–	2	2	2	$270,000
Other	–	–	–	–	–	–	–	–	–
Total – LCFS Programs	–	15	3	2	–	2	2	3	$270,000
Cargo Tank Inspection Program	–	103	–	–	–	–	–	–	–
Cargo Tank Pressure Test Program	–	56	5	–	–	5	5	–	$2,500
Annual Test Observation Program	–	49	–	2	–	1	1	1	$ 30,000
Total – Cargo Tank Programs	–	208	5	2	–	6	6	1	$32,500
Total – All Programs	575	6,923	105	124	7	68	75	154	$11,278,124

Appendix B-2

2021 Field Operations Statistics

Heavy-Duty Diesel Inspection Programs

Program Category	Total Inspections Completed[29]	Total Citations Issued[30]	Ratio of Citations to Inspections	Pending Citations on 01 Jan. 2021	Rescinded, Compliant, NFA	Closed	Total	Pending Citations on 31 Dec. 2021	Penalties Collected
Heavy-duty Vehicle Inspection Program	2,520	234	9%	292	2	77	79	447	$53,825
Emission Control Label Program	1,668	140	8%	933	2	52	54	1,019	$38,547
Commercial Vehicle Idling Program	9,303	232	2%	1,232	102	108	210	1,254	$53,430
Solid Waste Collection Vehicle Program	4	–	0%	17	3	–	3	14	–
Truck and Bus Program	2,634	97	4%	2,510	176	82	258	2,349	$42,600
Tractor-Trailer (GHG) (SmartWay®) Program	69	2	3%	278	69	5	74	206	$4,800
Drayage Truck Regulation Program	47	–	0%	283	–	–	–	283	–
Transport Refrigeration Unit Program	1,053	562	53%	3,807	540	219	759	3,610	$177,700
Off-road Diesel Vehicle Program	3,587	295	8%	941	15	201	216	1,020	$56,606
Diesel Exhaust Fluid /Selective Catalytic Reduction	72	–	0%	–	–	–	–	–	–
School Bus Idling Program	47	–	0%	–	–	–	–	–	–
Other Programs	1	–	0%	–	–	–	–	–	–
Total – Heavy-duty Diesel Field Program Inspections	21,005	1,562	7%	10,293	909	744	1,653	10,202	$427,508

	CARB	SDAPCD	Total
Total California Vehicles Inspected	7,108	2,276	9,384
Total Out-of-State Vehicles Inspected	2,358	249	2,607
Total Off-Road Vehicles Inspected	699	2,676	3,375
Total Number of Vehicles Inspected[31]	10,165	5,201	15,366

29 This includes total inspections done by CARB and SDAPCD. This breakdown is noted in Appendix B-4.
30 This includes total citations done by CARB and SDAPCD. This breakdown is noted in Appendix B-4.
31 Each vehicle can be inspected in more than one program.

Appendix B-3

2021 Field Operations Statistics: Environmental Justice Area Inspections Statistics

Heavy-Duty Diesel and Rail & Marine Inspections

Description	EJ Areas	Total	Percentage in EJ Areas
Heavy-Duty Diesel Vehicles Inspected	7,888	10,165	78%
Rail and Marine Inspections	1,722	1,799	96%
Total – Heavy-duty Diesel Inspections	9,610	11,964	80%

Appendix B-4

2021 Field Operations Statistics

Heavy-Duty Diesel Field Program Statistics

Program Category	CARB		SDAPCD	
	Inspections Completed	Citations Issued	Inspections Completed	Citations Issued
Heavy-duty Vehicle Inspection Program	1,570	180	950	54
Emission Control Label Program	1,105	89	563	51
Commercial Vehicle Idling Program	7,567	213	1,736	19
Solid Waste Collection Vehicle Program	4	–	–	–
Truck and Bus Program	2,069	32	565	65
Tractor-Trailer (GHG) (SmartWay®) Program	69	2	–	–
Drayage Truck Regulation Program	47	–	–	–
Transport Refrigeration Unit Program	843	522	210	40
Off-road Diesel Vehicle Program	911	98	2,676	197
Diesel Exhaust Fluid /Selective Catalytic Reduction	71	–	1	–
School Bus Idling Program	47	–	–	–
Other Programs	1	–	–	–
Total – Heavy-duty Diesel Field Program Inspections	14,304	1,136	6,701	426

Appendix B-5

2021 Field Operations Statistics: PEAQS Statistics

Mobile PEAQS Deployments

Location (City)	Vehicles Screened	Vehicles Inspected	Citations Issued
Calexico	523	14	4
Otay Mesa	3,330	99	45
Winterhaven	611	33	12
CHP Scale Total	4,464	146	61
Barstow	1,398	46	19
Lake Elsinore	1,015	49	17
Los Angeles	1,213	54	28
Oakland	403	44	6
Otay Mesa	1,070	16	9
Port of Los Angeles/Long Beach	4,447	137	39
Salinas	322	61	33
Santa Maria	379	26	6
Westmorland	256	13	6
Roadside Total	10,503	446	163
Mobile PEAQS Total	14,967	592	224

Stationary PEAQS Deployments

Location	Vehicles Screened	Non-Compliance Letters Sent
San Bernardino County	96,000	266
Riverside County	112,000	167
Total	208,000	433

Appendix B-6

2021 STEP Program Statistics

Truck & Bus Regulation (Fleet Tracker)

Action Taken	Fleets 2021	Vehicles 2021
Number of Notice of Non–Compliance Letters Sent[32]	1,896	4,998
Number of Notice of Violations Sent[33]	1,427	3,833
Number of Registration Holds Placed	–	2,277
Number of Warning Letters Sent	350	396
Demonstrated Compliance	–	1,768
Determined to be Exempt	–	673
	Penalties Paid	
Fleet Tracker Penalties Paid in 2021	$384,200.00	
Fleet Tracker Penalties Paid in Total	$5,811,427.99	

Periodic Smoke Inspection Program

Action Taken	Fleets 2021	Vehicles 2021
Number of Notice of Non–Compliance Letters Sent	255	1,563
Number of Notice of Violations Sent	171	861
Number of Registration Holds Placed	–	254
Demonstrated Compliance	–	68
Determined to be Exempt	–	8
	Penalties Paid	
PSIP Penalties Paid in 2021	$60,500.00	
PSIP Penalties Paid in Total	$67,000.00	

High Emitter Study

Action Taken	Fleets 2021	Vehicles 2021
Number of Notice of Non-Compliance Letters Sent	433	433
Number of Notice of Violations Sent	29	29
Number of Registration Holds Placed	–	2
Demonstrated Compliance	–	66
Determined to be Exempt	–	–
	Penalties Paid	
HEST Penalties Paid in 2021	$0.00	
HEST Penalties Paid in Total	$1,000.00	

32 Non-Compliance letter is the initial contact letter sent to fleets to inform them of their suspected non-compliance.
33 Notice of Violation is the formal notice and may include penalties.

Appendix C

2021 Complaint Program Statistics

CalEPA and CARB Hotline Services 2021	Complaints Received	Complaints Referred to Air District	Investigated by CARB	Other Dispositions[34]	Total Complaints Resolved
Stationary Source Complaints	1,111	1,111	31	–	1,111
School Bus Idling Complaints	13	–	13	–	13
Commercial Vehicle Idling Complaints	325	3	325	–	325
Smoking Vehicle Complaints	4,911	–	4,911	–	4,911
Heavy-Duty Diesel Program Complaints	745	1	745	–	745
All Other Complaints[35]	–	–	–	–	–
Total Complaints	7,105	1,115	6,025	0	7,105

34 Complaints referred to an external agency or those without enough information to take action.
35 Includes weights and measures complaints and those that fall outside the purview of CARB.

Appendix D

2021 Portable Equipment Registration Program Statistics

Table D-1: Portable Registration – New Applications

(January 1, 2021 - December 31, 2021)

Action	Application Count	Registration Unit Count	Engine Unit Count	Equipment Unit Count	TSE Unit Count
Received	2,257	5,829	4,661	1,150	18
Issued	1,510	3,948	3,129	802	17
Deemed Incomplete [36]	112	85	73	12	0

Table D-2: Portable Registration – Renewal Applications

(January 1, 2021 - December 31, 2021)

Action	Application Count	Registration Unit Count	Engine Unit Count	Equipment Unit Count
Issued[37]	3,420	6,287	5,401	886
Not Renewed	2,360	3,735	3,146	589
Deemed Incomplete	98	156	124	32
TSE Annual Reporting[38]	43	26	3,493	0

Table D-3: Portable Registration Fees

Fee Totals

Renewal Activity Net Fees	$5,774,818.01
All Other Activity Net Fees	$4,634,781.48
Total Net Revenue	$10,409,599.49

36 Includes some applications from latter parts of the previous year – data based on date deemed incomplete.
37 Multiple unit renewal applications include units that are renewed and those that are not renewed.
38 TSE has different requirements in that one application/registration is designated for each base and only total unit counts are required based on facility information as of 12/31/20 (end of previous calendar year). Includes only active TSE registrations which may include TSE registrations with 0 units; expired TSE registrations are not included.

Appendix E

2021 Stationary Source Enforcement Support Statistics

Table E-1: Air District Hearing Board Programs

Variances Received	143
Variances Reviewed	25
Notices Reviewed	142
Abatement Orders Received	38
Abatement Orders Reviewed	7

Table E-2: Landfill Methane Gas Program Services

Inspections Completed	14
Investigations Completed	9
Violations Resolved	9

Table E-3: Refrigerant Management Program

Inspections Completed	9
Investigations Completed	102
Violations Resolved[39]	42

Table E-4: Sulfur Hexafluoride Regulation Programs

Investigations Completed	34
Violations Resolved[40]	8

Table E-5: Renewable Portfolio Standard

Investigations Referred by Public Utilities Commission	1
Investigations Completed	1
Violations Resolved	1

Table E-6: Other Stationary Source and Equipment Inspections

Stationary Source Inspections and Investigations[41]	101
Other Airborne Toxic Control Measure Inspections/Investigations	0

39 Includes minor violations resolved with no penalty.
40 Includes minor violations resolved with no penalty.
41 Includes investigations that involve multiple inspections of the same facilities as well as surveillance activities related to those investigations.

Table E-7: Stationary Source Inspections

Program	Category	Inspections	Compliant	Violations
Landfills	Assist MLD in Data Gathering	1	1	
Landfills	LMR	12	4	8
Oil & Gas	Oil & Gas	10	3	7
Stationary Sources	CalEPA - Metal Shredders	8	7	1
Stationary Sources	SDAPCD Review – AB 423	50	33	17

Appendix F

2021 Training Program Statistics

Training Totals by Category

Category	Sessions	Students
Online Training and Recorded Webinars	–	1,982
Live (In-Class and Virtual) Training (Non-VEE)	20	648
Live VEE Certifications and Training	34	1,386
Internal Training	4	82
Training Total	58	4,098

Online Training Summary

Title	District	CARB	Other[42]	Total
AP101 - Air Academy Online Training: Online	47	13	61	121
AP102 - Air Quality Training Program: Online	24	3	12	39
AP106 - CalEPA Fundamental Inspector Course: Online Training	61	5	370	436
AP110 - Writing Enforceable Permits (Online)	24		0	24
CR103 - Chrome Plating ATCM Certification: Online (Recorded)	6	1	0	7
CR106 - Refrigerant Management Program	4	2	9	15
FP101 - Gasoline Dispensing Facilities - Enhanced Vapor Recovery Systems (Online)	109	2	11	122
FP102 - Enhanced Vapor Recovery Testing (Online)	74	1	6	81
MM104 - Visible Emissions Evaluation Online	46	1	118	165
MM529 - Periodic Smoke Inspection Program - Online	62	23	824	909
OS100 - Variance/Hearing Board Training (Online)	12	1	6	19
PS105 - Stationary Control Source Technology (Online)	37	3	4	44
Online Training Total	506	55	1,421	1,982

42 Other students may include regulated industry, environmental regulators, and community members.

Live (In-Class and Virtual) Training Summary

Title	Sessions	Students
AP108 - Stationary Source Permitting Overview	1	41
AP109 - Essentials for Air District Inspectors	1	24
AP206 - CalEPA Basic Inspector Academy	8	226
FP118 - Methane Leak Detection Equipment: Part A	4	25
FP118 - Methane Leak Detection Equipment: Part B	3	19
MM100 - AQ Web Series: Automotive Coatings - Webinar	1	248
PS106 - Stationary Control Source Technology	2	65
Live (Non-VEE) Total	20	648
MM105 - Visible Emissions Evaluation: In Class	6	144
MM106 - Visible Emissions Evaluation: Day Certification	24	1,168
MM107 - Visible Emissions Evaluation: Night Certification	4	74
VEE Certifications Total	34	1,386
Total - All Training	54	2,034

Appendix G-1

2021 CalEPA Eligible Supplemental Environmental Projects

SEP Name	Location	Project Summary
Asthma Impact Model Kern County	Kern County	Central California Asthma Collaborative proposes to expand the Asthma Impact Model (AIM) and include a total of 50 low-income clients. AIM program includes (1) a home assessment (2) asthma education, (3) home remediation, (4) receive a formal asthma diagnosis, (5) see a primary care physician about their asthma, and (6) follow-up on proper medication usage.
Asthma Impact Model Kings County	Kings County	Central California Asthma Collaborative proposes to expand the Asthma Impact Model (AIM) and include a total of 50 low-income clients. AIM program includes (1) a home assessment, (2) asthma education, (3) home remediation, (4) receive a formal asthma diagnosis, (5) see a primary care physician about their asthma, and (6) follow-up on proper medication usage.
Asthma Impact Model Stanislaus County	Stanislaus County	Central California Asthma Collaborative proposes to expand the Asthma Impact Model (AIM) and include a total of 50 low-income clients. AIM program includes (1) a home assessment, (2) asthma education, (3) home remediation, (4) receive a formal asthma diagnosis, (5) see a primary care physician about their asthma, and (6) follow-up on proper medication usage.
California Clean Air Day	Statewide	Coalition for Clean Air proposes to expand outreach for the California Clean Air Day. This SEP will include the implementation of surveys to determine changes to individual and organizational habits, website and toolkit improvements, goal setting with Regional Working groups, advertisement, social media communications, workshops, outreach to the business, community, and government agencies.
Clean Air SRO Association (CASA) Program: Air Filtration & Environmental Education for SF Disadvantaged Communities - Phase 1	San Francisco	Brightline Defense Project proposes to install 820 air filtration systems with 5-year maintenance plans for Single Residential Units due to recurring wildfire seasons and their catastrophic impacts on air quality. Collaborating with 2 community-based organizations and Stanford University, the project also includes creation of an environmental justice youth leadership program as well as community outreach and education about air quality.
Clean Air SRO Association (CASA) Program: Air Filtration & Environmental Education for SF Disadvantaged Communities - Phase 2	San Francisco	Brightline Defense Project proposes to install 207 air filtration systems with 5-year maintenance plans for Single Residential Units due to recurring wildfire seasons and their catastrophic impacts on air quality. Collaborating with 2 other community-based organizations and Stanford University, the project also includes creation of an environmental justice youth leadership program as well as community outreach and education about air quality.

SEP Name	Location	Project Summary
Coachella Valley Mitigation Project Extension 2018-2023	Coachella Valley	IQAir Foundation, in collaboration with Comite Civico Del Valle, Inc. (CCV) and IQAir North America, Inc., proposes a SEP to install and maintain high-performance air filtration systems in schools located in communities impacted by air pollution, especially Environmental Justice and/or Disadvantaged Communities disproportionately impacted by toxic air contaminants. IQAir Foundation, in collaboration with IQAir North America, Inc. will install the air filtration systems, and work with the local community and school district on the mitigating impacts of air pollution. There are 20 schools selected for this project, all located in Coachella Valley.
Community Based Monitoring and Assessment Program for Fresno Phase 2	Fresno County	The project would use community-based air quality monitoring and modeling and related outreach and education to inform community members about air quality issues in their communities. The purpose of this is to help community members reduce their exposure to air pollutants, thus providing protection for public health.
Flag Program Coachella Valley Mitigation Project Extension 2018-2023	Coachella	The purpose of the Air Quality School Flag Program is to help people with asthma by improving awareness and education about the school environment with outdoor air quality practices. The air quality school flag program uses colored flags based on U.S. EPA's Air Quality Index (AQI) to notify teachers, coaches, students, and others about outdoor air quality conditions. Schools raise a colored flag each day that corresponds to their local air quality forecast. By comparing the colored flags to the AQI, members of the school and the surrounding community can tell what the daily air quality is and adjust their activities to reduce their exposure to air pollution.
Fresno Trees	Fresno County	This project will strategically place green barriers downwind of major sources of pollution and use air monitors to evaluate how effective green barriers are at protecting people from exposure to air pollution. It also aims to reduce greenhouse gases by sequestering carbon. Lessons learned from this study can help influence the selection of vegetation used for green barriers, and the placement of vegetation for future projects.
Installation of Air Filtration Systems - Coachella Valley Adult School	Coachella Valley	IQAir proposes to install and maintain a high-performance air filtration system at the Coachella Valley Adult School for a 5-year timeline.

SEP Name	Location	Project Summary
Installation of Air Filtration Systems - LAUSD Murchison	Los Angeles	IQAir proposes to install and maintain a high-performance air filtration system at 2 schools in Los Angeles, which is part of an area impacted by air pollution and identified as Environmental Justice and/or Disadvantaged Communities, for a 10-year timeline.
Installation of Air Filtration Systems in San Francisco-Bay Academy	San Francisco	IQAir Foundation in collaboration with IQ Air North America, Inc. proposes a SEP to install and maintain high-performance air filtration systems at KIPP San Francisco Bay Academy, San Francisco. The length of this SEP is expected to be 5 years and will benefit 369 students. The project sites are located in a Cal EnviroScreen Percentile Range of 45-50%.
Installation of Air Filtration Systems in San Jose - KIPP Prize	San Jose	IQAir Foundation in collaboration with KIPP Charter Schools (KIPP Prize) and IQ Air North America, Inc. proposes a SEP to install and maintain high-performance air filtration systems in schools located in communities impacted by air pollution within San Jose, CA. The length of this SEP is expected to be 5 years and will benefit 408 students. The project sites are located in a Cal EnviroScreen Percentile Range of 50-55%.
Installation of Air Filtration Systems in Schools in Oakland - Phase 3	Oakland	IQAir proposes to install and maintain a high-performance air filtration system at 53 schools across Oakland, CA, which is part of an area impacted by air pollution and identified as Environmental Justice and/or Disadvantaged Communities, for a 10-year timeline.
Installation of Air Filtration Systems in Schools Phase 2*	SCAQMD	South Coast AQMD proposes to install and maintain air filtration systems in schools located in areas impacted by air pollution and identified as Environmental Justice and/or Disadvantaged Communities.
Installation of Air Filtration Systems La Canada Unified School District	La Canada Flintridge	IQAir Foundation proposes to install and maintain air filtration systems in La Canada Unified District Schools, which is part of an area impacted by air pollution produced by the Devil's Gate Reservoir Restoration project.
Installation of Air Filtration Systems San Ysidro Unified School District	San Ysidro	IQAir Foundation proposes to install and maintain air filtration systems in San Ysidro Unified School District, which is part of an area impacted by air pollution and identified as Environmental Justice and/or Disadvantaged Communities.
Installation of Air Filtration Systems West Contra Costa School District	Richmond (West Contra Costa)	IQAir Foundation proposes to install and maintain air filtration systems in West Contra Costa School District, which is part of an area impacted by air pollution and identified as Environmental Justice and/or Disadvantaged Communities.

SEP Name	Location	Project Summary
Installation of Air Filtration Systems in San Jose - KIPP Heartwood	San Jose	IQAir Foundation in collaboration with KIPP Charter Schools (KIPP Heartwood) and IQ Air North America, Inc. proposes a SEP to install and maintain high-performance air filtration systems in schools located in communities impacted by air pollution within San Jose, CA. The length of this SEP is expected to be 5 years and will benefit 413 students. The project sites are located in a Cal EnviroScreen Percentile Range of 50-55%.
Installation of Residential Air Filtration Systems*	SCAQMD	SCAQMD proposes to install and maintain air filtration systems in residential areas within EJ/DAC's most impacted by toxic air contaminants.
Installation of School Air Filtration Systems-Calexico (Imperial County)	Imperial County	ICAPCD proposes to install and maintain air filtration systems as well as an electronic flag program (enhanced flag program) in Calexico schools, which is part of the AB 617 Corridor, El Centro, Heber, and Calexico, an area impacted by air pollution and identified as Environmental Justice and/or Disadvantaged Communities.
Installation of School Air Filtration Systems-El Centro (Imperial County)	Imperial County	ICAPCD proposes to install and maintain air filtration systems as well as an electronic flag program (enhanced flag program) in El Centro schools, which is part of the AB 617 Corridor, El Centro, Heber, and Calexico, an area impacted by air pollution and identified as Environmental Justice and/or Disadvantaged Communities.
La Jolla Air Monitoring and Community Reporting Project	La Jolla Reservation	The La Jolla Environmental Protection Office aims to purchase the necessary equipment for reporting the ozone and PM2.5 Air Quality Index (AQI) value to the tribal community in real-time. Notifying the tribal community in real-time of "bad" air quality days due to PM2.5 and ozone will help the community, especially those suffering from respiratory issues, reduce exposure. Although the Tribe has started an ozone monitoring program, the equipment currently being utilized was donated, is outdated, and requires upgrade.
Skill Development Program-Rejuvenation of Urban Trees (SPROUT)	Los Angeles County	This project will enroll youth aged 16 to 24 who will receive training and education to foster a future generation of green sector workforce, especially within the sector of construction. Each cohort will participate in field days, where youth will assist in planting trees in Los Angeles County.
Placer County Community Based SEP Phase 2	Placer County	Placer County APCD proposes to install and maintain air filtration systems in Placer County schools, which is part of an area impacted by air pollution produced by heavy traffic in highways surrounding school areas.
West Oakland Local Environmental Equity and Empowerment Project (LEEEP)	Oakland	This proposal by the West Oakland Environmental Indicator Project will support clean air efforts in West Oakland through community education and engagement, information dissemination via new web-based resources, air monitoring, and a community street sweeping effort to support West Oakland's community action plan developed through AB 617.

Appendix G-2

2021 CalEPA Supplemental Environmental Projects Funded

SEP Name	SEP Recipient	Location	Amount
Installation of Air Filtration Systems West Contra Costa School District	IQAir Foundation	Contra Costa County	$89,000.00
Side Street Projects - Woodworking bus SEP	Side Street Projects	Pasadena	$162,200.00
Fresno Trees	Tree Fresno	Fresno County	$38,500.00
SEI Air Quality Education Program - Contra Costa	Strategic Energy Innovations	Contra Costa County	$30,000.00
Placer County Community Based Air Filtration SEP - Phase 2	Placer County Air Pollution Control District	Placer County	36,250.00
Fresno Trees	Tree Fresno	Fresno County	$180,250.00
Placer County Community Based Air Filtration SEP - Phase 2	Placer County Air Pollution Control District	Placer County	$1,281,312.00
Installation of Air Filtration Systems in Schools Phase 2	SCAQMD	South Coast	$1,275,000.00
California Clean Air Day	Coalition for Clean Air	Statewide	$45,000.00
SEI Air Quality Education Program - Contra Costa	Strategic Energy Innovations	Contra Costa County	$7,000.00
SEI Air Quality Education Program - San Diego	Strategic Energy Innovations	San Diego County	$44,348.00
Fresno TREES	Tree Fresno	Fresno County	$23,200.00
Installation of Air Filtration Systems in Oakland - Phase 2	IQAir Foundation	Oakland	$2,052,008.00
SEI Air Quality Education Program - Contra Costa	Strategic Energy Innovations	Contra Costa County	$41,750.00
Installation of Air Filtration Systems in Schools Oakland	IQAir Foundation	Oakland	$85,174.00

SEP Name	SEP Recipient	Location	Amount
Saving the Lives of West Fresno Elementary School Students by replacing HVAC units	Washington Unified School District	Fresno	$864,800.00
SEI Air Quality Education Program - San Diego	Strategic Energy Innovations	San Diego	$7,000.00
Coachella Valley Mitigation Project Extension 2018-2023	IQAir Foundation	Coachella Valley	$536,092.00
Installation of Air Filtration Systems in Oakland - Phase 3	IQAir Foundation	Oakland	$85,174.00
Total			$6,884,058.00

Appendix H

2021 Enforcement Settlement Agreements

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Certifications	Engine	Tadano America Corporation	4242 W Greens Rd, Houston, Texas 77066-4854	–	$3,750	$3,750	–
Certifications	Engine	American Honda Motor Co., Inc.	1919 Torrance Boulevard, Torrance, California	–	$6,994,518	$3,943,786	$3,050,732
Certifications	Engine	Western Oilfields Supply Company, dba Rain for Rent	3404 State Road, Bakersfield, California 93308	–	$12,625	$6,313	$6,312
Certifications	Engine	Crary Industries, Inc	237 12th St NW, West Fargo, North Dakota 58078-1302	–	$2,403	$2,403	–
Certifications	Parts	Walmart, Inc.	702 SW 8th Street, Bentonville, Arkansas 72716	–	$60,000	$30,000	$30,000
Certifications	Parts	Chris Rivas V-Twin Specialties, Inc.	201 Van Ness Ave, Fresno, California 93721	–	$13,500	$13,500	–
Certifications	Parts	Duramax Store, Inc.	6693 Merchandise Way Diamond Springs, California 95619	–	$62,250	$62,250	–
Certifications	Parts	K 2 Motor Corp., dba Spec-D Tuning	21901 Ferrero Parkway, City of Industry, California 91789	–	$88,696	$44,348	$44,348
Certifications	Parts	MOTO Group, LLC, dba Rinehart Racing	110 Vista Blvd, Arden, North Carolina 28704	–	$8,750	$8,750	–

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Certifications	Portable Fuel Containers	Green Valley Industrial Supplies Ltd	The Granary, Brickle Rd, Stoke Holy Cross, Norwich NR14 8NH, United Kingdom	–	$2,372	$2,372	–
Certifications	Recreational Marine Engines	White River Marine Group, LLC	2500 East Kearney, Springfield, Missouri 65898	–	$203,500	$203,500	–
Certifications	Recreational Marine Engines	Rogue Jet Boatworks, Inc.	2845 Merry Lane, White City, Oregon 97503	–	$72,500	$36,250	$36,250
Certifications	Vehicles	Volkswagen AG, Volkswagen Group of America, Inc. and AUDI AG	Berliner Ring 2, 38440 Wolfsburg, Germany 2200 Woodland Pointe Avenue, Herndon Virginia 20171 Auto-Union-Str. 1, 85057 Ingolstadt, Germany	–	$1,489,970	$868,704	$621,266
Diesel	Diesel Fleet	Cyclone Transport LLC	21 Salvadore Dr. Fernley, Nevada 89408	–	$45,000	$45,000	–
Diesel	Diesel Fleet	Tapia Brothers Enterprises, dba Tapia Brothers Co.	6067 District Blvd. Maywood, California 90270	–	$5,000	$5,000	–
Diesel	Diesel Fleet	Fidelity Roof Company	1075 40th Street Oakland, California 94608	–	$10,500	$10,500	–
Diesel	Diesel Fleet	K & W Trucking Group, Inc.	505 Montclair Avenue, Oakland, California 94606	–	$12,500	$12,500	–

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Diesel	Diesel Fleet	G & P Trucking, Inc.	133 Pino Solo Court, Nipomo, California 93444	–	$2,035	$2,035	–
Diesel	Diesel Fleet	OMC Transport, Inc.	20702 Kenwood Ave, Torrance, California 90502	–	$17,950	$17,950	–
Diesel	Diesel Fleet	Universal City Studios LLC	100 Universal City Plaza, Universal City, California 91608	–	$87,000	$87,000	–
Diesel	Diesel Fleet	Keith Day Company, Inc.	1091 Madison Lane, Salinas, California, 93907	–	$500	$500	–
Diesel	Diesel Fleet	Next Freight Inc.	7700 Industry Avenue Pico Rivera, California 90660	–	$4,500	$4,500	–
Diesel	Diesel Fleet	Five Harvest Co. Inc	2121 E. 12th Street Oakland, California 94606	–	$2,000	$2,000	–
Diesel	Diesel Fleet	Able Freight Services, LLC	5340 West 104th Street, Los Angeles, California 90045	–	$7,000	$7,000	–
Diesel	Diesel Fleet	Green Planet 21, Inc., dba The Sutta Company	336 Adeline Street, Oakland, California 94607	–	$7,000	$7,000	–
Diesel	Diesel Fleet	Reyes Coca-Cola Bottling, L.L.C	3 Park Plaza Irvine, California 92614	–	$137,000	$137,000	–
Diesel	Diesel Fleet	DH Carrier Inc	1943 Blevin Road, Yuba City, California 95993	–	$2,500	$2,500	–
Diesel	Diesel Fleet	Sun Valley Trucking, LLC	508 E. Edison Avenue, Sunnydale, Washington 98944	–	$11,700	$11,700	–

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Diesel	Diesel Fleet	Hal Hays Construction, Inc./Heritage Transportation, Inc./Golden Bear Equipment, Inc./Cal Pacific Constructors, Inc.	4181 Latham Street Riverside, California 92501	–	$61,000	$61,000	–
Diesel	Diesel Fleet	Basra Leasing, Inc.	905 Woodridge Ct., Yuba City, California 95993	–	$3,500	$3,500	–
Diesel	Diesel Fleet	Universal Services Recycling, Inc. w	3200 South El Dorado Street, Stockton, California 95206	–	$2,400	$2,400	–
Diesel	Diesel Fleet	Rex Trans Inc.	5211 E. Washington Blvd. Suite 3, Commerce, California 90040	–	$31,000	$31,000	–
Diesel	Diesel Fleet	Hawk Transportation Inc	15283 Arrow Boulevard, Fontana, California 92335	–	$27,600	$27,600	–
Diesel	Ports and Marine	JSC "Ship's Service Agency"	Lithuania	–	$10,500	$10,500	–
Fuels	Cargo Tanks	PSC Custom, LLC	4432 Winters Street, McClellan Park, CA 95652	–	$30,000	$15,000	$15,000
Fuels	Fuels Specifications	Chevron Richmond Refinery	6001 Bollinger Canyon Road, San Ramon, California 94583	–	$99,000	$49,500	$49,500
Fuels	Fuels Specifications	Chevron Sacramento Terminal	6001 Bollinger Canyon Road, San Ramon, California 94583	–	$77,000	$38,500	$38,500

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Fuels	Fuels Specifications	Phillips 66 LA Refinery	1660 W. Anaheim Street, Wilmington, California 90744	–	$200,000	$100,000	$100,000
Fuels	Low Carbon Fuel Standards	BP Biofuels (BP Bunge)	Estrada Municipal de Itumbiara a Cachoeira Dourada, km 18, s/n°, Fazenda Jandaia, Gleba B, Zona Rural, Zip Code 75503-970, City of Itumbiara, Goiás State, Brazil	–	$140,000	$140,000	–
Fuels	Low Carbon Fuel Standards	BP Biofuels (BP Bunge)	Fazenda Recanto, s/n°, Zona Rural, Zip Code 38300-898, City of Ituiutaba, Minas Gerais State, Brazil	–	$130,000	$130,000	–
Registration	Portable Equipment Registration	George L. Throop, Co.	444 N. Fair Oaks Avenue, Pasadena, CA 91103	–	$46,400	$23,200	$23,200
Renewable Standard Portfolio	Consumer Products	Stockton Port District	2001 West Washington Sreet Stockton, CA 95203	–	$25,000	$25,000	–
Stationary Sources	Composite Wood	CMC Worldwide, Inc.	1330 West Holt Avenue, Pomona, California	–	$13,500	$13,500	–
Stationary Sources	Composite Wood	Marco Padilla, doing business as BedCo	6513 Folsom Boulevard, Sacramento, California	–	$9,000	$9,000	–
Stationary Sources	Composite Wood	Furniture of America, Inc.	19223 East Colima Road #833, Rowland Heights, California	–	$18,000	$18,000	–
Stationary Sources	Composite Wood	Lexfloor, Incorporated	733 Harbour Way South, Richmond, California	–	$5,000	$5,000	–

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Stationary Sources	Consumer and Aerosol Coating Products	M&B Acquisition Incorporated	120 Midair Court, Brampton, Ontario, Canada	–	$15,000	$15,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Design Master Color Tool, Inc.	8200 NW 41st Street, Suite 130, Doral, Florida	–	$9,000	$9,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Middle Market Operating Partners, Inc.	2222 Foothill Blvd. Suite 504, La Canada Flintridge, California	–	$18,000	$18,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Orgill, Inc. 2021	4100 S. Houston Levee Road, Collierville, Tennessee	–	$38,000	$38,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Jack Manufacturing LLC	1 Zenex Circle, Cleveland, Ohio	–	$3,000	$3,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Brush And Pencil, LLC	25005 Hudson Knoll Drive, Porter, Texas	–	$1,500	$1,500	–
Stationary Sources	Consumer and Aerosol Coating Products	Milsek Furniture Polish, Incorporated	1351 Quaker Circle , Salem, Ohio	–	$6,000	$6,000	–
Stationary Sources	Consumer and Aerosol Coating Products	PLZ Aeroscience Corporation	1000 Integram Drive, Pacific, Missouri	–	$51,200	$51,200	–

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Stationary Sources	Consumer and Aerosol Coating Products	Smart & Final LLC	600 Citadel Drive, Commerce, California	–	$46,150	$46,150	–
Stationary Sources	Consumer and Aerosol Coating Products	Carl Zeiss Vision, Inc. 2021	12121 Scripps Summit Drive, San Diego, California	–	$60,000	$60,000	–
Stationary Sources	Consumer and Aerosol Coating Products	W.W. Grainger, Incorporated	100 Grainger Parkway, Lake Forest, Illinois	–	$14,000	$7,000	$7,000
Stationary Sources	Consumer and Aerosol Coating Products	General Finishes Sales and Service Corporation	2462 Corporate Circle, East Troy, Wisconsin	–	$6,000	$6,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Howard Products, Incorporated	560 Linne Road, Paso Robles, California	–	$3,000	$3,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Walmart, Inc.	702 SW 8th Street, Bentonville, Arkansas	–	$67,600	$67,600	–
Stationary Sources	Consumer and Aerosol Coating Products	Thrifty Payless, Inc., dba Rite Aid Pharmacy	30 Hunter Lane, Camp Hill, Pennsylvania	–	$34,200	$34,200	–
Stationary Sources	Consumer and Aerosol Coating Products	SJ Creations, Incorporated	P.O. Box 232428, Leucadia, California	–	$5,000	$5,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Betco Corporation	400 Van Camp, Bowling Green, Ohio	–	$6,000	$6,000	–

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Stationary Sources	Consumer and Aerosol Coating Products	Nice-Pak Products, Inc.	Two Nice-Pak Park, Orangeburg, New York	–	$160,500	$80,250	$80,250
Stationary Sources	Consumer and Aerosol Coating Products	3M Company	3M Center, Bldg. 220-6E-03, St. Paul, Minnesota	–	$18,800	$18,800	–
Stationary Sources	Consumer and Aerosol Coating Products	Flitz International, Ltd.	821 Mohr Avenue, Waterford, Wisconsin	–	$5,250	$5,250	–
Stationary Sources	Consumer and Aerosol Coating Products	Gemini Coatings, Incorporated	2602 Holloway Drive, El Reno, Oklahoma	–	$145,000	$145,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Method Products, PBC	637 Commercial Street, Suite 300, San Francisco, California	–	$79,000	$39,500	$39,500
Stationary Sources	Consumer and Aerosol Coating Products	Amika, LLC	5000 Centregreen, Suite 100, Cary, North Carolina	–	$3,000	$3,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Plasti Dip International, Incorporated	3920 Pheasant Ridge Drive, Blaine, Minnesota	–	$170,000	$170,000	–
Stationary Sources	Consumer and Aerosol Coating Products	Walmart, Inc.	702 SW 8th Street, Bentonville, Arkansas	–	$415,000	$267,800	$147,200

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Stationary Sources	Consumer and Aerosol Coating Products	Janeway-Bennett Paint, Inc.	4620 Easton Drive, Bakersfield, California	–	$9,225	$9,225	–
Stationary Sources	Consumer and Aerosol Coating Products	CVS Pharmacy, Inc.	One CVS Drive, Woonsocket, Rhode Island	–	$13,000	$13,000	–
Stationary Sources	Indoor Air Cleaners	Daikin North America LLC	19001 Kermier Road, Waller, Texas	–	$5,365	$5,365	–
Stationary Sources	Indoor Air Cleaners	SainStore Inc.	6945 Speedway Blvd, Suite H102, Las Vegas, Nevada	–	$96,000	$96,000	–
Stationary Sources	Indoor Air Cleaners	EcoQuest Alpine Fresh Living Air	13654 Victory Blvd. #110, Valley Glen, California	–	$3,000	$3,000	–
Stationary Sources	Refrigeration Management	Danisco US Inc.	925 Page Mill Road, Palo Alto, California 94304	–	$9,000	$9,000	–
Stationary Sources	Refrigeration Management	Sweet Earth Enlightened Foods	3080 Hilltop Road, Moss Landing, California 9503	–	$1,500	$1,500	–
Stationary Sources	Refrigeration Management	South Lake Tahoe Ice Arena	1901 Lisa Maloff Way., South Lake Tahoe, California 96150	–	$6,000	$6,000	–
Stationary Sources	Refrigeration Management	US Foods	1202 Park Center Drive, Vista, California 95081	–	$1,500	$1,500	–
Stationary Sources	Refrigeration Management	Mrs. Gooch's Natural Foods Market, Inc.	07 Goode Avenue, 7th Floor, Glendale, California 91203	–	$2,500	$2,500	–

Program Category	Subprograms	Company Name	Company Location	Judgement	Settlement	Assessed to CARB	AB 1071 SEP
Stationary Sources	Refrigeration Management	Capay Inc. dba Capay Organic	3880 Seaport Boulevard, West Sacramento California 95691	–	$3,000	$3,000	–
Stationary Sources	Refrigeration Management	Kautz Vineyards, Inc	1894 6 Mile Road, Murphys, California 95247	–	$6,000	$6,000	–
Stationary Sources	Refrigeration Management	Albertsons Companies, Inc.	250 Parkcenter Blvd., Boise, Idaho 83706	–	$5,100,000	$2,550,000	$2,550,000
Stationary Sources	Sulfur Hexafluoride	Southern California Edison	2244 Walnut Grove Ave, Rosemead CA 91770	–	$350,000	$350,000	–
Stationary Sources	Sulfur Hexafluoride	NRG/Long Beach Generation LLC	301 Vista Del Mar Ave. El Segundo CA 90245	–	$91,500	$46,500	$45,000

Appendix I

2021 Diesel Programs Compliance Calculations

In February 2022, CARB staff estimated Truck and Bus regulation compliance rates for all heavy vehicles with a GVWR greater than 26,000 pounds and lighter vehicles with a GVWR of 14,001 to 26,000 pounds. To calculate the compliance rate for heavy and light trucks, staff first looked at 3 types of vehicle registration: (1) vehicles registered with DMV, (2) vehicles registered with the International Registration Plan (IRP) that are based in California, and (3) vehicles registered with IRP that are based in all other states. IRP is a registration reciprocity agreement between the contiguous United States and Canadian provinces, which provides apportioned payments of registration fees based on the total distance operated in participating jurisdictions to them. CARB obtains data on vehicles registered with California DMV quarterly, and on vehicles registered with IRP every month. The DMV vehicle registration data used for this analysis were from January 2022. The vehicle registration data include the make and model of the vehicle, the vehicle model year, and information about the registered owner of each vehicle.

For vehicles registered with California DMV, staff used Accuzip software to standardize the address of each registered owner. Standardized addresses allowed for the grouping of vehicles by registration address in order to determine fleet size. Once vehicles were grouped by address, fleet size was determined by counting the number of vehicles registered to a particular address. Within each fleet, staff identified all heavy vehicles with a chassis model year 2007 and older, which are potentially noncompliant and all light vehicles with a chassis year 2007 and older. In general, vehicles are equipped with an engine that is one year older than the chassis model year. For example, a 2007 model year chassis is most likely equipped with a 2006 model year engine. All heavy vehicles with engines 2006 and older must be equipped with a diesel particulate filter or be reported into CARB's Truck Regulation Upload, Compliance and Reporting System (TRUCRS) to use a flexibility option, extension, or exemption. All light vehicles with engines 2007 and older must be replaced with newer trucks or be reported in TRUCRS to use a flexibility option, extension, or exemption. The vehicle identification numbers of any potentially noncompliant vehicles were cross-referenced with TRUCRS to determine whether that vehicle was reported compliant. For vehicles registered with IRP that are based in a state other than California, staff also identified all potentially noncompliant heavy and light vehicles and cross-referenced their vehicle identification numbers with TRUCRS to determine whether that vehicle was reported compliant.

Tables: I-1 through I-6 summarize, by vehicle registration type, vehicle counts per engine model year group corresponding to the Engine Model Year Compliance Schedule. Once the noncompliant vehicles were identified, staff compared these numbers with the overall population of vehicles to arrive at various compliance rates depending on fleet size and registration type. These results are summarized in Table I-7 in Appendix I and show a range of compliance from 79 to 99 percent.

2021 Diesel Programs Compliance Calculations

Table I-1 California Registered Heavier Diesel Truck Counts

GVWR > 26,000 (excludes IRP[43])

Pre-1995MY	3,024
MY1995 – MY1996	952
MY1997 – MY2000	2,616
MY2001 – MY2005	3,565
MY2006 – MY2007	5,082
MY2008 – MY2010	23,238
MY2011 +	167,014
Total All MY's	205,491
Pre-2008MY Total	15,239

Table I-2 California IRP Registered Heavier Diesel Truck Counts

GVWR > 26,000

Pre-1995MY	76
MY1995 – MY1996	14
MY1997 – MY2000	77
MY2001 – MY2005	302
MY2006 – MY2007	503
MY2008 – MY2010	3,003
MY2011 +	46,289
Total All MY's	50,264
Pre-2008MY Total	972

Table I-3 IRP (excluding CA) Registered Heavier Diesel Truck Counts

GVWR > 26,000

Pre-1995MY	7,867
MY1995 – MY1996	6,080
MY1997 – MY2000	30,147
MY2001 – MY2005	48,351
MY2006 – MY2007	57,751
MY2008 – MY2010	35,468
MY2011 +	1,135,141
Total All MY's	1,320,805
Pre-2008MY Total	150,196

43 IRP data contain motor carrier registration information for all participating jurisdictions within the U.S.

Table I-4 California Registered Light Diesel Truck Counts

GVWR between 14,001 and 26,000

Pre-1998 MY	1,941
1998	291
1999	561
2000	757
2001 - 2004	2,538
2005 - 2007	4,954
2008 - 2010	11,650
2011 +	130,722
Total All MY's	153,414
Pre 2001MY Total	11,042

Table I-5 California IRP Registered Light Diesel Truck Counts

GVWR between 14,001 and 26,000

Pre-1998 MY	1
1998	0
1999	0
2000	1
2001 - 2004	8
2005 - 2007	26
2008 - 2010	41
2011 +	864
Total All MY's	941
Pre 2001MY Total	36

Table I-6 IRP (excluding CA) Registered Light Diesel Truck Counts

GVWR between 14,001 and 26,000

Pre-1998 MY	339
1998	172
1999	245
2000	246
2001 - 2004	1,251
2005 - 2007	2,674
2008 - 2010	1,759
2011 +	92,851
Total All MY's	99,537
Pre 2001MY Total	4,927

Table I-7 Truck & Bus Compliance Rates

Reg. Type	Heavy-Duty: All Model Years	Heavy-Duty: Pre 2008	Heavy-Duty: Pre 2008 Noncompliant	Heavy-Duty: Compliance Rate	Light-Duty[44]: All Model Years	Light-Duty: Pre 2008	Light-Duty: Pre 2008 Noncompliant	Light-Duty: Compliance Rate
CA Reg. Fleet Size 1-3	70,287	6,346	2,211	97%	62,793	7,976	3,029	95%
CA Reg. Fleet Size 4-20	54,445	4,516	993	98%	37,699	2,113	489	99%
CA Reg. Fleet Size 21-100	34,568	2,627	470	99%	16,792	527	144	99%
CA Reg. Fleet Size > 100	36,243	1,317	299	99%	29,040	178	62	100%
Unknown[45]	9,948	433	176	98%	7,090	248	115	98%
CA Reg. In-State Totals	205,491	15,239	4,149	98%	153,414	11,042	3,839	97%
CA IRP Fleet Size 1-3	23,944	211	138	99%	346	12	9	97%
CA IRP Fleet Size 4-20	16,207	135	61	100%	451	22	12	97%
CA IRP Fleet Size 21-100	7,015	79	14	100%	105	2	2	98%
CA IRP Fleet Size > 100	3,098	44	0	100%	39	0	0	100%
CA IRP Totals	50,264	469	213	100%	941	36	23	98%
OS IRP Fleet Size 1-3	152,469	31,579	31,479	79%	5,469	987	981	82%
OS IRP Fleet Size 4-20	123,237	16,443	16,314	87%	4,050	872	860	79%
OS IRP Fleet Size 21-100	174,714	14,271	14,152	92%	5,205	881	877	83%
OS IRP Fleet Size > 100	870,385	30,152	30,007	97%	84,813	2,187	2,177	97%
OS IRP Totals	1,320,805	92,445	91,952	93%	99,537	4,927	4,895	95%
Total CA In State and CA IRP	255,755	15,708	4,362	98%	154,355	11,078	3,862	97%
Grand Totals	1,576,560	108,153	96,314	94%	253,892	16,005	8,757	97%

44 Refers to trucks and buses with GVWR between 14,001 and 26,000.

45 Unknown fleets include trucks and buses that are currently registered but could not be grouped into fleets to address standardization issues

Appendix J

2014-2021 Minimum and Maximum Penalties

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)		Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
1	**Aerosol Coating Products** Title 17, California Code of Regulations (CCR), sections 94520- 94528	Excess Ozone	Labeling	$5,235 to $10,470 per violation per day, Cal. Health & Safety Code (HSC), §§ 42400, 42402
	https://arb.ca.gov/enf/consprod.htm	$6,160-$16,981/ton (3 cases)	$750-$850/day (2 cases)	
2	**Aftermarket Parts** Title 13, CCR, sections 1900 et. seq., 2030-2031, 2047-2048, 2200-2207, 2220-2225 California Vehicle Code (VC), section 27156	Certification		$40,725 per action, HSC § 43016
	http://www.arb.ca.gov/msprog/aftermkt/aftermkt.htm	$8.70-$2,967/part (49 cases)		
3	Antiperspirants and Deodorants Title 17, CCR, sections 94500-94506.5	Excess VOC	Labeling	$5,235 to $10,470 per violation per day, HSC §§ 42400, 42402
		$15,000/ton (1 case)	No per ton penalties assessed during this period	
	https://arb.ca.gov/enf/consprod.htm	$1,150/day (1 case)	No per day penalties assessed during this period	

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)				Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
4	**Asbestos (ATCM) (HSC 39658(b))**Title 40, Code of Federal Regulations (CFR), Part 61, Subpart M	Failure to Notify		Failure to Inspect	Asbestos Emissions	$1,000 to $10,000 per violation per day, HSC §§ 39674, 39675; or up to $1,030,000 and one year in jail per violation per day possible where willful and intentional results in harm/death, HSC § 42400.3
	http://www.arb.ca.gov/enf/asbestos/asbestos.htm	$500 - $5,500/day (12 cases)		$1,363-$5,000/day (6 cases)	$25,000/day (1 case)	
5	**Automotive Refrigerant, Small Containers** Title 17, CCR, sections 95360-95370	$25/can (1 case)				$5,235 to $10,470 per violation per day, HSC §§ 38580, 42400, 42402
	https://www.arb.ca.gov/cc/hfc-mac/hfcdiy/hfcdiy.htm					
6	**Cap and Trade** Title 17, CCR, sections 95800 et. seq.	Lack of Compliance Instruments	Disclosure Violations	No Account Representatives	Auction Rule Violation	$5,235 to $10,470 per violation per day, HSC §§ 38580, 42400, 42402
	https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/about	$100/instrument (1 case)	$10,000-$35,000/incident (1 case)	$1,605/day (1 case)	$25,000/incident (1 case)	
7	**Cargo Handling Equipment** Title 13, CCR, section 2479	Failure to Meet Opacity Requirements		Failure to Meet In-use Performance Requirements	Failure to Meet Reporting Requirements	$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; $543 per unit or $40,725 per action, HSC §43016
	https://ww2.arb.ca.gov/our-work/programs/cargo-handling-equipment	$275 - $1,500/violation (8 cases)		$500 - $37,000/piece of equipment (11 cases)	$7,500/violation (1 case)	

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)						Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
8	**Cargo Tank Vapor Recovery** Title 17, CCR, section 94014	Failure to Meet Pressure Performance Requirements				Unlawful Purging of Vapor to Atmosphere		$5,235 to $10,470 per violation per day, HSC §§ 42400, 42402; or $78,525 per violation, HSC § 42402.3
	https://www.arb.ca.gov/ports/cargo/cargo.htm	$500-$1,000/non-compliant cargo tank (97 cases)				$2,500-$30,000/violation (2 cases)		
9	**Commercial Harbor Craft** Title 13, CCR, section 2299.5 and Title 17, CCR, section 93118.5	$2,500-$6,457/engine (5 cases)						$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC §43016
	https://ww2.arb.ca.gov/our-work/programs/commercial-harbor-craft							
10	**Composite Wood ATCM** Title 17, CCR, sections 93120-93120.12	Failure to Comply with Composite Wood ATCM						$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402
	https://ww2.arb.ca.gov/our-work/programs/composite-wood-products-program	$27-$10,000/day (23 cases)						
11	**Consumer Products** Title 17, CCR, sections 94507-94517 Penalties shown as per ton or per day depending on nature of penalty	Excess VOC	Excess Aromatic	Excess TAC	Global Warming Potential	Certification	Labeling	$5,235 to $10,470 per violation per day, HSC §§ 39674, 42400, 42402
		$3,512-$70,588/ton (146 cases)	No Per Ton Penalties Assessed During This Period	$4,391-$45,021/ton (12 cases)	$32,967/ton HFC134a (1 case)	$7,500-$10,000/ violation (4 cases)	No per ton penalties assessed during this period	
	http://arb.ca.gov/enf/consprod.htm	$560-$4,500/ day (70 cases)	$1,000/day (1 case)	No per day penalties assessed during this period	No Per day penalties assessed during this period	$1,000/day (17 settled cases)	$667-$1,000/ day (31 cases)	

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)					Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
12	Consumer Products, Alternative Control Plan Title 17, CCR, sections 94540-94555	No penalties assessed during this period.					$5,235 to $10,470 per violation per day, HSC §§ 42400, 42402
	https://www.arb.ca.gov/consprod/regact/acp/acp.htm						
13	**Diesel Emission Control System, Verified** Title 13, CCR, sections 2706(g), 2707(c), and 2709	Selling Non- Unit		Offering for Sale Non-Verified Unit	Installing Without Authorization		$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016
	http://www.arb.ca.gov/diesel/verdev/verdev.htm	$369 -$5,000/unit (7 cases)		$50-$1,000/unit (6 cases)	$550-$5,000/unit (2 cases)		
14	**Drayage Trucks** Title 13, CCR, section 2027	Trucks			Rail Yards	Dispatching Non-Compliant Trucks	$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016
		Failure to Report	Failure to Meet In-Use Performance Requirement	Submitting False Data	Failure to Submit Quarterly Report		
	https://ww2.arb.ca.gov/our-work/programs/drayage-trucks-seaports-railyards	$0-$800/vehicle (34 cases)	$200-$1,800/violation (231 cases)	$300-$1,300/violation (4 cases)	$7,300-$10,000/quarterly report (2 cases)	$30-$100/dispatch (10 cases)	
15	**Dry Cleaner (ATCM)** Title 17, CCR, sections 93109 and 93110	Submitting Inaccurate Report			Failure to Pay Fees		$1,000 to $10,300 per violation per day, HSC §§ 39674, 39675, 42400, 42402
	https://ww2.arb.ca.gov/our-work/programs/phase-out-perchloroethlyene-dry-cleaning-process/dry-cleaning-program	$357/violation (1 case)			$357/violation (1 case)		

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)	Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
16	**Engine Certification Label Program, On-Road Heavy-Duty Vehicle** Title 13, CCR, sections 2180-2189	Missing or Illegible Emission Control Label (ECL)	$300 first citation, additional $800 after 45 days, additional $1,800 for 2nd citation in 12 months, HSC § 44011.6
	https://ww2.arb.ca.gov/resources/documents/road-heavy-duty-certification-program-california-motor-vehicle-emission-control	$66-$1,800/label (1,812 citations)	
17	**Fleet Tampering / Non-conforming** HSC, section 43008.6	$500-$1,500/ vehicle (10 cases)	$1,500 per violation, HSC § 43008.6
	http://www.arb.ca.gov/enf/othermbl.htm		
18	**Fuel Containers and Spouts, Portable** Title 13, CCR, sections 2467-2467.9	Certification	$543 per portable fuel container or spout, HSC § 43016
	https://ww2.arb.ca.gov/our-work/programs/portable-fuel-containers-gas-cans	$0.50-$36/unit (6 cases)	
19	**Fuel Distributor Certification (Motor Vehicle Fuel)** HSC, section 43026	No penalties assessed during this period.	$1,000 to $10,000 per day, HSC § 43026
	http://www.arb.ca.gov/enf/fuels/distcert.htm		

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)				Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
20	**Fuels** Title 13, CCR, sections 2250-2259; 2260-2276; 2280-2285; 2290-2293,5; and 2299-2299.5	Fuels				$25,000, $35,000, $50,000, $200,000 per violation per day, HSC § 43027; or $5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016, 43020
	http://www.arb.ca.gov/fuels/fuels.htm	$500-$25,000/day (48 cases)				
21	**Heavy-Duty Vehicle Inspection Program (HDVIP)** Title 13, CCR, sections 2180-2189	–	Exceeding Opacity Limit	Tampering	Refusal to Submit to Inspection	$300 first citation, additional $500 after 45 days, additional $1,800 for 2nd citation in 12 months, HSC § 44011.6
		1st Citation	$300/violation (119 citations)	$300/violation (350 citations)	$800-$1300/ violation (13 citations)	
	http://www.arb.ca.gov/enf/hdvip/hdvip.htm	No Corrective Action Taken Within 45 Days	$500-$800/ violation (35 citations)	$800/violation (107 citations)	–	
		2nd Citation	$1,800/violation (2 citations)	$1,800/violation (1 citation)	–	
22	**Idling, Commercial Vehicle** Title 13, CCR, section 2485	Idling Longer than 5 Minutes				$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016
	https://ww2.arb.ca.gov/our-work/programs/atcm-to-limit-vehicle-idling	$100 - $1,000/violation (1,452 cases)				

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)	Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
23	**Idling, School Bus** Title 13, CCR, section 2480 *https://ww2.arb.ca.gov/resources/documents/school-bus-idling-and-idling-schools*	No penalties assessed during this period.	$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402
24	**Indoor Air Cleaning Devices** Title 17, CCR, sections 94800-94810 *https://ww2.arb.ca.gov/list-carb-certified-air-cleaning-devices*	Certification $3,000-$149,000/settlement (10 cases)	$5,235 to $10,470 per violation per day, HSC §§ 42400, 42402
25	**Landfill Methane Rule (LMR)** Title 17, CCR, sections 95460-95476 *http://www.arb.ca.gov/cc/landfills/landfills.htm*	Failure to Report $70,000 total (1 case)	$5,235 to $10,470 per violation per day, HSC §§ 38580, 42400, 42402
26	**Large Spark Ignited Engine (LSI) Fleet Requirements** Title 13, CCR, sections 2775-2775.2 *https://ww2.arb.ca.gov/our-work/programs/large-spark-ignition-lsi-engine-fleet-requirements-regulation*	No penalties assessed during this period.	$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)			Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
27	**Low Carbon Fuel Standard** Title 17, CCR, sections 95480-95491	Compliance Report			$5,235 to $10,470 per violation per day, HSC §§ 38580, 42400, 42402; or $25,000, $35,000, $50,000, $250,000 per day, HSC §§ 38580, 42402, 43027
	https://www.arb.ca.gov/fuels/lcfs/lcfs.htm	$50-195/deficit (2 case)	$4,167-$10,000/ misreporting (7 cases)	$1,000/day (1 case)	
28	**Mandatory Reporting of Greenhouse Gas Emissions (MRR)** Title 17, CCR, sections 95100 et. seq.	Inaccurate Report	Late Report		$5,235 to 10,470 per violation per day, HSC §§ 38580, 42400, 42402
	https://ww2.arb.ca.gov/our-work/programs/mandatory-greenhouse-gas-emissions-reporting	$500-$1,605/day (7 cases), $25,000-$75,000/incident (4 cases)	$400-$3,000/incident (9 cases), $349,500/incident (1 case)		
29	**Marine / Watercraft** Title 13, CCR, sections 2440-2448, 2850-2869	Certification			$40,725 per action, HSC §§ 43016, 43212
	https://ww2.arb.ca.gov/our-work/programs/spark-ignition-marine-watercraft/about	$500 - $5,000/violation (12 cases)			
30	**Motor Vehicles / Engines Certification, New** HSC, sections 43150-43154	Certification			$40,725 per action, HSC §§ 43016, 43212
	http://www.arb.ca.gov/msprog/onroad/onroad.htm	$500-$5,000/violation (113 cases)			

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)	Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
31	**Off-Highway Recreational Vehicles** Title 13, CCR, sections 2410-2415	Certification	$40,725 per action, HSC §§ 43016, 43150, 43154, 43212
	http://www.arb.ca.gov/msprog/offroad/orrec/orrec.htm	$500-$2,500/vehicle (4 cases)	
32	**Off-Road Engine Certification, Compression Ignition** Title 13, CCR, sections 2420-2427	Certification	$40,725 per action, HSC §§ 43016, 43154, 43212
	https://ww2.arb.ca.gov/our-work/programs/road-compression-ignition-certification-program/about	$125-$21,428/vehicle (17 cases)	
33	**Off-Road Engine Certification, Large (LSI)** Title 13, CCR, sections 2430-2439	Certification	$543 per unit or $40,725 per action, HSC §§ 43016, 43212
	https://ww2.arb.ca.gov/our-work/programs/large-spark-ignition-lsi-engine-fleet-requirements-regulation	$375-$500 (2 cases)	
34	**Off Road Engine Certification, Small (SORE)** Title 13, CCR, sections 2400-2409 and 2750-2774	Certification	$543 per unit, HSC §§ 43016, 43212
	https://ww2.arb.ca.gov/our-work/programs/small-off-road-engines-sore	$21.29-$500/violation (18 cases)	

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)						Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
35	**Off-Road Diesel-Fuel Fleets, In-Use** Title 13, CCR, section 2449	Adding Illegal Engine	No ROAR	Failure to Report	Submitting False Data	No EIN	Misreporting	$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016
	https://ww2.arb.ca.gov/our-work/programs/use-road-diesel-fueled-fleets-regulation	$200-$2,000/ violation (129 cases)	$0-$1,000/ violation (138 cases)	$0-$800/ violation (538 cases)	$300-$500/ violation (10 cases)	$0-$600/ violation (455 cases)	$300/ violation (24 cases)	
36	**On-Board Diagnostics, On-Road Heavy-Duty Vehicle** Title 13, CCR, sections 1971.1 and 1971.5	No penalties assessed during this period.						$40,725 per action, HSC §§ 43016, 43154, 43212
	https://ww2.arb.ca.gov/resources/documents/heavy-duty-obd-regulations-and-rulemaking							
37	**On-Board Diagnostics, On-Road Light-Duty Vehicle** Title 13, CCR, sections 1968.2 and 1968.5	Failure to Meet Certification Requirements						$40,725 per action, HSC §§ 43016, 43154, 43212
	https://ww2.arb.ca.gov/our-work/programs/obd	$6.25-$1,800/vehicle (2 cases)						
38	**On-Road New Diesel Engine Emission Standards Certification** Title 13, CCR, sections 1956.8, 1971, and 1971.1	No penalties assessed during this period.						$40,725 per action, HSC §§ 43154, 43212
	http://www.arb.ca.gov/msprog/onroad/cert/cert.php							

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)	Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
39	**Outboard Marine Tanks and Components, Portable** Title 13, CCR, sections 2190-2194	No penalties assessed during this period.	$40,725 per action, HSC §§ 43016, 43212
	https://ww2.arb.ca.gov/our-work/programs/outboard-marine-tanks		
40	**Periodic Smoke Inspection Program (PSIP)** Title 13, CCR, sections 2190-2194	Failure to Perform Test/Failed Test	$40,725 per action, HSC § 43016
	http://www.arb.ca.gov/enf/hdvip/hdvip.htm	$42-$800/violation (355 cases)	
41	**Prohibition on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chiller, Aerosols-Propellants, and Foam End-Uses** Title 17, CCR, sections 95371 - 95378	Failure to Comply with Regulatory Requirement – Use of Prohibited Substances	$10,300 per violation per day, HSC § 38580
	https://ww2.arb.ca.gov/rulemaking/2020/hfc2020	$0/day(2 cases)	
42	**Public Agencies and Utilities Fleets** Title 13, CCR, sections 2023-2023.4	Failure to Meet In-use Performance Requirements	$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016
	https://ww2.arb.ca.gov/our-work/programs/fleet-rule-public-agencies-and-utilities/about	$1,000/violation (2 cases)	

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)			Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
43	**Public Transit Bus Fleets** Title 13, CCR, sections 2023-2023.4	Failure to Report			$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016
	https://www.arb.ca.gov/regact/bus02/bus02.htm	$50/day (1 case)			
44	**Refrigerant Management Program (RMP)** Title 17, CCR, sections 95460-95476	Failure to Register / Report	Automatic Leak Detection System	Failure to Inspect	$5,235 to $10,470 per violation per day, HSC §§ 38580, 42400, 42402
		$115-$2,000/unit (12 cases) $$5.1 million total (1 Case)	$152-$1,500/unit (5 cases)	$152-$1,500/unit (9 cases)	
	https://www.arb.ca.gov/cc/rmp/rmp.htm	$150-$1,800/violation per day (101 cases)			
45	**Renewable Portfolio Standard** Title 20, CCR, sections 1240, 3200-3208	Publicly Owned Utility, Failed to Meet Regulation Requirements			$10,300 per violation per day, HSC § 38580
	https://ww2.arb.ca.gov/enforcement-renewables-portfolio-standard	$50/ mega-watthour, comparable with CPUC (1 case)			
46	**Solid Waste Collection Vehicles** Title 13, CCR, sections 2021, 2021, 2021.1, and 2021.2	Failure to Meet In-use Performance Requirements			$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016
	https://www.arb.ca.gov/msprog/swcv/swcv.htm	$150-$1,800/violation per day (107 cases)			

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)					Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
47	**Sulfur Hexafluoride (SF6) Reduction** Title 17, CCR, sections 95340-95346, 95352-95358	SF6 Emission Rate		Late/Inaccurate Report	Possessing SF6 on or after January 1, 2011, and Intentionally emitting SF6 to the atmosphere		$5,235 to $10,470 per violation per day, HSC §§ 38580, 42400, 42402
	http://www.arb.ca.gov/cc/sf6elec/sf6elec.htm	$136.99 - $700/day (9 cases)		$320 - 5,000/violation (2 cases)	$10,000/day (1 case)		
48	**Tractor and Trailer Greenhouse Gas Regulation** Title 17, CCR, section 95300	Failure to Meet In-use Performance Requirements					$5,235 to $10,470 per violation per day, HSC §§ 38580, 42400, 42402
	https://ww2.arb.ca.gov/our-work/programs/ghg-std-md-hd-eng-veh	$1,000-$1,800/ violation (258 cases)					
49	**Transport Refrigeration Units** Title 13, CCR, section 2477	Failure to Meet In-use Performance Requirements	No IDN	Failure to Register	Submitting False Data		$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402
		$225-$3,000/unit	$0-$1,800/ label	$0-$1,300/unit	$300-$500/violation		
	https://ww2.arb.ca.gov/our-work/programs/transport-refrigeration-unit	(1,976 cases)	(466 cases)	(705 cases)	(23 cases)		
50	**Trucks and Buses, In-Use Diesel** Title 13, CCR, section 2025	Failure to Meet In-use Performance Requirements	Failure to Provide Sales Disclosure	Failure to Report / Misreporting	Failure to Verify Compliance of Hired Vehicle/Fleet	Hiring Non-Compliant Vehicle/Fleet	$5,235 to $10,470 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $40,725 per action, HSC § 43016
		$100-$20,000/ vehicle	$225-300/violation	$75-$1,375/violation	$100-$1,396/ fleet	$1,000-$10,000/fleet	
	http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm	(4,580 cases)	(26 cases)	(m171 cases)	(12 cases)	(13 cases)	

#	Regulation or Program CA Regulatory or Statutory Code Program Internet Site	Minimum and Maximum Penalties (2014-2021)	Applicable Maximum Penalties (Strict Liability, Willful, Intentional, & Criminal) CA Health and Safety Code Reference
51	**Vessels, At-Berth for Auxiliary Engines ATCM (Shore Power)** Title 17, CCR, sections 93118.3 et. seq.	Failure to Meet In-Use Operational Requirements	$5,235 to $78,525 per violation per day, HSC §§ 39674, 39675, 42400, 42402
	https://ww2.arb.ca.gov/our-work/programs/ocean-going-vessels-berth-regulation	$250-$550/violation (5 cases)	
52	**Vessel (Ocean-Going) Incineration ATCM** Title 17, CCR, section 93119	No penalties assessed during this period.	$5,235 to $78,525 per violation per day, HSC §§ 39674, 39675, 42400, 42402
	https://ww2.arb.ca.gov/resources/documents/oceangoing-ship-onboard-incineration		
53	**Vessels, Fuel Sulfur and Other Operational Requirements for Ocean-Going** Title 13, CCR, section 2299.2 and Title 17, CCR, section 93118.2	Failure to Properly Complete Operational Requirements	$5,235 to $78,525 per violation per day, HSC §§ 39674, 39675, 42400, 42402; or $543 per unit or $40,725 per action, HSC § 43016
	https://ww2.arb.ca.gov/our-work/programs/ocean-going-vessel-fuel-regulation	$610 -$1,000/hour, $1,000-$53,000/day (106 cases)	

Appendix K

2021 District Agreements to Enforce CARB Programs

Air District	Landfill Methane Control Regulation	Oil and Gas Field Methane Control Regulation[46]	Semiconductor Operations	Gas Insulated Switchgear	SF6–General Restrictions (non–semiconductor, non–GIS)	Refrigerant Management Program	Specified Mobile Diesel Regulations[47]
Amador County	–	–	–	–	–	–	–
Antelope Valley	Yes	–	Yes	–	–	–	–
Bay Area	Yes	Yes	Yes	–	–	–	Yes
Butte County	–	Yes	–	–	–	–	–
Calaveras County	–	–	–	–	–	–	–
Colusa County	–	Yes	–	–	–	–	–
Eastern Kern	Yes	–	–	–	–	–	–
El Dorado County	–	–	–	–	–	–	–
Feather River	Yes	Yes	–	–	–	–	–
Glenn County	–	Yes	–	–	–	–	–
Great Basin	–	–	–	–	–	–	–
Imperial County	Yes	–	–	–	–	–	–
Lake County	Yes	–	–	–	–	–	–
Lassen County	Yes	Yes	–	–	–	–	–
Mariposa County	–	–	–	–	–	–	–
Mendocino County	Yes	Yes	–	–	–	–	–
Modoc County	–	–	–	–	–	–	–
Mojave Desert	Yes	Yes	–	–	–	–	–
Monterey	Yes	Yes	–	–	–	–	–

46 CARB has entered into agreements with some air districts authorizing local air district staff to implement and enforce CARB's oil and gas regulation.
47 CARB has entered into agreements with some air districts authorizing local air district staff to conduct specified inspections on CARB's behalf.

Air District	Landfill Methane Control Regulation	Oil and Gas Field Methane Control Regulation[46]	Semiconductor Operations	Gas Insulated Switchgear	SF6–General Restrictions (non–semiconductor, non–GIS)	Refrigerant Management Program	Specified Mobile Diesel Regulations[47]
North Coast	Yes	Yes	–	–	–	–	Yes
Northern Sierra	Yes	–	–	–	–	–	–
Northern Sonoma County	Yes	–	–	–	–	–	–
Placer County	Yes	–	Yes	–	–	–	–
Sacramento Metropolitan	Yes	Yes	Yes	–	–	–	–
San Diego County	Yes	–	Yes	–	–	–	Yes
San Joaquin Valley	Yes	Yes	–	–	–	–	–
San Luis Obispo County	Yes	Yes	–	–	–	–	–
Santa Barbara County	Yes	Yes	Yes	–	–	–	–
Shasta County	–	–	–	–	–	–	–
Siskiyou County	–	–	–	–	–	–	–
South Coast	Yes	Yes	Yes	–	–	Yes[48]	POLA[49]
Tehama County	Yes	Yes	–	–	–	–	–
Tuolumne County	–	–	–	–	–	–	–
Ventura County	Yes	Yes	Yes	–	–	–	–
Yolo–Solano	Yes	Yes	–	–	–	–	Yes

48 South Coast AQMD enforces local rule 1415.1; it is equivalent to CARB's Refrigerant Management Program regulation.
49 CARB has entered into agreements with the City of Los Angeles Board of Harbor Commissioners (POLA) authorizing POLA staff to conduct specified inspections on CARB's behalf.

Appendix L

2021 Memo: Increase in Maximum Penalties

CALIFORNIA
AIR RESOURCES BOARD

Gavin Newsom, Governor
Jared Blumenfeld, CalEPA Secretary
Liane M. Randolph, Chair

To: Enforcement Division Staff

From: Todd P. Sax, D.Env., Chief, Enforcement Division TPS

Date: March 4, 2022

Subject: Increase in Maximum Penalties Based on 2021 California Consumer Price Index

Effective immediately, California Air Resources Board (CARB) staff should reference the maximum penalties in the attached tables when settling violations that occurred on or after the date of this memorandum.

The California Legislature enacted changes to State law[1] increasing certain maximum penalties from the levels established in the mid-1970s. The Legislature also established that those maximum penalties be adjusted annually based on changes in the California Consumer Price Index (California CPI).

The California CPI for 2021, as reported by the California Department of Industrial Relations (DIR) on February 10, 2022 is **297.371.**[2] This reflects an increase of:

- **13.2%** since January 1, 2017, when changes to HSC §§ 43016, 43154, 43211, and 43212, became effective. The maximum penalties for specified **vehicular source violations** in Table 1 reflect that increase.
- **9.1%** since January 1, 2018, when HSC § 42411 became effective. The maximum penalties for **non-vehicular source violations** in Table 2 reflect that increase.

Maximum penalties are one factor CARB staff use when establishing penalties for air quality regulations enforced by CARB. As required by State law and described in CARB's Enforcement Policy, CARB staff should continue to consider all relevant factors when establishing penalties on a case-by-case basis.

[1] Assembly Bill (AB) 1685 (Gomez, 2016) revised HSC 43016, 43154, 43211, and 43212, establishing changes to maximum per-violation penalties for violations of vehicular air pollution control laws and regulations; AB 617 (Garcia, 2017) enacted similar changes applicable to violations of non-vehicular air pollution control laws and regulations.
[2] DIR publishes the California CPI online at: *https://www.dir.ca.gov/OPRL/CAPriceIndex.htm*.

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Table 1.
Maximum Penalties for **Vehicular** Source Violations Enforced by the California Air Resources Board Subject to Specified Health and Safety Code (HSC) Part 5 Penalty Provisions.

Penalty Statute (HSC §)	Maximum Penalty per Violation
43016(a)(1)	$42,450 $566
43154(a)(1)	$42,450
43154(a)(2)	$11,320
43211(a)	$42,450
43211(b)	$5,660
43212(a)(1)	$42,450

Table 2.
Maximum Penalties for **Non-Vehicular** Source Violations Enforced by the California Air Resources Board Subject to Specified Health and Safety Code (HSC) Part 4 Penalty Provisions.

Penalty Statute (HSC §)	Maximum Penalty per Violation
42400(a)	$5,455
42400(c)	$16,365
42400.1(a)	$27,275
42400.1(b)	$109,100
42400.2(a)	$43,640
42400.2(c)	$272,750
42400.3(a)	$81,825
42400.3(b)	$136,375 $545,500
42400.3(c)	$272,750 $1,091,000
42400.3.5(a)	$10,910
42400.3.5(b)	$38,185
42400.4(a)	$10,910
42400.4(b)	$10,910
42401	$27,275

Penalty Statute (HSC §)	Maximum Penalty per Violation
42402(a)	$5,455
42402(b)(1)	$10,910
42402(c)	$16,365
42402.1(a)	$27,275
42402.1(b)	$109,100
42402.2(a)	$43,640
42402.2(b)	$272,750
42402.3(a)	$81,825
42402.3(b)	$136,375 $545,500
42402.3(c)	$272,750 $1,091,000
42402.4	$38,185
42402.5	$546
42410(a)	$10,910 $109,100

Appendix M-1

2021 Compliance Rates

Program Category	Inspections	Compliant	Violation	% Compliant Total	%Compliant in non–DACs	%Compliant in DACs	Overall Compliance Rates [50]
Consumer Products							
Consumer & Aerosol Coating Products	15	9	6	60%	60%	75%	Undetermined
Fuels							
Diesel	121	120	1	99%	99%	100%	High
Gas	229	229	–	100%	100%	100%	High
Renewable	39	39	–	100%	–	100%	High
Heavy–Duty Vehicles							
Drayage Trucks	47	47	–	100%	100%	100%	High
HDVIP–Diesel Exhaust Fluid	72	72	–	100%	100%	100%	High
HDVIP–Emission Control Label	1,615	1,471	144	91%	91%	91%	Medium
HDVIP–Smoke Opacity	1,518	1,282	236	84%	85%	84%	Low, Biased
HDVIP–Tampering	975	911	64	93%	94%	92%	Medium
Idling	7,620	7,406	214	97%	98%	97%	High
Off–Road	911	810	101	89%	90%	86%	Medium
Public Agencies & Utilities	1	1	–	100%	–	100%	Undetermined
Smart–Way	69	67	2	97%	96%	100%	High
Solid Waste Collection	4	4	–	100%	100%	100%	Undetermined

50 Compliance rates above 95% are considered high, rates between 85%-95% are considered medium, and rates below 85% are considered low. Compliance rates are considered "biased" when inspectors can effectively target inspections for noncompliance, and are considered to be "undetermined" when the inspection sample size is less than 20 inspections, or when sufficient laboratory results are not yet available.

Program Category	Inspections	Compliant	Violation	% Compliant Total	%Compliant in non–DACs	%Compliant in DACs	Overall Compliance Rates [50]
Transportation Refrigeration Units	843	320	523	38%	44%	36%	Low, Biased
Truck and Bus	2,542	2,442	100	96%	93%	99%	High
Railroad & Marine							
Commercial Harbor Craft	67	67	–	100%	100%	100%	High
Cargo Handling Equipment	386	386	–	100%	100%	100%	High
Ocean Going Vessel Fuels	673	667	6	99%	–	99%	High
Shore Power[51]	–	–	–	–	–	–	Undetermined
Transportation Refrigeration Units	571	571	–	100%	–	100%	High
Vehicles & Engines							
Vehicles	104	104	–	100%	100%	100%	High
Dealer & Fleet Tampering	108	108	–	100%	100%	100%	High
Motorcycles	5	4	1	80%	67%	100%	Undetermined
Off–Highway Recreational Vehicles	27	27	–	100%	100%	100%	High
Portable Fuel Containers	164	164	–	100%	100%	100%	High
R–134a Refrigerant Cans	199	171	–	86%	85%	87%	Medium
Recreational Marine Engines	3	3	–	100%	100%	–	Undetermined
Small Off–Road Engines	182	182	–	100%	100%	100%	High

51 2021 audits still under review.

Appendix M-2

Last Available Compliance Rate for 2021 "Undetermined" Program Category

Program Category	Inspection Year(s)	Inspections	Compliant	Violation	% Compliant Total	%Compliant in non–DACs	%Compliant in DACs	Overall Compliance Rates
Consumer Products	–	–	–	–	–	–	–	–
Consumer & Aerosol Coating Products	2018–2020	1,068	887	181	83%	79%	89%	Low, Biased
Heavy Duty Vehicles	–	–	–	–	–	–	–	–
Public Agencies & Utilities	2015–2019	37	36	1	97%	100%	97%	High
SWC	2018–2020	27	21	6	78%	58%	93%	Low
Transportation Refrigeration Units	2019–2020	2,750	1,390	1,360	51%	48%	52%	Low, Biased
Railroad & Marine	–	–	–	–	–	–	–	–
Shore Power	2020	32	29	3	91%	100%	90%	Medium
Vehicles & Engines	–	–	–	–	–	–	–	–
Motorcycles	2018–2020	24	23	1	96%	94%	100%	High
Recreational Marine Engines	2019–2020	31	31	–	100%	100%	100%	High

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