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Judge: Edmunds, Nancy G.
MJ: Grand, David R.
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USA V SEALED MATTER (af)

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UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

	CRIMINAL NO.
UNITED STATES OF AMERICA,	**INDICTMENT**
v.	18 U.S.C. § 371 (Conspiracy to Defraud the United States, Violate the Clean Air Act, and Commit Wire Fraud);
EMANUELE PALMA	42 U.S.C. § 7413 (Violations of the Clean Air Act);
Defendant.	18 U.S.C. § 1343 (Wire Fraud); 18 U.S.C. § 1001 (False Statements); and 18 U.S.C. § 2 (Aiding and Abetting)

The Grand Jury charges that:

GENERAL ALLEGATIONS

At all times relevant to this Indictment:

I. RELEVANT INDIVIDUALS AND ENTITIES

A. Relevant Companies

1. Fiat Chrysler Automobiles N.V. ("FCA NV") was a motor vehicle manufacturer based in Turin, Italy. FCA US LLC, formerly Chrysler Group LLC, was a wholly owned subsidiary of FCA NV, based in Auburn Hills, Michigan (collectively, "FCA").

2. FCA's business was to design, engineer, manufacture, and sell motor vehicles worldwide, including in the United States. FCA's automotive brands

included, among others, Fiat, Chrysler, Ram, and Jeep.

3. VM Motori S.p.A. ("VM") was a diesel engine manufacturing company based in Cento, Italy, with offices in the United States, in Auburn Hills, Michigan. Beginning in 2010, FCA owned 50% of VM. Beginning in 2013, VM was a wholly owned subsidiary of FCA.

B. The Defendant

4. From in or about 2007 until in or about June 2016, defendant **EMANUELE PALMA** worked for VM. From in or about 2012 until in or about June 2016, **PALMA** was a Diesel Calibration Manager based in Auburn Hills, Michigan, and led a team of engineers that developed and calibrated diesel engines for use in FCA's vehicles. From in or about June 2016 through the present, **PALMA** worked directly for FCA as a Diesel Drivability and Emissions Senior Manager.

C. FCA's Diesel Vehicles Sold in the United States

5. Beginning in at least 2010, FCA started a program to develop a new 3.0-liter diesel engine for use in FCA's Jeep Grand Cherokee and Ram 1500 vehicles that would be sold in North America, including in the United States.

6. Between 2010 and continuing to at least 2017, FCA worked with VM to develop and calibrate the new 3.0-liter diesel engine, and to obtain regulatory approval to sell the new diesel vehicles in the United States.

7. Beginning in 2013, FCA sold, offered for sale, introduced into commerce, delivered for introduction into commerce, and imported into the United States (collectively "sold in the United States") the following vehicles with the new 3.0-liter diesel engine (the "Subject Vehicles"):

a. Model Years 2014-2016 Jeep Grand Cherokee; and

b. Model Years 2014-2016 Ram 1500.

8. During both the design phase and the marketing phase of the Subject Vehicles, FCA represented to FCA's regulators, customers, and the public that the Subject Vehicles met the relevant United States regulatory standards, including regulatory standards governing the emissions of pollutants.

D. FCA's Regulators in the United States

The Environmental Protection Agency

9. Nitrogen oxides or "NOx" are a family of poisonous gases that form when diesel or other fuels are burned at high temperatures. Motor vehicles using diesel engines may produce and emit NOx during normal vehicle operation.

10. The Environmental Protection Agency ("EPA") was an independent agency of the United States charged with implementing and enforcing standards for air quality, water quality, and individual pollutants, including NOx.

11. The Clean Air Act and its implementing regulations (collectively, "the Clean Air Act"), were designed to protect human health and the environment by,

among other things, reducing emissions of pollutants from new motor vehicles. The Clean Air Act required the EPA to promulgate standards for emissions of pollutants from new motor vehicles, including NOx.

12. In 1998, the United States established new federal emissions standards that would be implemented in separate steps, or Tiers. Tier II emissions standards, including for NOx emissions, were significantly stricter than Tier I. For light-duty vehicles, the regulations required manufacturers like FCA to begin to phase in compliance with the new, stricter Tier II NOx emissions standards in 2004, and required manufacturers like FCA to fully comply with the stricter standards for model year 2007.

13. The Clean Air Act prohibited manufacturers of new motor vehicles from selling, offering for sale, introducing or delivering for introduction into commerce, or importing (or causing the foregoing with respect to) any new motor vehicle unless the vehicle or engine (a) complied with emissions standards, including NOx emissions standards, and (b) was issued an EPA certificate of conformity ("COC") as required by the Clean Air Act.

14. The EPA used a series of federal test procedures (hereinafter, the "federal test procedures") to measure both tailpipe emissions of NOx and other pollutants, as well as fuel economy for new motor vehicles offered for sale in the United States. During these federal test procedures – commonly referred to as

driving "cycles" – motor vehicles would be placed on a device called a chassis dynamometer, which allowed the motor vehicle engine to run through simulated driving conditions while tailpipe emissions and fuel economy were tested. Each driving "cycle" was generally designed to simulate certain types of driving conditions, and to assess emissions and fuel consumption under those conditions. The EPA permitted manufacturers like FCA to conduct the required federal test procedures for new vehicles themselves, and to submit the certified results of those tests or driving "cycles" as part of their application for a COC.

15. Under the Clean Air Act, manufacturers like FCA were required to submit an application for a COC to the EPA for each model year ("MY"), and for each test group of vehicles that it intended to sell in the United States. The application was required to be in writing, to be signed by an authorized representative of the manufacturer, and to include the results of testing done pursuant to the published federal test procedures that measure NOx emissions.

16. In addition, manufacturers like FCA were required to include in the application descriptions of the engine, emissions control systems, and fuel system components, including a detailed description and justification for each Auxiliary Emission Control Device ("AECD") installed in the vehicle. An AECD was defined under the Clean Air Act as "any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other

parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system."

17. Under the Clean Air Act, if the EPA in reviewing the application for a COC, determined that an AECD "reduced the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use," and that (1) it was not substantially included in the federal test procedure, (2) the need for the AECD was not justified for protection of the vehicle against damage or accident, or (3) it went beyond the requirements of engine starting, the AECD was deemed a "defeat device." The EPA would not issue a COC for motor vehicles equipped with defeat devices.

18. After receiving a COC, manufacturers like FCA could still be required to submit to the EPA a description of any "running changes" made during the manufacturing of any certified vehicle, which included changes in vehicle or engine configuration, equipment, or calibration, which were made by the manufacturer in the course of motor vehicle or motor vehicle engine production. If the EPA determined that the vehicles affected by the "running change" did not meet the applicable standards of the EPA, the EPA could notify the manufacturer to rescind the addition or change immediately upon receipt of the notification.

The California Air Resources Board

19. As part of the process for obtaining approval to sell new vehicles,

manufacturers like FCA often worked in parallel with the EPA and the California Air Resources Board ("CARB") (collectively "FCA's Regulators"). CARB issued its own certificates, called Executive Orders, for the sale of motor vehicles in the State of California. In order to obtain an Executive Order from CARB and sell cars in the State of California, manufacturers like FCA were required to satisfy the standards set and enforced by the State of California.

20. In addition to demonstrating compliance with federal emissions standards, manufacturers like FCA were also required to demonstrate that their light-duty vehicles were equipped with an on-board diagnostic ("OBD") system capable of monitoring all emissions-related systems or components. Because CARB's OBD standards were at least equal to the federal OBD standards that were enforced and set by the EPA, manufacturers like FCA could demonstrate compliance with federal OBD standards by demonstrating compliance with CARB's OBD standards. CARB reviewed applications from manufacturers like FCA to determine whether their OBD systems were in compliance with California OBD standards, and CARB's conclusion would be included in the application manufacturers submitted to the EPA.

E. <u>FCA's Applications for the Subject Vehicles</u>

21. Between 2013 and continuing through 2016, FCA prepared and submitted applications for COCs to the EPA, and applications for Executive Orders

to CARB (collectively the "Applications"), in order to obtain authorization to sell each of the Subject Vehicles in the United States.

22. FCA's Applications to the EPA for the Subject Vehicles were accompanied by the following statement signed by an FCA representative:

> Chrysler Group LLC states that any element of design, system, or emission control device installed on or incorporated in Chrysler Group LLC new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under Section 202 of the Clean Air Act, will not, to the best of Chrysler Group LLC's information and belief, cause the emission into the ambient air of pollutants in the operation of its motor vehicles or motor vehicle engines which cause or contribute to an unreasonable risk to public health or welfare except as specifically permitted by the standards prescribed under Section 202 of the Clean Air Act. Chrysler Group LLC further states that any element of design, system, or emission control device installed on or incorporated in Chrysler Group LLC's new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under Section 202 of the Clean Air Act, will not, to the best of Chrysler Group LLC's information and belief, cause or contribute to an unreasonable risk to public safety.
>
> . . .
>
> The motor vehicles were tested in accordance with good engineering practice to ascertain that such test vehicles will meet with requirements for the useful life of the vehicle in those situations where Chrysler Group LLC had a reasonable basis for suspecting either an unsafe condition or the emission of noxious or toxic matter.
>
> . . .
>
> Chrysler Group LLC further states to the best of its knowledge and belief the test vehicles, with respect to which data are submitted, were tested in accordance with the applicable test procedures, meet the requirements of such tests, and, on the basis of such tests, conform to the requirements of the regulations.

23. Based on the representations made by FCA in the Applications for the

Subject Vehicles, including FCA's representations that all AECDs had been disclosed to FCA's Regulators, FCA's Regulators issued COCs and Executive Orders that allowed FCA to sell the Subject Vehicles in the United States.

F. The Primary Emissions Control Systems Used on the Subject Vehicles

24. Diesel-fueled motor vehicles often use a combination of emissions control systems to comply with the relevant emissions standards. The two primary emissions control systems used by FCA on the Subject Vehicles to control NOx emissions were an engine control system called "Exhaust Gas Recirculation," or "EGR," and an after-treatment system called Selective Catalytic Reduction, or "SCR."

25. EGR systems work to reduce NOx emissions by recirculating a portion of the exhaust gas back to the engine's combustion chamber, which lowers both the combustion temperature and the oxygen concentration in the chamber, and thereby reduces the formation of NOx in the engine.

26. As a general principle, an increase in the EGR rate will reduce NOx formation in the engine, but will also reduce fuel economy, while a reduction in the EGR rate will increase NOx formation in the engine, but will also have the benefit of increasing fuel economy.

27. SCR after-treatment systems work to reduce NOx emissions by removing NOx from the exhaust after combustion, but prior to emission of exhaust

from the tailpipe of the motor vehicle. SCR systems inject an ammonia solution into the exhaust stream at a calibrated dosing rate in order to produce a chemical reaction to reduce NOx to nitrogen and water.

28. The ammonia solution used by FCA in the Subject Vehicles' SCR system was known as diesel exhaust fluid ("DEF"), urea, or by its trade name, AdBlue. In the Subject Vehicles, the DEF used in the SCR system was stored in a tank, and when the SCR system used up the available DEF, the owner of the vehicle would need to refill the tank with additional DEF.

29. As a general principle, an increase in the DEF dosing rate will remove more NOx from the exhaust stream, but also increase the SCR system's consumption of DEF, while a decrease in the DEF dosing rate will remove less NOx from the exhaust stream, but also have the benefit of reducing the SCR system's consumption of DEF.

Controlling the EGR Rate on the Subject Vehicles

30. During the design of the diesel engine used in the Subject Vehicles, **PALMA** and others calibrated a software feature known as "T_Eng" to control the engine's EGR rate. By using T_Eng and other methods to control the engine's EGR rate, **PALMA** and others decided when and under what conditions the engine would produce higher NOx emissions with higher fuel economy, and when and under what conditions the engine would produce lower NOx emissions with lower fuel

economy.

Controlling the SCR Dosing Rate on the Subject Vehicles

31. Also during the design of the diesel engine used in the Subject Vehicles, **PALMA** and others calibrated software features known as "Standard Dosing" and "Online Dosing" to control the SCR system's DEF dosing rate. These two different dosing modes were calibrated based on judgments made by **PALMA** and others involved in the development of the engine. By using two different dosing modes to control the DEF dosing rate, **PALMA** and others decided when and under what conditions the SCR system would produce higher NOx emissions with reduced DEF consumption, and when and under what conditions the SCR system would produce lower NOx emissions with higher DEF consumption.

II. THE SCHEME

A. Overview of the Scheme

32. From in or around at least December 2011 and continuing through in or around at least April 2017, **PALMA**, and others, known and unknown to the Grand Jury, did knowingly, intentionally, and willfully combine, conspire, and confederate, and did agree, to mislead FCA's Regulators, customers, and the public, by making and causing others to make false and misleading representations about (a) the design, calibration, and function of the emissions control systems used on the Subject Vehicles, and (b) the emissions of pollutants from the Subject Vehicles.

B. Purpose of the Scheme

33. The purpose of the scheme was for **PALMA** and his co-conspirators to (a) make and cause others to make false and misleading representations to FCA's Regulators in order to obtain regulatory approval to sell the Subject Vehicles in the United States; (b) make and cause others to make false and misleading representations to FCA's customers and the public in an effort to increase sales and promote the Subject Vehicles; and (c) enrich themselves through the continued receipt of compensation and other benefits.

C. Description of the Scheme

34. In order to mislead FCA's Regulators, customers, and the public about (a) the design, calibration, and function of the emissions control systems used on the Subject Vehicles, and (b) the emissions of pollutants from the Subject Vehicles, **PALMA** and his co-conspirators used a variety of manner and means to accomplish their unlawful purpose. As set forth below, **PALMA** and his co-conspirators purposefully calibrated the EGR and SCR systems on the Subject Vehicles to produce less NOx emissions on the federal test procedures than when the Subject Vehicles were being driven by FCA's customers in the real world. **PALMA** and his co-conspirators then engaged in deceptive and fraudulent conduct to conceal the emissions impact and function of the emissions control systems from FCA's Regulators, customers, and the public, by (a) submitting false and misleading

Applications to FCA's Regulators, (b) making false and misleading representations to FCA's Regulators both in-person and in response to written requests for information, and (c) causing false and misleading representations to be made to the public about the Subject Vehicles, including that the Subject Vehicles were equipped with fuel efficient "clean EcoDiesel engine[s]" that reduced emissions, and were environmentally-friendly.

35. ***First***, **PALMA**, and his co-conspirators purposefully calibrated the emissions control system to produce (a) lower NOx emissions under conditions when the Subject Vehicles would be undergoing testing on the federal test procedures or driving "cycles," and (b) higher NOx emissions under conditions when the Subject Vehicles would be driven in the real world, and not subjected to testing on the federal test procedures or driving "cycles."

36. By calibrating the emissions control system on the Subject Vehicles to produce lower NOx emissions while the vehicles were on the driving "cycle," and higher NOx emissions when the vehicles were off the driving "cycle," or "off cycle," **PALMA** and his co-conspirators purposefully misled FCA's Regulators by making it appear that the Subject Vehicles were producing less NOx emissions than when operated in real world driving conditions.

37. With respect to the EGR system used in the Subject Vehicles, **PALMA** and his co-conspirators calibrated the T_Eng software to lower NOx emissions by

increasing the EGR rate when the vehicles were being tested for emissions on the federal driving "cycle." Conversely, when the Subject Vehicles were undergoing other portions of the federal test procedures, such as when the vehicles were being tested for fuel economy, or when the Subject Vehicles were "off cycle," *i.e.* not undergoing federal testing but instead being driven by FCA's customers, **PALMA** and his co-conspirators increased the NOx emissions of the Subject Vehicles by using the T_Eng software and other methods to lower the EGR rate.

38. Moreover, because **PALMA** and his co-conspirators purposefully lowered the EGR rate during the portion of the federal test procedures that measured fuel economy, **PALMA** and his co-conspirators obtained a favorable fuel economy rating from FCA's Regulators, in an effort to make the Subject Vehicles more attractive to FCA's potential customers, while also passing the emissions tests. **PALMA** and his co-conspirators referred to the manner in which they manipulated the EGR rate using the T_Eng software as "cycle detection."

39. With respect to the SCR system used in the Subject Vehicles, **PALMA** and his co-conspirators calibrated the SCR system to produce lower NOx emissions by increasing the DEF dosing rate when the vehicles were being tested for emissions on the federal driving "cycle." Conversely, when the Subject Vehicles were "off cycle," *i.e.* not undergoing federal testing but instead being driven by FCA's customers, **PALMA** and his co-conspirators designed the Subject Vehicles to emit

higher levels of NOx by reducing the DEF dosing rate. **PALMA** and his co-conspirators purposefully reduced the DEF dosing rate "off cycle" in order to increase the number of miles the Subject Vehicles could be driven before the DEF tank would need to be refilled, in an effort to make the vehicles more attractive to FCA's potential customers, while also passing the emissions tests. **PALMA**, his co-conspirators, and others, referred to the increased DEF dosing rate when the Subject Vehicles were "on cycle" as "Standard Dosing," and the reduced DEF dosing rate when the Subject Vehicles were "off cycle" as "Online Dosing."

40. ***Second***, because **PALMA** and his co-conspirators knew that their decision to calibrate the emissions control system used on the Subject Vehicles to perform differently "on cycle" versus "off cycle" would be subjected to significant scrutiny by FCA's Regulators, **PALMA** and his co-conspirators made and caused others to make false and misleading representations to FCA's Regulators in order to ensure that they obtained regulatory approval to sell the Subject Vehicles in the United States.

41. Specifically, because disclosure of these emissions control strategies carried a risk that FCA's Regulators would not agree that these strategies, and the resulting increase in NOx emissions, were justified under the relevant regulations, **PALMA** and his co-conspirators concealed that they had calibrated the EGR rate and DEF dosing rates on the Subject Vehicles to perform differently "on cycle"

versus "off cycle." **PALMA** and his co-conspirators also concealed that they did not calibrate the emissions control systems used in the Subject Vehicles to maximize the reduction of NOx emissions, but instead calibrated the emissions control systems to increase emissions under conditions that they believed would make the Subject Vehicles more attractive to FCA's potential customers, *i.e.*, by increasing fuel economy and reducing the SCR system's DEF consumption.

42. In order to prevent FCA's Regulators from reviewing and understanding the true impact of the emissions control system used on the Subject Vehicles, **PALMA** and his co-conspirators engaged in deceptive and fraudulent conduct, including (a) concealing from FCA's Regulators their manipulation of EGR rates and their use of two different DEF dosing modes, (b) making false and misleading representations to FCA's Regulators in the Applications submitted for the Subject Vehicles, and (c) making false and misleading representations to FCA's Regulators during in-person meetings that were held for the purpose of discussing the emissions control system used in the Subject Vehicles.

43. ***Third***, **PALMA** and his co-conspirators deceived and caused others to deceive FCA's customers and the public through claims that the Subject Vehicles had "clean EcoDiesel engines," and that the Subject Vehicles were fully approved and certified by FCA's Regulators, when they knew in reality that FCA's Regulators had authorized the sale of the Subject Vehicles, and approved the emissions control

system used on the Subject Vehicles based, in part, on the false and misleading representations **PALMA** and his co-conspirators made and caused others to make in the Applications.

Deceptive and Fraudulent Conduct to Conceal the Function of T_Eng and the Emissions Impact of EGR Rate Changes

44. After introducing T_Eng as a "cycle detection" strategy into the design of the Subject Vehicles, **PALMA** and his co-conspirators began to discuss potential false and fraudulent excuses they could use with FCA's Regulators to justify the T_Eng function if it were disclosed during the Application process. For example, in January 2012, one of **PALMA**'s co-conspirators emailed **PALMA** and others about T_Eng, writing, "Surely our approach will not be accepted by CARB because [it] is clearly aimed at cycle recognition. The[] only way to use it is to justify it as an aid for proper engine performance, e/g/. for cold-start or, anyway, during warmup."[1] **PALMA**'s supervisor agreed, writing back that "[c]learly, t_engine, as is, seems to be a cycle recognition. Instead, I think that it could be justified as an optimization of engine operation during warm-up." **PALMA**'s supervisor then admonished **PALMA**, his co-conspirators, and others to "not call it cycle recognition, not even among us."

45. Approximately one month later, **PALMA** and his co-conspirators

[1] Some of the emails quoted in this Indictment have been translated from Italian to English.

discussed using another false excuse with FCA's Regulators to justify T_Eng – that the EGR rate was being ramped down during the federal test procedures as the efficiency of the SCR system improved and the engine warmed up – which led **PALMA**'s supervisor to proclaim, "Nice []! We will 'baptize' t-engine as an efficiency factor of the SCR system."

46. Eventually, **PALMA** and his co-conspirators decided to not even try to falsely justify the T_Eng function and the impact it had on the EGR rate in the Applications submitted to FCA's Regulators, choosing instead to simply not disclose the T_Eng function at all. In an email sent in June 2013 as FCA was preparing the Applications for the Subject Vehicles, one of **PALMA**'s co-conspirators emailed **PALMA** and others to discuss this new strategy, writing, "[I]n the CERT docs tEngine is not mentioned, since if CARB found [out] about that it would be probably considered as cycle beating. On the other side, the cert docs need to reflect the actual enable conditions, so even not mentioning explicitly t engine we could get questions and maybe they could [find out] about it." The next day, **PALMA** wrote to his co-conspirators, and others, "I would like to have the strategy active but I don't want to disclose the t engine[.]"

47. In another email sent in June 2013 as FCA was preparing the Applications for the Subject Vehicles, one of **PALMA**'s co-conspirators emailed **PALMA** and others, writing, "[A]ttached [is] the latest revision of the AECD with

the new cal[ibration]. . . . The only strategies mentioned for the EGR are correction based on environmental temperature and pressure, nothing that in my opinion could put us in trouble. Other than that, we are discussing mainly shut off conditions. There's no mention of the t engine in the AECD."

48. Even after submitting an Application for the Subject Vehicles, **PALMA** and his co-conspirators continued to mislead FCA's Regulators by concealing both the T_Eng function and the manner in which they were manipulating the EGR rate "off cycle."

49. For example, the Subject Vehicles initially included T_Eng as an input condition to several OBD monitors, meaning that the OBD system had been calibrated to use T_Eng to determine whether the vehicle was working properly. However, because OBD monitor input conditions were required to be disclosed to FCA's Regulators, **PALMA** and his co-conspirators implemented software changes to remove T_Eng as an OBD monitor input condition solely to avoid potential disclosure of T_Eng in FCA's OBD certification documents. In March 2014, **PALMA** explained this strategy in an email he sent to his co-conspirators, and others, writing, "MY15 current cal has tEng as an enable condition for RHU, all the enable conditions should be disclosed in the cert docs. tEng is not disclosed in the MY14/15 docs and that shouldn't be changed[.]"

<u>Deceptive and Fraudulent Conduct to Conceal the Emissions Impact and Function of Online Dosing</u>

50. **PALMA** and his co-conspirators calibrated the Online Dosing mode so that it would not activate during the federal test procedures, meaning that the Subject Vehicles were always in Standard Dosing mode during the portion of the federal test procedures that tested the Subject Vehicles' emissions.

51. The reason for using two different DEF dosing modes in the SCR system of the Subject Vehicles was to reduce DEF consumption "off cycle," with the associated increase in NOx emissions occurring "off cycle," as described in an email sent by one of **PALMA**'s co-conspirators:

> In brief, there are two strategies for injecting urea in the SCR: standard dosing and online dosing.
>
> Standard dosing is what you do on cycle to obtain maximum NOx conversion efficiency.
>
> In theory, online dosing is used under particular conditions (e.g.: very high SCR temperatures) in which we know that the exhaust is not as efficient as it should be. So if we inject based on standard dosing under these conditions, the urea would not convert the NOx but would escape from the SCR (urea slip). In reality, we use online dosing as soon as we can off-cycle to consume less urea.

52. **PALMA** and his co-conspirators were concerned that FCA's Regulators would not find their goal of reducing DEF consumption to make the Subject Vehicles more attractive to FCA's customers to be a valid or appropriate justification for increasing NOx emissions "off cycle." In February 2013, **PALMA** acknowledged these concerns in an email he sent to his co-conspirators and others, writing, "DEF consumption is a functional objective, dealing with CARB/EPA is

clearly a higher level priority. In other words we cannot say we run very low dosing 'off cycle' because we want to meet the agreed refill change interval."

53. Due to these concerns, **PALMA** and his co-conspirators began to discuss potential false and fraudulent excuses they could use with FCA's Regulators to justify their Online Dosing strategy. One such false and fraudulent justification for using Online Dosing to control DEF consumption discussed by **PALMA** and his co-conspirators was to tell FCA's Regulators that the Online Dosing mode was being used to prevent a condition they called "ammonia slip," or "NH_3 slip," meaning that the DEF solution could pool and ultimately leak out of the tail pipe of the vehicle.

54. For example, in May 2012, **PALMA** received an email with the subject "ADBLUE CONSUMPTION," in which a proposal was discussed to simultaneously reduce SCR dosing and the EGR rate in the Subject Vehicles during "off cycle" conditions. **PALMA** responded by asking, "[H]ow do we explain to EPA/CARB that we close the EGR and reduce dos[ing] at high speed? It will never fly[.]" In response, one of **PALMA**'s co-conspirators wrote that they could tell FCA's Regulators that the "(official) purpose for reducing EGR is to lower temperature at the Inlet Manifold. Lowering AdBlue will be explained as a protection against NH3 leaks (very probable at high NOx concentration, high volume of exhaust gases, and high temperatures)."

55. However, testing of the SCR system used on the Subject Vehicles,

which was conducted in late February and early March 2013 and provided to **PALMA** and his co-conspirators, showed no evidence of NH_3 slip in either Standard Dosing or Online Dosing modes.

56. In fact, **PALMA** himself acknowledged that FCA considered the Online Dosing strategy "borderline as it's not justified by a real need other than to minimize the [DEF] consumption."

57. **PALMA** and other co-conspirators even discussed that Online Dosing was potentially a defeat device. In March 2013, **PALMA** and other co-conspirators circulated via email a 14-year-old press release regarding an $83.4 million settlement between diesel-engine manufacturers and the EPA for "illegal 'defeat devices,' which allow an engine to pass the EPA emissions test, but then turn off emission controls during highway driving." In the email circulating the press release, one of **PALMA**'s co-conspirators simply wrote, "Speaking of online dosing . . ."

58. Eventually **PALMA** and his co-conspirators decided to not even try to falsely justify the Online Dosing function to FCA's Regulators, choosing instead to simply conceal its existence by not disclosing the Online Dosing function at all.

59. **PALMA** and his co-conspirators also made false and misleading representations in the Applications submitted by FCA to FCA's Regulators in 2014, 2015, and 2016, about whether the SCR system as calibrated was capable or even designed to compensate for the increase in NOx emissions caused by a decrease in

disclosed EGR rates.

Deceptive and Fraudulent Conduct to Conceal the Emissions Impact and Function of the Valve Train Cleaning Routine

60. The valve train cleaning routine was a timer based software strategy used on the Subject Vehicles that initiated after 30 minutes of engine operation to shut off the EGR system for five minutes.

61. **PALMA**, his co-conspirators, and others, implemented the valve train cleaning routine in or around July 2013, after they encountered an issue related to engine shudder in the Subject Vehicles, which caused the vehicles to noticeably shake. VM identified the cause of the engine shudder as an accumulation of soot deposits on the exhaust valve stems, which could cause the valves to close too slowly, or become stuck all together, and determined that running the engine with the EGR rate reduced to zero corrected the shudder problem.

62. On or about July 13, 2013, **PALMA**'s co-conspirator proposed setting the activation timer for the valve train cleaning routine at 30 minutes, in order to avoid the possibility that the routine would run during any portion of the federal test procedures. The 30-minute activation time was explained in an email sent to **PALMA** from **PALMA**'s co-conspirator as representing the longest time the engine would be on the driving "cycle" for certification purposes, which was a total of 1545 seconds, plus a "10% safety margin," which totaled 28 minutes. **PALMA**'s co-conspirator concluded, "This means that for any driving cycle (key on) longer than

28 [minutes] (I would set it to 30 [minutes]) the egr can be closed for . . . . tbd[.]"

63. Following the implementation of the valve train cleaning routine, **PALMA** and his co-conspirators learned that the SCR system was consistently in Online Dosing mode during the routine, which could significantly reduce the SCR system's ability to neutralize the additional NOx generated from the complete closure of the EGR system. As one of **PALMA**'s co-conspirators explained in July 2013, "Obviously, if you close the EGR and do more NOx and you are in online dosing, there is no hope that the extra NOx you do gets consumed by the SCR…"

64. In an effort to obtain approval from FCA's Regulators for the MY15 Subject Vehicles, **PALMA** caused FCA to provide false and misleading information in response to questions from CARB about the valve train cleaning routine. For example, when CARB asked why the routine did not initiate until 30 minutes after the engine started, **PALMA** caused FCA to falsely state that "the time to initiate this cleaning routine [was] based on the time to fully warm the engine[,]" and that FCA "sampled various startup coolant temperatures and driving cycles to determine the optimum time to enable the cleaning routine."

65. **PALMA** also participated in a meeting with CARB to discuss the valve train cleaning routine on October 7, 2014. Prior to the meeting, **PALMA** prepared data regarding the emissions impact of the routine when it was run on one of the federal test cycles, which was shared with CARB. An explanation accompanying

the data claimed that due to increases in SCR dosing when the valve train cleaning routine activated, the data showed "no extra tailpipe NOx while EGR is off due to SCR compensation activity." However, neither the data, nor the narrative, disclosed the existence of Online Dosing, and its negative impact on the SCR system's ability to compensate for the increase in NOx emissions when the valve train cleaning routine was run "off cycle."

66. After receiving **PALMA**'s false explanation regarding the timing of the routine's initiation and misleading emissions data, CARB approved the application for the MY15 Subject Vehicles.

67. On or about September 27, 2015, **PALMA** conducted emissions testing based on a protocol he designed to simulate road emissions, which included the test vehicle running continuously for more than 35 minutes. **PALMA** shared the results of that testing internally at FCA, which **PALMA** explained showed that NOx emissions were "clearly higher" when the valve train cleaning routine was running. However, when **PALMA** and his co-conspirators disclosed the valve train cleaning routine to the EPA in or around November 2015, they falsely claimed and caused others to falsely claim that "the NOx emission level of the vehicle is not expected to increase."

Deceptive and Fraudulent Conduct Related to FCA's Customers and the Public

68. Having obtained the necessary authorization from FCA's Regulators to

sell the Subject Vehicles in the United States, **PALMA** and his co-conspirators caused the Subject Vehicles to be marketed to FCA's customers and the public through false and misleading statements about the Subject Vehicles, including that they used fuel efficient "clean EcoDiesel engine[s]" that reduced emissions and were environmentally-friendly. FCA's marketing strategy for the EcoDiesel included targeting "green-conscious" customers by touting the fuel efficiency of the Subject Vehicles, and claiming that the Jeep Grand Cherokee EcoDiesel was the "cleanest diesel" engine in its class. **PALMA** and his co-conspirators knew that these representations were false and misleading, that FCA's diesel vehicles were polluting the environment in violation of federal regulations, and that the authorization to sell the Subject Vehicles had been obtained, in part, through false and misleading misrepresentations they had made to FCA's Regulators.

Deceptive and Fraudulent Conduct During Meetings with FCA's Regulators

69. In or around September 2015, the EPA notified FCA that it would perform additional emissions testing "using driving cycles and conditions that may reasonably be expected to be encountered in normal operation and use, for the purpose of investigating a potential defeat device."

70. **PALMA** began assisting FCA with its response to the EPA testing, including by drafting written responses to EPA questions, gathering and presenting emissions data, and attending meetings and answering questions from the EPA about

the emissions control system used on the Subject Vehicles.

71. **PALMA** made and caused to be made false and misleading representations to the EPA, including false and misleading misrepresentations about the purpose, function, and emissions impact of (a) T_Eng, (b) "Online Dosing," and (c) the valve train cleaning routine. For example, in preparation for a meeting that was held on or about June 29, 2016 between FCA and FCA's Regulators, **PALMA** assisted in the preparation of a PowerPoint presentation, including by drafting specific slides, that purported to explain the reasons why certain emissions control functions had been used in the Subject Vehicles, including T_Eng, Online Dosing, and the valve train cleaning routine ("the PowerPoint Presentation"). During the meeting, which **PALMA** attended, numerous false and misleading representations which were contained within the PowerPoint Presentation were given to FCA's Regulators, including that:

a. T_Eng was a proxy for SCR temperature, based on experience with previous engine development and existing software module;

b. Online Dosing was utilized to reduce risk of ammonia slip and to protect the catalyst from condensed (liquid) ammonia;

c. Online Dosing was activated to deplete the catalyst and avoid ammonia slip under conditions where additional DEF dosing would only marginally improve NOx conversion efficiency;

d. the initiation of the valve train cleaning routine 30 minutes after the start of the engine was based on "engineering judgment to balance risks;"

e. the valve train cleaning routine lasts five minutes based on testing; and

f. the SCR effectively controls NOx emissions during a substantial portion of normal driving during the valve train cleaning routine.

72. During the June 29, 2016 meeting, **PALMA** also personally provided false and misleading representations in response to several questions from FCA's Regulators, including that the valve train cleaning routine was initiated after 30 minutes based on testing and analysis.

III. THE CHARGES

COUNT I

Conspiracy to Defraud the United States, Violate the Clean Air Act, and Commit Wire Fraud (18 U.S.C. § 371)

73. Paragraphs 1 through 72 of this Indictment are realleged and incorporated by reference as though fully set forth herein.

74. From at least in or about 2010 and continuing through at least in or about April 2017, in Oakland County, within the Eastern District of Michigan, and elsewhere, the defendant **EMANUELE PALMA**, and others known and unknown to the Grand Jury, did knowingly, intentionally, and willfully combine, conspire, and confederate and did agree to:

a. defraud the United States by impairing, impeding, obstructing, and defeating a lawful function of the federal government, that is, the U.S. EPA's function of implementing and enforcing emissions standards for air pollutants for new motor vehicles under the Clean Air Act, by deceitful and dishonest means, in violation of 18 U.S.C. § 371;

b. violate the Clean Air Act, by making, and causing to be made, false material statements, representations, and certifications in, and omitting and causing to be omitted material information from, notices, applications, records, reports, plans, and other documents required pursuant to the Clean Air Act to be filed and maintained, in violation of 42 U.S.C. § 7413(c)(2)(A); and

c. commit wire fraud, that is, knowingly, willfully, and with the intent to defraud, having devised and intending to devise a scheme and artifice to defraud and to obtain money and property by means of materially false and fraudulent pretenses, representations, and promises, transmit and cause to be transmitted by means of wire, radio, and television communication, writings, signs, signals, pictures, and sounds in interstate and foreign commerce for the purpose of executing such scheme and artifice in violation of 18 U.S.C. § 1343.

THE PURPOSE OF THE CONSPIRACY

75. The Grand Jury realleges and incorporates by reference paragraph 33 as a description of the purpose of the conspiracy.

MANNER AND MEANS OF THE CONSPIRACY

76. The Grand Jury realleges and incorporates by reference paragraphs 34 through 72 as a description of the manner and means of the conspiracy.

OVERT ACTS

77. In furtherance of the conspiracy and to achieve its objects and purpose, at least one of the co-conspirators committed and caused to be committed, in the Eastern District of Michigan, and elsewhere, the following overt acts, among others:

78. On or about December 19, 2011, **PALMA** provided a plan to increase fuel efficiency in the Subject Vehicles by implementing a vehicle speed correction to EGR that would not affect the federal test procedures and by implementing T_Eng into the calibration.

79. On or about January 8, 2012, one of **PALMA**'s co-conspirators sent an email to **PALMA** and others acknowledging that T_Eng was being used as cycle detection, suggesting justifying T_Eng as "optimization of engine operations during warm-up," and giving instructions not to call T_Eng "cycle recognition."

80. On or about May 27, 2013, one of **PALMA's** co-conspirator's sent an email to **PALMA**, writing, "So we have the solution: a lot of cycle recognition with t_engine[.] It's just a question of understanding if we are to be sent home, or if

[another co-conspirator] is to go to jail: I would say the 2nd."

81. On or about June 18, 2013, one of **PALMA's** co-conspirator's sent an email to **PALMA** and others writing, "[I]n the CERT docs tEngine is not mentioned, since if CARB found [out] about that it would be probably considered as cycle beating. On the other side, the cert docs need to reflect the actual enable conditions, so even not mentioning explicitly t engine we could get questions and maybe they could [find out] about it."

82. On or about June 19, 2013, **PALMA** sent an email to his co-conspirators writing, "I would like to have the strategy active but I don't want to disclose the t engine [to FCA's Regulators]."

83. On or about July 28, 2013, **PALMA** and his co-conspirators received an email discussing the accuracy of the AECD disclosures that were being submitted to FCA's Regulators, which said, "I am convinced we all know what is written in the AECD is not transparent[.]"

84. On or about March 10, 2014, one of **PALMA's** co-conspirators sent an email to **PALMA** and others proposing a software change in the OBD system used on the Subject Vehicles in order to avoid disclosing T_Eng to FCA's Regulators.

85. On or about October 1, 2014, in response to a question asking why FCA waited 30 minutes to run the valve train cleaning routine, **PALMA** caused FCA to falsely tell CARB it "chose the time to initiate this cleaning routine based on the

time to fully warm the engine."

86. On or about October 7, 2014, **PALMA** caused FCA to email to CARB emissions data related to the valve train cleaning routine, and described it as depicting "no extra tailpipe NOx while EGR is off due to SCR compensation activity."

87. On or about December 23, 2014, **PALMA** caused FCA to submit to FCA's Regulators the final MY14 Common Application for the Subject Vehicles that contained false and misleading representations.

88. On or about February 26, 2015, **PALMA** caused FCA to submit to FCA's Regulators the initial MY16 Common Application for the Subject Vehicles that contained false and misleading representations.

89. On or about November 17, 2015, **PALMA** caused FCA to submit to FCA's Regulators an AECD list for the MY14 Subject Vehicles that contained false and misleading representations.

90. On or about November 24, 2015, **PALMA** caused FCA to submit to FCA's Regulators an AECD list for its MY15 COC application that contained false and misleading representations.

91. On or about November 23, 2015, **PALMA** caused FCA to submit to FCA's Regulators an AECD list for its MY16 COC application that contained false and misleading representations.

92. On or about November 25, 2015, **PALMA** participated in a meeting with the EPA where he concealed the function and emissions impact of T_Eng and Online Dosing, and claimed that the valve train cleaning routine had no impact on emissions.

93. On or about March 4, 2016, **PALMA** caused FCA to submit to FCA's Regulators the final MY15 Common Application for the Subject Vehicles that contained false and misleading representations.

94. On or about June 29, 2016, **PALMA** caused FCA to make false and misleading representations to FCA's Regulators, including that T_Eng was a "proxy" for SCR temperature, that Online Dosing was utilized to reduce the risk of ammonia slip, and that the timing of the valve train cleaning routine was based on engineering judgment and testing.

95. On or about April 21, 2017, **PALMA** caused FCA to submit a response to one of the EPA's requests for information about the Subject Vehicles that contained material misrepresentations and omissions about T_Eng.

All in violation of Title 18, United States Code, Section 371.

COUNTS II THROUGH VII

Violations of the Clean Air Act (42 U.S.C. § 7413(c)(2)(A))

96. Paragraphs 1 through 72 and 78 through 95 of this Indictment are realleged and incorporated by reference as though fully set forth herein.

97. On or about the dates specified as to each count below, in Oakland

County, within the Eastern District of Michigan, and elsewhere, the defendant **EMANUELE PALMA**, aided and abetted by others known and unknown, did knowingly make and cause to be made, false material statements, representations, and certifications in, and omit and cause to be omitted material information from, and knowingly altered, concealed, and failed to file and maintain, notices, applications, records, reports, plans, and other documents required pursuant to the Clean Air Act to be filed and maintained with the EPA.

Count	Approximate Date	Title of Document as Submitted
2	December 23, 2014	2014 MY Common Final-Application for Certification-Final End of Model Year Application
3	February 26, 2015	Application to EPA Model Year 2016 for the Jeep Grand Cherokee Diesel and Ram 1500 Diesel (Test Group GCRXT03.05PV)
4	November 17, 2015	2014MY Certification Support Document for AECD Information
5	November 23, 2015	MY2016 Certification Support Document for AECD Information
6	November 24, 2015	2015 MY Certification Support Document for AECD Information
7	March 4, 2016	2015 MY Common Final Application

All in violation of 42 U.S.C. § 7413(c)(2)(A) and 18 U.S.C. § 2.

COUNTS VIII THROUGH XI

Wire Fraud (18 U.S.C. §§ 1343 and 2)

98. Paragraphs 1 through 72 and 78 through 95 of this Indictment are realleged and incorporated by reference as though fully set forth herein.

99. From at least in or around 2010 through at least in or around April 2017,

in Oakland County, within the Eastern District of Michigan and elsewhere, the defendant **EMANUELE PALMA**, aided and abetted by others known and unknown, did knowingly, willfully, and with the intent to defraud, having devised and intending to devise a scheme and artifice to defraud, and to obtain money and property by means of materially false and fraudulent pretenses, representations, and promises, knowing such pretenses, representations, and promises were false and fraudulent when made, transmit and cause to be transmitted, by means of wire, radio, and television communication, writings, signals, pictures, and sounds in interstate and foreign commerce for the purposes of executing such scheme and artifice.

PURPOSE OF THE SCHEME AND ARTIFICE TO DEFRAUD

100. The Grand Jury realleges and incorporates by reference paragraph 33 of this Indictment as though fully set forth herein as a description of the purpose of the scheme and artifice.

THE SCHEME AND ARTIFICE TO DEFRAUD

101. The Grand Jury realleges and incorporates by reference paragraphs 34 through 72 of this Indictment as though fully set forth herein as a description of the scheme and artifice.

USE OF THE WIRES

102. On or about the dates specified as to each count below, the defendant **EMANUELE PALMA**, in Oakland County, within the Eastern District of Michigan and elsewhere, for the purpose of executing the aforesaid scheme and artifice to

defraud, and attempting to do so, did knowingly transmit and cause to be transmitted, by means of wire, radio, and television communication, writings, signals, pictures, and sounds in interstate and foreign commerce for the purposes of executing such scheme and artifice, as set forth below:

Count	Approximate Date	Description of Wire Communication
8	October 1, 2014	Email from **PALMA** to co-conspirators and others forwarding information provided to CARB.
9	October 3, 2014	Email from **PALMA** to a co-conspirator describing the valve train cleaning routine.
10	December 1, 2015	Email caused to be sent by **PALMA** to FCA's Regulators concerning the Subject Vehicles' emissions control system.
11	June 24, 2016	Email from **PALMA** attaching a draft of a PowerPoint Presentation provided to FCA's Regulators.

All in violation of Title 18, United States Code, Sections 1343 and 2.

COUNTS XII THROUGH XIII

False Statements (18 U.S.C. § 1001(a))

103. The Grand Jury realleges and incorporates by reference paragraphs 1 through 72 and 78 through 95 of this Indictment as though fully set forth herein.

104. On or about the dates specified as to each count below, in Oakland County, within the Eastern District of Michigan, and elsewhere, the defendant **EMANUELE PALMA**, in a matter within the jurisdiction of the executive branch of the Government of the United States, to wit: the Federal Bureau of Investigation ("FBI"), and the United States Environmental Protection Agency, Criminal

Investigation Division ("EPA-CID"), knowingly and willfully (1) falsified, concealed, and covered up by trick, scheme, and device a material fact, and (2) made materially false, fictitious, and fraudulent statements and representations as follows:

Count	Approximate Date	False Statement(s)
12	August 3, 2016	During an interview with the FBI and EPA-CID, **PALMA** falsely stated that one of the reasons the T_Eng was introduced was to contain soot emissions and resolve "engine shudder."
13	August 3, 2016	During an interview with the FBI and EPA-CID, **PALMA** falsely stated that there was never an attempt to calibrate the Subject Vehicles in a way that there was "cycle recognition" and when the "cycle" is over there were no longer emissions controls.

All in violation of Title 18, United States Code, Section 1001(a).

THIS IS A TRUE BILL.

/s/ Grand Jury Foreperson
Grand Jury Foreperson

MATTHEW SCHNEIDER
United States Attorney
Eastern District of Michigan

JEAN E. WILLIAMS
Deputy Assistant Attorney General
Environment & Natural Resources Division

/s/ John K. Neal
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Trial Attorneys

Dated: September 18, 2019

ORIGINAL

United States District Court Eastern District of Michigan	**Criminal Case Cover**

Case:2:19-cr-20626
Judge: Edmunds, Nancy G.
MJ: Grand, David R.
Filed: 09-18-2019 At 03:08 PM
USA V SEALED MATTER (af)

NOTE: It is the responsibility of the Assistant U.S. Attorney signing this form to complete it accurately in all respects.

Companion Case Information	**Companion Case Number:**
This may be a companion case based upon **LCrR 57.10 (b)(4)**[1]:	**Judge Assigned:**
☐ Yes ☒ No	**AUSA's Initials:** TW

Case Title: USA v. Emanuele Palma

County where offense occurred : Oakland

Check One: ☒**Felony** ☐**Misdemeanor** ☐**Petty**

✓ Indictment/____Information --- **no** prior complaint.
____Indictment/____Information --- based upon prior complaint [**Case number:**]
____Indictment/____Information --- based upon **LCrR 57.10 (d)** ***[Complete Superseding section below]***.

Superseding Case Information

Superseding to Case No: _____ **Judge:** _____

☐ Corrects errors; no additional charges or defendants.
☐ Involves, for plea purposes, different charges or adds counts.
☐ Embraces same subject matter but adds the additional defendants or charges below:

Defendant name	**Charges**	**Prior Complaint (if applicable)**

Please take notice that the below listed Assistant United States Attorney is the attorney of record for the above captioned case.

September 18, 2019
Date

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[1] Companion cases are matters in which it appears that (1) substantially similar evidence will be offered at trial, or (2) the same or related parties are present, and the cases arise out of the same transaction or occurrence. Cases may be companion cases even though one of them may have already been terminated.