

Any finding of fact that should be construed as a conclusion of law is hereby adopted as such. Any conclusion of law that should be construed as a finding of fact is hereby adopted as such.

I. BACKGROUND

On December 13, 2010, Plaintiffs Environment Texas Citizen Lobby, Inc. (“Environment Texas”) and Sierra Club (“Sierra Club”) (collectively, “Plaintiffs”) brought suit under the citizen suit provision of the federal Clean Air Act (the “CAA”), 42 U.S.C. § 7604, against Defendants ExxonMobil Corporation, ExxonMobil Chemical Company, and ExxonMobil Refining and Supply Company (collectively, “Exxon”). The case concerns Exxon’s operation of a refinery, olefins plant, and chemical plant located in Baytown, Texas (the “Complex”), which is a suburb of Houston and within Harris County. Plaintiffs seek a declaratory judgment, penalties,³ injunctive relief, and appointment of a special master for events at the Complex involving unauthorized air emissions or deviations from one of the Complex’s air permits, during a period spanning from October 14, 2005, to September 3, 2013.

³ Plaintiffs originally requested \$1,023,845,000 in penalties, but they later reduced their request to \$642,697,500 to account for overlapping violations alleged in the various counts of the complaint.

II. FINDINGS OF FACT

The following facts have been established by a preponderance of the evidence:

A. Exxon and the Complex

1. ExxonMobil Chemical Company and ExxonMobil Refining and Supply Company are wholly owned subsidiaries of ExxonMobil Corporation.⁴ ExxonMobil Corporation is the largest publicly traded oil company in the world as measured by market evaluation.⁵ In addition, it is one of the largest publicly traded companies in the world measured by both revenue and market capitalization.⁶ Total after-tax profits of ExxonMobil Corporation were \$41 billion in 2011 and \$44 billion in 2012.⁷

2. Exxon owns and operates the Complex, which consists of a refinery, olefins plant, and chemical plant.⁸ The Complex is one of the largest and most

⁴ *Defendant ExxonMobil Corporation, ExxonMobil Chemical Company, and ExxonMobil Refining and Supply Company's Original Answer*, ¶¶ 12–13.

⁵ *Trial Transcript* at 5-61:6–9.

⁶ *Trial Transcript* at 5-60:5–21.

⁷ *Trial Transcript* at 5-61:11–13.

⁸ *Defendant ExxonMobil Corporation, ExxonMobil Chemical Company, and ExxonMobil Refining and Supply Company's Original Answer*, ¶¶ 11–13.

complex industrial sites in the United States.⁹ Specifically, it is the largest petroleum and petrochemical complex in the United States.¹⁰ It sits on approximately 3,400 acres, with a circumference of approximately 13.6 miles.¹¹ It has the capacity to process more than 550,000 barrels of crude oil per day and to produce about 13 billion pounds of petrochemical products each year.¹² These products range from jet fuel to plastic.¹³ The Complex has a vast array of equipment, including roughly 10 thousand miles of pipe, 1 million valves, 2,500 pumps, 146 compressors, and 26 flares.¹⁴ It employs over 5,000 people.¹⁵

3. The Complex is located in Baytown, Texas, which is a suburb of Houston. The nearby area in which the Complex operates is populated with numerous other refineries, petrochemical plants, and industrial facilities.¹⁶

⁹ *Trial Transcript* at 3-74:21–25, 4-171:21 to 4-172:6, 4-173:3–5.

¹⁰ *Plaintiffs' Exhibit* 556 at 25.

¹¹ *Trial Transcript* at 3-71:14 to 3-72:6–9, 8-50:20–22.

¹² *Trial Transcript* at 3-77:5 to 3-80:1.

¹³ *Trial Transcript* at 3-56:2–18, 3-60:16–18.

¹⁴ *Trial Transcript* at 3-24:19–21, 3-25:4–5, 3-250:5–11, 7-238:23 to 7-239:10, 3-72:20 to 3-73:24.

¹⁵ *Trial Transcript* at 3-75:15–18.

¹⁶ *Trial Transcript* at 11-33:19 to 11-39:16.

B. Title V Permits

4. The Complex is governed, in part, by operating permits issued by the Texas Commission on Environmental Quality (the “TCEQ”) pursuant to Title V of the CAA.¹⁷ The Title V permits incorporate—typically by reference—numerous regulatory requirements, such as United States Environmental Protection Agency (“EPA”) air pollution regulations and State of Texas air pollution regulations, as well as other permits, such as New Source Review permits and Prevention of Significant Deterioration permits.¹⁸ Taking all permit conditions together, the Complex is regulated by over 120,000 permit conditions related to air quality, each of which is tracked by the Complex for compliance purposes.¹⁹

C. Reportable Events, Recordable Events, and Deviations

5. Exxon documents noncompliance and indications of noncompliance with its Title V permits in three ways.²⁰ First, the TCEQ requires Exxon to document and submit to the TCEQ—via a State of Texas Environmental Electronic Reporting System (“STEERS”) report—information about “emissions events” that release greater than a certain threshold quantity of pollutants, called “reportable

¹⁷ *Trial Transcript* at 2-207:18 to 2-208:9, 2-212:1–3; *see* 30 TEX. ADMIN. CODE § 122.142(b).

¹⁸ *Trial Transcript* at 1-245:9–17, 2-208:13 to 2-209:13.

¹⁹ *Trial Transcript* at 3-81:9 to 3-82:1.

²⁰ *Trial Transcript* at 2-205:13 to 2-206:14, 2-216:3–20.

emissions events.”²¹ Second, the TCEQ requires Exxon to document information about “emissions events” that release less than the aforementioned threshold quantity of pollutants, called “recordable emissions events;” documentation of recordable emissions events are kept on-site at the Complex and are not submitted to the TCEQ via a STEERS report.²² Third, the TCEQ requires Exxon to document and submit to the TCEQ information about Title V “deviations” in semi-annual Title V “deviation reports.”²³ It is undisputed Exxon complied with the TCEQ’s aforementioned reporting and recording requirements. Plaintiffs and Exxon stipulated to the contents of Exxon’s STEERS reports of reportable emissions events, records of recordable emissions events, and Title V deviation reports covering the time period at issue in this case, which is October 14, 2005, to September 3, 2013.²⁴ These stipulations are contained in Excel spreadsheets spanning hundreds of pages, admitted at trial as Plaintiffs’ Exhibits 1A through 7E. Specifically, at issue are 241 reportable emissions events (the “Reportable

²¹ 30 TEX. ADMIN. CODE §§ 101.1(88), 101.201; *Trial Transcript* at 2-232:13–20, 2-236:3–24, 12-164:11–23.

²² 30 TEX. ADMIN. CODE §§ 101.1(71), 101.201(b); *Trial Transcript* at 2-232:21 to 2-233:16, 12-164:11–23. The terms “non-reportable emissions event” and “recordable emissions event” are interchangeable.

²³ 30 TEX. ADMIN. CODE §§ 122.10(6), 122.145(2); *Trial Transcript* at 2-217:4 to 2-218:19.

²⁴ *Trial Transcript* at 1-246:3–15.

Events”), 3,735 recordable emissions events (the “Recordable Events”), and 901 Title V deviations (the “Deviations”) (collectively, the “Events and Deviations” or the “Events or Deviations”).²⁵

D. Investigation, Enforcement, and Corrective Actions

6. The TCEQ investigates each reportable emissions event.²⁶ Following an investigation, the TCEQ determines whether it will initiate enforcement based, in part, on whether the event was “excessive” and whether the applicable statutory affirmative defense criteria were met.²⁷ Similarly, the TCEQ reviews the records of recordable emissions events and takes enforcement action should it determine the records reflect an inappropriate trend.²⁸

7. In addition to the TCEQ’s investigation, for each of the Reportable Events, Exxon conducted an extensive internal investigation, evaluated the root cause of the event, and implemented corrective actions to try to prevent recurrence.²⁹ Similarly, for the Recordable Events and Deviations, Exxon

²⁵ *Plaintiffs’ Exhibits* 1A–7E.

²⁶ *Defendants’ Exhibit* 546 at 8, ¶ 24; *Trial Transcript* at 2-241:14–21, 2-244:10–18, 4-5:21–23, 8-85:11–16.

²⁷ 30 TEX. ADMIN. CODE § 101.222; *Defendants’ Exhibit* 546 at 3–4, ¶ 10, 4–5, ¶ 12; *Trial Transcript* at 2-242:19–25, 12-160:2 to 12-162:8; *see Trial Transcript* at 12-161:10 to 12-162:8.

²⁸ *Defendants’ Exhibit* 546 at 5–7, ¶¶ 13–18.

²⁹ *Trial Transcript* at 3-114:25 to 3-117:4, 4-26:4–16.

analyzed the records for trends and ways to improve, identified root causes, and implemented corrective actions.³⁰ A root cause analysis requires consideration of a number of factors, including the type of equipment involved, the component of the equipment that may have failed, and human interaction with the equipment.³¹ A root cause analysis is necessary—as a factual matter in this case—to determine whether the Events and Deviations resulted from a recurring pattern, and to determine whether improvements could have been made to prevent recurrence.³² The number of events involving a certain type of equipment, a certain unit, or a certain type of issue (such as leaks) does not alone mean that any of the Events or Deviations resulted from a recurring pattern or were preventable.³³

8. After investigating, the TCEQ assessed \$1,146,132 in penalties against Exxon for some of the Events and Deviations.³⁴ In addition, Harris County assessed \$277,500 in penalties for some of the Events and Deviations.³⁵ Thus, in total, Exxon has paid \$1,423,632 in monetary penalties for Events and Deviations

³⁰ *Trial Transcript* at 3-117:5–22, 10-39:24 to 10-40:8, 10-219:11 to 10-220:13.

³¹ *Trial Transcript* at 10-231:15 to 10-232:14.

³² *Defendants' Exhibit* 546 at 6, ¶¶ 16–17.

³³ *Defendants' Exhibit* 546 at 6, ¶ 17; *Trial Transcript* at 10-232:15 to 10-233:10, 10-234:25 to 10-277:15, 11-5:17 to 11-21:18.

³⁴ *Plaintiffs' Exhibit* 337.

³⁵ *Defendants' Exhibit* 502 at 1–10.

at issue in this case.³⁶ Along with those penalties, the TCEQ required Exxon to take certain corrective actions or document the corrective actions already taken.³⁷

9. Moreover, after investigating, the TCEQ elected not to pursue enforcement on 97 Reportable Events because the TCEQ determined the applicable affirmative defense criteria were met.³⁸ Such applicable affirmative defense criteria include finding that the unauthorized emissions could not have been prevented, were not part of a recurring pattern, and did not contribute to a condition of air pollution.³⁹ Also, after investigating, the TCEQ elected to pursue enforcement but not impose penalties or require further action on 55 Reportable Events because Exxon either agreed to take certain corrective actions or had already taken corrective actions.⁴⁰ An example of one such Reportable Event occurred on August 30, 2006, at the Butadiene Unit due to operator error.⁴¹ Exxon's root cause analysis determined the event occurred because a technician

³⁶ Exxon claims it has paid \$2,022,288 in penalties, while Plaintiffs claim Exxon has paid \$1,423,632 in penalties. After thoroughly reviewing all of the evidence submitted to support each amount, the Court finds Plaintiffs' claim (\$1,423,632) to be better supported by the evidence.

³⁷ *E.g.*, *Defendants' Exhibits* 472 at 3–4, 475 at 2, 486 at 2, 488 at 2.

³⁸ *Defendants' Exhibits* 18–20; *Trial Transcript* at 3-202:14 to 3-206:3.

³⁹ 30 TEX. ADMIN. CODE § 101.222.

⁴⁰ *Defendants' Exhibits* 24–29; *Trial Transcript* at 3-200:9 to 3-202:13.

⁴¹ *Defendants' Exhibits* 26, 26E.

misunderstood a request via radio from a computer console operator and opened the wrong valve.⁴² The incorrect action was corrected within 12 minutes, and Exxon used the event as an example to its employees to reinforce the importance of effectively communicating via radio and repeating field expectations before performing action.⁴³ Another example of one such Reportable Event occurred on April 11, 2007, at the BOP-X Expansion Flare when the methanator shut down resulting in flaring.⁴⁴ Exxon's root cause analysis determined the methanator shut down because of a high temperature swing in the furnace crossover temperature during the feed-in of steam shortly after the furnace completed a routine decoke cycle.⁴⁵ That event was the first time in the 10 years the methanator had been in service that such an incident had occurred, which was 1 out of approximately 1,000 feed-ins.⁴⁶ To prevent similar events from occurring, Exxon increased the methanator trip point from 700 to 800 degrees and modified its operating procedures in three ways: operating windows for crossover temperatures, dimethyl

⁴² *Defendants' Exhibit 26E.*

⁴³ *Defendants' Exhibit 26E.*

⁴⁴ *Defendants' Exhibits 26, 26I.*

⁴⁵ *Defendants' Exhibit 26I.*

⁴⁶ *Defendants' Exhibit 26I.*

sulphide injection prior to feed-in, and removal of 225 pounds of steam prior to feed-in.⁴⁷

10. The distinction the TCEQ makes between reportable emissions events and recordable emissions events demonstrates the agency's belief that emissions from recordable emissions events are less serious and less potentially harmful to human health than emissions from reportable emissions events.⁴⁸ Of the 3,735 Recordable Events, 43% were 1/2 an hour or less in duration, 55% were 1 hour or less in duration, 62% were 2 hours or less in duration, 73% were 5 hours or less in duration, 82% were 12 hours or less in duration, and 89% were 24 hours or less in duration.⁴⁹ Further, 58% had total emissions of 20 pounds or less, 80% had total emissions of 100 pounds or less, 87% had total emissions of 200 pounds or less, and 93% had total emissions of 500 pounds or less.⁵⁰ For example, Exxon tracked, as a Recordable Event, smoke that emanated from a power receptacle due to an electrical issue when an extension cord was plugged in, which lasted such a short time that the duration was recorded as 0 hours and which emitted a total of 0.02

⁴⁷ *Defendants' Exhibit 26I.*

⁴⁸ *Trial Transcript* at 12-164:11-23.

⁴⁹ *Defendants' Exhibit 1007A* at 1; *see Plaintiffs' Exhibits 1B, 2B, 2D, 2F.*

⁵⁰ *Defendants' Exhibit 1007A* at 2; *see Plaintiffs' Exhibits 1B, 2B, 2D, 2F.*

pounds of emissions.⁵¹ As another example, Exxon tracked, as a Recordable Event, a fire in a cigarette butt can that lasted less than one minute and emitted a total of 0.02 pounds of emissions, the corrective action for which was to pour water in the cigarette butt can.⁵²

11. Of the 901 Deviations, 45% involved no emissions whatsoever.⁵³ The Deviations not involving emissions typically relate to late reports or incomplete reports.⁵⁴ For example, Exxon recorded, as Deviations, failure to maintain a record of a drain inspection; late submission of a report of an engine's hours of operation; and failure to perform a quarterly engine test due to engine malfunction, the corrective action for which was testing the engine upon repair and startup.⁵⁵ Of the 493 Deviations that involved emissions, 78 involved emissions occurring in the normal course of operations, and thus those emissions are not at issue in this case.⁵⁶ The emissions from the remaining 415 Deviations are categorized as either a Reportable Event or Recordable Event depending on the amount of emissions, and

⁵¹ *Plaintiffs' Exhibit 1B* at row 800; *Trial Transcript* at 10-216:17 to 10-218:6, 12-234:3-12.

⁵² *Plaintiffs' Exhibit 2D* at row 2432.

⁵³ *Trial Transcript* at 3-118:9-13, 10-204:11-13, 10-208:1-8.

⁵⁴ *Trial Transcript* at 10-208:9 to 10-209:17; *see Plaintiffs' Exhibits 7A-E*.

⁵⁵ *Plaintiffs' Exhibit 7C* at row 36, 142; *Trial Transcript* at 10-207:1-7.

⁵⁶ *Trial Transcript* at 10-209:18 to 10-210:1.

thus those emissions are addressed in the Court's findings related to Reportable Events or Recordable Events.⁵⁷

E. Agreed Enforcement Order

12. On February 22, 2012, Exxon and the TCEQ agreed on an enforcement order regarding the Complex (the "Agreed Order").⁵⁸ The Agreed Order, inter alia: (1) resolved enforcement for certain past reportable emissions events; (2) established stipulated penalties for future reportable emissions events, while precluding Exxon from asserting the applicable affirmative defense; (3) required specified emissions reductions; and (4) mandated implementation of 4 environmental improvement projects.⁵⁹ The environmental improvement projects are as follows:

a. Plant Automation Venture. Install computer applications to improve real-time monitoring, identification, diagnostics and online guidance/management of operations. The project is intended to provide early identification of potential events and/or instrumentation abnormalities, allowing proactive response.

* * *

b. Fuels North Flare System Monitoring/Minimization. . . . Additional instrumentation, including monitoring probes and on-line analyzers are intended to improve the identification and characterization of flaring events. The development of flare

⁵⁷ *Trial Transcript* at 10-203:11 to 10-204:10, 10-210:7-12.

⁵⁸ *Defendants' Exhibit 222*.

⁵⁹ *Defendants' Exhibit 222* at ¶¶ I.13, III.3, III.4, III.10, III.12; *Trial Transcript* at 3-32:25 to 3-40:5, 12-205:15 to 12-207:8.

minimization practices . . . are intended to reduce loads on the flare system.

* * *

c. BOP/BOPX Recovery Unit Simulators. Develop, implement and use high-fidelity process training simulators . . . intended to improve operator training and competency, resulting in reduced frequency and severity of emissions events.

* * *

d. Enhanced Fugitive Emissions Monitoring. . . . The program will use infrared imaging technology to locate potential VOC and HRVOC leaks. . . .⁶⁰

The Agreed Order states these projects “will reduce emissions at the Baytown Complex, including emissions from emissions events”⁶¹ Indeed, the Agreed Order requires certain amounts of emissions reductions.⁶² Exxon could not have been required to undertake these projects under existing laws and regulations.⁶³ Implementation of these projects will cost approximately \$20,000,000.⁶⁴ They must be implemented within 5 years of the date of the Agreed Order, and Exxon must submit semi-annual reports to the TCEQ that provide information on the progress of these projects.⁶⁵ In addition, Exxon must submit annual reports to the

⁶⁰ *Defendants’ Exhibit 222* at ¶ III.12.

⁶¹ *Defendants’ Exhibit 222* at ¶ III.12.

⁶² *Defendants’ Exhibit 222* at ¶ III.10.

⁶³ *Defendants’ Exhibit 222* at ¶ III.12; *Trial Transcript* at 3-190:6–24, 12-177:12 to 12-178:6.

⁶⁴ *Trial Transcript* at 3-32:25 to 3-40:5.

⁶⁵ *Defendants’ Exhibit 222* at ¶¶ III.12, 13.

TCEQ that identify emissions reductions, including “an explanation of how recent air emissions performance continues the overall emissions reduction trends at the Baytown Complex,” and provide information on activities undertaken to improve environmental performance.⁶⁶

F. Efforts to Improve Environmental Performance and Compliance

13. The Complex has a governing philosophy that all employees work toward plant reliability and environmental compliance.⁶⁷ It has a Safety Security Health and Environmental (“SSHE”) group comprised of approximately 75 employees, including approximately 30 dedicated to environmental compliance, with an annual budget of \$25 million in 2014.⁶⁸ Over the past several years Exxon has spent more than \$1 billion on regulatory compliance and environmental improvement projects at the Complex.⁶⁹ Specifically, for the years at issue in this case, Exxon spent the following on maintenance and maintenance-related capital projects at the Complex: \$464 million in 2005, \$539 million in 2006, \$519 million

⁶⁶ *Defendants’ Exhibit 222* at ¶ III.14.

⁶⁷ *Trial Transcript* at 3-82:2 to 3:83:20, 3-273:20 to 3-274:20.

⁶⁸ *Trial Transcript* at 2-195:1–2, 2-203:8–12, 3-89:22 to 3-90:9, 12-214:19 to 12-215:5, 12-226:4–13.

⁶⁹ *Trial Transcript* at 12-239:22 to 12-240:6.

in 2007, \$599 million in 2008, \$642 million in 2009, \$598 million in 2010, \$583 million in 2011, \$607 million in 2012, and \$685 million in 2013.⁷⁰

14. The Complex employs a wide variety of emissions-reduction equipment such as wet gas scrubbers, selective catalytic reduction, amine treating towers, flares, flare gas recovery systems, external floating roof tanks, sulfur recovery units, a regenerative thermal oxidizer, and more than one hundred low nitrogen oxide (“NO_x”) burners; the Complex also employs emissions-detection equipment such as continuous emissions monitoring systems and forward-looking infrared cameras.⁷¹ Approximately half of the flares at the Complex are connected to flare gas recovery compressors.⁷² All of the flares have flow rate velocity meters and are monitored for vent gas heat content, and Exxon takes steps to ensure each flare operates in compliance with applicable regulatory requirements.⁷³ Exxon has also generated and implemented a flare minimization plan to reduce

⁷⁰ *Defendants’ Exhibit* 413.

⁷¹ *Trial Transcript* at 10-47:5 to 10-78:19.

⁷² *Trial Transcript* at 10-56:13–16.

⁷³ *Trial Transcript* at 10-61:5–17.

flaring at the Complex.⁷⁴ Further, Exxon's maintenance policies and procedures conform or exceed industry standards and codes.⁷⁵

15. Both the TCEQ and the EPA recognize it is not possible to operate any facility—especially one as complex as the Complex—in a manner that eliminates all emissions events and deviations.⁷⁶ Despite good practices, at any industrial facility there will always be mechanical failure and human imperfection leading to noncompliance with Title V permit conditions.⁷⁷

G. Improvement

16. In the Agreed Order, the TCEQ recognized the Complex's historical reductions in emissions when making the following finding of fact:

The annual emissions inventory reports that ExxonMobil has submitted for the Baytown Complex under 30 TEX. ADMIN. CODE § 101.10 reflect a positive trend of reductions in actual emissions, including unauthorized emissions associated with emissions events and scheduled MSS activities, from Baytown Complex. From 2000 to 2010, ExxonMobil has reported a 60 percent reduction in aggregate emissions of VOC, HRVOC, CO, SO₂ and NO_x from the Baytown Complex. Over that same time period, reported emissions of VOC from the Baytown Complex have dropped by 44 percent, reported

⁷⁴ *Trial Transcript* at 12-231:16 to 12-232:1.

⁷⁵ *Trial Transcript* at 7-225:3–14, 11-274:25 to 11-275:7, 12-15:4 to 12-16:9, 12-20:15–20, 12-25:14–25, 12-26:16–23.

⁷⁶ *Defendants' Exhibit 190* at 7–8, 14–15; *Defendants' Exhibit 546* at 11, ¶¶ 32–34; *Trial Transcript* at 3-112:2–8.

⁷⁷ *Defendants' Exhibit 190* at 7–8, 14–15; *Defendants' Exhibit 546* at 11, ¶¶ 32–34; *Trial Transcript* at 3-112:2–8.

emissions of CO have dropped by 76, and reported emissions of NO_x have dropped by 63 percent.⁷⁸

Likewise, evidence in this case shows the total amount of emissions at the Complex generally declined year-to-year over the years at issue in the case.⁷⁹ In addition, the annual amount of unauthorized emissions of criteria pollutants at the Complex decreased by 95% from 2006 to 2013.⁸⁰ Similarly, the annual number of Reportable Events that occurred at the Complex decreased by 81% percent from 2005 to 2013.⁸¹ Flaring at the Complex has been reduced by 73% since 2000.⁸²

17. In addition, each year at issue, total emissions were far below the annual emissions limits.⁸³ For example, in 2012, the annual emissions limit of volatile organic compounds (“VOCs”) was 7,778.4 tons, but the Complex only emitted 2,958.1 tons of VOCs in that year.⁸⁴ Also, each year at issue, unauthorized

⁷⁸ *Defendants’ Exhibit 22* at ¶ I.12.

⁷⁹ *Defendants’ Exhibits 1004, 1008.*

⁸⁰ *Defendants’ Exhibit 1002.* Under the CAA, the EPA establishes minimum air quality levels in the form of “national ambient air quality standards” for six pollutants (known as “criteria pollutants”) to protect public health. 42 U.S.C. § 7409. The six criteria pollutants are sulfur dioxide, particulate matter, carbon monoxide, ozone, oxides of nitrogen/nitrogen dioxide, and lead. 40 C.F.R. §§ 50.4–17.

⁸¹ *Defendants’ Exhibit 1000* at 1.

⁸² *Defendants’ Exhibit 547* at 12:11–12.

⁸³ *Defendants’ Exhibits 1004, 1008.* Emissions from “event emissions” are at issue in this case, not “permitted emissions.”

⁸⁴ *Defendants’ Exhibit 1004* at 1.

emissions were a very small percentage of total emissions and an even smaller percentage of the annual emissions limits.⁸⁵ For example, in 2012, of the total VOCs emitted, only 54.9 tons were unauthorized, which is only 1.9% of the Complex's total VOC emissions that year and only 0.7% of the annual VOC emissions limit.⁸⁶

H. Plaintiffs and Plaintiffs' Members

18. Environment Texas is a non-profit corporation with a purpose "to engage in activities, including public education, research, lobbying, litigation, issue advocacy, and other communications and activities to promote pro-environment political ideas, policies and leaders."⁸⁷ It has approximately 2,900 dues-paying members in Texas.⁸⁸ Similarly, Sierra Club is a non-profit corporation with a purpose to protect humanity, the environment, and the ability to enjoy the outdoors.⁸⁹ The Lone Star (Texas) Chapter of the Sierra Club has approximately

⁸⁵ *Defendants' Exhibits* 1004, 1008.

⁸⁶ *Defendants' Exhibit* 1004 at 1.

⁸⁷ *Plaintiffs' Exhibit* 338 at ¶ II(2); *Trial Transcript* at 1-227:16–25.

⁸⁸ *Trial Transcript* at 1-234:24 to 1-235:4.

⁸⁹ *Trial Transcript* at 2-125:11–22.

25,000 members.⁹⁰ Plaintiffs called four members of either Environment Texas or Sierra Club to testify.

19. First, Diane Aguirre Dominguez is a member of Environment Texas and Sierra Club.⁹¹ She grew up in Baytown at her parents' home, which is about a mile and a half from the Complex.⁹² The Complex is the closest industrial facility to her parents' home.⁹³ She lived in Houston from 2006 through 2013 while attending college and working, during which time she regularly visited her parents' home in Baytown.⁹⁴ In March 2013, she moved to Oakland, California.⁹⁵ She has returned to Baytown to visit her family at her parent's home, and she has plans to visit Baytown again for the holidays in 2014.⁹⁶ While growing up in Baytown, she often smelled odors at her parents' home and other places in Baytown, and she had allergies characterized by running nose, watery eyes, and chest constriction, for which she took medication.⁹⁷ These symptoms improved when she moved away

⁹⁰ *Trial Transcript* at 2-125:23 to 2-126:4.

⁹¹ *Trial Transcript* at 1-192:2–22.

⁹² *Trial Transcript* at 1-193:8 to 1-194:16.

⁹³ *Trial Transcript* at 1-194:17–20.

⁹⁴ *Trial Transcript* at 1-196:6 to 1-199:9.

⁹⁵ *Trial Transcript* at 1-199:8–9.

⁹⁶ *Trial Transcript* at 1-199:10–25.

⁹⁷ *Trial Transcript* at 1-200:1 to 1-201:15, 1-205:6–25, 1-219:1–14.

from Baytown and she was able to stop taking medication, but the symptoms return whenever she visits her family in Baytown.⁹⁸ However, she cannot correlate any of these symptoms to specific Events or Deviations at issue in this case.⁹⁹ Further, she has seen flares, smoke, and a brownish haze over the Complex.¹⁰⁰ She finds these sights and smells worrisome because she thinks they indicate Exxon is emitting harmful chemicals; she is also concerned about the risk of explosion from an emergency condition at the Complex.¹⁰¹ However, she understands some flaring is a normal, permitted part of the operation of the Complex, and she does not know of a time when she observed unpermitted flaring.¹⁰² Lastly, she enjoys running outdoors, but when she is visiting Baytown, she refrains from doing so because she experiences labored breathing and an abrasive feeling in her throat and lungs.¹⁰³

20. Second, Marilyn Kingman is a member of Sierra Club.¹⁰⁴ She lives in a town that neighbors Baytown, but she shops, banks, attends church, and conducts

⁹⁸ *Trial Transcript* at 1-205:19 to 1-206:11.

⁹⁹ *Trial Transcript* at 1-207:25 to 1-209:23, 1-220:1 to 1-222:4.

¹⁰⁰ *Trial Transcript* at 1-202:2 to 1-203:8, 1-218:6–17.

¹⁰¹ *Trial Transcript* at 1-203:9 to 1-204:9.

¹⁰² *Trial Transcript* at 1-218:3–24.

¹⁰³ *Trial Transcript* at 1-204:10 to 1-205:5.

¹⁰⁴ *Trial Transcript* at 6-69:11–14.

other activities several times a week in Baytown, including nearby the Complex.¹⁰⁵ She has smelled a chemical smell around the Complex, seen flares at the Complex, and seen a gray or brown haze over the Complex.¹⁰⁶ The odors she has smelled, which she attributes to the Complex, cause her to be concerned for her health.¹⁰⁷ She limits her outdoor activities in Baytown when she smells odors or sees haze.¹⁰⁸ Also, flaring at the Complex concerns her because she is afraid of explosion and because she believes flaring indicates something is wrong.¹⁰⁹ However, she does not claim to have any physical ailments or health conditions that she attributes to anything happening at the Complex.¹¹⁰ Also, she was not able to correlate any of her experiences or concerns to specific Events or Deviations at issue in this case.¹¹¹

21. Third, Richard Shae Cottar is a member of Sierra Club.¹¹² From April 2010 through September 2012, he lived a quarter of a mile from the Complex.¹¹³

¹⁰⁵ *Trial Transcript* at 6-71:3 to 6-75:6.

¹⁰⁶ *Trial Transcript* at 6-75:2 to 6-76:15.

¹⁰⁷ *Trial Transcript* at 6-76:16–23, 6-83:6–12.

¹⁰⁸ *Trial Transcript* at 6-76:24 to 6-77:24.

¹⁰⁹ *Trial Transcript* at 6-78:13 to 6-80:5.

¹¹⁰ *Trial Transcript* at 6-95:14–20.

¹¹¹ *Trial Transcript* at 6-91:23 to 6-95:9. On February 13, 2014, Kingman smelled an odor she attributed as emanating from the Complex, and a Recordable Event occurred that day; however, February 13, 2014, is outside the time frame of this case.

¹¹² *Trial Transcript* at 1-98:18 to 1-99:13.

Since September 2012, he has lived approximately two miles from the Complex.¹¹⁴ While living at the closer address, he saw or heard flaring events at the Complex from his home that were audibly disruptive, woke him up, rattled the windows of his house, involved plumes of black smoke, involved large flames, and lasted for several hours in duration.¹¹⁵ He also smelled strong, pungent odors that, on occasion, caused him headaches and awoke him in the night.¹¹⁶ He attributed odors at his home to being caused by the Complex because when the wind was blowing from the Complex towards him during flaring events, he smelled the odors, but when the wind was blowing towards the Complex away from him during flaring events, he did not smell the odors.¹¹⁷ He has also smelled odors that became more intense the closer he got to the Complex while driving.¹¹⁸ His asthmatic symptoms were exacerbated when living at the closer address, and since moving further from the Complex, his asthmatic symptoms have decreased.¹¹⁹ He

¹¹³ *Trial Transcript* at 1-102:7 to 1-103:6.

¹¹⁴ *Trial Transcript* at 1-102:3-4, 1-106:5-11.

¹¹⁵ *Trial Transcript* at 1-108:5-24, 1-109:12-20, 1-118:13-24, 1-121:7 to 1-123:18, 1-128:2-3.

¹¹⁶ *Trial Transcript* at 1-109:21 to 1-112:3, 1-131:5 to 1-132:4, 1-176:6-9.

¹¹⁷ *Trial Transcript* at 1-119:5-18.

¹¹⁸ *Trial Transcript* at 1-111:10-20.

¹¹⁹ *Trial Transcript* at 1-148:3 to 1-149:19, 1-187:12 to 1-188:1.

moved further away from the Complex out of concern for his health and safety.¹²⁰ When visiting the nature center next to the Complex, he does not stay if he sees emissions.¹²¹ He does not want to breathe unauthorized emissions, and his concerns about air quality would be lessened if Exxon were to reduce its unauthorized emissions.¹²² However, he understands that certain emissions and flaring are allowed by permits.¹²³ In total, he was able to credibly correlate three flaring events he observed to specific Events or Deviations, one of which woke him up from noise and involved a “sweet odor” outside his home.¹²⁴

22. Fourth, Sharon Sprayberry is a member of Sierra Club.¹²⁵ She lived in Baytown from 2004 until June 2012, about one mile from the Complex.¹²⁶ While living in Baytown, she heard flares at the Complex from inside her home, saw smoke coming from the flares, saw haze over the Complex, and smelled a chemical odor outdoors when the wind was blowing from the Complex towards her or when

¹²⁰ *Trial Transcript* at 1-144:21 to 1-145:17.

¹²¹ *Trial Transcript* at 1-152:11–21.

¹²² *Trial Transcript* at 1-153:9–20.

¹²³ *Trial Transcript* at 1-153:9–13, 1-169:3–18.

¹²⁴ *Trial Transcript* at 1-123:19 to 1-131:1, 1-168:17 to 1-181:12.

¹²⁵ *Trial Transcript* at 6-5:19–23.

¹²⁶ *Trial Transcript* at 6-11:23 to 6-13:13, 6-37:2–5, 6-40:3–10.

she saw flares.¹²⁷ These smells concerned her because she was afraid they were toxic or harmful.¹²⁸ While living in Baytown, she also experienced respiratory issues.¹²⁹ Her respiratory problems went away within a few weeks of moving to a different city—McGregor, Texas.¹³⁰ She would like to return to Baytown to visit friends and attend events, but she is unlikely to return because during her last visit the air quality affected her breathing.¹³¹ She would have retired in Baytown if the air quality were better.¹³² She understands not all flares involve unauthorized emissions because some flares and emissions are authorized by permit.¹³³ In total, she was able to credibly correlate two events she observed to Events or Deviations.¹³⁴

I. Baytown Residents Called by Exxon

23. Exxon called three residents of the Baytown community to testify. First was Fred Aguilar, who has lived approximately eight blocks from the

¹²⁷ *Trial Transcript* at 6-15:18 to 6-16:19, 6-33:12 to 6-36:13.

¹²⁸ *Trial Transcript* at 6-36:16 to 6-37:1.

¹²⁹ *Trial Transcript* at 6-15:7–17.

¹³⁰ *Trial Transcript* at 6-37:9–24.

¹³¹ *Trial Transcript* at 6-38:2–19.

¹³² *Trial Transcript* at 6-38:20–22.

¹³³ *Trial Transcript* at 6-50:12–20.

¹³⁴ *Trial Transcript* at 6-17:7 to 6-23:8, 6-45:20 to 6-49:16, 6-65:20 to 6-67:24.

Complex for **35 years**.¹³⁵ He has no health issues or concerns that he attributes to the Complex, does not worry about living near the Complex, and has never had any concerns about any emissions events or flares that have occurred at the Complex.¹³⁶ He has only rarely heard very loud noise from flaring, the last time being six or seven years ago, and such noise never affected his ability to enjoy his property.¹³⁷

24. Second was Billy Barnett, who has lived across the street from the Complex for 17 years and in close proximity to the Complex for a total of **37 years**.¹³⁸ He does not “feel impacted or influenced” by his close proximity to the Complex.¹³⁹ Specifically, he has had no health issues that he attributes to living across the street from the Complex, flaring at the Complex has not disturbed his enjoyment of his property, and he has not had problems with loud noises coming from the Complex.¹⁴⁰ He has smelled substantial odors a couple of times in 37 years but does not characterize the odors as overpowering.¹⁴¹

¹³⁵ *Trial Transcript* at 10-130:11 to 10-131:9.

¹³⁶ *Trial Transcript* at 10-140:8–24, 10-142:1–6, 10-155:4–12.

¹³⁷ *Trial Transcript* at 10-142:7–18.

¹³⁸ *Trial Transcript* at 11-101:8 to 11-102:3, 11-104:10–19.

¹³⁹ *Trial Transcript* at 11-114:13–18.

¹⁴⁰ *Trial Transcript* at 11-113:7–11, 11-114:19 to 11-115:1, 11-115:10–14.

¹⁴¹ *Trial Transcript* at 11-115:5–9.

25. Third, Gordon Miles has lived very close to the Complex for **28 years**.¹⁴² He has never experienced any problems with flaring, odors, or noises coming from the Complex; has no health problems that he attributes to anything happening at the Complex; and has no complaints about Exxon as a neighbor.¹⁴³

III. CONCLUSIONS OF LAW

A. Standing

1. An organization “has standing to bring suit on behalf of its members when: (1) its members would otherwise have standing to sue in their own right; (2) the interests it seeks to protect are germane to the organization’s purpose; and (3) neither the claim asserted nor the relief requested requires the participation of individual members.” *Texans United for a Safe Econ. Educ. Fund v. Crown Cent. Petroleum Corp.*, 207 F.3d 789, 792 (5th Cir. 2000). Exxon does not contest the second and third requirements, and the Court finds these requirements are met. At issue is the first requirement.

2. In order for a member to have standing to sue in his or her own right, (1) he or she must have suffered an actual or threatened injury, (2) that is fairly traceable to the defendant’s action, and (3) the injury must likely be redressed if the plaintiff prevails in the lawsuit. *Id.* The plaintiff has the burden to prove these

¹⁴² *Defendants’ Exhibit 545; Trial Transcript* at 12-82:11 to 12-86:5.

¹⁴³ *Trial Transcript* at 12-89:22 to 12-90:14, 12-96:13–22.

requirements by the preponderance of the evidence. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 561 (1992); *Envtl. Conservation Org. v. City of Dallas*, No. 3-03-CV-2951-BD, 2005 WL 1771289, at *4 n.2 (N.D. Tex. July 26, 2005). Each requirement is addressed in turn.

a. Injury-in-Fact

3. To satisfy the injury-in-fact requirement, the plaintiff must prove injury to himself or herself, not injury to the environment. *Friends of the Earth, Inc. v. Laidlaw Env'tl. Servs. (TOC), Inc.*, 528 U.S. 167, 181 (2000). There is a “low threshold for sufficiency of injury” to confer standing. *Save Our Cmty. v. EPA*, 971 F.2d 1155, 1161 (5th Cir. 1992). For an environmental plaintiff, effect to his or her recreational or aesthetic interests constitutes injury-in-fact. *Laidlaw*, 528 U.S. at 183. Also, “breathing and smelling polluted air is sufficient to demonstrate injury-in-fact and thus confer standing under the CAA.” *Texans United*, 207 F.3d at 792; *Concerned Citizens Around Murphy v. Murphy Oil USA, Inc.*, 686 F. Supp. 2d 663, 670–71 (E.D. La. 2010).

4. In this case, four members of either Environment Texas or Sierra Club testified. As detailed supra in paragraphs II.19–22, while living or visiting near the Complex during the time period at issue in this case, at least one of these members experienced the following, inter alia: allergies; respiratory problems; the smell of pungent odors, which occasionally caused headaches; audibly disruptive noise; and

visions of flares, smoke, and haze. In addition, at least one of these members was worried about the risk of explosion after seeing flares and worried about his or her health after seeing flares, smoke, and haze.¹⁴⁴ Because of at least one of the aforementioned experiences or worries, at least one of these members made the following changes in his or her life, inter alia: refrained from running outdoors, limited outdoor activities when odors were smelt or haze seen, left the nature center next to Complex early, and moved away from Complex.¹⁴⁵ Collectively, these experiences, worries, and changes satisfy the injury-in-fact requirement.

b. Traceability

5. So long as there is a fairly traceable connection between a plaintiff's injury and the defendant's violation, the traceability requirement of standing is satisfied. *Comer v. Murphy Oil USA*, 585 F.3d 855, 864 (5th Cir. 2009). To confer standing, the plaintiff's injury does not have to be linked to exact dates that the defendant's violations occurred, and the plaintiff does not have to "show to a scientific certainty that defendant's [emissions], and defendant's [emissions] alone, caused the precise harm suffered by the plaintiffs." *Texans United*, 207 F.3d at 793; *Save Our Cmty.*, 971 F.2d at 1161 (internal quotation marks omitted); see *Tex. Campaign for the Env't v. Lower Colo. River Auth.*, No. H-11-791, 2012 WL

¹⁴⁴ *Supra* ¶¶ II.19–22.

¹⁴⁵ *Supra* ¶¶ II.19–22.

1067211, at *4–5 (S.D. Tex. Mar. 28, 2012) (Miller, J.). Rather, circumstantial evidence of traceability suffices, such as observation of smoke coming from the defendant’s plant while at the same time smelling odors, and expert evidence that on certain days when the defendant’s violations occurred, excess emissions were detectable in the plaintiff’s neighborhood. *Texans United*, 207 F.3d at 793.

6. Even though Plaintiffs’ members’ injuries do not have to be linked to exact dates that the Events and Deviations occurred, Plaintiffs’ members correlated some of the experiences described supra, such as odor and noise, to five Events or Deviations.¹⁴⁶ Also, Plaintiffs’ members have seen flares, smoke, and haze over the Complex.¹⁴⁷ Some of the members smelled odors at their homes while living very close to the Complex, particularly when the wind was blowing towards their homes from the Complex, and the Complex was the closest industrial facility to their homes.¹⁴⁸ One member who lived a quarter of a mile from the Complex saw or heard flaring events at the Complex from his home, and he smelled odors that became more intense the closer he got to the Complex while driving.¹⁴⁹ Some of the members’ allergies and respiratory problems decreased when they moved away

¹⁴⁶ *Supra* ¶¶ II.19–22 (Dominguez-0, Kingman-0, Cottar-3, and Sprayberry-2).

¹⁴⁷ *Supra* ¶¶ II.19–22.

¹⁴⁸ *Supra* ¶¶ II.19, 21–22.

¹⁴⁹ *Supra* ¶ II.21.

from the Complex.¹⁵⁰ Additionally, Plaintiffs submitted evidence of the potential health effects caused by the types of pollutants emitted during the Events and Deviations, and some of these potential health effects match some of the experiences of Plaintiffs' members.¹⁵¹ All the aforementioned evidence suffices to establish a fairly traceable connection between Plaintiffs' members' injuries and the Events and Deviations at the Complex. Accordingly, the traceability requirement is satisfied.

c. Redressability

7. A plaintiff must prove redressability "for each form of relief sought." *Laidlaw*, 528 U.S. at 185. Relief that prevents or deters violations from reoccurring satisfies the redressability requirement. *Id.* at 185–86. Here, Plaintiffs request penalties for the Events and Deviations, an injunction enjoining Exxon from violating the CAA, a special master to monitor compliance with the injunctive relief, and a declaratory judgment that Exxon violated its Title V permits. Civil penalties in a CAA citizen suit satisfy the redressability requirement of standing because they deter future violations. *Texans United*, 207 F.3d at 794;

¹⁵⁰ *Supra* ¶¶ II.19, 21–22.

¹⁵¹ For example, hydrogen sulfide can smell badly and cause headaches, and one of Plaintiffs' members smelled strong, pungent odors that, on occasion, caused him headaches. *Plaintiffs' Exhibit 476* at 38–39; *Plaintiffs' Exhibit 540* at 1, 4, 10; *Trial Transcript* at 7-89:25 to 7-91:9, 9-161:24 to 9-162:8; *supra* ¶ II.21.

Laidlaw, 528 U.S. at 185–86.¹⁵² An injunction requiring the defendant to cease its violations also satisfies the redressability requirement of standing. *Texans United*, 207 F.3d at 794; *Env'tl. Conservation Org.*, 2005 WL 1771289, at *4. Because the purpose of the special master in this case would be to ensure violations do not recur, the request for a special master in this particular case also satisfies the redressability requirement. Lastly, because a public, court-ordered declaratory judgment that Exxon has violated its Title V permits would help deter Exxon from violating in the future, the request for a declaratory judgment in this particular case satisfies the redressability requirement. Accordingly, the redressability requirement is satisfied as to all relief sought.

8. Because the injury-in-fact, traceability, and redressability requirements are satisfied, Plaintiffs' members have standing to sue in their own right, and Plaintiffs have standing.

¹⁵² To the extent the redressability requirement in a CAA case is only satisfied as to penalties for ongoing violations, not wholly past violations, the Court notes Exxon has some ongoing violations. *See infra* ¶¶ III.9–30 (finding that because Exxon violated some of the same emission standards or limitations both before and after the complaint was filed, those violations are considered ongoing under the CAA and are thus actionable in a citizen suit).

B. Actionability

9. It is undisputed Exxon violated some emission standards or limitations under the CAA.¹⁵³ The issue is whether such violations are actionable under the CAA as a citizen suit. The CAA provides citizens may bring a civil action “against any person . . . who is alleged to have violated (if there is evidence that the alleged violation has been repeated) or to be in violation of . . . an emission standard or limitation under [the CAA].” 42 U.S.C. § 7604(a)(1). The plaintiff must prove these requirements by a preponderance of the evidence. *Carr v. Alta Verde Indus., Inc.*, 931 F.2d 1055, 1061, 1063–64 (5th Cir. 1991).¹⁵⁴ The plaintiff can prove a person is “in violation,” otherwise known as proving ongoing violation, in one of two ways: first, “by proving violations that continue on or after the date the complaint is filed, or [second] by adducing evidence from which a reasonable trier of fact could find a continuing likelihood of recurrence in intermittent or sporadic violations.” *Id.* at 1062. Proof of one post-complaint violation is conclusive that the corresponding pre-complaint violation is actionable.

¹⁵³ Specifically, Exxon does not dispute that the alleged violations under Counts II, III, IV, and V of Plaintiffs’ complaint constitute violations of an emission standard or limitation. However, Exxon does dispute that the alleged violations under Counts I, VI, and VII constitute violations of an emission standard or limitation.

¹⁵⁴ *Carr* is a Clean Water Act (“CWA”) case. The “to be in violation” provision in the CAA is identical to the “to be in violation” provision in the CWA. Compare 42 U.S.C. § 7604(a) (CAA), with 33 U.S.C. § 1365(a)(1) (CWA). Interpretations of the CWA provision are instructive when analyzing the CAA provision. See *United States v. Anthony Dell’Aquila, Enters. & Subsidiaries*, 150 F.3d 329, 338 n.9 (3d Cir. 1998).

Id. at 1065 n.12; *Natural Res. Def. Council, Inc. v. Texaco Ref. & Mktg., Inc.*, 2 F.3d 493, 502 (3d Cir. 1993). The plaintiff can prove “a continuing likelihood of recurrence” in one of two ways: “[f]irst, by proving a likelihood of recurring violations of the same parameter; or second, by proving a likelihood that the same inadequately corrected source of trouble will cause recurring violations of one or more different parameters.” *Texaco Ref.*, 2 F.3d at 499. In summary, the plaintiff must prove by the preponderance of the evidence one of the following in a CAA citizen suit:

(1) “to have violated”: repeated violation of the same emission standard or limitation before the complaint was filed; or

(2) “to be in violation”:

(a) violation of the same emission standard or limitation both before and after the complaint was filed; or

(b) continuing likelihood of recurrence:

(i) likelihood of recurring violations of the same parameter; or

(ii) likelihood that the same inadequately corrected source of trouble will cause recurring violations of one or more different parameters.

See 42 U.S.C. § 7604(a)(1); *Carr*, 931 F.2d at 1062; *Texaco Ref.*, 2 F.3d at 499; *see also Env’t Tex. Citizen Lobby, Inc. v. ExxonMobil Corp.*, No. H-10-4969, ECF

No. 126 at 10–13 (S.D. Tex. Apr. 3, 2013) (Smith, Mag.) (memorandum and recommendation on motion for summary judgment in this case), *adopted by* ECF No. 135 (S.D. Tex. May 2, 2013) (Hittner, J.) (order adopting the memorandum and recommendation). The definition of “emission standard or limitation” includes any “standard,” “limitation,” “schedule,” “term,” or “condition” in a Title V permit. 42 U.S.C. § 7604(f)(4).

10. Here, Plaintiffs claim Exxon either (1) repeatedly violated the same emission standards or limitations in its Title V permits before the complaint was filed, or (2)(a) violated the same emission standards or limitations in its Title V permits both before and after the complaint was filed. Plaintiffs do not claim satisfaction of the third method of proving actionability: method (2)(b) continuing likelihood of recurrence.¹⁵⁵

¹⁵⁵ Because Plaintiffs do not claim a continuing likelihood of recurrence for purposes of actionability, the Court declines to address in detail this method of proving actionability. However, the Court does find that the preponderance of the credible evidence does not support such a finding. The number of Events and Deviations does not alone prove a likelihood of recurring violations. *See supra* ¶ II.7; *infra* ¶¶ III.36–37, 42. The testimony of Keith Bowers, particularly his opinion that the Events and Deviations had “common causes,” is not persuasive to prove the same inadequately corrected source of trouble will cause recurring violations of different parameters. *See infra* ¶ III.37 n.224. There is no credible evidence that any of the Events or Deviations resulted from the same root cause. *Infra* ¶ III.37. Accordingly, none of the Events or Deviations are actionable due to a continuing likelihood of recurrence.

Exxon contends that to be actionable, the law requires the violations to have involved the same equipment, the same emissions point, and the same root cause. Such considerations may be applicable to one way to prove actionability: method (2)(b) continuing likelihood of recurrence, particularly method (2)(b)(ii) likelihood that the

11. Title V permits incorporate numerous, different regulatory requirements, and the Complex is regulated by over 120,000 permit conditions.¹⁵⁶ Plaintiffs must prove Exxon repeatedly violated *an* emission standard or limitation, which includes a standard, limitation, schedule, term, or condition *in* one of Exxon's Title V permits. *See* 42 U.S.C. § 7604(a)(1), (f)(4). Thus, it is insufficient to prove violation of one standard or limitation followed by violation of a different standard or limitation. *ExxonMobil Corp.*, ECF No. 126 at 13 (holding that the CAA allows citizen suits for a wholly past violation so long as there is a second violation of the *same* emission standard or limitation) (citing *Patton v. Gen. Signal Corp.*, 984 F. Supp. 666, 672 (W.D.N.Y. 1997)) (citing *Satterfield v. J.M. Huber Corp.*, 888 F. Supp. 1561, 1564–65 (N.D. Ga. 1994)). Similarly, it is insufficient to prove repeated violation a Title V permit, without showing which specific standard, limitation, schedule, term, or condition in the Title V permit was repeatedly violated.

same inadequately corrected source of trouble will cause recurring violations of one or more different parameters. However, such considerations are not required to prove actionability the other two ways: method (1) repeated violation of the same emission standard or limitation pre-complaint, or method (2)(a) violation of the same emission standard or limitation both before and after the complaint. For additional background on why violations are not required to have involved the same equipment, the same emissions point, and the same root cause to be actionable, see *ExxonMobil Corp.*, ECF No. 126 at 11–13.

¹⁵⁶ *Supra* ¶ II.4.

12. As evidentiary support for the actionability of the alleged violations in each count of their complaint, Plaintiffs cite to the stipulated spreadsheets of Events and Deviations;¹⁵⁷ spreadsheets created by Plaintiffs that correspond to the stipulated spreadsheets, the only difference being a column added containing Plaintiffs' "number of days of violation" calculations;¹⁵⁸ and tables that tally the alleged number of days of pre-complaint and post-complaint violations from the aforementioned spreadsheets.¹⁵⁹ Each count of Plaintiffs' complaint is addressed in turn.

a. Count I

13. Count I alleges Exxon violated the provision of the Complex's Title V permit that prohibits emissions from upset events. Exxon disputes that these events constitute violations of an emissions standard or limitation. As to specific standards or limitations violated, Plaintiffs' contentions have been inconsistent. In Plaintiffs' original post-trial submission to the Court, they contend "violations of general conditions 8 and 15, and special conditions 38 and 39 (formerly 60 and 61)

¹⁵⁷ *Plaintiffs' Exhibits 1A–7E; see supra* ¶ II.5. These stipulated spreadsheets span hundreds of pages and contain thousands of rows of alleged violations. The Court has reviewed the details of all these spreadsheets.

¹⁵⁸ *Plaintiffs' Exhibits 587–603*. Exxon contends Plaintiffs' method of calculating the number of days of violation is legally incorrect. Reference in this Order to Plaintiffs' calculation of the number of days of violation does not indicate the Court agrees on the accuracy of Plaintiffs' calculations.

¹⁵⁹ *Plaintiffs' Exhibits 9–15*.

in permit 18287/PSD-TX-730M4 for emissions of” various air contaminants.¹⁶⁰ However, in Plaintiffs’ revised post-trial submission to the Court, they added a contention of violation of “Title V permit O1229” and removed contention of violation of conditions 8 and 15.¹⁶¹ In further conflict, Plaintiffs’ Exhibit 9 contends violation of “general condition 8” (not 15), “special condition 1” (not 38 or 39), and “MAERT limits.”¹⁶² Thus, it is unclear exactly which standards or limitations Plaintiffs contend were violated under Count I.¹⁶³

14. The evidentiary support cited to by Plaintiffs for Count I is Plaintiffs’ Exhibits 1A and IB (stipulated spreadsheets), 587 and 588 (Plaintiffs’ corresponding spreadsheets), and 9 (tallied table). Violation of the aforementioned conditions is not corroborated by these spreadsheets. These spreadsheets reference permit 18287, but the spreadsheets do not appear to reference any specific *conditions* of permit 18287 or any other permit, such as general conditions 8 or 15,

¹⁶⁰ *Plaintiffs’ Proposed Findings of Fact and Conclusions of Law* at 117 (capitalization omitted).

¹⁶¹ *Plaintiffs’ Revised Proposed Findings of Fact and Conclusions of Law* at 58 (capitalization omitted).

¹⁶² *Plaintiffs’ Exhibit 9* at 1 (capitalization omitted).

¹⁶³ Although unclear, Plaintiffs appear to be combining a condition incorporated into a flexible permit that does not authorize upset emissions with conditions incorporated into the same flexible permit that limit separate air contaminants. Plaintiffs have not met their burden to prove how any such combination is actionable.

or special conditions 38 and 39.¹⁶⁴ Thus, although the spreadsheets corroborate certain emissions were “not specifically authorized” or perhaps were not authorized by permit 18287, the spreadsheets do not corroborate violation of the specific conditions enumerated under Count I. Repeated violation of permit 18287 does not suffice without showing which conditions of permit 18287 were violated. Further, Plaintiffs have not provided any other persuasive evidence that the emissions listed in the spreadsheets violate the Title V permit conditions enumerated under Count I.

15. Plaintiffs do not contend every upset event is actionable because the condition that does not authorize upset emissions was repeatedly violated. Therefore, the Court need not address whether the sole fact that there are allegedly multiple upset events makes those upset events actionable under the CAA or whether the condition referencing upset emissions constitutes a standard or limitation under the CAA. Rather, Plaintiffs base the actionability of upset events under Count I on alleged repetition of violations of conditions or limitations that apply to separate air contaminants.¹⁶⁵ Specifically, under Count I, Plaintiffs claim “each regulated air contaminant is counted separately for purposes of repeated

¹⁶⁴ See *Plaintiffs’ Exhibits* 1A–1B, 587–88.

¹⁶⁵ See *Plaintiffs’ Exhibit* 9.

violations,” and their tallied table is divided by air contaminant.¹⁶⁶ Therefore, the Court will address whether violations of conditions that apply to separate air contaminants, particularly hourly limits, are actionable under Count I.¹⁶⁷

16. As explained supra, Plaintiffs must prove repetition of the *same, specific* limitation. The spreadsheets have a column labeled “reported emission limit/permit limit” in pounds per hour.¹⁶⁸ Plaintiffs separate each air contaminant in their analysis. For example, Plaintiffs claim carbon monoxide limits were violated 1,286 days pre-complaint and 454 days post-complaint and thus such violations are actionable.¹⁶⁹ However, different releases of carbon monoxide counted by Plaintiffs as at least one day of violation have different limits listed on the spreadsheets.¹⁷⁰ For example, the carbon monoxide limit for the Reportable Event starting on October 20, 2006, was 4,199.43 pounds per hour; but the carbon monoxide limit for the Reportable Event starting on November 3, 2006, was

¹⁶⁶ *Plaintiffs’ Exhibit 9.*

¹⁶⁷ Under Count I, when computing days of violations, Plaintiffs considered every hourly emission limit to be zero because they claim no emissions from upset events are authorized. Nevertheless, the Court considers the hourly emissions limits of each contaminant due to Plaintiffs’ approach to proving repeated violations under Count I contaminant-by-contaminant. The Court also notes that Plaintiffs recognize violations under Count I overlap to an extent with hourly emission limit violations under Count II.

¹⁶⁸ *Plaintiffs’ Exhibits 1A–1B, 587–88 (capitalization omitted).*

¹⁶⁹ *Plaintiffs’ Exhibit 9 at 2.*

¹⁷⁰ *See Plaintiffs’ Exhibits 1A–1B, 587–88.*