United States District Court
Southern District of Texas
ENTERED
April 26, 2017
David J. Bradley, Clerk

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

ENVIRONMENT TEXAS CITIZEN LOBBY, INC. *and* SIERRA CLUB,	§	
Plaintiffs,	§	
v.	§	Civil Action No. H-10-4969
EXXONMOBIL CORPORATION, EXXONMOBIL CHEMICAL COMPANY, *and* EXXONMOBIL REFINING AND SUPPLY COMPANY,	§	
Defendants.	§	

REVISED FINDINGS OF FACT & CONCLUSIONS OF LAW[1]

On February 10, 2014, this Court commenced a non-jury trial in the above-entitled matter. During the course of the thirteen-day proceeding, the Court

[1] As explained further below, the Fifth Circuit vacated the Court's prior judgment as expressed in the initial Findings of Fact and Conclusions of Law. However, the Fifth Circuit upheld the Court's findings as to Count VII; the denial of a declaratory judgment, permanent injunction, and appointment of a special master; and the CAA penalty factor for compliance history and good faith efforts to comply. The Court's initial findings as to Counts V and VI, and the following penalty factors—the size of the business and payment by the violator of penalties previously assessed for the same violation—were unaddressed and undisturbed by the Circuit's opinion. Because the Court's prior judgment was vacated in whole and not in part, where the Court's prior findings were undisturbed or upheld by the Fifth Circuit, the Court reincorporates the prior findings into the Revised Findings of Fact and Conclusions of Law. Part II of the revised findings of fact and conclusion of law adopts the previous Part II in its entirety, as the Circuit did not hold the Court made any clearly erroneous factual finding.

received evidence and heard sworn testimony.[2] On December 17, 2014, having considered the evidence, testimony, and oral arguments presented during the trial, along with post-trial submissions[3] and the applicable law, the Court entered its initial findings of fact and conclusions of law pursuant to Federal Rule of Civil Procedure 52(a). The judgment was appealed. The Fifth Circuit vacated the Court's judgment and remanded the case for the determination of a new judgment as consistent with the Circuit's opinion. Accordingly, the Court issues the following revised findings of fact and conclusions of law, as consistent with the instructions on remand from the Fifth Circuit following the vacatur of the Court's initial judgment. 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

[2] The parties submitted 1,148 exhibits that span thousands of pages, and 25 witnesses testified.

[3] The post-trial submissions considered by the Court include the plaintiffs' and the defendants' original proposed findings of fact and conclusions of law, which are 455 pages and 361 pages in length, respectively. On remand, the Court considered the revised proposed findings of fact and conclusions of law, and where relevant, the pre-appeal proposals (both the original and revised).

"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,[4] 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.

On December 17, 2014, the Court issued its initial findings of fact and conclusions of law.[5] Plaintiffs appealed the decision to the Fifth Circuit. On May 27, 2016, the Fifth Circuit issued an opinion vacating the Court's judgment and remanding for assessment of penalties based on the violations actionable as consistent with its opinion.[6] Specifically, the Circuit held: (1) as to Count I, the Court erred as a matter of law in treating the count as alleging violations of Maximum Allowable Emission Rate Table ("MAERT") limitations rather than

[4] 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. On remand, Plaintiffs only seek $40,815,618 in penalties.

[5] *Findings of Fact & Conclusions of Law*, Document No. 225.

[6] *Env't Tex. Citizen Lobby, Inc. v. ExxonMobil Corp.*, 824 F.3d 507 (5th Cir. 2016).

special conditions 38 and 39; (2) as to Count II, the Court erred in requiring Plaintiffs to show repeated violations of the same numerical threshold per pollutant per emission point, rather than violations per pollutant per emission point, even if the numerical limitations varied due to amendment or renewal; (3) as to Counts III and IV, the Court erred in requiring corroboration for violations it explicitly found were uncontested; and (4) in assessing the penalty factors, the Court erred in failing to enter findings as to whether an economic benefit was received by delaying environmental improvement projects and abused its discretion in treating violations of shorter duration as offsetting longer duration violations and less serious violations as offsetting more serious violations.

On August 29, 2016, the Court ordered the parties to submit revised proposed findings of fact and conclusions of law consistent with scope of remand from the Fifth Circuit. The Court instructed the parties that it would not revisit any finding of fact or conclusion of law upheld in or left undisturbed by the Fifth Circuit's opinion. The parties submitted their proposals on October 31, 2016, and filed responses to the respective opposing party's proposal on November 21, 2016. Having considered the Fifth Circuit's opinion, the parties revised proposals and responses thereto, the Court revises its initial conclusions of law, as follows, on Counts I–IV; the economic benefit, duration, and seriousness penalty factors; enters conclusions of law in the first instance on the affirmative defenses asserted

in Exxon's revised proposal; and its judgment on the amount of penalties to be assessed.[7]

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.[8] ExxonMobil Corporation is the largest publicly traded oil company in the world as measured by market evaluation.[9] In addition, it is one of the largest publicly traded companies in the world measured by both revenue and market capitalization.[10] Total after-tax profits of ExxonMobil Corporation were $41 billion in 2011 and $44 billion in 2012.[11]

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[7] The Court deems abandoned any argument asserted in the initial proposed finding facts and conclusions of law that was not re-urged on remand in the revised proposals or the responses thereto.

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

[9] *Trial Transcript* at 5-61:6–9.

[10] *Trial Transcript* at 5-60:5–21.

[11] *Trial Transcript* at 5-61:11–13.

2. Exxon owns and operates the Complex, which consists of a refinery, olefins plant, and chemical plant.[12] The Complex is one of the largest and most complex industrial sites in the United States.[13] Specifically, it is the largest petroleum and petrochemical complex in the United States.[14] It sits on approximately 3,400 acres, with a circumference of approximately 13.6 miles.[15] 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.[16] These products range from jet fuel to plastic.[17] 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.[18] It employs over 5,000 people.[19]

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

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

[14] *Plaintiffs' Exhibit* 556 at 25.

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

[16] *Trial Transcript* at 3-77:5 to 3-80:1.

[17] *Trial Transcript* at 3-56:2–18, 3-60:16–18.

[18] *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.

[19] *Trial Transcript* at 3-75:15–18.

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.[20]

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.[21] 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.[22] 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.[23]

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

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

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

[23] *Trial Transcript* at 3-81:9 to 3-82:1.

C. Reportable Events, Recordable Events, and Deviations

5. Exxon documents noncompliance and indications of noncompliance with its Title V permits in three ways.[24] 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 emissions events."[25] 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.[26] Third, the TCEQ requires Exxon to document and submit to the TCEQ information about Title V "deviations" in semi-annual Title V "deviation reports."[27] It is undisputed Exxon complied with the TCEQ's aforementioned reporting and recording requirements. Plaintiffs and

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

[25] 30 TEX. ADMIN. CODE §§ 101.1(88), 101.201; *Trial Transcript* at 2-232:13–20, 2-236:3–24, 12-164:11–23.

[26] 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.

[27] 30 TEX. ADMIN. CODE §§ 122.10(6), 122.145(2); *Trial Transcript* at 2-217:4 to 2-218:19.

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.[28] 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 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").[29]

D. Investigation, Enforcement, and Corrective Actions

6. The TCEQ investigates each reportable emissions event.[30] 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.[31] Similarly, the TCEQ reviews

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[28] *Trial Transcript* at 1-246:3–15.

[29] *Plaintiffs' Exhibits* 1A–7E.

[30] *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.

[31] 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.

the records of recordable emissions events and takes enforcement action should it determine the records reflect an inappropriate trend.[32]

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.[33] Similarly, for the Recordable Events and Deviations, Exxon analyzed the records for trends and ways to improve, identified root causes, and implemented corrective actions.[34] 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.[35] 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.[36] The number of events involving a certain type of equipment, a certain unit, or a

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[32] *Defendants' Exhibit* 546 at 5–7, ¶¶ 13–18.

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

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

[35] *Trial Transcript* at 10-231:15 to 10-232:14.

[36] *Defendants' Exhibit* 546 at 6, ¶¶ 16–17.

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.[37]

8. After investigating, the TCEQ assessed $1,146,132 in penalties against Exxon for some of the Events and Deviations.[38] In addition, Harris County assessed $277,500 in penalties for some of the Events and Deviations.[39] Thus, in total, Exxon has paid $1,423,632 in monetary penalties for Events and Deviations at issue in this case.[40] Along with those penalties, the TCEQ required Exxon to take certain corrective actions or document the corrective actions already taken.[41]

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.[42] 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

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[37] *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.

[38] *Plaintiffs' Exhibit* 337.

[39] *Defendants' Exhibit* 502 at 1–10.

[40] 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.

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

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

condition of air pollution.[43] 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.[44] An example of one such Reportable Event occurred on August 30, 2006, at the Butadiene Unit due to operator error.[45] Exxon's root cause analysis determined the event occurred because a technician misunderstood a request via radio from a computer console operator and opened the wrong valve.[46] 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.[47] 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.[48] 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

[43] 30 TEX. ADMIN. CODE § 101.222.

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

[45] *Defendants' Exhibits* 26, 26E.

[46] *Defendants' Exhibit* 26E.

[47] *Defendants' Exhibit* 26E.

[48] *Defendants' Exhibits* 26, 26I.

cycle.[49] 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.[50] 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 sulphide injection prior to feed-in, and removal of 225 pounds of steam prior to feed-in.[51]

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.[52] 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.[53] Further, 58% had total emissions of 20 pounds or less, 80% had total

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[49] *Defendants' Exhibit* 26I.

[50] *Defendants' Exhibit* 26I.

[51] *Defendants' Exhibit* 26I.

[52] *Trial Transcript* at 12-164:11–23.

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

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.[54] 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 pounds of emissions.[55] 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.[56]

11. Of the 901 Deviations, 45% involved no emissions whatsoever.[57] The Deviations not involving emissions typically relate to late reports or incomplete reports.[58] 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

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

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

[56] *Plaintiffs' Exhibit* 2D at row 2432.

[57] *Trial Transcript* at 3-118:9–13, 10-204:11–13, 10-208:1–8.

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

corrective action for which was testing the engine upon repair and startup.[59] 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.[60] The emissions from the remaining 415 Deviations are categorized as either a Reportable Event or Recordable Event depending on the amount of emissions, and thus those emissions are addressed in the Court's findings related to Reportable Events or Recordable Events.[61]

E. Agreed Enforcement Order

12. On February 22, 2012, Exxon and the TCEQ agreed on an enforcement order regarding the Complex (the "Agreed Order").[62] 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

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

[60] *Trial Transcript* at 10-209:18 to 10-210:1.

[61] *Trial Transcript* at 10-203:11 to 10-204:10, 10-210:7–12.

[62] *Defendants' Exhibit* 222.

environmental improvement projects.[63] 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.
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> * * *
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> 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 minimization practices . . . are intended to reduce loads on the flare system.
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> 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.
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> d. Enhanced Fugitive Emissions Monitoring. . . . The program will use infrared imaging technology to locate potential VOC and HRVOC leaks. . . .[64]

The Agreed Order states these projects "will reduce emissions at the Baytown Complex, including emissions from emissions events . . . ."[65] Indeed, the Agreed Order requires certain amounts of emissions reductions.[66] Exxon could not have

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[63] *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.

[64] *Defendants' Exhibit* 222 at ¶ III.12.

[65] *Defendants' Exhibit* 222 at ¶ III.12.

[66] *Defendants' Exhibit* 222 at ¶ III.10.

been required to undertake these projects under existing laws and regulations.[67] Implementation of these projects will cost approximately $20,000,000.[68] 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.[69] In addition, Exxon must submit annual reports to the 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.[70]

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.[71] It has a Safety Security Health and Environmental ("SSHE") group comprised of approximately 75 employees, including approximately 30 dedicated to environmental compliance,

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[67] *Defendants' Exhibit* 222 at ¶ III.12; *Trial Transcript* at 3-190:6–24, 12-177:12 to 12-178:6.

[68] *Trial Transcript* at 3-32:25 to 3-40:5.

[69] *Defendants' Exhibit* 222 at ¶¶ III.12, 13.

[70] *Defendants' Exhibit* 222 at ¶ III.14.

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

with an annual budget of $25 million in 2014.[72] Over the past several years Exxon has spent more than $1 billion on regulatory compliance and environmental improvement projects at the Complex.[73] 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 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.[74]

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.[75] Approximately half of the flares at the Complex are connected to flare gas recovery compressors.[76] All of the flares have flow rate velocity

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[72] *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.

[73] *Trial Transcript* at 12-239:22 to 12-240:6.

[74] *Defendants' Exhibit* 413.

[75] *Trial Transcript* at 10-47:5 to 10-78:19.

[76] *Trial Transcript* at 10-56:13–16.

meters and are monitored for vent gas heat content, and Exxon takes steps to ensure each flare operates in compliance with applicable regulatory requirements.[77] Exxon has also generated and implemented a flare minimization plan to reduce flaring at the Complex.[78] Further, Exxon's maintenance policies and procedures conform or exceed industry standards and codes.[79]

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.[80] Despite good practices, at any industrial facility there will always be mechanical failure and human imperfection leading to noncompliance with Title V permit conditions.[81]

G. Improvement

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

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[77] *Trial Transcript* at 10-61:5–17.

[78] *Trial Transcript* at 12-231:16 to 12-232:1.

[79] *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.

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

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

> 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, S02 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 emissions of CO have dropped by 76, and reported emissions of NO_x have dropped by 63 percent.[82]

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.[83] In addition, the annual amount of unauthorized emissions of criteria pollutants at the Complex decreased by 95% from 2006 to 2013.[84] Similarly, the annual number of Reportable Events that occurred at the Complex decreased by 81% percent from 2005 to 2013.[85] Flaring at the Complex has been reduced by 73% since 2000.[86]

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[82] *Defendants' Exhibit* 22 at ¶ I.12.

[83] *Defendants' Exhibits* 1004, 1008.

[84] *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.

[85] *Defendants' Exhibit* 1000 at 1.

[86] *Defendants' Exhibit* 547 at 12:11–12.

17. In addition, each year at issue, total emissions were far below the annual emissions limits.[87] 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.[88] Also, each year at issue, unauthorized emissions were a very small percentage of total emissions and an even smaller percentage of the annual emissions limits.[89] 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.[90]

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."[91] It has approximately 2,900 dues-paying

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[87] *Defendants' Exhibits* 1004, 1008. Emissions from "event emissions" are at issue in this case, not "permitted emissions."

[88] *Defendants' Exhibit* 1004 at 1.

[89] *Defendants' Exhibits* 1004, 1008.

[90] *Defendants' Exhibit* 1004 at 1.

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

members in Texas.[92] Similarly, Sierra Club is a non-profit corporation with a purpose to protect humanity, the environment, and the ability to enjoy the outdoors.[93] The Lone Star (Texas) Chapter of the Sierra Club has approximately 25,000 members.[94] 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.[95] She grew up in Baytown at her parents' home, which is about a mile and a half from the Complex.[96] The Complex is the closest industrial facility to her parents' home.[97] She lived in Houston from 2006 through 2013 while attending college and working, during which time she regularly visited her parents' home in Baytown.[98] In March 2013, she moved to Oakland, California.[99] She has returned to Baytown to visit her family at her parent's home, and she has plans to

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[92] *Trial Transcript* at 1-234:24 to 1-235:4.

[93] *Trial Transcript* at 2-125:11–22.

[94] *Trial Transcript* at 2-125:23 to 2-126:4.

[95] *Trial Transcript* at 1-192:2–22.

[96] *Trial Transcript* at 1-193:8 to 1-194:16.

[97] *Trial Transcript* at 1-194:17–20.

[98] *Trial Transcript* at 1-196:6 to 1-199:9.

[99] *Trial Transcript* at 1-199:8–9.

visit Baytown again for the holidays in 2014.[100] 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.[101] These symptoms improved when she moved away from Baytown and she was able to stop taking medication, but the symptoms return whenever she visits her family in Baytown.[102] However, she cannot correlate any of these symptoms to specific Events or Deviations at issue in this case.[103] Further, she has seen flares, smoke, and a brownish haze over the Complex.[104] 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.[105] 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.[106] Lastly, she enjoys running outdoors, but when she is visiting Baytown,

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[100] *Trial Transcript* at 1-199:10–25.

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

[102] *Trial Transcript* at 1-205:19 to 1-206:11.

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

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

[105] *Trial Transcript* at 1-203:9 to 1-204:9.

[106] *Trial Transcript* at 1-218:3–24.

she refrains from doing so because she experiences labored breathing and an abrasive feeling in her throat and lungs.[107]

20. Second, Marilyn Kingman is a member of Sierra Club.[108] She lives in a town that neighbors Baytown, but she shops, banks, attends church, and conducts other activities several times a week in Baytown, including nearby the Complex.[109] She has smelled a chemical smell around the Complex, seen flares at the Complex, and seen a gray or brown haze over the Complex.[110] The odors she has smelled, which she attributes to the Complex, cause her to be concerned for her health.[111] She limits her outdoor activities in Baytown when she smells odors or sees haze.[112] Also, flaring at the Complex concerns her because she is afraid of explosion and because she believes flaring indicates something is wrong.[113] However, she does not claim to have any physical ailments or health conditions that she attributes to

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[107] *Trial Transcript* at 1-204:10 to 1-205:5.

[108] *Trial Transcript* at 6-69:11–14.

[109] *Trial Transcript* at 6-71:3 to 6-75:6.

[110] *Trial Transcript* at 6-75:2 to 6-76:15.

[111] *Trial Transcript* at 6-76:16–23, 6-83:6–12.

[112] *Trial Transcript* at 6-76:24 to 6-77:24.

[113] *Trial Transcript* at 6-78:13 to 6-80:5.

anything happening at the Complex.[114] Also, she was not able to correlate any of her experiences or concerns to specific Events or Deviations at issue in this case.[115]

21. Third, Richard Shae Cottar is a member of Sierra Club.[116] From April 2010 through September 2012, he lived a quarter of a mile from the Complex.[117] Since September 2012, he has lived approximately two miles from the Complex.[118] 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.[119] He also smelled strong, pungent odors that, on occasion, caused him headaches and awoke him in the night.[120] 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

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[114] *Trial Transcript* at 6-95:14–20.

[115] *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.

[116] *Trial Transcript* at 1-98:18 to 1-99:13.

[117] *Trial Transcript* at 1-102:7 to 1-103:6.

[118] *Trial Transcript* at 1-102:3–4, 1-106:5–11.

[119] *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.

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

odors, but when the wind was blowing towards the Complex away from him during flaring events, he did not smell the odors.[121] He has also smelled odors that became more intense the closer he got to the Complex while driving.[122] His asthmatic symptoms were exacerbated when living at the closer address, and since moving further from the Complex, his asthmatic symptoms have decreased.[123] He moved further away from the Complex out of concern for his health and safety.[124] When visiting the nature center next to the Complex, he does not stay if he sees emissions.[125] 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.[126] However, he understands that certain emissions and flaring are allowed by permits.[127] 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.[128]

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[121] *Trial Transcript* at 1-119:5–18.

[122] *Trial Transcript* at 1-111:10–20.

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

[124] *Trial Transcript* at 1-144:21 to 1-145:17.

[125] *Trial Transcript* at 1-152:11–21.

[126] *Trial Transcript* at 1-153:9–20.

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

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

22. Fourth, Sharon Sprayberry is a member of Sierra Club.[129] She lived in Baytown from 2004 until June 2012, about one mile from the Complex.[130] 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 she saw flares.[131] These smells concerned her because she was afraid they were toxic or harmful.[132] While living in Baytown, she also experienced respiratory issues.[133] Her respiratory problems went away within a few weeks of moving to a different city—McGregor, Texas.[134] 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.[135] She would have retired in Baytown if the air quality were better.[136] She understands not all flares involve unauthorized

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[129] *Trial Transcript* at 6-5:19–23.

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

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

[132] *Trial Transcript* at 6-36:16 to 6-37:1.

[133] *Trial Transcript* at 6-15:7–17.

[134] *Trial Transcript* at 6-37:9–24.

[135] *Trial Transcript* at 6-38:2–19.

[136] *Trial Transcript* at 6-38:20–22.

emissions because some flares and emissions are authorized by permit.[137] In total, she was able to credibly correlate two events she observed to Events or Deviations.[138]

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 Complex for **35 years**.[139] 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.[140] 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.[141]

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**

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[137] *Trial Transcript* at 6-50:12–20.

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

[139] *Trial Transcript* at 10-130:11 to 10-131:9.

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

[141] *Trial Transcript* at 10-142:7–18.

years.[142] He does not "feel impacted or influenced" by his close proximity to the Complex.[143] 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.[144] He has smelled substantial odors a couple of times in 37 years but does not characterize the odors as overpowering.[145]

25. Third, Gordon Miles has lived very close to the Complex for **28 years**.[146] 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.[147]

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

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

[143] *Trial Transcript* at 11-114:13–18.

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

[145] *Trial Transcript* at 11-115:5–9.

[146] *Defendants' Exhibit* 545; *Trial Transcript* at 12-82:11 to 12-86:5.

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

(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 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 Envtl. 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.[148] 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 smelled or haze seen, left the nature center next to Complex early, and moved away from Complex.[149] Collectively, these experiences, worries, and changes satisfy the injury-in-fact requirement.

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[148] *Supra* ¶¶ II.19–22.

[149] *Supra* ¶¶ II.19–22.

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 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.[150] Also, Plaintiffs' members have seen flares, smoke, and haze over

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

the Complex.[151] 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.[152] 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.[153] Some of the members' allergies and respiratory problems decreased when they moved away from the Complex.[154] 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.[155] 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.

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[151] *Supra* ¶¶ II.19–22.

[152] *Supra* ¶¶ II.19, 21–22.

[153] *Supra* ¶ II.21.

[154] *Supra* ¶¶ II.19, 21–22.

[155] 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.

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; *Laidlaw*, 528 U.S. at 185–86.[156] An injunction requiring the defendant to cease its violations also satisfies the redressability requirement of standing. *Texans United*, 207 F.3d at 794; *Envtl. 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

[156] 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.9–48 (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).

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.

B. Actionability

9. It is undisputed Exxon violated some emission standards or limitations under the CAA.[157] 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).[158] The plaintiff

[157] 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.

[158] *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'Aquilla, Enters. & Subsidiaries*, 150 F.3d 329, 338 n.9 (3d Cir. 1998).

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. *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.[159]

[159] 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

11. Title V permits incorporate numerous, different regulatory requirements, and the Complex is regulated by over 120,000 permit conditions.[160] 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

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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.60–61. 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.61 n.224. There is no credible evidence that any of the Events or Deviations resulted from the same root cause. *Infra* ¶ III.61. 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 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.

[160] *Supra* ¶ II.4.

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.

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;[161] 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; and tables that tally the alleged number of days of pre-complaint and post-complaint violations from the aforementioned spreadsheets.[162] The Court addresses each count of Plaintiffs' complaint in turn.

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[161] *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.

[162] *Plaintiffs' Exhibits* 9–15.

a. Count I

1. Special conditions 38 and 39 are standards or limitations within the meaning of the CAA

13. Plaintiffs contend the language in flexible permit 18287's special conditions 39 and 39 stating upset emissions are "not authorized" is a standard or limitation under the CAA. Exxon contends that special conditions 38 and 39 are not standards or limitations under the CAA because the term "not authorized" exempts upset emissions from the permit.

14. The Court's initial opinion found Plaintiffs failed to provide corroborating evidence of violations of special conditions 38 and 39 because the evidence provided in support of Count I failed to specify which standards and limitations were allegedly violated. To the extent Plaintiffs did allege a violation of air containment conditions or limitations, the Court found the evidence did not prove a repeated violation of the same, specific limitation. On appeal, the Circuit held the Court conflated its analysis of Count I with the alleged MAERT limitation violations in Count II. As a matter of law, the Circuit held Count I sufficiently alleged an alternate theory from Count II, that every emissions event at the refinery constitutes a violation of the "no upset emissions" provision in special conditions 38 and 39. The Court's judgment on Count I was vacated and remanded. The Circuit determined the Court "appl[ied] the wrong law to the events set forth" by

using the incorrect permit provisions in its analysis. The Court, therefore, must in the first instance examine whether violations of special conditions 38 and 39 are actionable under the CAA, and if so, what the statutory scope of liability is for each upset event.[163]

15. The Court first turns to whether special conditions 38 and 39 are an "emission standard or limitation" within the meaning of CAA. An "emission standard or limitation" is defined as "any standard, limitation or schedule established under any permit issued pursuant to subchapter V of this chapter or under any applicable State implementation plan approved by the Administrator, any permit term or condition, and any requirement to obtain a permit as a condition of operations." 42 U.S.C. § 7604(f)(4). Permit 18287 is a Title V permit within

[163] The Fifth Circuit remanded the case because it determined the Court applied the wrong law. The Court acknowledged in its original opinion (as did the Fifth Circuit opinion) that it did not reach the legal question of whether any violation was actionable under the CAA. Instead, the Court had determined it did not need to address that legal question because, even if the emission events were actionable under the CAA, Plaintiffs did not meet their burden of proof. Exxon contends that because the Fifth Circuit only remanded to this Court with instructions to treat Count I as alleging violations of special conditions 38 and 39, and not MAERT violations, any language in the opinion pertaining to the validity of Exxon's theory that the permits do not govern upset emissions is not binding on remand. To the extent Exxon is correct—that any discussion by the Fifth Circuit pertaining to Exxon's argument that upset emissions are not governed by permits is dicta—the Court notes that it has independently undertaken an analysis of the argument. The Court (as addressed in detail below) agrees with the Fifth Circuit's analysis of Exxon's argument. As such, the Court finds it not necessary to address which portions of the Fifth Circuit's opinion as to Count I may be dicta, and therefore, not binding on the Court on remand.

the meaning of the CAA.[164] Therefore, liability turns on whether the "not authorized" language in special conditions 38 and 39 is a limitation in the permit or an exemption from the permit.

16. On its face, the language in special conditions 38 and 39 is a limitation within the meaning of the CAA. The relevant provision in the special conditions states: "This permit does not authorize upset emissions, emissions from maintenance activities that occur as a result of upsets, or any unscheduled/unplanned emissions associated with an upset. Upset emissions are not authorized, including situations where that upset is within the flexible permit emission cap or an individual emissions limit."[165] The term "not authorized" cannot be interpreted in isolation from the surrounding text. The modifying language within the text, that this provision applies even when an upset is "within the flexible permit emission cap or an individual emissions limit," clarifies any ambiguity as to whether the term "not authorized" should be interpreted as a limitation. Rather than exempting upset emissions from the permit, the terminology provides a further limitation on standards and limitations found elsewhere in the permit.

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[164] Title V permit O1229 incorporates permit 18287.

[165] Plaintiffs' Exhibit 176, Special Condition ¶¶ 38, 39 (emphasis added).

17. Exxon's contention the phrasing of general condition 15 indicates that each special condition would need to explicitly state failure to comply with a limit in a permit is a "violation" where an emission is "not authorized" is unavailing. General condition 15 states: "The permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized ***and*** are violations of this permit."[166] The phrase "are not authorized and are violations of the permit" modifies the first part of the sentence "[e]missions that exceed the limits of this permit." The "not authorized" terminology from special condition 38 and 39 does not parallel the modifying "not authorized and . . . violations of the permit" language in general condition 15, such that the term should not be interpreted as violations unless explicitly deemed such. Special conditions 38 and 39's language is best classified as instead defining when an upset event "exceeds the limits of this permit." As discussed above, by the special conditions' terms, any upset emission—even one within the flexible permit emission cap or an individual emissions limit—exceeds the limits of permit 18287.

18. The cases Exxon cites in support of holding that special conditions 38 and 39 exempt upset emissions from the permit are inapposite. The analysis of the distinction between "authorizing" and "prohibiting" an event in *Association of Civilian Technicians v. FLRA*, 269 F.3d 1112, 1116 (D.C. Cir. 2001), turned on an

[166] Plaintiffs' Exhibit 176, General Condition ¶ 15 (emphasis added).

agency's reliance on a non-applicable statute to interpret a collective bargaining provision and its interpretation that the lack of authorization in that inapplicable statute prohibited an expenditure. The statutory provision at issue did not use the term "not authorized." *Id.* As such, the D.C. Circuit was not even interpreting the term "not authorized" and differentiating the term from "prohibiting"; any discussion of a lack of authorization merely pertained to the general principle that an expenditure is not authorized unless affirmatively recognized by a law or regulation. *Id.* The special conditions at issue here turn on the definition of the explicit term "not authorized." *Cabazon Band of Mission Indians v. Wilson*, 37 F.3d 430, 433 (9th Cir. 1994), involved a statute that did not confer authority to tax, but neither did the statute prohibit taxation if another source of authority for taxing power could be shown. Here, Exxon has not directed the Court to an alternate authority source that authorizes upset emissions.[167] Additionally, in context of the entire text of the provision at issue in special conditions 38 and 39, the term "not authorized" on its face prohibits upset emissions.

19. Nor does Exxon find support for its position in the regulatory framework. Special conditions 38 and 39 pertain to "upset emissions." As permit 18287 does not define the term, the Court turns to the definition found in Texas's regulatory framework. An "upset event" is defined under Texas law as "[a]n

[167] *Infra* ¶¶ III.19–20.

unplanned and unavoidable breakdown or excursion of a process or operation that results in unauthorized emissions. . . ."[168] 30 TEX. ADMIN. CODE § 101.1 (110). "[U]nauthorized emissions" are defined as "[e]missions of any air contaminant except water, nitrogen, ethane, noble gases, hydrogen, and oxygen that exceed any air emission limitation in a permit, rule, or order of the commission or as authorized by Texas Health and Safety Code, §382.0518(g)." *Id.* § 101.1(108). The regulations themselves refer back to the limitations set out in a permit. Exxon has not pointed the Court to a regulation that governs upset emissions that would potentially conflict with special conditions 38 and 39.[169]

20. The Court has not found any ambiguity as to whether the term "not authorized" in special conditions 38 and 39 pertains to a limitation. The Court found the language in the relevant special conditions is plain on its face and is a

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[168] In full, the definition states: "Upset event--An unplanned and unavoidable breakdown or excursion of a process or operation that results in unauthorized emissions. A maintenance, startup, or shutdown activity that was reported under §101.211 of this title (relating to Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements), but had emissions that exceeded the reported amount by more than a reportable quantity due to an unplanned and unavoidable breakdown or excursion of a process or operation is an upset event." 30 TEX. ADMIN. CODE § 101.1(110).

[169] 30 Texas Administrative Code § 101.1 merely sets out the definitions for terms used in air quality rules; section 101.1 does not provide any affirmative regulation pertaining to those definitions. Even if Exxon were able to direct the Court to such a provision, general provision 13 in permit 18287 states the special conditions in the permit may be more restrictive than the requirement of Title 30 of the Texas Administrative Code. See Plaintiffs' Exhibit 176, General Condition ¶13.

limitation within the meaning of the CAA. Even if there were to be ambiguity, however, the evidence Exxon cites from the TCEQ and the purported applicability of *Auer* deference is unpersuasive. The Agreed Order states: "Emission events and MSS activities, other than planned MSS activities, are not subject to permitting under 30 Tex. Admin. Code Chapters 106 or 116, and are regulated under 30 Tex. Admin. Code Chapter 101 and Tex. Health & Safety Code §§ 382.0215, 382.0216 and 382.085."[170] Chapter 106 pertains to permits by rule. *See* 30 TEX. ADMIN. CODE § 106.4. Chapter 116 pertains to permitting for new construction or modification. *See* 30 TEX. ADMIN. CODE § 116.10. The Agreed Order is best interpreted as stating Exxon cannot receive a permit allowing emissions events or unplanned MSS activities by rule or during new construction and modification. Emissions events and unplanned MSS activity is not exempted from a permit; instead, Exxon is prohibited from receiving a permit allowing emissions events and unplanned MSS activities pursuant to those chapters. The Agreed Order prohibits issuing a permit that allows emissions events and unplanned MSS activities, and states the events and activities are additionally subject to the cited regulatory schemes. A permit could still include a provision that prohibits emissions events and unplanned MSS activities and would be consistent with the Agreed Order.

[170] *Defendants' Exhibit* 222, Finding ¶ I.2.

22. Exxon further contends the trial evidence establishes agency regulatory policy considers special conditions 38 and 39 not to be stand-alone emissions standards or limitations, and the agency's treatment of these special conditions is entitled to *Auer* deference.[171] At trial, Karen Olson ("Olson"), a former TCEQ permit reviewer and manager, testified that special conditions 38 and 39, "define what is within the scope of the permit and what is not within the scope of the permit as handled through Chapter 101."[172] However, there was no testimony that specifically stated whether upset emissions were within the scope of the permit or not.[173] Even if the Court were to interpret Olson's testimony as stating the agency did not consider special conditions 38 and 39 as stand-alone limitations, *Auer* deference would not apply to that testimony. *See Paralyzed Veterans of Am. V. D.C. Arena L.P.*, 117 F.3d 579, 587 (D.C. Cir. 1997), *abrogated on other grounds by Perez v. Mortg. Bankers Ass'n*, 135 S. Ct. 1199

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[171] *Auer* deference is the proposition that, where an agency's regulation is ambiguous, courts "defer to an agency's interpretation of its regulations, even in a legal brief, unless the interpretation is plainly erroneous or inconsistent with the regulations or there is any other reason to suspect that the interpretation does not reflect the agency's fair and considered judgment on the matter in question." *Talk Am., Inc. v. Mich. Bell Tel. Co.*, 546 U.S. 50, 59 (2011) (internal quotations omitted).

[172] *Trial Transcript*, 11-149:5 to 150:15.

[173] Further, the Court sustained Plaintiffs' objection to Exxon's tender of Olson for the purpose of "establish[ing] the TCEQ's understanding of the permit, the regulations that apply to the permit, and how the TCEQ views permit and permitting issues, and how they interpreted those rules." *Trial Transcript*, 11-127:8 to 128:5.

(2015) ("A speech of a mid-level official of an agency, however, is not the sort of 'fair and considered judgment' that can be thought of as an authoritative departmental position."). Olson's testimony would be the equivalent of a speech by a mid-level official in *Paralyzed Veterans*, which the Court would not—without more—ascribe authority to as a departmental position. *Auer* deference, therefore, is inapplicable. Accordingly, the Court finds that special conditions 38 and 39 are standards and limitations within the CAA

2. Violations of Special Conditions 38 and 39

23. Plaintiffs contend that each pollutant emitted during an upset event is a separate violation. Exxon does not address this contention. The Court did not reach the question in its initial opinion as to whether violations are determined per upset event or on a contaminant-by-contaminant basis.

24. Interpretations of the CWA provision are instructive when analyzing a CAA provision. *See United States v. Anthony Dell'Aquilla, Enters. & Subsidiaries*, 150 F.3d 329, 338 n.9 (3d Cir. 1998). The CWA utilizes a pollutant-by-pollutant analysis in determining violations. *See Texaco*, 2 F.3d 493, 498–99 (discussing that one unresolved source of trouble can result in violations of multiple parameters, all of which are actionable in citizen's suit). Additionally, the language of special conditions 38 and 39 refers to "upset emissions" not "upset

events."[174] As discussed above, under Texas's regulatory framework "upset events" are defined as resulting in "unauthorized emissions."[175] The Court determines that the statutory framework and language of the special conditions indicate a pollutant-by-pollutant approach should be adopted here. Accordingly, the Court will count each emission of a separate pollutant during an upset event as an individual violation.

25. The evidentiary support cited for violations of Count I is Plaintiff's Exhibits 1A and 1B (stipulated spreadsheets), 587 and 588 (Plaintiffs' corresponding spreadsheets), and 9 (tallied table).[176] These exhibits all reference permit 18287. The information contained within the spreadsheets pertaining to the date, time, duration of release, and amount released is undisputed. The Court found that pursuant to special conditions 38 and 39 these emissions were not authorized in any amount, even if the emissions fell within an emissions cap or

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[174] Plaintiffs' Exhibit 176, Special Condition ¶¶ 38, 39.

[175] *Supra* ¶ III.19.

[176] On remand, Plaintiffs submitted resorted versions of Plaintiffs' Exhibits 587–94. *Description of Re-Sorted Versions of Plaintiffs' Exhibits 587–594*, Document No. 253, Exhibit 3. The resorted versions show how repeated violations of specific emissions were identified and calculated, as well as grouped by duration. The spreadsheets were submitted to the Court in native format. The Court has reviewed the resorted exhibits and finds they are consistent with the spreadsheets initially submitted at trial.

individual emission limit.[177] Therefore, the hourly emission limit is zero. Plaintiff's spreadsheets comport with the Court's analysis of special conditions 38 and 39.

26. Each day of violation is subject to a civil penalty under the CAA. *See* 42 U.S.C. § 7413(b); 40 C.F.R § 19.4. Neither party has directed the Court to a definition within a statute or permit for the term "day." The Court adopts the definition of "day" as a twenty-four hour period, as has been adopted in the context of the CWA. *See San Francisco Baykeeper v. W. Bay Sanitary Dist.*, 791 F. Supp. 2d 719, 762 (N.D. Cal. 2011) (noting the twenty-four hour period calculation, as opposed to a calendar day definition, was more favorable to the defendant, the non-moving party). As the Court found each separate emission of a pollutant during an upset event is a separate violation, to the extent multiple violations by the same pollutant occur on the same calendar day, those violations are counted as separate violations. However, a continuous violation of pollutant resulting from one upset event utilizes the twenty-four hour period definition in calculating days of violations.

[177] To the extent the spreadsheets reference MAERT limits the Court will consider those violations in the alternative under Count II. The Court will analyze permit 18287 violations individually under each count. To the extent Counts I and II overlap—and as consistent with the Circuit's instructions on remand—the Court will not double count any violations under Counts I and II in calculating the penalties.

27. The Court has reviewed the spreadsheets and tallied table submitted by Plaintiffs relevant to Count I and agrees with the methodology used in calculating the total violations per pollutant listed therein. The evidence shows the refinery emitted twenty-four different pollutants in continuing or repeated violations totaling 10,583 days of violations. Accordingly, the Court finds under Count I, Plaintiffs have proven 10,583 days of repeated or continued violations of special conditions 38 and 39 by a preponderance of the evidence.

b. Count II

28. Plaintiffs contend—given the Fifth Circuit's holding that even if the numerical limits per pollutant within a permit vary due to amendment or renewal, exceeding those differing limits qualifies as a violation of the same permit—the violations in Count II are undisputed. Exxon contends it merely stipulated the data in the evidentiary spreadsheets supporting Count II was correct, but did not concede that entries on those spreadsheets listing the emission limit as zero or not authorized were violations.

29. The Court's initial opinion found Plaintiffs' spreadsheets supporting their allegations of violations of the hourly MAERT limits needed to reference and provide corroborating evidence of repeated or continuing violations of a specific permit condition. Additionally, the Court found where the numeric limit for a specific permit varied, each numeric violation constituted a separate permit for

purposes of showing repeated violations. Only as to the chemical plant permits, did the Court find the spreadsheets corroborated repeated violations of the same, specific hourly emission limitation.[178] The Fifth Circuit held the Court erred in treating variations in numerical limits for a pollutant within a permit due to amendment or renewal as different conditions or limitations. "[W]ith respect to specific limits on particular pollutants from particular sources that change numerically due to amendments or renewal . . . such limits constitute the same 'standards or limitations' for purposes of determining whether violations are 'repeated' or 'ongoing' under the CAA citizen suit provision." *Env't Tex. Citizen Lobby v. ExxonMobil Corp.*, 824 F.3d 507, 519 (5th Cir. 2016) (citing 42 U.S.C. §§ 7604(a)(1) & (f)(4)). The Court was instructed on remand to calculate the correct number of actionable Count II violations using the correct definition of the "same standard or limitation."

30. Exxon contends the Fifth Circuit only vacated in part the Court's initial conclusions of law for Count II. Undisturbed by the Circuit's opinion, Exxon argues, are the Court's initial conclusions of law paragraphs 19, 22, and 25. These paragraphs originally found that where certain emissions were listed as "not specifically authorized" or authorized by the particular permit, the spreadsheets did

[178] The Court found sixteen violations of Count II utilizing that interpretation of violating the same, specific permit condition. *See Findings of Fact and Conclusions of Law*, Document No. 225, Appendix.

not corroborate violations of "specific conditions." As such, Exxon contends it is free on remand to challenge the sufficiency of entries on the spreadsheets that use the notations "not specifically authorized" or an hourly emissions limit rate of zero, to prove repeated violations. Exxon is mistaken. Footnote five of the Circuit's opinion forecloses any argument on remand as to whether these entries constitute violations. In that note, the Circuit addresses Exxon's argument on appeal "that it 'never admitted' any entries under Count II were violations, 'and the district court plainly understood that position since it did not find liability on all of the allegations in' that count." *Env't Tex.*, 824 F.3d at 518 n.5. Holding that Exxon conceded that filing a reportable STEERS event is a violation, the Circuit explained this Court's finding of no liability on some events did not necessitate the Court having adopted Exxon's position. *Id.* Because the CAA requires proving repeated violations, the existence of a single reported violation does not create per se liability under the CAA. *Id.* The Court noted in its initial findings (which the Circuit's opinion cited) that Exxon "[did] not dispute that the alleged violations under Count II . . . of Plaintiff's complaint constitute violations of an emission standard or limitation."[179] The Circuit's opinion did not find any error with the finding that the Count II violations were undisputed. Therefore, the Court declines

[179] *Findings of Fact and Conclusions of Law*, Document No. 225, ¶ III.9, ¶ III.9 n.153.

on remand to revisit that conclusion. Accordingly, the Court finds, as to Exxon's contention it is entitled to contest on remand whether entries for which the limit is listed as zero or not specifically authorized are violations, the Courts initial findings forecloses that argument on remand.[180]

31. The Circuit's analysis of Counts III and IV is instructive to the extent Exxon contends the Court's initial conclusion, that entries with limitations listed as "not specifically authorized" or zero were not corroborated and therefore not proven, was not vacated. The Circuit interpreted the Court's initial conclusions of law paragraphs 19, 22, and 25 as not being corroborated as to the "same limit"—not that an entry listing the limit as "not authorized" or zero required additional corroboration. *Env't Tex.*, 824 F.3d at 521. The term corroboration referred not to additional evidentiary proof that an entry was a violation, but instead to whether such a violation was repeated or continuous such that it would be actionable under the CAA.[181] Accordingly, the Court finds as consistent with the Circuit's opinion,

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[180] *Supra* ¶ III.9 n.153; *Findings of Fact & Conclusions of Law*, Document No. 225, ¶ III.9 n.153.

[181] To the extent the Court's initial conclusions could be interpreted to support Exxon's theory, the Court finds any such interpretation is foreclosed by the Fifth Circuit's opinion. Specifically, the opinion states: "[T]he district court clearly assumed each Count II event counted by Plaintiffs was undisputed as a violation because it limited its focus in its findings of fact and conclusions of law to whether identical numerical permit limits were present in Plaintiffs' tables such that repeated or ongoing violations of the *same* limits were 'corroborated.'" *Env't Tex.*, 824 F.3d at 524. Whether this characterization of the Court's initial conclusions simplified any nuances in that opinion is immaterial on remand. The Circuit vacated Count II in its entirety, not in part. Exxon

that where a limit is listed as zero or "not authorized," that term refers to a limitation within the CAA and any entry on the spreadsheet listed as such is a violation. In calculated the number of violations, the Court below will note the permit conditions the Plaintiffs allege were violated and the spreadsheets providing the evidentiary support documenting those violations. [182]

32. General condition 8 and special condition 1 of each of Exxon's state-issued permits identify a MAERT. For each pollutant, the MAERT identifies the pollution source, termed the "emission point." Flexible permits contain a single

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is attempting on remand to assert arguments the Circuit specifically found were waived. In repeated footnotes, in regards to Count II, the Circuit stated: "Exxon never contested those emissions as violations below, and the district court rightly understood there was no dispute on the point." *Id.* at 524 n. 9; *see also*, *id.* at 518 n.5 (noting Exxon did not contest on the record whether "specific entries in which the emission quantity—standing alone—would appear to fall below the applicable listed threshold were not shown to be violative of MAERT limits"). The Court interprets these notes as instructing it to consider each entry on Count II as an undisputed violation and that any interpretation otherwise would be error. On remand, the Circuit did give Exxon leave to contest whether an entry on the spreadsheet was attributable to planned MSS activity. *Id.* at 519. In other words, Exxon was free on remand to direct the Court to which entries were attributable to authorized MSS activity (essentially to assert which violations were subject to affirmative defenses). Violations that result from planned MSS activity are an affirmative defense pursuant to 30 Texas Administrative Code § 101.222. Except to the extent Exxon has addressed MSS activity in its briefing on the affirmative defenses, Exxon has not otherwise directed the Court to which violations could be attributable to planned MSS activity. Accordingly, the Court on this count will treat all violations as uncontested and then determine when it addresses Exxon's affirmative defenses whether all the repeated violations provide a basis for liability under the CAA.

[182] As noted in the previous footnote, the following subsections calculate the repeated violations in total. The Court will address in the section on affirmative defenses whether all the repeated violations proven in Count II give rise to liability under the CAA prior to calculating the base number used in determining the amount of a penalty to assess.

hourly emission limit for a pollutant—a cap—governing all sources in aggregate. 30 TEX. ADMIN. CODE § 116.715(c)(7). Standard permit MAERTs list the hourly emission limit per pollutant for each source.[183] "An exceedance of the flexible permit emission cap(s) or individual emission limitations is a violation of the permit." *Id.* § 116.715(b). MAERTs, and any other special conditions listed in a permit, govern the emission limits for flexible permits. *Id.* § 116.715(c)(7) (stating only those sources of emissions and air contaminants listed in the table are permitted). The corollary of the MAERT defining the universe of sources and contaminants a permit allows within the limits set forth is, that if an emission is not listed in the MAERT, it is not allowed by permit and not authorized. Therefore, the effective limit for that unauthorized contaminant is zero.

33. Plaintiffs submitted spreadsheets in native format sorted based on the information provided in the stipulated spreadsheets. The Court has reviewed Plaintiffs' spreadsheets and determined that violations are properly counted, based on the above findings, where the emissions rate is "not specifically authorized," zero, or where portions of an emission is authorized, but the emission exceeds the applicable pounds/hour rate limit, without any additional corroboration needed. As with Count I, the Court concludes the use of a twenty-four hour period, as opposed to a calendar day, to calculate days of violation is appropriate.

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[183] *See e.g.*, *Plaintiffs' Exhibit* 139 at ETSC 076146–47.

i. Refinery Flexible Permit 18287[184]

34. Refinery Flexible Permit 18287 provides for MAERT limitations in general conditions 8 and 15, special condition 1, and the table set forth in accordance with those conditions.[185] General condition 8 provides, in relevant part, that "[f]lexible permitted sources are limited to the emission limits and other conditions specified in the table attached to the flexible permit."[186] General condition 15 requires the permit holder to comply with all requirements of the permit, and states emissions exceeding the limits thereof are not authorized and are permit violations.[187] Special condition 1 provides that "[t]his permit covers only those emissions from those points listed in the attached table entitled "Emission Sources – Emission Caps,' and the facilities covered by this permit are authorized to emit to the emission rate limits and other conditions specified in this permit."[188]

35. The evidentiary support cited for MAERT violations of permit 18287 is Plaintiff's Exhibits 2A and 2B (stipulated spreadsheets), 589 and 590 (Plaintiffs'

[184] Count II violations involving 18287 are calculated here without respect to the Court's findings on Count I. The Count II violations are to an extent duplicative of the Count I violations. In calculating the amount of a penalty to assess, the Court will use the violations in Count I, as special conditions 38 and 39 are more restrictive than the MAERT limitations in Count II, and encompass the Count II violations.

[185] *Plaintiffs' Exhibit* 176 at ETSC 077534.

[186] *Plaintiffs' Exhibit* 176, General Condition ¶ 8.

[187] *Plaintiffs' Exhibit* 176, General Condition ¶ 15.

[188] *Plaintiffs' Exhibit* 176, Special Condition ¶ 1.

corresponding spreadsheets), and 10 (tallied table). The Court has reviewed the spreadsheets and tallied table submitted by Plaintiffs relevant to Count II, permit 18287, and agrees with the methodology used in calculating the total violations per pollutant listed therein. The evidence shows the refinery emitted twenty-four different pollutants in continuing or repeated violations totaling 7,920 days of violations. Accordingly, the Court finds as to permit 18287, Plaintiffs have proven 7,920 days of repeated or continued violations of MAERT limits by a preponderance of the evidence.[189]

ii. Olefins Plant Flexible Permit 3452

36. Olefins Plant Flexible Permit 3452 provides for MAERT limitations in general condition 8, special condition 1, and the table set forth in accordance with those conditions.[190] General condition 8 provides, that "[t]he total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled 'Emission Sources – Maximum Allowable Emission Rates.'"[191] Special condition 1 provides that "[t]his permit authorizes emissions only from those points listed in the attached

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[189] The Court finds the Count II violations as to permit 18287 in the alternative to any violations found as to that permit in Count I.

[190] *Plaintiffs' Exhibit* 132 at ETSC 076033 et seq.

[191] *Plaintiffs' Exhibit* 133, General Condition ¶ 8.

table entitled "Emission Points, Emission Caps, and Individual Emission Limitations."[192]

37. The evidentiary support cited for MAERT violations of permit 3452 is Plaintiff's Exhibits 2C and 2D (stipulated spreadsheets), 591 and 592 (Plaintiffs' corresponding spreadsheets), and 10 (tallied table). The Court has reviewed the spreadsheets and tallied table submitted by Plaintiffs relevant to Count II, permit 3425, and agrees with the methodology used in calculating the total violations per pollutant listed therein. The evidence shows the plant emitted fourteen different pollutants in continuing or repeated violations totaling 4,038 days of violations. Accordingly, the Court finds as to permit 3452, Plaintiffs have proven 4,038 days of repeated or continued violations of MAERT limits by a preponderance of the evidence.

iii. Chemical Plant Permits: 4600 (Flare Stack 23), 5259 (Furnaces), 20211 (Flare Stack 12, Butyl Units, Aromatics Units), 36476 (Flare 28, Syngas Fugitives), and No Permit Authorization[193]

38. The Chemical Plant permits provide for MAERT limitations in general condition 8, special condition 1, and the tables set forth in accordance with

[192] *Plaintiffs' Exhibit* 133, Special Condition ¶ 1.

[193] The Court in its initial findings of fact and conclusions of law did find repeated violations of the Chemical Plant permits on Count II. However, as the Circuit determined the Court used an erroneous definition of the term "same permit," the Court reanalyzes the Chemical Plant permits anew using the correct standard. This necessitates entering entirely new findings as to these permits.

the conditions of permits 4600, 5259, 20211, 36476. General condition 8 of permits 4600, 5259, and 36476 provides, that "[t]he total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled 'Emission Sources – Maximum Allowable Emission Rates.'"[194] General condition 8 of permit 20211 provides, in relevant part, that "[f]lexible permitted sources are limited to the emission limits and other conditions specified in the table attached to the flexible permit."[195] Special condition 1 of permits 4600 and 36476 provides that "[t]his permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources – Maximum Allowable Emission Rates' and facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit."[196] Special condition 1 of permit 5259 states that "[t]his permit covers only those sources of emissions listed in the attached table entitled 'Emission Sources – Maximum Allowable Emission Rates,' and those sources are limited to the emission limits and other conditions

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[194] *Plaintiffs' Exhibit* 140, General Condition ¶ 8; *Plaintiffs' Exhibit* 144, General Condition ¶ 8; *Plaintiffs' Exhibit* 139, General Condition ¶ 8.

[195] *Plaintiffs' Exhibit* 123, General Condition ¶ 8.

[196] *Plaintiffs' Exhibit* 140, Special Condition ¶ 1; *Plaintiff's Exhibit* 139, Special Condition 139. The MAERT table for permit 4600 is located at *Plaintiffs' Exhibit* 140 at ETSC 76161 et seq. The MAERT table for permit 36476 is located at *Plaintiffs' Exhibit* 140 at 076146 et seq.

specified in the attached table."[197] Special condition of permit 20211 provides, in relevant part, that "the facilities covered by this permit are authorized to emit subject to the emission rate limits on the maximum allowable emission rates table (MAERT) table and other requirements specified in Special Condition Nos. 54 through 68."[198]

39. The evidentiary support cited for MAERT violations of the Chemical Plant permits is Plaintiff's Exhibits 2E and 2F (stipulated spreadsheets), 593 and 594 (Plaintiffs' corresponding spreadsheets), and 10 (tallied table). The Court has reviewed the spreadsheets and tallied table submitted by Plaintiffs relevant to Count II, chemical plant permits, and agrees with the methodology used in calculating the total violations per pollutant listed therein. The evidence shows the plant emitted different pollutants in continuing or repeated violations totaling 1,671 days of violations. Accordingly, the Court finds as to the Chemical Plant permits, Plaintiffs have proven 1,671 days of repeated or continued violations of MAERT limits by a preponderance of the evidence.

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[197] *Plaintiffs' Exhibit* 144, Special Condition ¶ 1. The MAERT table for permit 5259 is located at *Plaintiffs' Exhibit* 140 at ETSC 76187.

[198] *Plaintiffs' Exhibit* 120, Special Condition ¶ 1. The MAERT table for permit 20211 is located at *Plaintiff's Exhibit* 120 at 075736 et seq.

c. Count III

40. Under Count III, Plaintiffs allege thirteen violations of the rule that limits plant-wide emissions of highly reactive volatile organic compounds to no more than 1,200 pounds per hour (the "HRVOC Rule").[199] The evidentiary support cited to is Plaintiffs' Exhibits 3 (stipulated spreadsheet), 595 (Plaintiffs' corresponding spreadsheet), and 11 (tallied table). Plaintiffs divided this count by plant for the purpose of proving repeated violations.[200]

41. The Court in its initial opinion determined that Plaintiffs provided corroborating evidence sufficient to prove nine violations. The Fifth Circuit held the Court erred in requiring corroboration of the Count III violations, as the Court had expressly found the violations under Counts II, III, IV, and V were undisputed. On remand, the Court was instructed to include in its tally of Count III violations, those violations which it had previously deemed uncorroborated.

42. For each plant, the Court finds that Plaintiffs' Exhibit 3 establishes either at least two violations of the HRVOC rule prior to, or at least one violation proceeding and following, the complaint's filing. As the Court found that violations in Count III were undisputed, and the Circuit held that no corroboration

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[199] *Plaintiffs' Proposed Findings of Fact and Conclusions of Law*, Document No. 218 at 100.

[200] *Plaintiffs' Exhibit* 11. Only violations at the olefins and chemical plant are listed; no violations at the refinery are listed.

of the undisputed violations was required, all of the alleged violations are actionable. Accordingly, the Court finds as to the HRVOC rule violations, Plaintiffs have proven thirteen repeated or continued violations, totaling eighteen days of violation, by a preponderance of the evidence.[201]

d. Count IV

43. Under Count IV, Plaintiffs allege forty-two violations of the rule that prohibits visible emission from flares except for periods not to exceed five minutes in two consecutive hours (the "Smoking Flares Rule").[202] The evidentiary support cited to is Plaintiffs' Exhibits 4 (stipulated spreadsheet), 596 (Plaintiffs' corresponding spreadsheet), and 12 (tallied table). Plaintiffs divided this count by plant for the purpose of proving repeated violations.

44. The Court in its initial opinion determined that Plaintiffs provided corroborating evidence sufficient to prove twenty-eight violations. The Fifth Circuit held the Court erred in requiring corroboration of the Count IV violations, as the Court had expressly found the violations under Counts II, III, IV, and V were undisputed. On remand, the Court was instructed to include in its tally of

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[201] As with the prior counts, the Court will later address the applicability of any affirmative defenses to the Count III violations.

[202] *Plaintiffs' Proposed Findings of Fact and Conclusions of Law*, Document No. 218 at 101.

Count IV violations, those violations which it had previously deemed uncorroborated.

45. For each plant, the Court finds that Plaintiffs' Exhibit 4 establishes either at least two violations of the Smoking Flare rule prior to, or at least one violation proceeding and following, the complaint's filing. As the Court found that violations in Count IV were undisputed, and the Circuit held that no corroboration of the undisputed violations was required, all of the alleged violations are actionable. Accordingly, the Court finds as to the Smoking Flare rule violations, Plaintiffs have proven forty-two repeated or continued violations, totaling forty-four days of violation, by a preponderance of the evidence.[203]

e. Count V

46. Under Count V, Plaintiffs allege violations of the rule that requires flares to operate with a pilot flame present at all times (the "Pilot Flame Rule").[204] The evidentiary support cited to is Plaintiffs' Exhibits 5 (stipulated spreadsheet), 597 (Plaintiffs' corresponding spreadsheet), and 13 (tallied table). Plaintiffs divided this count by plant for the purpose of proving repeated violations.[205]

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[203] As with the prior counts, the Court will later address the applicability of any affirmative defenses to the Count IV violations.

[204] *Plaintiffs' Proposed Findings of Fact and Conclusions of Law*, Document No. 218 at 101.

[205] *Plaintiffs' Exhibit* 13.

Violation of this rule is corroborated by these spreadsheets for all of the Events and Deviations counted by Plaintiffs as at least one day of violation. The violations are corroborated because the spreadsheets contain verbiage that pilot outages occurred under one of two "cause reported" columns. For example, for the Event or Deviation starting March 25, 2010, the spreadsheets report, "[h]igh winds extinguished flare pilots."[206] For each plant, there are either (1) at least two corroborated violations of the Pilot Flame Rule that occurred before the complaint was filed, or (2)(a) at least one corroborated violation of the Pilot Flame Rule both before and after the complaint was filed. Therefore, Plaintiffs have met their burden to prove all of the alleged violations of the Flame Pilot Rule under Count V are actionable.[207]

f. Count VI

47. Under Count VI, Plaintiffs allege fugitive emissions are actionable. Specifically, Plaintiffs contend violations of permits 18287, 3452, 20211, 28441, 36476, and 9571; general conditions 8 and 14/15; special condition 1; and MAERT

[206] *Plaintiffs' Exhibits* 5 at row 17, 597 at row 17.

[207] All the violations listed in Plaintiffs' Exhibit 5 are actionable. The Court is not required to revisit its methodology in determining that all violations are actionable because the Fifth Circuit did not address Count VI on appeal.

limits for emissions of various air contaminants.[208] Exxon disputes that the events under Count VI constitute violations of an emissions standard or limitation. The evidentiary support cited to by Plaintiffs is Plaintiffs' Exhibits 6 (stipulated spreadsheet), 598 (Plaintiffs' corresponding spreadsheet), and 14 (tallied table). As in Count I and parts of Count II, violation of the aforementioned conditions cannot be corroborated by these spreadsheets. The spreadsheets reference the aforementioned permit numbers, such as 18287, in a column entitled "plant (refinery/olefins/chemical);"[209] however, listing a permit number associated with plant does not mean that permit was violated. Regardless, the spreadsheets do not appear to reference any specific *conditions* of the permits.[210] The spreadsheets list emissions limits, but Plaintiffs claim all emissions limits should be considered zero under this Count, which conflicts with the limits listed on the spreadsheets.[211] At most, the spreadsheets corroborate that fugitive emissions of various contaminants occurred; however, the spreadsheets do not corroborate violations of any specific standards or limits of a Title V permit. Further, Plaintiffs have not provided any

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[208] *Plaintiffs' Proposed Findings of Fact and Conclusions of Law*, Document No. 218 at 102; *Plaintiffs' Revised Proposed Findings of Fact and Conclusions of Law*, Document No. 222 at 58–59; *Plaintiffs' Exhibit* 14 at 1.

[209] *Plaintiffs' Exhibits* 6 (capitalization omitted), 598 (capitalization omitted).

[210] *See Plaintiffs' Exhibits* 6, 598.

[211] *Plaintiffs' Exhibit* 598.

other persuasive evidence that the emissions listed in the spreadsheets violate the Title V permit conditions or limits referenced under this Count. For these reasons, Plaintiffs have not met their burden to prove either repeated violation pre-complaint or violation both before and after the complaint of the same emission standard or limitation under Count VI.[212]

g. Count VII[213]

48. Under Count VII, Plaintiffs allege Exxon's Deviations are actionable.[214] Exxon disputes that the Deviations under Count VII constitute violations of an emissions standard or limitation. The CAA citizen suit provision requires Exxon "to have violated . . . or to be in violation of . . . an emission standard or limitation." 42 U.S.C. § 7604(a)(1). However, a deviation is defined as "[a]ny *indication* of noncompliance with a term or condition of the permit . . . ." 30 TEX. ADMIN. CODE § 122.10(6) (emphasis added).[215] "A deviation is not always a violation. . . . Included in the meaning of deviation [is] . . . [a] situation where

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[212] The Court notes that Plaintiffs recognize violations under Count VI overlap with violations under other counts.

[213] The Fifth Circuit affirmed the Court's judgment as to Count VII, and the Court instructed the parties it would not revisit its findings as to this Count on remand.

[214] The evidentiary support cited to is Plaintiffs' Exhibits 7A–7E (stipulated spreadsheets), 599–603 (Plaintiffs' corresponding spreadsheets), and 15 (tallied tables).

[215] *See also Trial Transcript* at 10-203:3–13, 10-209:7–14 (discussing how deviations are indications of noncompliance with a permit condition).

process or emissions control device parameter values *indicate* that an emission limitation or standard has not been met . . . ." 40 C.F.R. § 71.6(a)(3)(iii)(C) (emphasis added). Plaintiffs have not met their burden to show how, in light of these provisions, the Deviations at issue in this case are actual violations and not merely *indications* of noncompliance. Accordingly, Plaintiffs have not met their burden to prove any of the Deviations under Count VII are actionable.

D. Affirmative Defenses

49. The Court addresses the applicability of Exxon's asserted affirmative defenses prior to addressing the relief sought by Plaintiffs, because if an affirmative defense is proven applicable to a violation, the Court in its assessment of the penalty factors will not consider that violation. In the initial findings of fact and conclusions of law, the Court declined to address Exxon's affirmative defenses as it had found no penalties or other relief warranted. In vacating and remanding that judgment, the Fifth Circuit recognized the Court would likely be called to rule upon the applicability of the affirmative defenses on remand. Exxon contends Hurricane Ike was an Act of God that shields it from liability for emissions violations occurring during the duration of Governor's proclamation and that it is entitled to affirmative defenses under 30 Texas Administrative Code Chapter 101.222. Plaintiffs contend the defenses are not available as a matter of law or are not supported by sufficient proof.

1. Hurricane Ike Defenses

50. Exxon contends the Texas Governor's proclamation prior to Hurricane Ike's landfall, and the TCEQ's guidance that the proclamation abrogated a need to seek prior approval for exceedance of emission limits directly related to the hurricane response, precludes liability for ten reportable events resulting violations. Plaintiffs contend the CAA does not contain an Act of God defense, and therefore, the defense is not available because Exxon has not met its burden to show any such provision was incorporated in Texas's State Implementation Plan ("SIP").[216]

51. A state regulatory defense "must itself be authorized or permitted by the SIP." *Sierra Club v. Tenn. Valley Auth.*, 430 F.3d 1337, 1346–50 (11th Cir. 2005) (explaining why a state provision that provided a defense that the "EPA has never sanctioned . . . and has yet to accept or reject [the defense] as a proposed SIP revision" is inapplicable). Texas Water Code § 7.215 provides: "If a person can establish that an event that would otherwise be a violation of a statute within the commission's jurisdiction or a rule adopted or an order or a permit issued under such a statute was caused solely by an act of God, war, strike, riot, or other catastrophe, the event is not a violation of that statute, rule, order, or permit." TEX.

[216] Exxon contends Plaintiffs did not previously raise the argument that § 7.251 of the Texas Water Code is not included in the Texas SIP. That is incorrect. *See Plaintiff's Revised Proposed Findings of Fact and Conclusions of Law*, Document No. 218, ¶ 42.

WATER CODE § 7.251 (enacted in 1997 and current through the end of the 2015 Regular Session of the 84th Legislature). Exxon contends that because Texas's SIP incorporates § 7.251's predecessor statute, which includes an Act of God provision, the Act of God defense is recognized by Texas's SIP. *See* 40 C.F.R. § 52.2270(e) (incorporating Texas Clean Air Act (Article 4477-5), Vernon's Texas Civil Statutes, as amended by S.B. 48 of 1969). The problem with this argument is that the SIP incorporates a previous version of the statute, not the current provision. A state regulatory defense has to be specifically authorized or permitted by the state SIP. Exxon is claiming a state regulatory defense pursuant to Texas Water Code § 7.251. Section 7.251 is not specifically authorized or permitted by the SIP; its predecessor is. There is no indication in the record or the statutory provisions cited that EPA has ever sanctioned § 7.251 or considered the provision as a proposed SIP revision.[217] Accordingly, the Court finds as a matter of law that Exxon's Act of God defense is inapplicable and Exxon is subject to liability under the CAA for the events purportedly covered by this defense.

2. 30 Texas Administrative Code § 101.222 Affirmative Defenses

50. Exxon contends affirmative defenses under 30 Texas Administrative Code § 101.222 apply to ninety-eight of the events. Plaintiffs contend Exxon did

[217] Nor is there any provision in the SIP adopting the Governor's Hurricane Ike proclamation. The CAA does not provide an Act of God defense. Without specific authorization in the CAA or Texas's SIP, the Act of God defense is inapplicable here.

not set forth specifically how the statutory criteria are met for each event for which an affirmative defense is asserted, but that Exxon instead impermissibly relied on TCEQ's acceptance of the asserted affirmative defenses.

51. The burden to show the applicability of an affirmative defense rests on the party seeking entitlement to the defense. *Luminant Generation Co. LLC v. U.S. E.P.A.*, 714 F.3d 841, 855 (5th Cir. 2013). That party must prove the "enumerated factors, including that the period of excess emissions was minimized to the extent practicable and that the emissions were not due to faulty operations or disrepair of equipment." *Id.* (quoting 75 FED. REG. at 68,992 and citing 30 TEX. ADMIN. CODE § 101.222(b), (c)) (rejecting the contention that a defendant only need make a prima facie showing of applicability and that the burden will then shift to the plaintiff to show the defense does not apply).

52. Pursuant to 30 Texas Administrative Code § 101.222(b), non-excess upset events are subject to affirmative defenses in enforcement actions, where the "**owner or operator proves all of the following**:"

> (1) the owner or operator complies with the requirements of §101.201 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements). . . .;
>
> (2) the unauthorized emissions were caused by a sudden, unavoidable breakdown of equipment or process, beyond the control of the owner or operator;

(3) the unauthorized emissions did not stem from any activity or event that could have been foreseen and avoided or planned for, and could not have been avoided by better operation and maintenance practices or technically feasible design consistent with good engineering practice;

(4) the air pollution control equipment or processes were maintained and operated in a manner consistent with good practice for minimizing emissions and reducing the number of emissions events;

(5) prompt action was taken to achieve compliance once the operator knew or should have known that applicable emission limitations were being exceeded, and any necessary repairs were made as expeditiously as practicable;

(6) the amount and duration of the unauthorized emissions and any bypass of pollution control equipment were minimized and all possible steps were taken to minimize the impact of the unauthorized emissions on ambient air quality;

(7) all emission monitoring systems were kept in operation if possible;

(8) the owner or operator actions in response to the unauthorized emissions were documented by contemporaneous operation logs or other relevant evidence;

(9) the unauthorized emissions were not part of a frequent or recurring pattern indicative of inadequate design, operation, or maintenance;

(10) the percentage of a facility's total annual operating hours during which unauthorized emissions occurred was not unreasonably high; and

(11) the unauthorized emissions did not cause or contribute to an exceedance of the national ambient air quality standards (NAAQS),

> prevention of significant deterioration (PSD) increments, or to a condition of air pollution.

30 TEX. ADMIN. CODE § 101.222(b) (emphasis added).

53. The evidentiary support cited for the affirmative defenses is Defendant's Exhibits 18, 19, and 20, and the corresponding STEERS reports attached thereto. Exxon also directs the Court to paragraphs 476 through 687 of its initial proposed findings of facts and conclusions of law.[218] Therein, Exxon cites to expert testimony of Dr. Christopher S. Buehler, Dr. Lucy Fraiser, and Mr. David Cabe.[219]

54. The Court finds that Exxon has not met its burden to demonstrate that the eleven statutory criteria are met as to the ninety-eight events. The Court has reviewed paragraphs 476 to 687 in full. As to each STEERS event, Exxon cites to a finding by the TCEQ that an affirmative defense applies to that event. However, the TCEQ's determination of the applicability of an affirmative defense at best rises to the level of prima facie proof. Reliance on the TCEQ's determination is not sufficient to meet Exxon's evidentiary burden at trial to demonstrate all eleven criteria are met. Neither is Exxon's general citation to the testimony of its experts

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[218] *Proposed Findings of Fact and Conclusions of Law*, Document No. 216, Exhibit 1.

[219] *Proposed Findings of Fact and Conclusions of Law*, Document No. 216, Exhibit 1, ¶¶ 677–86.

sufficient to demonstrate all ninety-eight STEERS events are subject to affirmative defenses. **Exxon has the burden to demonstrate that all eleven criteria are met for each specific event to which an affirmative defense would apply**. Exxon did not, for each purported STEERS event for which an affirmative defense was asserted, direct the Court to the evidentiary testimony from the experts that demonstrated each of the eleven criteria were met as to that specific event.[220] Accordingly, the Court finds Exxon has not met its burden to show the applicability of 30 Texas Administrative Code § 101.222 under the eleven enumerated factors to each of the relevant STEERS events.

C. Declaratory Judgment

55. Plaintiffs request a "declaratory judgment that Exxon violated its Title V permits and thus the CAA."[221] The Court declines to issue such declaratory judgment because the issue in a citizen suit is not *solely* whether the defendant

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[220] For example, while Dr. Buehler testified in his opinion the criteria were met as to all the events, he did not testify as to whether ***all*** the criteria were met, as Mr. Cabe and Dr. Fraiser testified as to the air quality criterion. *Trial Transcript*, 11-241:24 to 242:22. The Court would then further have to refer back to respective expert reports and next piece together any testimony and information from the reports to match that evidence the respective STEERS events. Rather than direct the Court to pinpointed testimony and supporting documentation in the expert reports for the eleven criteria for each separate STEERS event, Exxon has only provided a general citation to the testimony and record. The Court finds this is not sufficient to prove each of the enumerated factors as to each STEERS event.

[221] *Plaintiffs' Proposed Findings of Fact and Conclusions of Law*, Document No. 218 at 405; *Plaintiffs' Revised Proposed Findings of Fact and Conclusions of Law*, Document No. 222 at 58.

violated the CAA. Indeed, it is undisputed Exxon violated some emission standards or limitations. Rather, the issue is whether any such violations are actionable under the CAA as a citizen suit. As such, the issue is whether there was repeated violation pre-complaint, violation both before and after the complaint, or a continuing likelihood of recurrence.[222] The Court has already made these findings.[223]

D. Penalties

56. Having found on remand, that a majority of events are actionable under the CAA's citizen suit provision, the Court will exercise its discretion to conduct a penalty assessment for those events.

57. "In determining the amount of any penalty to be assessed under" the CAA in a citizen suit, the Court "shall take into consideration (in addition to such other factors as justice may require)" the following penalty assessment factors:

> the size of the business,
> the economic impact of the penalty on the business,
> the violator's full compliance history and good faith efforts to comply,
> the duration of the violation as established by any credible evidence . . . ,
> payment by the violator of penalties previously assessed for the same violation,
> the economic benefit of noncompliance, and
> the seriousness of the violation.

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[222] *Supra* ¶¶ III.9–12.

[223] *Supra* ¶¶ III.13–48.

42 U.S.C. § 7413(e)(1).

58. The Court is not required to assess a penalty for violations. 42 U.S.C. § 7413(e)(2) ("A penalty *may* be assessed for each day of violation." (emphasis added)); *Luminant*, 714 F.3d at 852 ("[T]he penalty assessment criteria . . . are considered by the courts . . . in determining *whether or not* to assess a civil penalty for violations and, if so, the amount." (emphasis added)); *see also* 42 U.S.C. § 7413(e)(1) ("In determining the amount of *any* penalty to be assessed . . . ." (emphasis added)); *Envtl. Conservation Org. v. City of Dallas*, 529 F.3d 519, 530 ("[E]ven in the event of a successful citizen suit, the district court is not bound to impose the maximum penalty afforded under the statute.").[224] Rather, the amount of any penalty, the analysis of the factors, and the process of weighing the factors are "'highly discretionary' with the trial court." *Sierra Club, Lone Star Chapter v. Cedar Point Oil Co.*, 73 F.3d 546, 576 (5th Cir. 1996) (quoting *Tull v. United States*, 481 U.S. 412, 427 (1987)); *United States ex rel. Adm'r of EPA v. CITGO Petroleum Corp.*, 723 F.3d 547, 551 (5th Cir. 2013). Each of the penalty assessment factors are considered in turn.

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[224] Because the penalty provisions in the CAA are similar to the penalty provisions in the CWA, "CWA cases are instructive in analyzing [penalty] issues arising under the CAA." *Pound v. Airosol Co.*, 498 F.3d 1089, 1094 n.2 (10th Cir. 2007) (citing *United States v. Anthony Dell'Aquilla, Enters. & Subsidiaries*, 150 F.3d 329, 338 n.9 (3d Cir. 1998)).

a. Size of the Business and Economic Impact of the Penalty on the Business

59. Plaintiffs contend the large size and profitability of Exxon weigh towards imposing a penalty. Specifically, Plaintiffs contend Exxon will only be impacted by a large penalty and has the ability to pay the alleged maximum penalty. Exxon does not dispute these contentions, and the Court agrees given the facts found supra in paragraph II.1. Accordingly, both the size and economic impact factors weigh towards assessing a penalty.

b. Violator's Full Compliance History and Good Faith Efforts to Comply

60. Quantitatively, the number of Events and Deviations at issue in this case is high: 241 Reportable Events, 3,735 Recordable Events, and 901 Title V Deviations.[225] Thus, based on the total number of Events and Deviations alone, Exxon's compliance history appears to be arguably inadequate. However, the Complex is one of the largest and most complex industrial sites in the United States.[226] Therefore, there are numerous opportunities for noncompliance, and the number of Events and Deviations alone is not the best evidence of compliance history.[227] In other words, the number of Events and Deviations must be

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[225] *See supra* ¶ II.5.

[226] *Supra* ¶ II.2.

[227] *See Trial Transcript* at 10-220:14 to 10-223:16.

considered with respect to the size of the Complex. For example, in 2012 the refinery averaged one pin hole leak for every 167 linear miles of pipe.[228]

61. Moreover, the number of Events and Deviations does not alone mean Exxon did not make a good faith effort to comply. Despite good practices, it is not possible to operate any facility—especially one as complex as the Complex—in a manner that eliminates all Events and Deviations.[229] Based on the facts expounded supra in paragraphs II.12–14, the Court finds Exxon made substantial efforts to improve environmental performance and compliance, including implementing four environmental improvement projects to reduce emissions and employing a vast array of emissions-reduction and emissions-detection equipment. Likely due to Exxon's substantial efforts, the Complex achieved significant reduction in the number of Reportable Events, the amount of unauthorized emissions of criteria pollutants, and the total amount of emissions over the years at issue in this case.[230] For reasons explained infra in footnote 240, the Court is not persuaded by Keith Bowers's opinion that certain capital improvements or additional spending on

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[228] *Trial Transcript* at 10-221:24 to 10-222:10.

[229] *Supra* ¶ II.15. The Court understands impossibility is not a defense to penalties, except as it might apply to the applicable affirmative defense criteria. The Court does not consider the fact that it is not possible to operate the Complex in a manner that eliminates all Events and Deviations as a reason to not impose penalties. Rather, the Court notes this fact only to explain that the number of Events and Deviations does not alone mean Exxon did not make a good faith effort to comply.

[230] *Supra* ¶ II.16.

maintenance would have prevented the Emissions and Deviations. In addition, the Court does not accept Plaintiffs' view that the number of events involving a certain type of equipment, a certain unit, or a certain type of issue is alone adequate to support a conclusion that any of the Events or Deviations were preventable.[231] Rather, as expounded supra in paragraph II.7, a root cause analysis is necessary to determine whether the Events and Deviations resulted from a recurring pattern and to determine whether improvements could have been made to prevent recurrence. Plaintiffs did not put forth any credible evidence that any of the Events or Deviations resulted from the same root cause.[232] Therefore, there is no credible evidence that any of the Events or Deviations resulted from a recurring pattern or that improvements could have been made to prevent recurrence. For each of the Reportable Events, Exxon conducted an extensive internal investigation, evaluated the root cause of the event, and implemented appropriate corrective actions to try

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[231] *Supra* ¶ II.7.

[232] In particular, the Court finds Bowers's testimony regarding the Events and Deviations having "common causes" is neither credible nor persuasive. For example, the Events and Deviations that Bowers categorizes as having the same common cause of "power supply failures" include the following: moisture got into the connections of improperly installed lightening arresters, causing them to short out; a squirrel bypassed animal traps, causing some electrical equipment to short circuit; and a hawk dropped a snake on top of Substation One, causing an electrical power disruption. *Defendants' Exhibits* 1020C, 1020I–O; *Trial Transcript* at 10-244:17 to 10-253:17. Categorizing such varied events together does not prove the events had a common cause, resulted from a recurring pattern, or were preventable.

to prevent recurrence.[233] Similarly, for the Recordable Events and Deviations, Exxon analyzed the records for trends and ways to improve, identified root causes, and implemented corrective actions.[234] Additionally, Exxon's maintenance policies and procedures conform or exceed industry standards and codes.[235] The Court finds the opinion of Dr. Christopher S. Buehler, a chemical engineer, that the Complex ranks at or near the top of petrochemical facility "leaders in maintenance and operation practices" is persuasive and credible.[236] Lastly, the Court finds the opinions of John Sadlier, the former Deputy Director of the Office of Compliance and Enforcement at the TCEQ who dealt with Exxon for 20 years while working at the TCEQ, persuasive and credible when he opined that he "always felt and continue[s] to feel today that Exxon had always made a concerted effort to comply[,] that their dealings with [the TCEQ] were straightforward frank discussions," that Exxon is "[a]bsolutely not" a "bad actor," and that he has no reason to not believe Exxon "will earnestly try to achieve the goals" in the Agreed Order of reducing emissions.[237] After evaluating all the evidence, the Court finds

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[233] *Supra* ¶¶ II.7–9.

[234] *Supra* ¶ II.7.

[235] *Supra* ¶ II.14.

[236] *Trial Transcript* at 12-16:10–20.

[237] *Defendants' Exhibit* 546 at 14–15, ¶¶ 40–44.

the preponderance of the credible evidence shows Exxon made good faith efforts to comply with the CAA.[238] Accordingly, Exxon's full compliance history and good faith efforts to comply weigh against assessing a penalty.

c. Duration of the Violation

62. The Fifth Circuit's opinion held the Court abused its discretion by viewing violations of a longer duration as offset by violations of a shorter duration. The Circuit's opinion also indicated the Court should revisit its approach as to, whether in calculating the duration of a violation, a court should look to the duration of each individual violation or the period of time over which the violations occurred. *See Env't Tex.*, 824 F.3d at 531. The Court was instructed on remand, if it continued to consider durations of the violations individually, to determine whether any violation standing alone was sufficient to justify imposing a penalty.[239]

63. The Court first turns to the proper standard for determining whether this factor requires examining the length of an individual violation or the period of

[238] In addition to the aforementioned issues, Plaintiffs contend Exxon's policy of always asserting the affirmative defense to penalties to the TCEQ is, in itself, bad faith. Based on the greater weight of the credible evidence, the Court disagrees such policy is in bad faith. Although Exxon initially asserts the affirmative defense when reporting an event to the TCEQ, the TCEQ, after investigation, determines whether the affirmative defense actually does apply.

[239] Exxon contends the Court should continue to look to duration of the violations standing alone in analyzing this factor. However, Exxon cites no case law to support this proposition.

time over which the violations occurred. Exxon does not address the case law cited by Plaintiffs, and referred to by the Fifth Circuit, that indicates the Court should consider the period of time over which the violations occurred on this factor. *See United States v. Vista Paint Corp.*, No. EDCV 94-0127 RT, 1996 WL 477053, at *15 (C.D. Cal. Apr. 16, 1996); *United States v. B & W Inv. Props., Inc.*, No. 91 C 5886, 1994 WL 53781, at *4 (N.D. Ill. Feb. 18, 1994); *United States v. Midwest Suspension & Brake*, 824 F. Supp. 713, 736–37 (E.D. Mich. 1993); *United States v. A.A. Mactal Constr. Co. Inc.*, Civ. A. No. 89-2372-V, 1992 WL 245690, at *3 (D. Kan. Apr. 10, 1992). Nor does Exxon argue that the plain meaning of the phrase "duration of the violation" requires examining each individual violation as opposed to the period of time over which the violations occurred. The Court, in light of the Fifth Circuit's notation of the authority supporting the position, adopts the interpretation of this factor that examines the period of time over which the credible evidence establishes the violations occurred.

64. The Court next turns to, whether looking to the period of time over which the violations occurred, the duration factor supports imposing a penalty. The credible evidence establishes the violations at issue occurred over an eight-year period. During that eight-year time period, Exxon averaged more than one

violation per day. Accordingly, the Court finds the duration factor weighs in favor of assessing a penalty.[240]

d. Payment by the Violator of Penalties Previously Assessed for the Same Violation

65. Exxon has paid $1,423,632 in monetary penalties for the Events and Deviations at issue in this case to either the TCEQ or Harris County.[241] Plaintiffs accede this amount should be deducted from the total penalty determined by the Court, and the Court agrees. Accordingly, $1,423,632 will be deducted from any penalty otherwise warranted.[242]

e. Economic Benefit of Noncompliance

66. Generally, economic benefit of noncompliance is the financial benefit obtained by ***"delaying*** capital expenditures and maintenance costs on pollution-

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[240] The Court finds even under its previous interpretation of this factor, looking to the individual violation's duration, there are individual violations of a sufficient duration to weigh in favor of assessing penalties. The Court previously found that any longer violations where balanced out by the numerous cursory violations. The Circuit held utilizing the balancing methodology for analyzing the duration factor was an abuse of discretion. As directed by the Circuit on remand, the Court now looks to the actionable violations and determines that a sufficient quantity of violations of a sufficient duration occurred to weigh in favor of assessing penalties. For example, under Count II, there were 138 actionable violations that were more than forty-eight hours in duration. *See Plaintiffs' Exhibits* 589, 590, 591, 592, 593 & 594.

[241] *Supra* ¶ II.8.

[242] Plaintiffs contend on remand this amount should be reduced given the Court's finding on Count VII; however, as this issue was not appealed or part of the Fifth Circuit's instructions on remand, the Court will not revisit the issue.

control equipment." *CITGO Petroleum Corp.*, 723 F.3d at 552 (emphasis added). "[T]here are two general approaches to calculate economic benefit: (1) the cost of capital, i.e., what it would cost the polluter to obtain the funds necessary to install the equipment necessary to correct the violation; and (2) the actual return on capital, i.e., what the polluter earned on the capital that it declined to divert for installation of the equipment." *Id.* (internal quotation marks omitted). A district court must make a reasonable estimate of economic benefit of noncompliance. *Id.* at 552–53.

67. The Fifth Circuit held this Court erred in failing to enter findings as to whether Exxon received an economic benefit in delaying implementation of the four environmental improvement projects from the Agreed Order.[243] Although the Circuit upheld the Court's rejection of Bower's expert testimony on this issue as not credible,[244] the Circuit held that Plaintiffs elicited testimony on this issue from

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[243] *Supra* ¶ II.12.

[244] As to Bower's testimony, the Court's initial opinion made the following findings, in paragraphs 41–42 of the Court's *Findings of Fact and Conclusions of Law*, Document No. 225:

> 41. Plaintiffs claim Exxon's economic benefit of noncompliance is $657 million as of June 2014. This number is based on Bowers's opinion that the Events and Deviations would not have occurred if (1) if Exxon would have spent $90 million more annually on maintenance and (2) if Exxon would have installed certain capital equipment (an additional sulfur unit costing $100 million, an additional sour gas flare costing $10 million, and two additional compressor stations costing $50 million each). Plaintiffs offered the testimony of an economist, Jonathan Schefftz, who

Shefftz that was independent of Bower's testimony. *Env't Tex.*, 824 F.3d at 529, 529 n.17. The Circuit noted this Court found Shefftz's method for calculating the economic benefit reliable. On remand, the Court was instructed that "the economic benefit estimate must 'encompass *every* benefit that defendants received

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used Bowers's inputs as to maintenance and capital expenditure costs delayed to calculate present-day economic benefit using the weighted-average cost of capital. The Court finds Schefftz's method of calculating economic benefit to be reliable. However, Schefftz made it very clear that he had no opinion as to the reliability of the inputs given to him by Bowers. For reasons explained infra, the Court finds Bowers's inputs to be neither reliable, credible, nor persuasive. Therefore, Schefftz's economic benefit of noncompliance figure is equally unreliable.

42. Bowers is a retired refinery and chemical plant engineer. Bowers's opinions and the bases for his opinions were vague and undetailed. Of the $90 million Bowers opined should have been spent on maintenance, Bowers opined half of the $90 million needed to be spent to hire 900 new employees to "run[ ] around inspecting things" and "[j]ust do more" maintenance and "stuff that needs to be done." He opined the remainder of the $90 million needed to be spent on "material." He said his estimate was a "crude estimate," and he did not create a detailed budget of the type that he would have created when he was a project manager. Neither Bowers nor any other evidence credibly demonstrated that spending an additional $90 million on maintenance would have prevented any of the Events or Deviations. Similarly, neither Bowers nor any other evidence credibly demonstrated that any of Bowers's suggested capital improvements would have prevented any of the Events or Deviations. Instead, the preponderance of the credible evidence shows Bowers's suggested capital improvements would not help reduce emissions. Moreover, Exxon has spent a substantial amount of money on maintenance, emissions-reduction and emissions-detection equipment, and capital improvement projects in an effort to reduce emissions and unauthorized emissions events. This includes four environmental improvement projects costing approximately $20 million that Exxon was not required to undertake under law, and over $500 million on maintenance and maintenance-related capital projects each year at issue.

from violation of the law' regardless of the inherently speculative nature of the inquiry." *Id.* at 530 n.19 (citing *United States v. Gulf Park Water Co.*, 14 F. Supp. 2d 854, 864 (S.D. Miss 1998)). Further, after making such findings, the Court was instructed to consider whether those four improvement projects were necessary to correct the violations. The Circuit noted the evidence indicated the projects "appear to be correlated in at least a general way" and the Court's inquiry on remand "should center on whether the projects will ameliorate the kinds of general problems that have resulted in at least some of the permit violations upon which Plaintiffs have sued." *Id.* at 530, 530 n.19.

68. The Court interprets the Fifth Circuit's opinion as instructing it to do a two-step analysis on remand: (1) enter findings based on Shefftz's testimony as to the economic benefit Exxon received from delaying implementation of the projects[245]; and (2) enter findings on the "necessary to correct" prong as to whether the four improvement projects would generally ameliorate the violations on which the Plaintiffs have sued, without requiring a showing that the projects are specifically tied to the prevention of each violation.

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[245] The Court interprets the Circuit's opinion as holding that Shefftz's testimony alone is sufficient to carry Plaintiff's burden of proof on the first step. To the extent Exxon contests the sufficiency of Shefftz's testimony, in regards to the interest rate chosen in the calculations and because he failed to account for the cost of delay by ignoring the increase in equipment expense, the Circuit instructed the Court to consider "*every* benefit . . . regardless of the inherently speculative nature of the inquiry." *Env't Tex.*, 824 F.3d at 530 n.19 (emphasis in original).

69. On the first step, the Court turns to Shefftz's testimony as to any economic benefit Exxon received from delaying implementation of the four projects in the Agreed Order. The Court previously found Shefftz's methodology reliable. Shefftz calculated the economic benefit to Exxon from delaying implementation as $11,746,234 as of November 22, 2013 (the date of Shefftz's report).[246] The economic benefit would increase by $61,066 per month until the economic benefit was disgorged in the form of a civil penalty.[247] It is now April 2017, which is forty-one additional months from the date of Shefftz's report. Therefore, the economic benefit would encompass an additional $2,503,706 and the total economic benefit from delay is $14,249,940. Accordingly, the Court finds Exxon received an economic benefit of $14,249,940 from the delayed implementation of the improvement projects.[248]

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[246] *Trial Transcript* 5-57:14 to 58:13; *Plaintiffs' Exhibit* 556 at 1, 18–21.

[247] *Plaintiffs' Exhibit* 556 at 14, 19. *Trial Transcript*, 5-49:5–9, 5-52:6–10.

[248] Plaintiffs also contend on remand that because the Circuit instructed the Court to consider every benefit, the one billion dollars the Court found demonstrated Exxon's good faith efforts to comply should now be included in the calculation of the economic benefit from delay. The scope of the Circuit's remand was clear that its instructions pertained to the Shefftz's testimony about the four projects and every benefit derived from the delaying the projects' implementation. Even if Plaintiffs' contention were within the scope of remand, the Court finds the evidence cited insufficient to support even a highly speculative inquiry, and additionally, the argument is waived because it was not raised in any of the previously filed proposed findings of fact and conclusions of law.

70. The Court now turns to the Circuit's direction on the second step, whether a delayed project is "necessary to correct" the types of violations in the complaint. The Circuit has articulated a general correlation standard to utilize in analyzing this step.[249] As an example of the general correlation standard, the Circuit notes that "one project aims to 'more effectively monitor and troubleshoot' a refinery flare system in order to 'improve the identification and characterization of flaring events' (Count IV) and the order estimates that the projects will specifically achieve reductions in HRVOC emissions (Count III)." *Env't Tex.*, 824 F.3d at 530. Given the Fifth Circuit's holding that at least one project meets the general correlation standard, the Court finds the Plaintiffs have met their burden as to at least one project on the "necessary to correct" step. Additionally, the Circuit noted this Court had previously recognized in its order the "projects reflect 'an effort to reduce emissions and unauthorized emissions events' at the Baytown complex."[250] *Id.* As the Fifth Circuit instructed the Court to analyze the "necessary to correct" step at a high level of generality, the Court finds Plaintiffs have carried their burden of proof.[251] Plaintiffs have demonstrated that: (1) the

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[249] *Supra* ¶ III.67.

[250] *Supra* ¶ II.12.

[251] To the extent Exxon argues the projects were voluntary and not required for compliance, and therefore, not a proper basis for determining delayed economic benefit, the Court notes the Fifth Circuit directed it to use those projects on remand in its analysis of the factor.

Plant Automation Venture "is intended to provide early identification of potential events and/or instrumentation abnormalities, allowing proactive response"[252]; (2) the Fuels North Flare System Monitoring/Minimization Project is intended to "more effectively monitor and troubleshoot" the refinery flares[253]; (3) the BOP/BOPX Recovery Unit Simulators Project is intended to "improve operator training and competency, resulting in reduced frequency and severity of emissions events"[254]; and (4) the Enhanced Fugitive Emissions Monitoring Project is a program to locate VOC and HRVOC leaks.[255] Accordingly, under the generally correlated standard articulated by the Fifth Circuit, the Court finds the four improvement projects were "necessary to correct" the violations at issue in this suit.

71. The Court has found Exxon received an economic benefit of $14,249,940 by delay four implementation of four improvement projects that were necessary to correct the violations at issue in this suit. Accordingly, the Court finds the economic benefit of noncompliance factor weighs in favor of assessing a penalty.

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[252] *Defendants' Exhibit* 222, ¶ 12.a.

[253] *Defendants' Exhibit* 222, ¶ 12.a.

[254] *Defendants' Exhibit* 222, ¶ 12.b.

[255] *Defendants' Exhibit* 222, ¶ 12.d.

f. Seriousness

72. The CAA does not define "seriousness" in relation to the penalty assessment factors. *See* 42 U.S.C. § 7413(e)(1). Some circuit courts, not including the Fifth Circuit, have held that "a court may still impose a penalty if it finds there is a risk or potential risk of environmental harm" even if there is "a lack of evidence on the record linking [a defendant's] CAA violations to discrete damage to either the environment or the public." *Pound*, 498 F.3d at 1099 (citing *Pub. Interest Research Grp. of N.J., Inc. v. Powell Duffryn Terminals Inc.*, 913 F.2d 64, 79 (3d Cir. 1990)). The Fifth Circuit, however, did not issue any guidance in its opinion as to the proper definition of the term. Instead, the Fifth Circuit held the Court abused its discretion in viewing the violations it found to be more serious as offset by the numerous less serious violations. In doing so, the Circuit noted—without explicitly adopting—courts have recognized that "the overall number and quantitative severity of emissions or discharges may properly be relied upon as evidence of seriousness." *Env't Tex.*, 824 F.3d at 532 (citing *Pub. Interest Research Grp. of N.J., Inc. v. Powell Duffryn Terminals Inc.*, 913 F.2d 64, 79 (3d Cir. 1990)).

73. In light of the Circuit's guidance, the Court looks to the overall number and quantitative severity of the emissions or discharges.[256] The overall

[256] The Court maintains its findings from its initial findings of fact and conclusions of law that most the violations were not serious from a public health and environmental perspective. As is necessary for parts of the Court's initial judgment left undisturbed by the Fifth Circuit's opinion, which relied on those findings, the Court reiterates here paragraphs 47 and 48 from the *Findings of Fact and Conclusions of Law*, Document No. 225:

> 47. Plaintiffs claim the Events and Deviations were serious because they adversely affected public health. To support this claim, Plaintiffs submitted evidence of the potential health effects caused by the types of pollutants emitted during the Events and Deviations. For example, hydrogen sulfide, which smells like rotten eggs or feces, can cause sore throat, cough, fatigue, headaches, nausea, and poor memory at low concentrations. Factors affecting potential risk of harm from pollutants include duration of exposure and concentration of pollutants. As discussed supra, the Events and Deviations differ tremendously in terms of duration and amount. Plaintiffs' aforementioned evidence of the potential health effects caused by the types of pollutants emitted does not include credible evidence that any of the specific Events and Deviations were of a duration and concentration to—even potentially—adversely affect human health or the environment. Although Plaintiffs' evidence of potential health effects provides some support of a potential risk of harm to human health, this evidence in this case is too tenuous and general to rise above mere speculation.
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> 48. Plaintiffs also claim the Events and Deviations were serious because they created "nuisance-type impacts" to the community that interfered with daily life. Four Plaintiffs' members experienced impacts to their life while living or visiting near the Complex, including pungent odors, allergies, respiratory problems, disruptive noise from flaring, concerns for their health after seeing haze believed to be harmful, and fears of explosion after seeing flares. However, these impacts could have been caused by Exxon's authorized emissions or other companies' emissions, because certain emissions and flares are authorized by permit and the nearby area in which the Complex operates is populated with numerous other refineries, petrochemical plants, and industrial facilities. Indeed, unauthorized emissions were a very small percentage of total emissions at the Complex for each year at issue. Plaintiffs' members were only able to

number of violations weighs in favor finding the violations serious. 16,386 days of violations are supported by the evidence.[257] As to the quantitative severity of the emissions, approximately ten million pounds of pollutants were released into the atmosphere as a result of the violations in this case.[258] Accordingly, the Court finds given the number of days of violations and the quantitative amount of emissions released as a result, the seriousness factor weighs in favor of the assessment of a penalty.

g. Balancing the Factors

74. The maximum penalty for each day of violation is $32,500 for violations occurring before January 13, 2014, and $37,500 for violations occurring on January 13, 2009, and thereafter. 42 U.S.C. § 7413(e)(2); 40 C.F.R. § 19.4.

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correlate some of the impacts, such as odor and noise, to five Events or Deviations at issue in this case. Moreover, Plaintiffs' members' testimonies regarding impacts were controverted by persuasive testimony from three other residents of the community who have lived very close to the Complex for many years. These residents testified the Complex has not impacted their lives, including that they have had no health problems they attribute to the Complex and that they have not experienced any problems with flaring, odors, noises, or emissions coming from the Complex. For all these reasons, the proposition that the Events or Deviations were serious because they created nuisance-type impacts on the surrounding community is not supported by the preponderance of the credible evidence.

[257] Days of violations per count are as follows: (1) Count I: 10,583 days; (2) Count II: 5,709 days; (3) Count III: 18 days; (4) Count IV: 44 days; and (5) Count V: 32 days.

[258] *Plaintiffs' Exhibit* 609.

Plaintiffs contend the total maximum penalty, after deducting for overlapping violations, is $573,510,000. However, Plaintiffs are only seeking $40,815,618 in penalties on remand.[259] Exxon contends it should not be assessed a penalty.

75. After carefully considering all of the penalty assessment factors discussed above, the Court determines a penalty is appropriate in this case.[260] The size and economics factor, duration factor, economic benefit from noncompliance factor, and seriousness factor, all weigh towards assessing a penalty. While Exxon's compliance history weighs against assessing a penalty, that factor is not sufficient to outweigh the factors supporting assessing a penalty. Any penalty assessed will deduct the $1,423,632 Exxon was already penalized from the amount.

76. The CAA does not prescribe a specific method for determining appropriate penalties. Some courts use the top-down approach, in which the court starts at the maximum penalty allowed by law and reduces downward as appropriate considering the factors as mitigating factors. *CITGO Petroleum Corp.*, 723 F.3d at 552. Other courts employ the bottom-up approach, in which the court

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[259] *Plaintiffs' Proposed Findings of Fact and Conclusions of Law Following Remand*, Document No. 253, Exhibit 1, ¶52.

[260] Exxon did not contend in its initial proposed findings of fact and conclusions of law that the Court should consider the "justice so requires" factor. Therefore, the Court declines to address those arguments on remand.

starts at the economic benefit of noncompliance and adjusts upward or downward as appropriate considering the factors. *Id.* Rejecting a requirement that a district court must employ either the top-down or bottom-up approach, some circuit courts have held the district court can "simply rely[ ] upon [the] factors to arrive at an appropriate amount" without starting at a specific amount because "[t]he statute only requires that the [penalty] be consistent with a consideration of each of the factors." *United States v. Anthony Dell'Aquilla, Enters. & Subsidiaries*, 150 F.3d 329, 339 (3d Cir. 1998); *see Pound*, 498 F.3d at 1095. "The [Fifth] [C]ircuit has never held that a particular approach must be followed" and has left such decision to the discretion of the district court. *CITGO Petroleum Corp.*, 723 F.3d at 552, 554.

77. Plaintiffs calculate the maximum penalty as follows[261]: (1) Count I: 10,583 days of violation with a $370,405,000 penalty; (2) Count II: 7,920 days of refinery violations with a $277,200,000 penalty, 4,038 days of olefins violations with a $141,330,000 penalty, and 1,671 days of chemical plant violations with a $58,485,000 penalty; (3) Count III: 18 days of violations with a $630,000 penalty; (4) Count IV: 44 days of violations with a $1,540,000 penalty; and (5) Count V: 32

[261] Plaintiffs apply a penalty rate of $35,000 per day across the board, given that approximately half the violations occurred when the rate was $32,500 and half when the rate was $37,500. Defendants do not contest this specific point in determining the maximum penalty. Therefore, as it is uncontested, the Court adopts this methodology as well.

days of violations with a $1,120,000 penalty. The Court agrees with this calculation. As the Court found Exxon liable on the refinery violations in Count I, it will not include the refinery violations in Count II when calculating the maximum penalty. The total maximum penalty, therefore, is $573,510,000.

78. **Plaintiffs** have submitted proposed findings of fact and conclusions of law that **adopt a bottom-up approach**, which calculates the penalty at an amount that is **fifty percent** higher than the economic benefit from noncompliance.[262] Therefore, as the Court has discretion as to which method to follow, the Court adopts the method proposed by Plaintiffs. The Court determined the economic benefit from noncompliance to be $14,249,940.[263] Using Plaintiffs' proposed methodology for calculating the penalty (which includes a 50% multiplier), the resulting penalty is $21,374,910. The Court determines, considering its finding that Exxon made a good faith effort to comply, the amount is sufficient to account for the factors that weighed towards assessing a penalty. The majority of the factors weigh towards imposing a penalty, which the Court determines justifies an increase from the base economic benefit from noncompliance number. Subtracting

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[262] *Plaintiffs' Proposed Findings of Fact and Conclusions of Law Following Remand*, Document No. 253, Exhibit 1, ¶52.

[263] Plaintiffs' proposed findings of fact and conclusions of law utilized a higher base amount (approximately $28 million); however, as the Court rejected Plaintiffs' theory that led to the higher base amount, the Court uses the amount in the actual finding to calculate the penalty. *Supra* ¶ III.69, III.69 n.248; *Plaintiffs' Proposed Findings of Fact and Conclusions of Law Following Remand*, Document No. 253, Exhibit 1, ¶52.

the $1,423,632 already paid by Exxon in penalties, the resulting penalty amount is $19,951,278.

E. Injunctive Relief

79. "The party seeking a permanent injunction must meet a four-part test. It must establish (1) success on the merits; (2) that a failure to grant the injunction will result in irreparable injury; (3) that said injury outweighs any damage that the injunction will cause the opposing party; and (4) that the injunction will not disserve the public interest." *VRC LLC v. City of Dallas*, 460 F.3d 607, 611 (5th Cir. 2006). "Other Fifth Circuit authority recognizes that the inadequacy of monetary damages also is a factor in the analysis." *Reservoir, Inc. v. Truesdell*, No. 4:12-2756, 2013 WL 5574897, at *7 (S.D. Tex. Oct. 9, 2013) (Atlas, J.) (citing *ITT Educ. Servs., Inc. v. Arce*, 533 F.3d 342, 347 (5th Cir.2008)). "[A]n injunction is a drastic and extraordinary remedy, which should not be granted as a matter of course." *Monsanto Co. v. Geertson Seed Farms*, 561 U.S. 139, 165 (2010). It is within the court's discretion to grant or deny injunctive relief. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 320 (1982). Even if a plaintiff prevails in a citizen suit, the court does not have to award any injunctive relief. *Envtl. Conservation Org. v. City of Dallas*, 529 F.3d 519, 530 (5th Cir. 2008).

80. Plaintiffs request Exxon be enjoined for five years from violating the emission standards and limitations found by this Court to be actionable. The CAA

provides that district courts have jurisdiction to enforce emission standards or limitations. 42 U.S.C. § 7604(a). However, "[t]he grant of jurisdiction to ensure compliance with a statute hardly suggests an absolute duty to do so under any and all circumstances, and a federal judge sitting as chancellor is not mechanically obligated to grant an injunction for every violation of law." *Weinberger*, 456 U.S. at 313. "Denial of injunctive relief does not necessarily mean that the district court has concluded there is no prospect of future violations for civil penalties to deter." *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 193 (2000). Rather, the court in a "citizen suit properly may conclude that an injunction would be an excessively intrusive remedy, because it could entail continuing superintendence of the permit holder's activities by a federal court—a process burdensome to court and permit holder alike." *Id.* In addition, an injunction ordering a party to obey the law allows for a possible contempt citation and threat of judicial punishment should the party disobey the law. *See Schmidt v. Lessard*, 414 U.S. 473, 476 (1974). In determining whether to grant injunctive relief, the court may consider the "attitude and laudable efforts" of a defendant "in continuously trying to improve the level of emissions." *See Ala. Air Pollution Control Comm'n v. Republic Steel Corp.*, 646 F.2d 210, 214 (5th Cir. Unit B 1981) (internal quotation marks omitted).

81. Enjoining Exxon from violating CAA standards and limitations would do nothing more than require Exxon to obey the law in the future. The Court finds that such an injunction is unnecessary and that Plaintiffs have not established injury to the public outweighs damage to Exxon. Exxon—without an injunction ordering it to comply with the CAA—already faces threat of TCEQ enforcement actions, including penalties, and threat of citizen suits should it not comply with the CAA. The Court believes any additional benefit the public would gain from Exxon having the additional threat of judicial contempt and punishment for violation of a court order is minimal. Additionally, for reasons explained supra in footnote 251, the greater weight of the credible evidence does not support a finding that the Events or Deviations were harmful to the public or the environment, and there is no evidence that any potential future emissions events or deviations will be more harmful to the public or the environment than past Events and Deviations allegedly were. To the contrary, the number of Reportable Events, the total amount of emissions, and the amount of unauthorized emissions of criteria pollutants have all decreased over the years at issue.[264] This is likely due to Exxon's substantial efforts to improve environmental performance and compliance.[265] Moreover, proving compliance with the CAA to this Court for five

[264] *Supra* ¶ II.16.

[265] *See supra* ¶¶ II.12–14.

years would be unduly burdensome on Exxon. Likewise, ensuring Exxon's compliance with the CAA for five years would be unduly burdensome on this Court. For these reasons, the Court finds Plaintiffs have not established denial of the requested injunction will cause injury to the public that outweighs damage the injunction would cause Exxon. Accordingly, Plaintiffs have not established the third requirement for injunctive relief, and injunctive relief is denied.

F. Special Master

82. Plaintiffs request the Court appoint a special master to monitor compliance with the injunctive relief granted in this Order. Plaintiffs request the special master be paid for by Exxon; have full access to the Complex, its personnel, and records; and be able to retain services of professional and technical people as needed. Having found no injunctive relief is warranted, a special master to monitor compliance with injunctive relief is consequently not warranted.

83. Moreover, even if the Court had granted the requested injunctive relief, a special master would still not be warranted. Plaintiffs did not show by the preponderance of the credible evidence that a special master could do a better job at reducing emissions events and deviations than the Complex's existing workforce. In addition, a special master would be excessively intrusive to Exxon's operations. Accordingly, Plaintiffs' request that the Court appoint a special master is denied.

G. Attorneys' Fees

84. Plaintiffs request an award of attorneys' fees, expert witness fees, and costs pursuant to 42 U.S.C. § 7604(d).[266] Exxon has not responded in opposition to this request. The Court finds an award of reasonable attorneys' fees, expert fees, and costs is appropriate as the Plaintiffs have substantially prevailed. Plaintiffs have ninety days to file their costs. The Plaintiffs are directed to file an appropriate and timely application for fees following the entry of judgment.

IV. CONCLUSION

Based on the foregoing, the Court hereby

ORDERS that Plaintiffs Environment Texas Citizen Lobby, Inc. and Sierra Club's requests in this case for a declaratory judgment, injunctive relief, and appointment of a special master, are **DENIED**. Plaintiffs' request for penalties against Defendants is **GRANTED IN THE AMOUNT OF $19,951,278**. Further, the Court

ORDERS that Plaintiffs' request for attorneys' fees, expert witness fess, and costs is **GRANTED**. The Court further

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[266] *Addendum to Plaintiffs' Proposed Findings of Fact and Conclusions of Law Following Remand*, Document No. 254. Exxon did request attorneys' fees and costs in its proposal; as Exxon is not the substantially prevailing party, the Court denies that request.

ORDERS that Defendants' request for attorneys' fees and costs is **DENIED**.

The Court will issue a separate Final Judgment.

SIGNED at Houston, Texas, on this 26 day of April, 2017.

DAVID HITTNER
United States District Judge