

No. 17-20545

In the United States Court of Appeals
For the Fifth Circuit

ENVIRONMENT TEXAS CITIZEN LOBBY, INCORPORATED; SIERRA
CLUB,
Plaintiffs-Appellees,

v.

EXXONMOBIL CORPORATION; EXXONMOBIL CHEMICAL COMPANY;
EXXONMOBIL REFINING & SUPPLY COMPANY,
Defendants-Appellants.

Appeal from the United States District Court for the
Southern District of Texas, Houston Division; No. 4:10-cv-4969

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CERTIFICATE OF INTERESTED PERSONS

The undersigned counsel of record certifies that the following listed persons and entities as described in the fourth sentence of Rule 28.2.1 have an interest in the outcome of this case. These representations are made in order that the judges of this Court may evaluate possible disqualifications or recusal.

1. Environment Texas Citizen Lobby, Inc., Plaintiff-Appellee;
2. Sierra Club, Plaintiff-Appellee;
3. National Environmental Law Center, Counsel for Plaintiffs-Appellees
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Respectfully submitted,

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STATEMENT REGARDING ORAL ARGUMENT

Plaintiffs-Appellees believe oral argument will assist the Court's analysis of the standing, economic benefit, and affirmative defense issues.

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ISSUES PRESENTED

1. In its original and revised opinions, the district court held that Plaintiffs proved injury-in-fact, traceability, and redressability with respect to each claim—that is, with respect to each “emission standard or limitation” they sought to enforce.

a. Does the prior panel’s implicit acceptance of that holding foreclose Exxon’s challenge to standing in this appeal, under the law of the case doctrine?

b. Did the district court err by assessing Plaintiffs’ standing in the same way every reported decision adjudicating standing in a Clean Air Act or Clean Water Act citizen enforcement suit has done: with respect to each “emission standard or limitation” they sought to enforce, and not on a violation-by-violation basis?

2. The district court held that four environmental improvement projects were “necessary to correct” violations at issue in the case, and that Exxon gained approximately \$14 million in economic benefit by delaying their implementation.

a. Does the prior panel’s rejection of Exxon’s argument that these projects are not evidence of economic benefit because they were allegedly “voluntary” foreclose Exxon from renewing that argument now under the law of the case doctrine?

b. Did the district court abuse its discretion by following this Court's instructions in evaluating whether these projects were "necessary to correct" the violations at issue?

c. Are the district court's factual findings that the projects were "necessary to correct" at least some of the violations, based in part on Exxon's admissions, clearly erroneous?

d. Did the district court abuse its discretion by applying an economic benefit calculation methodology that the prior panel recognized had previously been found reliable?

3. The district court followed this Court's direction by assessing the seriousness of Exxon's violations through an evaluation of the number of violations and the amounts of pollutants illegally emitted.

a. Is Exxon's argument that seriousness must instead be assessed separately for each violation foreclosed by the law of the case doctrine?

b. Did the district court abuse its discretion in finding that 16,386 days of violation, resulting in 10 million pounds of illegal pollution, weigh in favor of assessing a penalty?

c. Can this Court affirm the district court's seriousness finding on an alternative ground: that the district court's original finding that Exxon's

violations posed no potential or actual risk of harm was clearly erroneous, given the factual record before it?

4. Did the district court abuse its discretion in finding that, evaluating Exxon's 3,976 emission events both individually and as a group, the duration of Exxon's violations weighs in favor of assessing a penalty?

5. In assessing a penalty, did the district court abuse its discretion by not applying "other factors as justice may require" that Exxon now raises?

6. Did the district court err by refusing to allow a state-based act of God defense?

7. Was the district court's factual finding that Exxon failed to identify evidence in the record supporting each element of its state-based affirmative defense for emission events clearly erroneous, and can the finding be upheld independently on the ground that Plaintiffs adduced additional facts demonstrating Exxon's failure to meet its burden of proof?

STATEMENT OF THE CASE

I. PROCEDURAL HISTORY.

Plaintiffs-Appellees Environment Texas Citizen Lobby, Inc., and Sierra Club ("Plaintiffs") filed a seven-count Complaint on December 13, 2010, alleging that Defendants ("Exxon") violated the Clean Air Act ("CAA") at its Baytown Complex. ROA.26. A 13-day bench trial was conducted. An Opinion and

Judgment, entered on December 17, 2014, found 94 “actionable” violations of the CAA but imposed no civil penalty. Plaintiffs appealed the opinion and judgment to this Court, which held that the district court made errors of law in determining the number of violations and abused its discretion in assessing three of the statutory civil penalty factors. This Court vacated the district court’s judgment and remanded for recalculation of the number of violations and reassessment of penalties. *Env’t Tex. Citizen Lobby v. ExxonMobil Corp. (ETCL)*, 824 F.3d 507, 514 (5th Cir. 2016). Exxon’s petition for en banc review was denied on August 16, 2016.

On April 26, 2017, after remand, the district court issued a Revised Opinion and Judgment, finding Exxon liable for 16,386 days of violation under the first five counts of the Complaint and ordering Exxon to pay a civil penalty of \$19,951,278. The district court arrived at this figure by calculating the economic benefit Exxon enjoyed by delaying compliance with its permits, and then, after weighing other statutorily-required factors, adding 50% to that figure. ROA.13292, ROA.13300. On July 31, 2017, the district court denied Exxon’s motion to alter or amend its judgment. ROA.15551. This appeal followed.

II. THE NATURE OF PLAINTIFFS’ CLAIMS.

Plaintiffs’ claims were brought under the “citizen suit” provision of the CAA, which authorizes citizens to sue persons who violate their CAA permits and

to seek enforcement of the terms of those permits. 42 U.S.C. § 7604(a) and (f)(4). Under the citizen suit provision, district courts are granted jurisdiction to impose “any appropriate civil penalties” on violators. 42 U.S.C. § 7604(a). The citizen suit plaintiff does not receive the penalty, which is paid to the U.S Treasury. 42 U.S.C. § 7604(g). Exxon’s assertion that Plaintiffs sought a “windfall” (Brief of Appellants (“Exxon Br.”) 17) is thus false.

Plaintiffs alleged—and proved—that Exxon’s violations of numerous permit limits recurred post-Complaint (thus showing Exxon was “in violation” at time of suit). ROA.13235–37 (citing *Carr v. Alta Verde Indus., Inc.*, 931 F.2d 1055, 1062 (5th Cir. 1991)). Plaintiffs also proved that Exxon’s violations of a few additional permit limits had been repeated before the Complaint was filed even though they did not continue after filing. In the parlance of the district court, such “ongoing” or “continuing” violations, as well as such repeated past violations, are “actionable” under the CAA citizen suit provision. ROA.13235 (construing 42 U.S.C. § 7604(a)(1)).

The district court found that Exxon violated its CAA Title V permits at the Baytown Refinery, Olefins Plant, and Chemical Plant (collectively, “the Complex”) during the period October 14, 2005, through September 3, 2013 (the “Claims Period”; ROA.13209) as follows:

- Count I: Exxon violated a provision in the Baytown Refinery permit prohibiting “upset emissions,” which are unauthorized emissions of

regulated air pollutants (10,583 days of continuing or repeated violations, ROA.13251);

- Count II: Exxon violated various specified hourly emission limits set forth in permits covering the Baytown Olefins and Chemical Plants (4,038 days of continuing or repeated violations at Olefins Plant, ROA.13259, and 1,671 days of continuing or repeated violations at the Chemical Plant, ROA.13261);¹
- Count III: Exxon violated a Texas regulation, incorporated into its permits, limiting emissions of highly reactive volatile organic compounds (the “HRVOC Rule”) (18 days of continuing or repeated violations, ROA.13263);
- Count IV: Exxon violated permit provisions limiting visible emissions from its flares (the “smoking flare rule”) (44 days of continuing or repeated violations, ROA.13264); and
- Count V: Exxon violated permit provisions prohibiting the operation of flares without a pilot flame (the “pilot flame rule”) (13 days of continuing or repeated violations, ROA.13265 and ROA.13292 n.257).

No “sweeping theories” or “broad readings” were required to prove Exxon’s liability: the district court simply applied the terms of Exxon’s permits to Exxon’s own undisputed records of emissions. Exxon’s own counsel admitted to most of its violations at the end of trial. *ETCL*, 824 F.3d at 520–21. And Exxon does not appeal the liability findings here.

¹ The district court also found 7,920 days of continuing or repeated violations of hourly emission limits set forth in the Refinery permit (ROA.13258) but did not include them in its penalty assessment because they overlap with the Count I violations

The violations for which Exxon was held liable by the district court stemmed from 3,976 separate “emissions events” occurring at the Complex during the Claims Period. ROA.13209. Exxon witnesses acknowledged that *every* reported or recorded emission event involves an emission of one or more air pollutant not authorized by any permit or regulation. ROA.16465:13–16467:22; Tex. Health & Safety Code § 382.0215(a)(1); 30 Tex. Admin. Code § 101.1(28), (108) (an “emission event” “results in unauthorized emissions of air contaminants;” “unauthorized emissions” are those “that exceed any air emission limitation in a permit”).

Of these emission events, 241 were “Reportable Events,” for which Exxon submitted State of Texas Electronic Environmental Reporting System (“STEERS”) Reports to TCEQ to document emission events that release greater than a threshold quantity of pollutants. 30 Tex. Admin. Code §§ 101.1(88), 101.201; ROA.13208–09. An additional 3,735 emission events were “Recordable Events,” those not meeting the STEERS reporting threshold, for which Exxon was required to keep documentation on-site at the Complex (“Recordable Lists”). 30 Tex. Admin. Code § 101.201(b); ROA.13208–09.

III. THE MAGNITUDE OF EXXON’S VIOLATIONS.

The 241 Reportable Events and 3,735 Recordable Events at issue average out to more than one emission event per day throughout the Claims Period.

ROA.13282-83. Because Exxon’s emission events often released more than one pollutant, they frequently involved violations of more than one emission limit. Thus, using the district court’s computation of 16,386 days of violation,² on any given day over the full eight-year period covered by this case Exxon was likely to be emitting illegal levels of five or six different pollutants into the air (on some days more, on some less).

Plaintiffs’ members could not have avoided exposure to Exxon’s unlawful emissions (other than by moving out of town completely). Emissions could happen virtually anywhere at the Exxon Complex, at every time of year, and during the day or night; unauthorized emissions came from flares, storage tanks, furnaces, vents, pipes, valves, oil and chemical spills, and fires, among other sources. *See, e.g.*, ROA.50463–732 (“Date,” “Time,” and “Emission Point Common Name” columns in the stipulated spreadsheet of recordable emission events at the Refinery).

Unauthorized emissions continued well after the filing of the Complaint, up to and during the trial itself. *See* ROA.13225 n.115.

² Each “day of violation” is subject to a civil penalty under the Act. 42 U.S.C. § 7413(b); 40 C.F.R. § 19.4. Violations that occur on different calendar days are counted separately. For a violation that extends uninterrupted beyond the calendar day on which it begins, a “day” is a 24-hour period, not a calendar day. ROA.13250 (citing *S.F. Baykeeper v. W. Bay Sanitary Dist.*, 791 F. Supp. 2d 719, 762 (N.D. Cal. 2011) (construing identical language in CWA)).

A. Exxon's Violations Were Serious.

Exxon mentions that, on an annualized basis, unauthorized emissions are small compared to the total emissions from the Complex. Exxon Br. 4. But Exxon sidesteps the fact that virtually all of the violations at issue were of hourly emission limits. TCEQ determined that “[h]ourly emission limits are necessary in order to ensure protection of public health from short-term exposure.” 36 Tex. Reg. 943, 950 (February 18, 2011), *available at* <http://texashistory.unt.edu/ark:/67531/metaph145988/m1/64/>.

In holding that the seriousness of the violations weighed in favor of a penalty, the district court found that “approximately ten million pounds of pollutants were released into the atmosphere as a result of the violations in this case.” ROA.13292. Of those ten million pounds, well over nine million pounds (4,500 tons) were “criteria pollutants”³ and well over 100 additional tons included carcinogens and other “hazardous air pollutants” (“HAPs”).⁴ ROA.16366:12–16368:1; ROA.69402 (summary of annual emission inventories at the Exxon

³ “Criteria pollutants” have been found by Congress to “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. § 7408(a)(1)(A).

⁴ “Hazardous air pollutants” include “substances which are known to be, or may reasonably be anticipated to be, carcinogenic, mutagenic, teratogenic, neurotoxic, which cause reproductive dysfunction, or which are acutely or chronically toxic.” 42 U.S.C. § 7412(a)(6), (b)(1) (list), (2) (explanation).

Complex); ROA.61431–643 (annual emission inventories). These pollutants included:

- *Respiratory hazards*, such as sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM), and hydrogen sulfide (“H₂S”);
- *Smog-forming chemicals*, such as NO_x, CO, and VOCs;
- *Carcinogens*, including benzene, 1,3-butadiene, ethylbenzene, hexane, isoprene, and xylene; and
- *Other toxicants*, including hydrogen chloride, carbon disulfide, carbonyl sulfide, hydrogen cyanide, toluene, methylbenzene, and naphthalene.

Moreover, many individual emission events released tens or even hundreds of thousands of pounds of pollutants over just hours or days. ROA.63681–98. These emission violations occur in an area that has unhealthy levels of ozone (smog), carcinogens, and particulates, and where smog, respiratory difficulties, and cancer are well-documented problems. ROA.63892–93.

The parties stipulated to the admissibility of government documents describing the adverse health effects of the pollutants emitted during Exxon’s violations. ROA.17804:8–12 (exhibits appear at ROA.64050 *et seq.*). And Plaintiffs presented expert testimony as to the compromised air quality in the area around the Complex and the exposure levels and synergistic effects by which the primary pollutants released by Exxon can adversely affect public health. ROA.11074–84 (Plaintiffs’ initial post-trial proposed findings).

In addition, Exxon’s own air dispersion modeling of selected emission events showed that, on over 150 occasions, the predicted off-site concentrations of pollutants released by Exxon exceeded safety thresholds.⁵ Even the smaller Recordable Events caused offsite pollutant concentrations to exceed safety thresholds more than 100 times. ROA.17889:22–17890:1.

Contrary to Exxon’s assertion, Plaintiffs did not treat every violation “the same.” Exxon Br. 9. Plaintiffs did initially seek the maximum penalty for all violations, because Plaintiffs’ experts had determined that the economic benefit earned by Exxon as a result of delaying compliance expenditures was greater than the maximum statutory penalty. However, Plaintiffs also presented extensive evidence, expert testimony, and briefing focusing on the dangers posed by the largest, longest lasting, and most harmful of Exxon’s violations. *See, e.g.*, ROA.11058–61; ROA.11125–33.

Exxon’s hand-picked list of purportedly “insubstantial” emissions events (Exxon Br. 9, 26) reveals more about Exxon’s casual approach to compliance with the law than it does about the seriousness of its violations. Each of the ten emission events Exxon lists (Exxon Br. 9) involved a fire—as did 343 other emission events at issue (ROA.16901:11–16902:22; ROA.63484-505 (list of

⁵ *See infra* p. 45 n.22 (record citations showing violations during which safety thresholds were exceeded). And these were not the worst of the violations; Exxon chose *not* to commission modeling of approximately 100 of the largest, most serious Reportable Events at issue. ROA.17966:6–21.

emission events involving fires)). Every fire at an oil refinery or petrochemical plant is potentially serious. Because gases and liquids present throughout the Complex are flammable, precautions must be taken to prevent ignition of those materials should they escape.⁶ ROA.16780:7–25, ROA.18459:21–18460:2, ROA.18746:5–10. Exxon’s environmental manager confirmed that a “smoldering board” is a potential ignition source (ROA.16781:6–22), and Exxon’s engineering expert testified that leaks of flammable gases should be minimized to reduce explosion risk at the Complex (ROA.18746:5–14).

B. Exxon’s Violations Were of Extensive Duration.

The district court found that “Exxon averaged more than one violation per day” during the Claims Period. ROA.13282–83.

Further, the duration of many individual releases was extensive. Among Reportable Events under Count II: 138 actionable violations lasted more than 48 hours, resulting in a total of 1,245 days of violation; an additional 107 actionable violations lasted more than 24 (but less than 48) hours, and an additional 99 actionable violations lasted more than 12 (but less than 24) hours. *See* Plaintiffs’ Exhibits 589, 591, and 593 (ROA.12829–73) (sorted by duration of each

⁶ Photographic evidence of a fire that burned out of control at the Complex was presented at trial. ROA.18482:22–18485:21; ROA.69493–95 (photographs).

violation).⁷ Of the 3,735 Recordable Events, 45% (or 1,681 events) were more than one hour in duration and 408 events lasted more than 24 hours. ROA.50274. Under Count III, one Reportable Event lasted 41 hours and caused 16 hourly violations of the HRVOC Rule; another lasted 18 hours and caused 7 hourly violations; and a third event violated the HRVOC Rule “intermittently” over a period of 114 hours. ROA.69270–72 (rows 6, 9, 11). Under Count IV, twelve smoking flare violations had durations of 8 hours or longer. ROA.69276–81 (rows 26–28, 30–34, 36–38, 41). Under Count V, four violations of the pilot flame rule lasted 4 hours or more, with one outage lasting 23 hours. ROA.69282–84 (rows 6, 12, 14, 15).

IV. PLAINTIFFS’ MEMBERS SUFFERED INJURIES THROUGHOUT THE CLAIMS PERIOD THAT WERE TRACEABLE TO THE FULL RANGE OF EXXON’S VIOLATIONS.

Four members of the Plaintiff groups who have lived near the Complex and experienced ill effects from emission events testified at trial. *See generally* ROA.13222–28. Each witness became a member of one of the Plaintiffs before the suit was filed: Marilyn Kingman joined Sierra Club in 2008 (before the required pre-suit notice was served) because she was “interested in fresh air” (ROA.17323:11–17); Shae Cottar joined Sierra Club in October, 2010, after

⁷ Because the Count I violations result from the same Refinery emission events that were at issue under Count II, the long durations of violations shown in PX 589 are applicable to Count I as well.

learning about the group at his new job with another clean air organization (ROA.16065:23–16068:13); Diane Aguirre joined Sierra Club in June, 2010, and Environment Texas on December 9, 2010, after hearing from her mother that this lawsuit was being planned (ROA.16159:5–16160:7; ROA.16178:4–16179:18; ROA.16182:21–16183:5); and Sharon Sprayberry joined Sierra Club in July, 2010, after she, on her own initiative, contacted one of the groups to find out what they were doing to support clean air (ROA.17296:20–17297:8). Exxon’s assertion that Plaintiffs “recruited” these witnesses post-Complaint, once Exxon “failed to capitulate” (Exxon Br. 11, 17, 27) is preposterous, and denigrates their long-held interest in improving air quality in Baytown. The district court made factual findings supporting the following:⁸

Plaintiffs’ members have a personal stake in the air quality of the neighborhoods close to the Exxon Complex. Mr. Cottar lived a quarter-mile from the Complex from April 2010 through September 2012, and then moved two miles from the Complex “out of concern for his health and safety.” ROA.13225–26. Ms. Sprayberry lived one mile from the Complex from 2004 until she moved out of town in 2012 to escape the air pollution; she would retire in Baytown and/or “return to Baytown to visit friends and attend events” if the air quality improved. ROA.13227. Ms. Kingman lives in a town neighboring Baytown and “shops,

⁸ Footnotes in the district court’s opinion citing to the trial transcript have been omitted from the quotations in this section.

banks, attends church, and conducts other activities several times a week in Baytown, including nearby the Complex.” ROA.13224. Ms. Aguirre grew up a mile and a half from the Complex and visits her parents’ home near the Complex. ROA.13222–23.

Plaintiffs’ members suffered injuries from poor air quality and the threat of emission events throughout the Claims Period. “While living at the closer address, [Mr. Cottar] 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. He also smelled strong, pungent odors that, on occasion, caused him headaches and awoke him in the night. . . . He has also smelled odors that became more intense the closer he got to the Complex while driving. His asthmatic symptoms were exacerbated when living at the closer address. . . . When visiting the nature center next to the Complex, he does not stay if he sees emissions.” ROA.13225–26. Ms. Sprayberry “experienced respiratory issues” throughout her time in Baytown and on a return visit after she moved; from her home she heard, saw, and smelled flares, haze, and chemical odors from the Complex. ROA.13227. Ms. Kingman smells chemical odors and sees flares and a gray or brown haze over the Complex; “flaring at the Complex concerns her because she is afraid of explosion and because she believes flaring indicates

something is wrong”; and she has to “limit[] her outdoor activities in Baytown when she smells odors or sees haze.” ROA.13224. Ms. Aguirre smelled odors at her parents’ home and elsewhere in Baytown; observed flaring, smoke, and a brownish haze at the Complex; experiences runny nose, watery eyes, and chest constriction when she is in Baytown; refrains from running outdoors whenever she visits her family because exercise exacerbates these effects; and is “concerned about the risk of explosion from an emergency condition at the Complex.” ROA.13223–24.

Plaintiffs’ members traced their injuries to emissions from the Complex. Mr. Cottar was able to trace strong, pungent, or sweet chemical odors to the Complex by both proximity and wind direction; his asthmatic symptoms became worse when he lived near the Complex and lessened when he moved further away; and he saw plumes of black smoke coming from Complex flares. ROA.13225–26. Ms. Sprayberry traced odors to the Complex by wind direction; she lived close enough to see, hear, and feel flaring events; and her breathing problems worsened when near the Complex and alleviated when she left Baytown. ROA.13227. Ms. Kingman smells chemical odors when she is “around the Complex” and can see the Complex’s flaring and haze. ROA.13224. Ms. Aguirre notes that the “Complex is the closest industrial facility to her parents’ home,”

correlates her respiratory symptoms with spending time near the Complex, and sees visual evidence of emissions from the Complex. ROA.13222–23.

Exxon’s violations released pollutants that cause or contribute to these types of injuries. The various respiratory problems suffered by Mr. Cottar, Ms. Sprayberry, and Ms. Aguirre are consistent with exposure to the many respiratory irritants and smog-forming chemicals emitted by Exxon during emission events: CO, carbonyl sulfide, hydrogen chloride, hydrogen cyanide, hydrogen sulfide, NO_x, particulate matter, sulfur dioxide, and VOCs. *See infra* pp. 50–55.

Fears about increased risk of cancer (Aguirre, ROA.16170:9–16; Kingman, ROA.17331:23–17332:7) are reasonable given Exxon’s repeated releases of known or suspected human carcinogens, including benzene, 1,3-butadiene, ethylbenzene, hexane, isoprene, and xylene. *See infra* p 10.

The headaches experienced by Mr. Cottar after being exposed to powerful pungent or sweet chemical odors can be caused by exposure to hydrogen sulfide (rotten egg odor), hydrogen cyanide (bitter odor), and benzene (sweet odor). ROA.13233 n.155; *see infra* pp. 50–55. Other pollutants with powerful odors released by Exxon include ammonia, hydrogen chloride, sulfur dioxide, and other sulfur compounds. *Id.*

These witnesses’ fears of explosions are rationally linked to Exxon’s uncontrolled releases of flammable gases—VOCs, carbon disulfide, and hydrogen

sulfide—particularly when coupled with the Complex’s 353 emission events involving fires. *See infra* pp. 50–55.

Plaintiffs’ members testified that their injuries are ongoing, and that fewer emission events and a reduction in illegal emissions would help redress these injuries. Mr. Cottar “does not want to breathe unauthorized emissions, and his concerns about air quality would be lessened if Exxon were to reduce its unauthorized emissions.” ROA.13226. Ms. Aguirre testified similarly. ROA.16174:1–9. Ms. Kingman does not want to breathe whatever chemicals are causing the odors that come from the Complex. ROA.17337:2–12. And Ms. Sprayberry would like the air quality in Baytown to improve so she can visit old friends again. ROA.13227.

V. EXXON’S VIOLATIONS WERE PREVENTABLE, AND EXXON BENEFITTED FINANCIALLY FROM ITS DELAY IN PREVENTING THEM.

In this appeal, Exxon suggests that there was nothing it could have done to address emission events: because emission events are “unplanned and unavoidable,” and result from a multitude of specific “root causes,” a large and complicated facility like the Complex, Exxon claims, is simply doomed to perpetually violate its permits. Exxon Br. 3. Yet by the time of trial in February 2014, Exxon had made strides towards getting its Complex-wide compliance problems under better control. *See* ROA.50250. The district court found that

Exxon’s compliance expenditures during the Claims Period “achieved significant reduction in the number of Reportable Events [and] . . . unauthorized emissions . . . over the years at issue in this case.” ROA.13278. Had Exxon made these “good faith” investments in CAA compliance (*see* Exxon Br. 3–4) years earlier, these emission reductions would have been realized sooner.

Plaintiffs initially proposed a penalty at the maximum end of the scale that would have more fully reflected the economic benefit Exxon gained from having waited until the Claims Period to begin making these investments, but the district court rejected that argument. ROA.13284 n.244. However, Plaintiffs had also directed their economics expert, Jonathan Shefftz, to calculate the economic benefit to Exxon of delaying four compliance projects mandated by a TCEQ agreed enforcement order issued in February 2012. ROA.61182 (the “Agreed Order”). This Court thus directed the district court to consider, on remand, whether Exxon had gained an economic benefit by “foregoing earlier implementation” of these compliance measures. *ETCL*, 824 F.3d at 530.

The district court found that Exxon had embarked upon these projects, to be implemented over an approximately five-year period under the terms of the order, “in an effort to reduce emissions and unauthorized emissions events.” ROA.13285 n.244. The order itself states—using language originally proposed by Exxon (ROA.18915:6–17; ROA.69523–24)—that these projects “will reduce

emissions...from emissions events.” ROA.13216. Testimony by Exxon witnesses established that Exxon could have implemented each of these four projects prior to the statute of limitations period. ROA.16529:1–6; ROA.16530:2–16532:5; ROA.16914:9–14; ROA.17743:2–9; ROA.66740–41 (Shefftz expert report). Had Exxon done so, the number and severity of permit violations at issue in this case would have been reduced.

Using methodology the district court found “reliable,” Mr. Shefftz testified—and the district court found—that Exxon gained an economic benefit of \$14,249,940 by postponing these expenditures until 2012–2017. ROA.13287.

VI. EXXON FAILED TO PROVE ITS AFFIRMATIVE DEFENSES.

Exxon waited until *after* the district court issued its final decision on remand to attempt to identify evidence supporting its affirmative defenses, despite this Court’s statement that “the district court may well be called upon to rule on Exxon’s claimed affirmative defenses on remand.” *ETCL*, 824 F.3d at 534 n.21. Exxon failed—at trial, in post-trial briefing, and again on remand—to identify specific evidentiary support demonstrating it had met the eleven elements of the Texas affirmative defense (30 Tex. Admin. Code § 101.222) for any of the 97 emission events for which it claimed the defense. ROA.15555–56 (order denying Exxon’s motion to alter or amend the judgment). Plaintiffs, in contrast, specifically called the district court’s attention to “evidence showing the

deficiencies for each affirmative defense asserted.” ROA.15555; *see, e.g.*, ROA.63667–80 (PX 446). *See infra* pp. 87–95.

Similarly, Exxon did not present evidence sufficient to satisfy the criteria for meeting the “Act of God” defense for unauthorized emissions occurring during Hurricane Ike. *See infra* pp. 84–85.

SUMMARY OF ARGUMENT

Exxon’s challenge to Plaintiffs’ standing is foreclosed by the law of the case doctrine. Exxon informed the prior panel that its argument on standing was “intermeshed” with the merits of Plaintiffs’ liability and penalty claims. This Court implicitly affirmed Plaintiffs’ standing by ruling in Plaintiffs’ favor on the liability and penalty issues and remanding to the district court for findings on liability and penalties.

Exxon now reasserts the violation-by-violation approach to standing rejected by the district court. This is a policy argument through which Exxon seeks to restrict Clean Air Act enforcement in a manner contrary to the express intent of Congress, to Article III of the Constitution, and to settled case law. Under the CAA, a citizen enforcer’s claim is to enforce an “emission standard or limitation” by proving ongoing or repeated violations of that standard; each individual violation is not a separate claim. No court has held otherwise. Exxon’s citations to cases stating that standing is not dispensed “in gross” are inapposite; those cases caution against lumping different claims together without separate standing analyses, and do not address repeated violations that fall under a single claim. The district court properly assessed Plaintiffs’ standing with respect to each claim asserted. The undisputed facts strongly support the district court’s findings that

Plaintiffs satisfied the three-part test of injury-in-fact, traceability, and redressability for each claim.

The district court did not abuse its discretion when it reassessed three CAA penalty factors—economic benefit of noncompliance, seriousness of the violations, and duration of the violations—in the manner directed by this Court.

On economic benefit, the district court made findings of fact that four environmental improvement projects required by the Agreed Order were necessary to correct underlying causes of violations at issue, and that the projects could have been implemented years earlier. These findings, based on Exxon’s admissions and agency findings, were made in accordance with reasonable instructions from the prior panel and were not clearly erroneous. Exxon’s argument that the projects were “voluntary” and should have been excluded from the analysis was previously rejected by this Court, is irrelevant to Congress’s conception of economic benefit, and is contradicted by the factual record. The district court adopted the methodology used by Plaintiffs’ economist to calculate the economic benefit Exxon gained by delaying implementation of these projects. The prior panel did not disturb the district court’s ruling, in its original decision, that this methodology—including the start date from which to measure Exxon’s delay—was reliable.

In assessing the seriousness of Exxon’s violations, the district court followed this Court’s direction in looking to the overall number (16,386 violations) and quantitative severity (10 million pounds of unauthorized emissions) of the violations in finding that this factor weighed in favor of a penalty. This Court also advised that risk or potential risk of harm from emissions of dangerous pollutants can form the basis of a seriousness determination. The record on appeal is replete with evidence of such risk, providing an alternative ground supporting the district court’s assessment.

In assessing the duration of Exxon’s violations, the district court employed both of the approaches suggested by the prior panel: it considered the overall length of the period during which the violations occurred, and it considered the extensive duration of many individual violations. Under both approaches, the district court reasonably found that the duration of Exxon’s nearly 4,000 unauthorized emission events weighed in favor of a penalty.

The district court correctly found that, because Exxon had not raised the point in its original post-trial briefing, Exxon had waived its argument on remand that “other factors as justice may require” warrant a penalty reduction. Further, this Court’s remand language precluded Exxon from re-litigating any penalty issues not remanded by this Court, and Exxon’s “other factors” argument was an

improper attempt to repackage the “voluntary compliance” argument already rejected by this Court.

The district court’s rejection of Exxon’s affirmative defenses involves no errors of law or clearly erroneous factual findings. A state statute must be included in a federally-approved “state implementation plan” to serve as an affirmative defense, and the act of God statute on which Exxon relied is not part of the Texas plan. Moreover, Exxon put on no evidence to establish this defense at trial. The district court did not violate Fed. R. Civ. P. 52(a) (requiring a trial judge to find facts) in rejecting Exxon’s assertion of the affirmative defense provided in 30 Tex. Admin. Code § 101.222. The district court’s finding that Exxon failed to identify sufficient facts to meet its burden to prove each element of this defense was itself a finding of fact to be accorded deference by this Court. Moreover, Plaintiffs adduced substantial evidence demonstrating Exxon’s failure to meet its burden.

ARGUMENT

I. STANDARDS OF REVIEW.

A. Law Of The Case.

Exxon’s challenge to the district court’s finding that Plaintiffs have standing; its argument that four environmental compliance projects cannot provide the basis for an economic benefit determination because they were “voluntary”; and its argument that the district court should have assessed the seriousness factor of the penalty analysis solely on a violation-by-violation basis, are attempts to re-litigate issues already decided by this Court in the previous appeal.

“Under the ‘law of the case’ doctrine, an issue of law or fact decided on appeal may not be reexamined . . . by the appellate court on a subsequent appeal.” *Ill. Cent. Gulf R.R. v. Int’l Paper Co.*, 889 F.2d 536, 539 (5th Cir. 1989). Unless an exception applies,⁹ “[o]n a second appeal following remand, the only issue for consideration is whether the court below reached its final decree in due pursuance of our previous opinion and mandate.” *Burroughs v. FFP Operating Partners, L.P.*, 70 F.3d 31, 33 (5th Cir. 1995) (citation omitted). The law of the case

⁹ A prior panel’s decision must be followed except in three narrow circumstances, none of which apply here: where “the evidence on a subsequent trial was substantially different, controlling authority has since made a contrary decision of the law applicable to such issues, or the decision was clearly erroneous and would work a manifest injustice.” *White v. Murtha*, 377 F.2d 428, 431–32 (5th Cir. 1967); *see also N. Miss. Commc’ns, Inc. v. Jones*, 951 F.2d 652, 656 (5th Cir. 1992).

doctrine applies not only to issues decided explicitly, but also to everything decided “by necessary implication.” *Browning v. Navarro*, 887 F.2d 553, 556 (5th Cir. 1989); *see also Lehrman v. Gulf Oil Corp.*, 500 F.2d 659, 663 (5th Cir. 1974). The doctrine applies to jurisdictional issues. *See Free v. Abbott Labs., Inc.*, 164 F.3d 270, 272–73 (5th Cir. 1999); *LaShawn A. v. Barry*, 87 F.3d 1389, 1394 (D.C. Cir. 1996) (*en banc*).

B. Findings Of Fact Are Reviewed For Clear Error.

“Findings of fact . . . must not be set aside unless clearly erroneous” Fed. R. Civ. P. 52(a)(6). The district court’s factual findings on standing and on the penalty factors of economic benefit, seriousness, and duration, and its factual finding that Exxon failed to identify record evidence to establish its affirmative defenses, are subject to review only for clear error. *In re Deepwater Horizon*, 739 F.3d 790, 805 (5th Cir. 2012) (“Even though standing is a jurisdictional matter, any facts expressly or impliedly found by the district court in the course of making its jurisdictional findings must be accepted on appeal unless they are clearly erroneous”) (internal quotes and citations omitted); *United States v. CITGO Petrol. Corp.*, 723 F.3d 547, 551 (5th Cir. 2013) (“We review factual findings in support of a district court’s penalty calculation for clear error”); *Retractable Techs., Inc. v. Becton Dickinson & Co.*, 842 F.3d 883, 898, 900 (5th Cir. 2016) (reviewing fact findings applicable to affirmative defense of laches for clear error).

Clear error is a high bar. “A finding is ‘clearly erroneous’ when although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed.”

Duke Power Co. v. Carolina Env'tl. Study Group, Inc., 438 U.S. 59, 74 n.19 (1978) (quoting *United States v. U.S. Gypsum Co.*, 333 U.S. 364, 395 (1948)).

C. Penalty Assessment Is Reviewed For Abuse Of Discretion.

The assessment of penalties is “‘highly discretionary,’” thus “[a] court’s determination of the amount of a penalty to be assessed is reviewed under the highly deferential abuse-of-discretion standard.” *CITGO*, 723 F.3d at 551 (quoting *Tull v. United States*, 481 U.S. 412, 427 (1987), and citing *Sierra Club v. Cedar Point Oil Co.*, 73 F.3d 546, 573 (5th Cir. 1996)). “Generally, an abuse of discretion only occurs where no reasonable person could take the view adopted by the trial court.” *Friends for Am. Free Enter. Ass’n v. Wal-Mart Stores, Inc.*, 284 F.3d 575, 578 (5th Cir. 2002) (internal quotes and citations omitted).

D. A District Court May Be Affirmed On Any Basis The Record Supports.

Notwithstanding an error by the district court, an appellate court is “free to affirm a district court on any basis that the record supports.” *Deslatte v. Tidex, Inc.*, 83 F.3d 418, 1996 WL 197372, at *1 (5th Cir. 1996) (unpublished table decision) (citing *Ferguson v. Hill*, 846 F.2d 20, 21 (5th Cir.1988); *Brock v. Mr. W Fireworks, Inc.*, 814 F.2d 1042, 1044 (5th Cir.)). “Where precisely the same result

could have been reached on other grounds apparent from the record, sending the case back to the district court is wasteful both for the courts and for the litigants.” *Ecological Rights Found. v. Pac. Lumber Co.*, 230 F.3d 1141, 1154 (9th Cir. 2000) (citing *SEC v. Chenery*, 318 U.S. 80, 88 (1943)); *see also United States v. Laird*, 494 F.2d 709, 711 n.9 (4th Cir. 1974) (“the appellate court will affirm if sound grounds therefor appear, irrespective of the reasons given by the lower court”).

II. PLAINTIFFS ESTABLISHED STANDING TO BRING ALL CLAIMS AND TO SEEK ALL FORMS OF RELIEF.

Exxon argues that the district court incorrectly analyzed standing, and that had it performed a correct analysis, it would have found no standing (or at most standing to sue for 40 days of violation). This argument is without substance.

A. Under The Law Of The Case Doctrine, Exxon May Not Challenge Plaintiffs’ Standing.

Because of the law of the case doctrine, this Court should reject Exxon’s standing challenge.

The issue of Plaintiffs’ standing was heavily contested before the district court and fully addressed in its original opinion. ROA.11529–35 (factual findings on standing), ROA.11537–42 (legal conclusions on standing). The district court’s holding that Plaintiffs have standing was brought to the attention of the prior panel by both parties during the first appeal of this case. Case 15-20030, Document 00513045339, pp. 22, 87 (Plaintiffs’ brief); Case 15-20030, Document

00513188580, pp. 3, 25, 27 (Exxon’s brief). Exxon informed the prior panel that it did not “raise” the standing issue on that appeal because the “main standing challenge (on the element of redressability in the context of civil penalties) is tied to the ‘repeated and ongoing’ requirement for citizen suits and is thus ‘intermeshed’ with the merits.”¹⁰ *Id.* at 27 n.4. By Exxon’s own admission, then, the prior panel could not have resolved the repeated and ongoing or repeated violations issue in Plaintiffs’ favor, or instructed the district court to conduct a new civil penalty analysis, without implicitly affirming the district court’s finding that Plaintiffs had standing to invoke the court’s jurisdiction pursuant to 42 U.S.C. § 7604(a). *See ETCL*, 824 F.3d at 523 (referencing jurisdiction to enforce emission standards and apply penalties).

The district court, on remand, recognized this as well; it declined to “revisit any finding of fact or conclusion of law [in its original opinion] upheld in or left undisturbed by the Fifth Circuit’s opinion.” ROA.13204. Thus, even though the prior panel did not discuss standing in its decision, this was no “drive-by jurisdictional ruling” where jurisdiction was not raised by the parties or was unrelated to the issues presented on appeal. *See USPPS, Ltd. V. Avery Dennison Corp.*, 647 F.3d 274, 283 (5th Cir. 2011) (quoting *Steel Co. v. Citizens for a Better Env’t*, 523 U.S. 83, 91 (1998)).

¹⁰ Exxon even pointed the prior panel to the particular portions of the record on appeal involving its challenge to Plaintiffs’ standing. *Id.* at 27.

This case is similar to *Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc.*, 776 F.3d 837 (Fed. Cir. 2015), *abrogated on other grounds*, *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, --- U.S. ----, 136 S. Ct. 1923 (2016). There, a party challenged plaintiffs’ standing before the district court, which rejected the argument in a written opinion. *Id.* at 841. No party briefed the issue of standing during a first appeal, nor did the first panel make an explicit determination regarding standing; it simply confirmed that the lower court had jurisdiction. *Id.* On a second appeal to a new Federal Circuit panel after remand, the same party challenged plaintiffs’ standing, arguing that the first panel had not resolved the issue with finality. *Id.* at 842. The Federal Circuit rejected this attempt to circumvent the “law of the case” doctrine, finding it was bound to leave in place the prior implicit legal conclusion that the plaintiffs had standing. *Id.* The court observed that it was “not a case in which a standing issued remained dormant in facts buried deep in the record, or which was not recognized by either party or the trial court.” *Id.* The same is true here.

B. Exxon’s Standing Argument Is A Policy Attack On Congress’ Authorization Of CAA Enforcement By Citizens.

Exxon (and its amici) make it clear they do not like the citizen suit provision of the CAA. They are entitled to this policy preference, but cannot vindicate it in this forum. The role of the federal courts in statutory enforcement cases is to interpret and implement the will of Congress. Although Exxon may wish to

strictly limit citizen enforcement, its restrictive view of Article III standing contravenes both congressional intent (as expressed in the plain language of the Act) and longstanding Supreme Court and Fifth Circuit precedent.

Exxon argues that the standing doctrine should be used to curb citizen suits for two reasons. First, it argues, the district court’s finding that Plaintiffs have standing “transform[ed] this citizen suit into a sprawling quasi-regulatory proceeding.” Exxon Br. 23; *see also* Exxon Br. 27; Amici Br. 8. This case is nothing like a regulatory proceeding. Plaintiffs do not seek to impose new emission standards on the Complex, nor are they challenging the agencies’ permitting policies. Plaintiffs seek only to enforce the standards already embodied in the permits issued to Exxon by those agencies.¹¹

Second, Exxon suggests that the district court’s finding that Plaintiffs have standing has undermined government enforcement. Exxon Br. 28; Amici Br. 17. But Congress has already spoken on this issue, and it struck the balance it desired between deference to government enforcement and encouragement of citizen enforcement. As the district court held here (in a recommended summary

¹¹ Citing *Friends of the Earth v. Laidlaw Env’tl. Servs.*, 528 U.S. 167, 193 (2000), industry amici assert that “courts should decline to exercise ‘continuing superintendence’ over a company or industry’s regulatory compliance.” Amici Br. 10. In the first place, *Laidlaw* does not say this. Rather, it points out that a court may choose to impose a civil penalty instead of an injunction to restrain future violations, because it is less intrusive. In the second place, there is no “continuing superintendence” in the present case. The district court did exactly what the Supreme Court contemplated: it imposed a penalty instead of an injunction.

judgment opinion by Magistrate Judge Smith, adopted by Judge Hittner), the CAA clearly sets out the limited circumstances under which citizens are barred from bringing an enforcement suit, *i.e.*: (1) the “prior enforcement bar,” 42 U.S.C. § 7604(b)(1)(b) (barring commencement of a citizen suit when the government has already sued and is diligently prosecuting a civil action in court to address the same violations),¹² and (2) the 60-day notice requirement, 42 U.S.C. § 7604(b)(1)(A) (requiring 60 days’ pre-suit notice, thus ensuring that the government has an opportunity to sue first).¹³ ROA.6924. As the district court further stated, “[i]t is not for this court to move those boundaries, or indeed erect new ones, merely to satisfy defendants’ policy concerns.” ROA.6926–27; *see also Friends of the Earth v. Consol. Rail Corp.*, 768 F.2d 57, 63 (2d Cir. 1985) (noting, in construing prior enforcement bar of the CWA, “[h]ad Congress wished to

¹² As this Court has held, citizens are authorized to file a CAA enforcement action when, as here, a state agency takes administrative enforcement action but does not file a case in court. *Texans United for a Safe Econ. Fund v. Crown Cent. Petrol. Corp.*, 207 F.3d 789, 791, 795 (5th Cir. 2000); *accord St. Bernard Citizens for Envtl. Quality, Inc. v. Chalmette Ref., LLC*, 399 F. Supp. 2d 726, 740 (E.D. La. 2005).

¹³ *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49 (1987), a CWA case cited by industry amici (Amici Br. 9–10), does not impose any broader limits on citizen suits than the narrow ones enacted by Congress. As correctly determined by the district court, the Supreme Court’s description of citizen suits in *Gwaltney* as “interstitial” and “supplemental” did not create any limitations not found in the statute. ROA.6925–27; *Wash. Pub. Interest Research Group v. Pendleton Woolen Mills*, 11 F.3d 883, 886 (9th Cir. 1993) (rejecting argument that the “supplement not supplant” language of *Gwaltney* bars citizen suits for a reason not found in the statute).

impose [a] broader prohibition on citizen suits . . . it could easily have done so. It did not.”).

C. The District Court Was Not Required To Perform A Separate Standing Analysis For Each Violation (Or Day Of Violation).

Exxon argues that the district court committed reversible error by failing to analyze standing for “each claimed CAA violation.” Exxon Br. 10; *see also id.* 33 (root cause of each violation must be examined in redressability analysis). Exxon also contends (presumably in the alternative, though it is not clear) that the district court was required to conduct a standing analysis “for each of the 16,386 days of violation” (a single CAA violation can continue for multiple days). Exxon Br. 26; *see also id.* 33 (“plaintiffs must establish redressability separately for each day of violation of a particular emission standard or limitation”).¹⁴ This is not the law. The district court was correct in ruling that “Defendants’ violation-by-violation approach to assessing standing is more exacting than what courts have required in citizen environmental suits. *See Sierra Club, Lone Star Chapter v. Cedar Point Oil*, 73 F.3d 546, 556–58 (5th Cir. 1996).” ROA.6935.

¹⁴ Industry amici argue that the District Court was required to analyze standing separately for each violation, not each day of violation. Amici Br. 11–16.

1. No court in a citizen enforcement suit has applied a violation-by-violation (much less a day of violation-by-day of violation) approach to standing.

Exxon does not, and cannot, cite a single citizen suit decision in which a court applied a standing analysis separately for each violation or day of violation, let alone a decision holding that such an analysis is required. Courts, including the Supreme Court and this Court, routinely find standing to bring citizen suits over multiple violations and multiple days of violations without separate standing analyses. *E.g.*, *Laidlaw*, 528 U.S. at 176, 180–88 (where defendant was found to have violated CWA permit on 489 occasions, standing upheld without 489 separate analyses); *Piney Run Pres. Ass’n v. County Comm’rs of Carroll County*, 268 F.3d 255, 261–64 (4th Cir. 2001) (290 CWA permit violations found, standing upheld without 290 separate analyses); *Texans United*, 207 F.3d at 791, 792–94 n.4 (625 days of CAA violations alleged; this Court upheld standing without 625 separate analyses); *Cedar Point*, 73 F.3d at 574, 555–58 (809 days of CWA violations found; this Court upheld standing without 809 separate analyses); *Pub. Interest Res. Group of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 68, 70–73 (3rd Cir. 1990) (386 CWA permit violations found; standing upheld without 386 separate analyses); *WildEarth Guardians v. Colo. Springs Util. Bd.*, 17-cv-00357, 2018 WL 317469, at *3 n.2, *4–8 (D. Colo. Jan. 8, 2018) (3,155 CAA violations alleged; standing found without 3,155 separate analyses); *Concerned Citizens*

Around Murphy v. Murphy Oil USA, Inc., 686 F. Supp. 2d 663, 668–67, 679 (E.D. La. 2010) (24 CAA violations alleged; standing found without 24 separate analyses).

These decisions reflect the purpose of Article III standing; Exxon’s new violation-by-violation or day of violation-by-day of violation requirement does not. Simply put: “The [Article III] standing inquiry ensures that a plaintiff has a sufficient personal stake in a dispute to render judicial resolution appropriate.” *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149, 153 (4th Cir. 2000) (*en banc*); accord *Village of Arlington Heights v. Metro. Housing Dev. Corp.*, 429 U.S. 252, 260–61 (1977); *Trinity Gas Corp. v. Taylor*, 276 F.3d 699, 701 n.1 (5th Cir. 2002); *Powell Duffryn*, 913 F.2d at 70. In other words, standing assures that plaintiffs are not merely “concerned bystanders.” *Duke Power*, 438 U.S. at 75 & n.20. In the environmental citizen suit context, this means that a plaintiff must have more than a “mere general interest in environmental preservation.” *Save Our Cmty. v. EPA*, 971 F.2d 1155, 1161 (5th Cir. 1992).

Plaintiffs’ members in the present case established their personal stake in Exxon complying with its emission limits by testifying that they live, shop, exercise, and visit family near the Complex; that Exxon’s emissions can be seen, smelled, and felt in those areas; and that they want to breathe as little of the

Complex’s pollution as possible in the future. Their stake in clean air in Baytown exists at all times: when they happen to see, smell, or hear a violation at the Exxon Complex, *and* when (through happenstance of wind direction or the timing of their daily routines) they happen not to be directly downwind at the time of an illegal emission. Their stake exists whether an Exxon violation happens to spew a large amount, or only a small amount, of illegal pollution into their community. *Their personal stake will be extant until Exxon stops violating its permits.* Plaintiffs’ members do not want the Exxon Complex to emit illegal pollution without warning at any time of day or night into the air where they live, work, shop, worship, and play. They certainly do not want Exxon to average far more than a violation per day and more than one million pounds of unlawful pollution per year. *See supra* pp. 13–19. Plaintiffs’ members have proven they are far from mere bystanders.

2. The district court did not consider standing “in gross.”

Despite the fact that courts routinely analyze standing in the manner the district court here did, Exxon presses the argument that by not analyzing standing separately for each violation or day of violation, the district court failed to consider “each claim” separately and thus improperly considered standing “in gross.” Exxon is incorrect.

To begin with, Exxon misrepresents the nature of a CAA citizen suit claim. Neither a single violation nor a single day of violation can be a separate claim under the citizen suit provision of the CAA.

The language of the citizen suit provision authorizes two types of claims. One type is against a defendant alleged “to be in violation” of an applicable CAA “emission standard or limitation.” To prove a defendant is “in violation” of an emission standard or limitation, a citizen-suit plaintiff must prove either (1) the defendant violated that standard or limitation again after the complaint is filed, or (2) there is “a continuing likelihood of recurrence in intermittent or sporadic violations.” ROA.13236 (quoting *Carr*, 931 F.2d at 1063–64; accord *Natural Res. Def. Council, Inc. v. Texaco Ref. & Mktg., Inc.*, 2 F.3d 493, 502 (3d Cir. 1993); *Chesapeake Found. Inc. v. Gwaltney of Smithfield, Ltd.*, 890 F.2d 690, 693 (4th Cir. 1989)).¹⁵ Proving a defendant is “in violation” is also known as proving an “ongoing” or “continuing” violation. *E.g.*, *Gwaltney*, 484 U.S. at 67 (“ongoing”); *Fried v. Sungard Recovery Serv.*, 916 F. Supp. 465, 467 (E.D. Pa. 1996) (“continuing”).

¹⁵ *Carr*, *Texaco* and *Chesapeake* are CWA cases. As the district court noted, “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 CAA provisions. See *Anthony Dell'Aquila, Enters. & Subsidiaries*, 150 F.3d 329, 338 n.9 (3d Cir. 1998).” ROA.13235 n.158.

The other type of claim is against a defendant alleged “to have violated (if there is evidence that the alleged violation has been repeated)” an “emission standard or limitation.” 42 U.S.C. § 7604(a)(1); ROA.13236-27.¹⁶

Because both types of claims require citizens to prove that more than one violation will or has occurred, citizens cannot maintain a “claim” for a stand-alone violation.¹⁷ Thus, for instance, Plaintiffs could not have asserted a stand-alone claim that Exxon violated its permit limit for sulfur dioxide only once, on a particular date. Exxon’s incorrect definition of a citizen plaintiff’s “claim” provides no support for its theory of violation-by-violation standing.

The citizen suit provision’s grant of jurisdiction also undercuts Exxon’s argument. District courts are not granted jurisdiction over individual violations under § 7604; they are granted jurisdiction “to enforce [] an emission standard or limitation.” 42 U.S.C. § 7604(a). Once citizens prove they have standing to seek enforcement of a limit that is being violated (because they have an interest in not being harmed by violations of that particular limit), the court has jurisdiction to

¹⁶ Here, only a handful of the violations for which the district court found liability fell solely under the “have violated” provision. *See* Plaintiff Exhibits 9–13 (breaking out pre- and post-complaint violations of each emission limit) (ROA.51894–906).

¹⁷ A separate provision of the CAA authorizes federal courts to impose penalties “for each day of violation,” 42 USC § 7413(c)(2), but this is in furtherance of their jurisdiction to enforce the underlying standard being violated.

enforce it by, among other remedies, assessing penalties for all violations of that limit.

While Exxon cites several decisions noting that standing is not dispensed “in gross,” none requires a violation-by-violation approach to standing in citizen suit cases. Indeed, Exxon does not discuss the facts or contexts of the cases it cites, but merely identifies words or phrases that appear on the surface to support its argument.

One of the decisions Exxon cites is *Laidlaw*, in which standing could not have been upheld had Exxon’s approach been applied. There, the Supreme Court upheld a citizen group’s standing to bring a claim to enforce the mercury discharge limit in a CWA permit governing discharges to a river—and to seek penalties for all 489 alleged violations—*without* requiring a separate standing analysis for each day of violation. The Court did not require the plaintiff’s members to prove that they were near the river to observe or be sickened by each illegal discharge when it occurred, and did not require them to establish that *legal* discharges were not causing their injury on any particular day. To the contrary, the Court found that *avoidance* of the river out of concerns about the defendant’s pollution—which would prevent a person from “correlating” their injury to any specific violation—was *itself* a cognizable injury. *Laidlaw*, 528 U.S. at 184 (“[W]e see nothing ‘improbable’ about the proposition that a company’s continuous and pervasive

illegal discharges of pollutants into a river would cause nearby residents to curtail their recreational use of that waterway”).

Similarly, Plaintiffs’ members here have reduced or discontinued their visits to areas near the Complex, or moved further away, because of their concern about the effects of the pollutants illegally emitted during Exxon’s pervasive and repeated violations.¹⁸ Indeed, since Exxon has contributed to the poor air quality near the Complex by, in effect, dispensing its *violations* “in gross,” thereby causing Plaintiffs’ members to change their behavior, Plaintiffs would have standing even if Exxon’s violation-by-violation approach *were* the law. *See supra* pp 7–8.

The other cases cited by Exxon and its amici are not to the contrary. Rather (as set out in the margin), they simply apply, in a variety of contexts, the undisputed proposition that a plaintiff must establish standing for each claim and form of relief pursued.¹⁹

¹⁸ *See, e.g.*, ROA.13227 (Sprayberry moved away, but would return if the air quality improved). Although Exxon appears to suggest that *Laidlaw* is distinguishable because the pollution there came from “one discharge point,” Exxon Br. 31, the fact that Exxon’s illegal emissions come from various points *within* the Complex makes no material difference; to Plaintiffs’ members, the unlawful emissions also come from “one” source: the Exxon Complex.

¹⁹ *See Town of Chester, N.Y. v. Laroe Estates, Inc.*, --- U.S. ---, 137 S. Ct. 1645, 1650–51 (2017) (intervenor seeking relief different from the plaintiff must prove its own standing to seek that form of relief); *Davis v. FEC*, 554 U.S. 724, 733–34 (2008) (standing to bring First Amendment challenge to one provision of a campaign finance law does not provide standing to challenge a separate provision of the law); *DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 353 (2006) (proof of standing to challenge a municipal tax does not establish standing to challenge a

D. The District Court Was Correct In Holding That All Three Elements Of Standing Were Established.

Exxon does not challenge any of the district court’s factual findings on standing or argue that the record does not support those findings. Under well-settled law, these findings are sufficient to establish standing for all of Plaintiffs’ claims and for all forms of relief sought.

1. Plaintiffs proved injury in fact.

Exxon does not argue that the district court committed an error by determining that Plaintiffs suffered an injury in fact.²⁰ Nor could it, since as a

separate state tax); *Lewis v. Casey*, 518 U.S. 343, 358 (1996) (proof of injury-in-fact to an illiterate prisoner challenging a state law library program did not establish injury-in-fact to the inmate population at large); *Blum v. Yaretsky*, 457 U.S. 991, 1000 (1982) (plaintiff nursing home residents had standing to challenge their transfer to a lower level of care, because they could establish injury from such transfer, but did not have standing to challenge transfers to a higher level of care, because they suffered no injuries from transfer to superior care); *Fontenot v. McGraw*, 777 F.3d 741, 746–47 (5th Cir. 2015) (plaintiff whose driving record had been expunged prior to suit had no injury and thus no standing to bring class action against state driver’s license agency); *Nat’l Fed’n of the Blind of Tex., Inc. v. Abbott*, 647 F.3d 202, 209 (5th Cir. 2011) (plaintiffs could not establish standing to challenge the constitutionality of one provision of law by relying on their standing to challenge the constitutionality of another provision of the same law, where they did not appeal the loss of that second challenge); *Sierra Club v. EPA*, 873 F.3d 946, 951 (D.C. Cir. 2017) (even if the plaintiffs had standing to challenge regulatory provisions for one type of pollutant—which was not determined—this would not establish standing to challenge the provisions for another type of pollutant).

²⁰ Although Exxon states that the district court “errs on all three elements” of standing, Exxon Br. 20, it does not present an argument on injury.

matter of law the facts show that Plaintiffs' members' injuries are both concrete and particularized.

The following (all of which are present here) have been held to be concrete injuries that constitute injury in fact:

- Physical discomfort or adverse health effects. *Texans United*, 207 F.3d at 792; *Hall v. Norton*, 266 F.3d 969, 976 (9th Cir. 2001); *Tex. Campaign for the Env't v. Lower Colo. River Auth.*, No. 4:11-cv-791, 2012 WL 1067211, at *4 (S.D. Tex. Mar. 28, 2012).
- Reasonable concern about the health effects of pollution. *Sierra Club v. TVA*, 430 F.3d 1337, 1345 (11th Cir. 2005); *Murphy Oil*, 686 F. Supp. 2d at 671.
- Breathing or smelling polluted air. *Texans United*, 207 F.3d at 792; *Murphy Oil*, 686 F. Supp. 2d at 671; *Cmtys. For a Better Env't v. Cenco Ref. Co.*, 180 F. Supp. 2d 1062, 1075 (C.D. Cal. 2001); *Sierra Club v. Tri-State Generation and Transmission Ass'n, Inc.*, 173 F.R.D. 275, 280 (D. Colo. 1997).
- Harm to aesthetic and/or environmental interests, including observing unwanted pollution. *Laidlaw*, 528 U.S. at 181–84; *TVA*, 430 F.3d at 1345; *Cedar Point*, 73 F.3d at 557; *Save Our Cmty.*, 971 F.2d at 1161; *Consol. Rail*, 768 F.2d at 61.
- Curtailing recreation or enjoying it less because of pollution. *Laidlaw*, 528 U.S. at 181–84; *Pac. Lumber*, 230 F.3d at 1150; *Powell Duffryn*, 913 F.2d at 71.
- An increased risk of harm. *Spokeo, Inc. v. Robins*, --- U.S. ---, 136 S. Ct. 1540, 1549 (2016); *Pac. Lumber*, 230 F.3d at 1151; *Gaston Copper*, 204 F.3d at 160; *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1234–35 (D.C. Cir. 1996); *Village of Elk Grove Village v. Evans*, 997 F.2d 328, 329 (7th Cir. 1993).

Plaintiffs note that concern about the health effects of pollution need not be accompanied by physical symptoms of harm, *St. Bernard Citizens for Env'tl. Quality, Inc. v. Chalmette Ref., LLC*, 354 F. Supp. 2d 697, 702 (E.D. La. 2005), or supported by medical testimony, *cf. id.*; *Murphy Oil*, 686 F. Supp. 2d at 671; *Cenco*, 180 F. Supp. 2d at 1075. Nor do emissions need to cause the ambient levels of air pollutants to exceed regulatory limits for a person to suffer an injury in fact. *Sierra Club v. Franklin County Power of Ill., LLC*, 546 F.3d 918, 925 (7th Cir. 2008); *LaFleur v. Whitman*, 300 F.3d 256, 270–71 (2d Cir. 2002).²¹

Plaintiffs' members' injuries are particularized. *See Spokeo*, 136 S. Ct. at 1548 (“For an injury to be ‘particularized,’ it ‘must affect the plaintiff in a personal and individual way.’”) (citations omitted). As discussed above, four of Plaintiffs' members testified about how Exxon's violations and pollution affect them personally.

2. Plaintiffs proved traceability.

Exxon claims, “In a proper case, citizen-suit plaintiffs offer scientific evidence to trace emissions to their injuries,” such as “air dispersion modeling and expert analysis” of the violations, and it argues that Plaintiffs did not do so here. Exxon Br. 29.

²¹ In addition, concern about future adverse effects from pollution also constitutes injury in fact. *Cedar Point*, 73 F.3d at 556.

In fact, Plaintiffs used air modeling conducted by Exxon's own experts to show that violations caused ambient air concentrations to exceed safety standards more than 150 times.²²

In any event, Exxon's argument about what is required to prove traceability is wrong as a matter of law. The district court correctly ruled:

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 *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 (Miler, J.)).

ROA.13232; accord *Natural Res. Def. Council v. Sw. Marine, Inc.*, 236 F.3d 985, 995 (9th Cir. 2000); *Gaston Copper*, 204 F.3d at 161; *Cedar Point*, 73 F.3d at 558; *Powell Duffryn*, 913 F.2d at 72. Indeed, this Court has expressly rejected the argument that a citizen-suit plaintiff's injuries must be "linked to the exact dates where violations of regulatory standards are known to have occurred." *Texans*

²² This is shown by excerpts from a table created by Exxon expert David Cabe. The column titled "Ratio of Concentration to Comparison Value," shows by how much an off-site concentration of a pollutant exceeded the relevant safety threshold. For example, the number "5.88" in that column at ROA.69406 means the concentration of ammonia was 5.88 times higher than the safety threshold. ROA.17950:19–17952:21; PX 610A (ROA.69406–07), 611A (ROA.69418–28); ROA.17966:22–17967:8. Exxon modeling performed in response to TCEQ requests showed numerous additional exceedances of safety thresholds. *E.g.*, ROA.61647–48 (hydrogen chloride levels were 33.2 times the safety threshold), and other instances cited at ROA.11126–31 (Plaintiffs' initial post-trial proposed findings of fact).

United, 207 F.3d at 793; *accord WildEarth Guardians*, 2018 WL 317469, at *8; *Murphy Oil*, 686 F. Supp. 2d at 671; *Chalmette Ref.*, 354 F. Supp. 2d at 697. And it is settled that in determining traceability, courts do not “conduct a proximate cause analysis to determine the immediate cause” of a plaintiff’s injuries. *Planned Parenthood of Gulf Coast, Inc. v. Gee*, 862 F. 3d 445, 456 (5th Cir. 2017); *accord, e.g., Bennett v. Spear*, 520 U.S. 154, 168–69 (1997); *Mercado v. Dallas County*, 229 F. Supp. 3d 501, 507 (N.D. Tex. 2017), *abrogated on other grounds, City of El Cenizon v. Texas*, 885 F.3d 332 (5th Cir. 2018); *see Powell Duffryn*, 913 F.2d at 72 (fairly traceable requirement “is not equivalent to a requirement of tort causation”).

As noted by the Fourth Circuit, “[w]e decline to transform the ‘fairly traceable’ requirement into the kind of scientific inquiry that neither the Supreme Court nor Congress intended,” which would stray “far afield from the straightforward . . . issue of whether [the defendant] has violated its permit limitations.” *Gaston Copper*, 204 F.3d at 162–63. Citizen suit plaintiffs are not “required to supply costly, strict proof of causation to meet a threshold jurisdictional requirement,” especially since “the asserted cause of action does not itself require such proof.” *Id.* at 161; *see also Laidlaw*, 528 U.S. at 181 (cautioning against “rais[ing] the standing hurdle higher than the necessary showing for success on the merits.”).

Consistent with this approach, this Court utilizes the following three-prong test (not cited by Exxon) for traceability in a citizen suit:

[T]he plaintiff must demonstrate that ‘a defendant has 1) discharged some pollutant in concentrations greater than allowed by its permit 2) into [an area] in which the plaintiffs have an interest that is or may be adversely affected by the pollutant and that 3) this pollutant causes or contributes to the kinds of injuries alleged by the plaintiffs.’

Friends of the Earth v. Crown Cent. Petrol., 95 F.3d 358, 360–61 (5th Cir. 1996) (quoting *Cedar Point*, 73 F.3d 557). “Rather than pinpointing the origins of particular molecules, a plaintiff must merely show that a defendant discharges a pollutant that causes or contributes to the kinds of injuries alleged in the specific geographical area of concern.” *Gaston Copper*, 204 F.3d at 161 (internal quotes and citation omitted); *accord Sw. Marine, Inc.*, 236 F.3d at 995.

In *Cedar Point*, this Court held the citizen-suit plaintiff had standing because 1) the defendant’s “produced water” discharges were unlawful; 2) plaintiff’s member used Galveston Bay “in the vicinity of Cedar Point’s discharge,” which established the member’s “interest in that part of Galveston Bay around Cedar Point’s discharge”; and 3) “produced water contributes to the types of injuries alleged by [the member], including his fear that the harmful effects on water quality and the ecosystem will impair his ability to enjoy canoeing and observing wildlife.” 73 F.3d at 558. This Court stated, in language rejecting Exxon’s very argument here, “Contrary to Cedar Point’s suggestion, the Constitution does not

require Sierra Club to produce an affiant who claims that Cedar Point’s discharge *in particular* injured him in some way.” *Id.* (emphasis in original).

Exxon’s insistence that a plaintiff must provide *scientific proof* of a “causal connection” between each individual violation and a specific injury (Exxon Br. 28–30) is at odds with this established Article III jurisprudence. The three-prong traceability test establishes the requisite causal connection for standing, and each prong of that test is satisfied here.

a. Exxon emitted air pollutants greater than allowed by its Title V permits.

The district court held that Exxon emitted a variety of pollutants in violation of its CAA permits, and Exxon does not appeal that holding.

b. The unlawful pollutants were emitted into an area in which Plaintiffs’ members have an interest that is or may be adversely affected by the pollutants.

As discussed, the district court found that Plaintiffs’ members reside, shop, recreate, visit their families, and conduct other activities in areas of Baytown near the Complex.

The evidence is clear that emissions from the Complex reach the areas of Baytown that these members use. First, the district court found that they experience the Exxon’s emissions first-hand. When the wind blows toward them from the Complex they smell offensive odors. ROA.13225–27; ROA.13233; *see also* ROA.13224 (member smells “a chemical smell around the Complex”). Odors

are stronger the closer members get to the Complex. ROA.13226; ROA.13233. Members see smoke and haze coming from the Complex. ROA.13223–25; ROA.13227; ROA.13232–33. Members have been awakened in the middle of the night by emissions from the Complex and by flaring incidents. ROA.13225. Members’ allergies and respiratory problems decreased when they moved away from the Complex. ROA.13223; ROA.13226; ROA.13227; ROA.13233

Second, Exxon’s own air dispersion modeler testified that air pollutants from the Complex can travel significant distances beyond the facility’s fence line. ROA.17895:12–18. He testified that the air pollutants from the Complex are carried by the wind, and that the wind blows from all directions at the Complex. ROA.17912:8–10; ROA.17743:19–24.

Third, Exxon itself admitted that reducing “air incidents” and emissions from the Complex would reduce air pollution “in our local community and the greater Houston area” (ROA.63705), which encompasses the areas frequented by Plaintiffs’ members.²³

²³ *Sierra Club v. City of Jackson*, 34 F. App’x 151, 2002 WL 496379 (5th Cir. 2002) (unpublished table opinion), cited by Exxon, is readily distinguishable. In that case, there was no proof that any pollutant was discharged to any waterway, and neither of the two proffered standing witnesses had used the allegedly affected part of the waterway in the past 17 years. *Id.* at *4.

c. The pollutants cause or contribute to the kinds of injuries suffered by Plaintiffs' members.

As noted above, breathing pollution is itself an injury. Exxon's emissions are pollution, and thus cause and contribute to this injury. *See, e.g., Tri-State Generation*, 173 F.R.D. at 280.

In addition, as shown below, each of the pollutants that Exxon emitted in violation of its limits under Counts I through V causes the types of injuries suffered by one or more of Plaintiffs' members who testified at trial, Diane Aguirre, Marilyn Kingman, Shae Cottar, and Sharon Sprayberry.²⁴

Counts I and II

Count I is a single claim to enforce the prohibition against upset emissions in the permit governing the Refinery at the Exxon Complex; the prohibition is a single "emission standard or limitation." Count II encompasses claims to enforce various pollutant-specific emission limits in the permits governing the Refinery, Olefins Plant, and Chemical Plant; each limit is a separate "emission standard or limitation." The pollutants emitted most frequently during the violations adjudicated under both counts are set forth together below. The days of violation

²⁴ In the interest of space, Plaintiffs often list below only one witness for each chemical, although usually more than one experienced effects or concerns consistent with a chemical's release.

associated with each type of illegal emission are shown in parentheses.²⁵

Ammonia (427 days of violation) has a “pungent” smell, ROA.18455:21–18456:4, and causes respiratory irritation. Kingman smells strong odors near the Complex that cause her to be concerned for her health (ROA.13224); Cottar smells “pungent” odors from the Complex and experiences breathing difficulties (ROA.13225–26).

Benzene (448) is a human carcinogen (ROA.63928; ROA.65324; ROA.65343), has a sweet, perfume like smell (ROA.65324; ROA.65348), and can cause headaches even in short-term exposures (ROA.63929; ROA.65324; ROA.65575). Aguirre does not want to breathe, and is concerned about Exxon’s emissions of, carcinogens. ROA.16170:9–16. Cottar smelled a “sweet odor” outside his house when he was awakened by an emission event at the Complex, and strong odors have caused him headaches. ROA.13225–26.

Carbon Disulfide (54) explodes in air and catches fire easily. ROA.64400; ROA.64635. Aguirre is “concerned about the risk of explosions” at the Complex (ROA.13223), as is Kingman (ROA.13224).

Carbon monoxide (3,139) is a “criteria pollutant” that causes respiratory and other health problems (ROA.64124–28), and contributes to ground-level ozone

²⁵ The days of violation are taken from Plaintiffs’ proposed findings of fact on remand, which were adopted by the district court (ROA.11965–66 for Count I, and ROA.11980–81 & ROA.11986–89 for Count II). Count II violations for the Refinery are omitted, as they overlap with Count I.

(smog) (ROA.64128), a visible haze which causes numerous serious health effects and is itself a criteria pollutant. ROA.17593:9–19. Plaintiffs’ members have “limited [their] outdoor activities” when they see haze (ROA.13231) and “have concerns for their health after seeing haze believed to be harmful” (ROA.13291). *See also* entries below on respiratory impacts.

Carbonyl sulfide (126) is an eye and skin irritant. ROA.64640. Aguirre experiences “watery eyes” when near the Exxon Complex. ROA.13225.

Chlorine (22) is an EPA-listed Hazardous Air Pollutant (“HAP”). 42 U.S.C. § 7412(b)(1); ROA.64376. Aguirre is concerned for her and her family’s health because she believes “Exxon is emitting harmful chemicals.” ROA.13223.

Crude oil (29) contains toluene (ROA.66118; ROA.66142), which is a toxicant to the nervous system (ROA.66116; ROA.66118–19; ROA.66142) and causes a host of other problems (ROA.66116; ROA.66118–19; ROA.66148). Aguirre is bothered by “gasoline” smells from the Complex. ROA.16167:1–17.

Dimethylformamide (15) is a HAP. 42 U.S.C. § 7412(b)(1). Cottar does not want to breathe unauthorized emissions from the Complex. ROA.13226.

Hydrogen chloride (49) has a strong irritating odor (ROA.64642; ROA.64646) and causes eye, nose, throat and respiratory system irritation (ROA.63986; ROA.64642–43; ROA.64646; ROA.17583:21–25). Aguirre

experiences “an abrasive feeling in her throat and lungs” when running in Baytown near the Complex. ROA.13223–24.

Hydrogen cyanide (262) has a bitter odor (ROA.64649; ROA.64654; ROA.64677), causes breathing difficulties, chest pain, and headaches (ROA.64650), and is a cellular asphyxiant. ROA.17534:25–ROA.17535:9. Aguirre experiences “chest constriction” when near the Complex (ROA.13223); Sprayberry experiences “respiratory problems” in Baytown, where the “air quality affect[s] her breathing” (ROA.13227).

Hydrogen sulfide (1,485) “smells like rotten eggs or feces, [and] can cause sore throat, cough, fatigue, headaches, nausea, and poor memory in low concentrations.” ROA.13291 n. 256. It is a chemical asphyxiant (ROA.17534:25–ROA.17535:9), and is flammable (ROA.63922; ROA.65017). *See* previous entries on strong smells, headaches, throat irritation, and fear of explosions.

Nitrous oxides (2,088), a criteria pollutant, contribute to ozone formation (ROA.64130), and react with other chemicals in the air to form acid aerosols and nitrogen dioxide, which cause respiratory problems (ROA.64129; ROA.64133–35). *See* carbon monoxide and previous entries regarding respiratory impacts.

N-methyl-2pyrrolidone (58) is a VOC and thus contributes to ozone formation. ROA.63909. *See* carbon monoxide.

Opacity (78) measures the amount of visible emissions that block light and “is a proxy for particulate emissions.” *Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 648 (7th Cir. 1986). Kingman is concerned when she sees black smoke emanating from the Exxon Complex, because of the risk of harmful pollutant releases. ROA.17332:13–17333:16.

Particulate matter (618), a criteria pollutant, is a respiratory hazard. ROA.16541:17–16542:1. *See* other entries on respiratory impacts.

Sulfur compounds (23) have a strong and unpleasant smell. Both Sprayberry and Aguirre are bothered by sulfur smells from the Exxon Complex. ROA.17290:1–18; ROA.16167:1–24.

Sulfur dioxide (1,722), a criteria pollutant, has a pungent odor that smells like rotten eggs. ROA.17521:18–22; ROA.63915; ROA.64141–44; ROA.64166. It causes respiratory problems, such as shortness of breath, wheezing and coughing, and enhances allergic and asthmatic conditions. ROA.63915; ROA.17520:24–ROA.17521:17. These effects are exacerbated if a person in exercising. ROA.64141–45; ROA.64195. Plaintiffs’ members experience “allergies” and “respiratory problems” while near the Exxon Complex (ROA.12391); Cottar moved his family further away from the Exxon Complex because of “asthmatic symptoms” (ROA.13228); Aguirre experiences “an abrasive

feeling in her throat and lungs” when running in Baytown near the Exxon Complex (ROA.13223–24).

VOCs (5,548) contribute to the formation of ozone. ROA.63909. VOCs emitted during violations include several HAPS, including toluene, 1,3-butadiene, xylene, naphthalene, isoprene, methylbenzene, and ethylene. 42 U.S.C.

§ 7412(b)(1). *See* carbon monoxide and chlorine.

Counts III–V

These three counts encompass three separate claims. Count III is a claim to enforce the HRVOC Rule (*supra* p. 6); 18 days of violation were adjudicated under this count (ROA.13263). HRVOCs are the VOCs most closely associated with the formation of ground-level ozone; as cited above, the district court found that all of Plaintiffs’ standing witnesses were bothered by haze near the Complex and/or by breathing difficulties, which are associated with ground-level ozone.

Count IV is a claim to enforce the “smoking flare rule”; 44 days of violation were adjudicated under this count (ROA.13264). As cited above, Ms. Kingman is concerned when she sees black smoke emanating from flares at the Complex, because of the risk of harmful pollutant releases.

Count V is a claim to enforce the pilot flame rule for flares; 13 days of violation were adjudicated under this count (ROA.13265 and ROA.13292 n.257). Failure to have a pilot flame allows more of the chemicals enumerated above to be

releases into the atmosphere, thus contributing to the effects on Plaintiffs’ members enumerated above.

3. Plaintiffs proved redressability.

The district court, citing *Texans United*, 207 F.3d at 794, held that civil penalties in a CAA citizen suit deter future violations and thus redress Plaintiffs’ members’ injuries. ROA.13234; *accord Laidlaw*, 528 U.S. at 185 (“all civil penalties have some deterrent effect” and Congress’ determination that penalties “deter future violations . . . warrants judicial attention and respect”), 186 (“a defendant once hit in its pocketbook will surely think twice before polluting again”).²⁶

On appeal, Exxon acknowledges that penalties satisfy the redressability element for “violations that are ongoing at the time of the complaint and that could continue into the future if undeterred.” Exxon Br. 32 (quoting *Laidlaw*, 528 U.S. at 187). Yet despite the plain fact that its violations were “ongoing at the time of the complaint,” and continued throughout the Claims Period and even through the time of trial (ROA.13225 n.115), Exxon argues that for Article III purposes its violations are “wholly past” (Exxon Br. 33) because the “root cause” of each

²⁶ The fact that an agency has taken administrative enforcement action against a citizen suit defendant does not defeat redressability where, as here, the defendant continues to violate. *Texans United*, 207 F.3d at 793–94; *Gulf Restoration Network v. City of Hattiesburg*, No. 2:12-cv-36, 2012 WL 5413909, at *3 (S.D. Miss. Nov. 6, 2012).

violation was subsequently corrected (*e.g.*, by replacing the corroded portion of a leaking pipe). As a result, Exxon claims, a penalty will not prevent future violations, “since the root causes of the past violations were corrected and there is neither a likelihood of recurrence nor an ability to avoid recurrence.” Exxon Br. 34. In other words, Exxon argues that penalties will have no effect because it is powerless to prevent future violations from occurring.

The facts—and common sense—demonstrate otherwise. For Exxon wants it both ways. On the one hand, it argues that nothing can be done to prevent emission events. On the other hand, it wants credit, even now on appeal, for taking measures to reduce the frequency and severity of emission events. Exxon Br. 3-4; *see also ETCL*, 824 F.3d at 525 (noting the district court found Exxon’s efforts resulted in a “‘significant reduction’ in overall unauthorized emissions”); ROA.13210 (finding that Exxon “analyzed the records for trends and ways to improve” on the number of Recordable Events). Had these measures been taken earlier, emission events and violations would have been reduced. And as the Supreme Court found in *Laidlaw*, a penalty for noncompliance motivates the violator to take corrective measures on a *timely* basis in the future.

The four projects on which the district court based its economic benefit determination, *see infra* pp. 65–68, illustrate the point. The district court found that these projects will reduce emission events. Exxon did not agree to undertake

these projects until more than a year after this suit was filed, and actual implementation was phased in over five additional years—yet Exxon admitted that it could have implemented the projects years earlier. A penalty that reflects the economic benefit to Exxon of delaying these projects is certainly warranted; it will deter the company from again delaying emission reduction efforts in the future. That such deterrence will help redress the Plaintiffs’ members’ injuries by reducing their exposure to pollution is hardly “speculative.” Exxon Br. 31 (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 561 (1992)); see *Laidlaw*, 528 U.S. at 185–87. A penalty incentivizes Exxon to be proactive about compliance in the future.²⁷

Steel Co., 523 U.S. 83, cited by Exxon, does not require a different result. In *Steel Co.*, which was decided before *Laidlaw*, the defendant was sued for not filing a required disclosure form. Once the defendant filed the form, the violation ceased and there was no injury to redress. Here, on the other hand, Plaintiffs have proven thousands of ongoing violations of various permit limits.

Exxon’s insistence that each of its violations is, nonetheless, “wholly past” is dependent on its wrong-headed argument that each violation is a separate claim, an argument that has been rejected both by this Court and the district court. On summary judgment, the district court rejected Exxon’s argument that “continuing”

²⁷ Although civil penalties are the only form of relief at issue on this appeal, the district court also made specific findings supporting Plaintiffs’ standing to seek injunctive and declaratory relief. ROA.13234–35 (“the redressability requirement is satisfied as to all relief sought”).

or “repeated” violations must all stem from the same root cause or “same inadequately corrected source of trouble” or “same source,” rather than simply involve the same emission standard or limitation. ROA.6928–29. The district court rejected the argument again after trial. ROA.13238 (continuation of footnote 159). And on the first appeal, this Court held that liability is properly based on multiple violations of the “*same specific* conditions or limitations in Exxon’s permits,” without requiring proof of the same root cause. *See ETCL*, 824 F.3d at 518–19. Given that Exxon has represented to this Court that its challenge to redressability is “tied to the ‘repeated and ongoing’ requirement for citizen suits and is thus ‘intermeshed’ with the merits,” Case 15-20030, document 00513045339, p. 27 n.4, the prior panel’s rejection of Exxon’s liability argument was also a rejection of its argument on redressability.

III. THE DISTRICT COURT’S ECONOMIC BENEFIT DETERMINATION IS BASED ON SOUND LEGAL PRINCIPLES AND IS AMPLY SUPPORTED BY THE UNDISPUTED RECORD.

Previously, this Court held that the district court erred by failing to consider evidence “regarding the benefit that Exxon received from foregoing earlier implementation of” the four environmental improvement projects specified in the Agreed Order and by failing to enter “specific findings as to whether the projects demonstrate that Exxon received an economic benefit from noncompliance.” *ETCL*, 824 F.3d at 530. This court remanded the case, stating, “On remand, the

district court is instructed to enter such findings, which will entail consideration of whether the projects are ‘necessary to correct’ the violations at issue in this suit.”

Id. In footnote 19 of its opinion, the Court set forth the manner in which the district was to make this economic benefit determination:

In making its findings on remand, the court should be mindful that the economic benefit estimate must “‘encompass *every* benefit that defendants received from violation of the law’” regardless of the inherently speculative nature of the inquiry. . . . We thus believe that compliance expenditures or projects need not be tied specifically to prevention of each violation in order to establish that they are “‘necessary to correct’” the violations overall, particularly in a case such as this where the violations are extensive and varied. Rather, we believe the inquiry 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 n.19 (quoting *United States v. Gulf Park Water Co. (Gulf Park II)*, 14 F. Supp. 2d 854, 864 (S.D. Miss. 1998)).

The district court applied the precepts of footnote 19 in making its economic benefit determination. ROA.13288–89. In doing so, it referred to footnote 19 as setting out a “general correlation standard.” ROA.13288.

A. Exxon’s Argument That The District Court Should Have Ignored Footnote 19 Is Wrong.

Exxon argues that the district court should have ignored footnote 19 and then should have determined whether “any of the four projects in the Agreed Order was necessary to correct *any particular violations*.” Exxon Br. 56 (emphasis added); *see also* Exxon Br. 52. More specifically, Exxon argues that the mandate

rule and the law of the case doctrine do not apply to footnote 19 because it is non-binding dictum and, even if it is not, this Court was “clearly erroneous” and committed a “manifest injustice” in writing it.

1. Footnote 19 is not dictum.

Quoting *Int’l Truck & Engine Corp. v. Bray*, 372 F.3d 717, 721 (5th Cir. 2004), Exxon contends footnote 19 was non-binding dictum because it “‘could have been deleted without seriously impairing the analytical foundations of the holding’ and ‘being peripheral, may not have received the full and careful consideration of the court . . .’” Exxon Br. 51. But Exxon omits the very next sentence in *Int’l Truck*: “A statement is *not* dictum if it is necessary to the result or constitutes an explication of the governing rules of law.” 372 F.3d at 721 (emphasis added); accord *Mississippi ex rel. Hood v. Au Optronics Corp.*, 559 F. App’x 375, 377 (5th Cir. 2014) (*per curiam*).

Here, footnote 19 is both necessary to the result and an explication of the governing law. This Court held that the district court had erred by not considering evidence that the delayed expenditures were for projects “necessary to correct” violations. *ETCL*, 824 F.3d at 530. Defining “necessary to correct,” as the Court did in footnote 19, is central to this holding, lest the district court misconstrue the term.

Further, there is no indication that this Court’s reasoning in footnote 19 was not the product of “full and careful consideration.” Exxon had previously argued to this Court that the four projects were irrelevant to economic benefit because the district court had found no evidence they “would have prevented” any of the specific emission events at issue. Case 15-20030, Document 00513188580, p. 57. This Court in footnote 19 rejected that argument. In addition, the *Gulf Park II* case referenced in footnote 19 was discussed at length in the body of this Court’s opinion, *ETCL*, 824 F.3d at 528–29. Moreover, Plaintiffs had previously argued to this Court that that the projects at issue would address the general problems underlying emission events. Case 15-20030, Document 00513045339, pp. 70–71.

2. Footnote 19 is not clearly erroneous.

Exxon argues that footnote 19 is clearly erroneous because it does not require the “necessary to correct” determination to be made on a violation-by-violation basis. Exxon argues that the approach outlined in footnote 19 “would dilute a citizen-suit plaintiff’s burden of proof by requiring courts to accept ‘inherently speculative’ evidence of economic benefits.” Exxon is wrong.

The CAA itself does not require a violation-by-violation determination of economic benefit. 42 U.S.C. § 7413(e)(1) provides that a court must consider the “economic benefit of *noncompliance*.” (Emphasis added). In contrast, the CWA

provides that in determining a penalty a court must consider “the economic benefit (if any) resulting from *the violation*.” 33 U.S.C. § 1319(d) (emphasis added).

Further, footnote 19 naturally follows from this Court’s decision in *CITGO*, 723 F.3d at 553, which notes that an estimate of economic benefit must be made even when “admittedly difficult.”

Footnote 19 also is consistent with other case law on economic benefit. *See United States v. Smithfield Foods, Inc.*, 191 F.3d 516, 529 (4th Cir. 1999) (“the precise economic benefit a polluter has gained by violating its effluent limits may be difficult to prove” so a “reasonable approximation” will suffice); *Cedar Point*, 73 F.3d at 576 (court need only make a “reasonable approximation” of economic benefit); *United States v. Mun. Auth. of Union Twp.*, 929 F. Supp. 800, 806–07 (M.D. Pa. 1996) (“While the court acknowledges its determination of [defendant’s] economic benefit is somewhat speculative, it is in the nature of this factor that its qualification will be imprecise.”); *cf. Fey v. Walston & Co., Inc.*, 493 F.2d 1036, 1055 (7th Cir. 1974) (“It is now elementary that when precise damage measurements are precluded by wrongful acts, the wrongdoer cannot insist upon exact measurements and the exact tracing of causal lines to an impractical extent; fair approximations are in order.”).

In fact, courts are regularly called upon to make determinations that are much more speculative than the economic benefit determination here. *See, e.g.*,

Turley v. ISG Lackawanna, Inc., 774 F.3d 140, 162 (2d Cir. 2014) (“Awards for mental and emotional distress damages are inherently speculative. There is no objective way to assign any particular dollar value to distress.”); *Louisiana v. Guidry*, 489 F.3d 692, 702 (5th Cir. 2007) (under Louisiana law, general damages are inherently speculative “and cannot be fixed with mathematical certainty”); *In re Oil Spill by Oil Rig Deepwater Horizon*, 295 F.R.D. 112, 155 (E.D. La. 2013) (“any award of punitive damages is inherently speculative”); *Kravitz v. Pressman Frohlic & Frost, Inc.*, 447 F. Supp. 203, 216 (D. Mass. 1978) (determining damages in a securities churning case “must always be somewhat speculative”).

Moreover, employing correlations in making decisions is well within a court’s experience and practice. *E.g.*, *Amerimex Recycling, L.L.C. v. PPG Indus. Inc.*, 564 F. App’x 100, 112 (5th Cir. 2014) (*per curiam*) (“correlation between the weights and dates” of loads of metals used to determine damages); *Reigstad v. Pilger*, 316 F. App’x 322, 328 (5th Cir. 2009) (*per curiam*) (computation of damages was proper where court utilized an “attempted correlation” between an estimate of damages and an itemized list of damages).

Finally, this is “a case . . . where the violations are extensive and varied,” *ETCL*, 824 F.3d at 530 n.19, and occurred throughout the Complex. Accordingly, Complex-wide measures designed to address general problems causing emission events—instrument failures, flaring practices, operator errors, and leaks—are

appropriate and necessary compliance measures. And the cost estimates for these particular Complex-wide measures come from Exxon itself.

3. This Court did not commit a manifest injustice.

Footnote 19 does not work a manifest injustice. To the contrary, “[i]t would eviscerate the Act to allow violators to escape civil penalties on the ground that such penalties cannot be calculated with precision.” *Union Twp.* 929 F. Supp. at 806–07; *accord Gulf Park II*, 14 F. Supp. 2d at 864.

B. The District Court’s Specific Findings, Supported By The Factual Record, That The Four Projects Were “Necessary To Correct The Violations” Are Not Clearly Erroneous.

The district court made findings that each of the four projects is intended to implement particular equipment upgrades or types of operator training for the specific purpose of preventing emission events or reducing their severity, and thus that each was “necessary to correct” the violations at issue. ROA.13288–89. Because each finding is amply supported by Exxon’s admissions, TCEQ’s findings, and the undisputed factual record, they are not clearly erroneous.

The Agreed Order itself states that the four projects are designed to reduce “upset emissions.” ROA.61189 (¶ 12). The order’s individual project descriptions indicate that each project is focused on preventing or mitigating emission events, and it plainly predicts that the projects “will reduce emissions at the Baytown Complex, including emissions from emissions events.” *Id.* These statements are

as much Exxon's as they are TCEQ's: Exxon wrote the first draft of the order (ROA.69587, at 229:15–17); Exxon proposed the four projects (ROA.69588, at 230:6–8); and Exxon is a signatory to the order. Exxon's representation to this Court that “no document suggested” that the projects were necessary to correct its violations (Exxon Br. 42) thus is ludicrous.

Indeed, earlier in the litigation Exxon affirmatively represented to the district court that the projects *would* prevent emission events. Apparently seeking to forestall an injunction and gain credit for its compliance efforts, Exxon told the district court, “The purpose of each of these environmental improvement projects is to reduce the number and frequency of reportable events and recordable events *and the emissions of all air contaminants emitted from them*, including, among others, VOCs, highly reactive VOCs (‘HRVOCs’), CO, SO₂ NO_x, and hydrogen sulfide.” ROA.10441, ¶ 99 (Exxon's post-trial proposed findings; emphasis added); *see also* ROA.10438, ¶ 95 (projects are to reduce emissions from emission events).

Further, as Plaintiffs made clear in their proposed findings to the district court on remand (ROA.12011–13), the record shows that each of the four projects in the Agreed Order was designed to directly address specific problems that collectively resulted in thousands of Exxon's adjudicated violations. Because they

are designed to reduce the number and severity of emission events, the nexus between the projects and the violations adjudicated in this case is apparent.

The *Plant Automation Venture*, to be implemented at all three plants in the Complex, “is intended to provide early identification of potential [emission] events and/or instrumentation abnormalities, allowing proactive response.” ROA.61189, ¶ 12.a. In other words, this project is designed to help prevent emission events (and their unauthorized emissions) throughout the Complex. As noted, there were 16,386 days of violation at the Complex.

The *Fuels North Flare System Monitoring/Minimization Project* is intended “to more effectively monitor and troubleshoot” a group of refinery flares, numbered Flares 17 through 22, and thus to “improve the identification and characterization of flaring events” and “reduce loads on the flare system.” ROA.61190, ¶ 12.b. There were 629 days of violation involving flaring at the Fuels North Flare System adjudicated under Count I (violations of the “no upset emissions” provision of the refinery permit at Flares 17 through 22), and 209 days of violation under Count II (violations of hourly emission limits at Flares 17 through 22). *See* PX 587–88 (Count I), 589–90 (Count II) (ROA.67284–909). Moreover, this Court previously recognized the link between this project and the violations at issue under Counts III and IV. *ETCL*, 824 F.3d at 530.

The *BOP/BOPX Recovery Unit Simulators Project* is intended to “improve operator training and competency, resulting in reduced frequency and severity of emissions events” at the Olefins Plant. ROA.61190, ¶ 12.c. There were 4,038 days of violation at the Olefins Plant adjudicated under Count II, 15 days under Count III, 24 days under Count IV, and five days under Count V; all but five occurred during emission events. *See* PX 591–92 (Count II) (ROA.67910–68021), 595–97 (Counts III–V) (ROA.68112–26).

The *Enhanced Fugitive Emissions Monitoring Project* is a program at all three of the plants to locate VOC and HRVOC leaks. ROA.61190–92, ¶ 12.d. Exxon’s STEERS reports and recordable event lists identified 1,758 of the emission events at issue in this case as being caused by leaks. *See* PX 436 (ROA.63328–460).²⁸

C. Exxon’s Argument That Delaying The Projects Created No Economic Benefit Because They Were “Voluntary” Has Already Been Rejected By This Court, And Is Wrong.

Exxon argues that the district court’s finding that “Exxon could not have been required to undertake these projects under existing laws and regulations” means the projects were voluntary and not required for compliance, and thus

²⁸ Plaintiffs note that the \$19.95 million penalty imposed by the district court is less than the maximum statutory penalty for any one of the following: (1) the 629 days of Fuels North flaring violation under Count I, (2) the thousands of days of violation at the Olefins Plant, or (3) the thousands of violations caused by 1,758 leak-related emission events.

cannot be considered as conferring an economic benefit. Exxon Br. 39–40. Exxon made this same argument on the first appeal (Case 15-20030, Document No. 00513188580, at pp. 57–58) and it was expressly rejected. *ETCL*, 824 F.3d at 529 n.18 (Exxon’s “argument about compliance efforts ‘negating’ economic benefit is precisely the argument that various courts have rejected under the economic benefit factor.”). Had this Court agreed with Exxon’s argument, it would not have ordered the district court to reconsider the economic benefit from the delay of the four projects. Exxon’s argument on this point is thus foreclosed by the law of the case doctrine.

Even if not foreclosed, there is no reason for this Court to come to a different conclusion now. As Exxon’s own economics expert agreed at trial, economic benefit is a “no-fault concept,” meaning that “a company need not deliberately [] have chosen to delay compliance or to even [have] been aware of its noncompliance in order to receive an economic benefit.” ROA.18818:1–11. Exxon does not deny that its failure to spend its money on these projects earlier made the funds available to it for other productive uses. This is true regardless of whether Exxon had a specific legal obligation to undertake them.

Moreover, Exxon’s policy argument that penalties based on economic benefit create a disincentive for adding pollution controls (Exxon Br. 40) is illogical. The sooner that compliance measures (whether “voluntarily” or

otherwise) are taken, the shorter the period of “delay” will be, and the smaller the economic benefit. If a company is motivated to minimize or avoid an economic benefit-based penalty, it will incur compliance expenditures in a timely fashion.

In any event, the projects in the Agreed Order were not “voluntary.” In the first place, the order was negotiated against the backdrop of Exxon’s ongoing noncompliance. While Exxon has some flexibility to develop and utilize the most cost-efficient means of satisfying its permits, it always has the legal responsibility to comply. Regardless of whether Exxon was obligated, before the Agreed Order was issued, to undertake these four particular projects, it was required to do *something* to bring its facilities back into compliance.²⁹ As Exxon can be presumed to have proposed cost-effective compliance measures to TCEQ, the district court correctly used those projects as a reasonable basis for determining the economic benefit of delayed compliance.

Further, the four projects were not “voluntary” even under the terms of the Agreed Order itself.³⁰ TCEQ *did* require Exxon to undertake these “Ordered”

²⁹ The trial testimony of Exxon consultant and former TCEQ director Mark Vickery, Exxon Br. 39, is not to the contrary. Plaintiffs agree that Exxon was not, until it was ordered to do so by TCEQ, compelled to implement *these specific projects*. But Exxon’s ongoing legal responsibility to comply with its permits obligated Exxon to take measures (these projects and/or others) to curtail emission events.

³⁰ Exxon falsely claims that Plaintiffs “embraced” the “could not have required” finding on remand, and provides a misleading cite to Plaintiffs’ post-remand proposed findings. Exxon Br. 39. Because the district court had instructed the

projects (ROA.61189, ¶ 12) by making them mandatory conditions of an enforcement order. The text of the order squarely states that “[t]he emission reduction projects undertaken pursuant to this Agreed Order *do not qualify* as a potential voluntary pollution reduction or early compliance program. . . .”

ROA.61188, ¶ 10 (emphasis added). In fact, the order states that “ExxonMobil has represented” it would not have committed to these projects “on the schedule required by this Agreed Order . . . *absent the requirements of this Agreed Order.*”

ROA.61189, ¶ 12 (emphasis added).

D. The District Court’s Finding That Exxon Gained An Economic Benefit Of \$14 Million Is Supported By The Factual Record And Proper Methodology.

This Court accepted the district court’s original finding that the methodology used by Plaintiffs’ economics expert, Jonathan Shefftz, to calculate the economic benefit resulting from the four projects was reliable. *ETCL*, 824 F.3d at 529. And Exxon admitted on remand that Mr. Shefftz’s “mathematics methodology was proper.” ROA.11885. Having determined that the four projects were “necessary to correct the violations,” the district court had no reason to revisit its finding that Plaintiffs carried their burden of proof on the calculation.

parties to leave intact those portions of its opinion not reversed by this Court (ROA.11839), Plaintiffs’ proposed findings had to include a section of the district court’s *original* opinion in its original form (ROA.11929–30). But Plaintiffs made it clear elsewhere in their proposed findings that “the Agreed Order itself ... contradicts this claim.” ROA.12010.

Exxon’s argument that the district court “uncritically accepted” Mr. Shefftz’s \$14 million economic benefit calculation (Exxon Br. 46) boils down to two points, neither of which is valid. First, Exxon argues that Mr. Shefftz erred by assuming that the projects were “necessary to correct” Exxon’s violations. *Id.* at 41. As discussed above, the district court did not rely on Mr. Shefftz on this point but made its own findings, in compliance with the Court’s remand order, and the record strongly supports those findings.

Second, Exxon asserts that Mr. Shefftz erred by using October 14, 2005—the beginning of the statute of limitations period in this case—as the start date for computing Exxon’s economic benefit from the delayed implementation of the four projects. Exxon argues that economic benefit “could not begin to accrue until the Exxon Defendants became subject to an obligation with which they were required to comply (as set out in the Agreed Order).” Exxon Br. 57. This argument misrepresents the nature of Exxon’s legal obligations under the CAA.

The noncompliance for which Exxon was found liable in this case was the repeated violation of emission limits in its CAA permits during emission events. *See ETCL*, 824 F.3d at 528 (economic benefit is that gained “from delayed expenditures to comply with *the Act*”) (emphasis added). Exxon was “subject to,” and “required to comply” with these limits throughout the statute of limitations period. Because Plaintiffs proved, and the district court found, that Exxon could

have implemented each of the four projects earlier than Oct. 14, 2005,³¹ and thus could have reduced its noncompliance earlier, this is the proper date from which to compute economic benefit.

Other courts have calculated economic benefit from the beginning of the statute of limitations period in similar circumstances, and the use of this date plainly is not, as Exxon suggests (Exxon Br. 59), “arbitrary.” *See, e.g., Idaho Conservation League v. Magar*, No. 3:12-cv-00337-CWD, 2015 WL 632367, at *5 n.9 (D. Idaho Feb. 13, 2015) (considering economic benefit during the limitations period); *Sierra Club v. El Paso Gold Mines, Inc.*, No. Civ. A. 01 PC 2163 OES, 2003 WL 25265873, at *8 (D. Colo. Feb. 10, 2003) (calculating the “economic benefit defendant realized during the relevant limitations period”); *Atl. States Legal Found. Inc. v. Universal Tool & Stamping Co.*, 786 F. Supp. 743, 749–51 (N.D. Ind. 1992) (calculating defendants’ economic benefit from the first day of the limitations period through the date pollution control equipment was installed).

The dates associated with Exxon’s compliance or noncompliance with the Agreed Order, *see* Exxon Br. 57-58, are simply irrelevant to the economic benefit analysis, as the district court correctly held in denying Exxon’s motion to alter or amend the judgment. ROA.15553-54. And Exxon’s attempt to rely on *Gulf Park*

³¹ *Supra* pp. 18–20. Exxon did not claim, or put on evidence to show, otherwise. This Court accepted that the projects could have been implemented earlier. *ETCL*, 824 F.3d at 529.

II, Exxon Br. 57, is unavailing. In that case, the government’s expert had, as Exxon represents, calculated economic benefit from the date the defendant was “ordered to connect” its wastewater discharge to a municipal treatment system. *Gulf Park II*, 14 F. Supp. 2d at 863. What Exxon does not say, however, is that the *Gulf Park* defendant had not been violating the Clean Water Act until that order was issued.³² Here, in contrast, Exxon had been violating its Clean Air Act permit limits for (at least) seven years before the 2012 Agreed Order was issued.³³

IV. THE DISTRICT COURT DID NOT ABUSE ITS DISCRETION IN FINDING THE SERIOUSNESS OF EXXON’S VIOLATIONS WARRANTS THE PENALTY IMPOSED.

Exxon seems to suggest that the district court was required to separately evaluate the seriousness of each of the thousands of violations (constituting 16,386 days of violation). Exxon Br. 60. But this Court previously informed the district court that “courts have recognized the overall number and quantitative severity of emissions or discharges may properly be relied upon as evidence of seriousness.”

³² Defendant had been sending its wastewater for land application and did not start discharging to the Mississippi Sound in violation of the CWA until a state court ordered the defendant to connect to the municipal treatment system. *See United States v. Gulf Park Water Corp. (Gulf Park I)*, 972 F. Supp. 1056, 1058–59 (S.D. Miss. 1997).

³³ In fact, the court in *Gulf Park* used a start date that pre-dated the five-year statute of limitations. *See Gulf Park I*, 972 F. Supp. at 1058 (case filed in 1993; penalties sought for violations going back five years to 1988); *Gulf Park II*, 14 F. Supp.2d at 857, 863 (economic benefit calculated from 1985). Applying the rationale in *Gulf Park*, the district court could have reasonably found that Exxon gained an even greater benefit than calculated by Mr. Shefftz.

ETCL, 824 F.3d at 532 (citing *Powell Duffryn*, 913 F.2d at 79); accord *Gulf Park II*, 14 F. Supp. 2d at 859 (“the number of violations” is first factor in assessing seriousness); *Haw. ’s Thousand Friends v. City and County of Honolulu*, 821 F. Supp. 1368, 1383 (D. Haw. 1993) (same). The district court duly followed that directive, and under the law of the case doctrine Exxon cannot contest it now.

In any event, Plaintiffs are aware of no contrary authority. Indeed, it would make no sense for a court to ignore the number of violations, or the total amount of pollutants emitted, in evaluating seriousness. Here, the district court did not abuse its discretion by finding thousands of violations and approximately ten million pounds of unlawful air pollutants to be “serious.”

In remanding the penalty assessment to the district court, this Court also noted alternate grounds for a finding of seriousness:

In assessing the ‘seriousness of the violation’ penalty factor, courts outside of this circuit have looked to the ‘risk or potential risk of environmental harm’ posed by emissions/discharges and have found violations to be serious ‘even absent proof of actual deleterious effect.’

ETCL, 824 F.3d at 532 (citing *Pound v. Airosol Co.*, 498 F.3d 1089, 1099 (10th Cir. 2007)); see also *Powell Duffryn*, 913 F.2d at 79 (“particularized showing” of the harm caused is not required to establish seriousness); *United States v. Smithfield Foods, Inc.*, 972 F. Supp. 338, 344 (E.D. Va. 1977) (“a significant penalty” is appropriate if “there is a risk or potential risk of environmental harm,

even absent proof of actual deleterious effect”). Whether this Court evaluates seriousness by looking at violations in the aggregate or violation-by-violation, and whether this Court focuses on potential risk of harm or actual harm, the record supports the same result: the violations were sufficiently serious to warrant the penalty imposed.³⁴

The quantity of pollutants released during individual emission events was significant. There were 3,976 individual emission events (many of which lasted more than one day, and most of which caused more than one violation of an emission standard). *Supra* pp. 7–8. Of the 241 violations classified as Reportable Events: seven each released more than 100,000 lbs. of carbon monoxide (the largest released more than half a million pounds); four each released more than 50,000 lbs. of sulfur dioxide (the largest released over 300,000 lbs.); nine each released more than 16,000 lbs. of highly reactive volatile organic compounds (HRVOCs) (the largest released over 125,000 lbs.); eight each released more than 6,000 lbs. of nitrogen oxides (the largest released over 20,000 lbs.); twenty each

³⁴ As noted in the standard of review section, this Court may affirm on any basis that the record supports. *Deslatte*, 1996 WL 197372, at *1. Plaintiffs raised these seriousness issues in their appeal of the district court’s first opinion, but this Court determined it did not need to reach them to remand the case. *See ETCL*, 824 F.3d at 533 n.20 (“Because the district court acknowledged that for at least some of the emissions events, the sheer quantity of pollutants emitted made the violations ‘more serious,’ we do not find it necessary to address the other asserted errors raised by Plaintiffs with respect to this factor.”) These issues were argued again to the district court (ROA.12020–28) and thus were preserved for this appeal.

released more than 800 lbs. of the human carcinogens benzene or 1,3-butadiene (the largest released nearly 20,000 lbs. of 1,3-butadiene); four each released more than 1,200 lbs. of hydrogen sulfide (the largest released over 3,500 lbs.); six each released more than 1,000 lbs. of hydrochloric acid (the largest released over 130,000 lbs.); and five each released at least 175 lbs. of hydrogen cyanide (the largest released 900 lbs.). ROA.12019; ROA.63681–98. Of the 3,735 violations classified as Recordable Events, 261 each released over 500 pounds of pollutants; 486 each released over 200 pounds of pollutants; and 747 each released over 100 pounds of pollutants. ROA.13213–14. One Recordable Event released 180,000 pounds of carbon monoxide. ROA.12020; ROA.63681. And, as this Court noted, the fact that there were also numerous smaller violations serves to increase the overall severity of the violations. *ETCL*, 824 F.3d at 532 (“If anything, the inclusion of many *more* violations with the most serious ones . . . only increase[s] the overall degree of seriousness, rather than lessening it.”).

Exxon’s violations released six different carcinogens. Supra p. 10. Benzene releases alone were responsible for 448 days of violation of the Refinery permit under Count I. ROA.51894. Exxon did not dispute Plaintiffs’ evidence that: there is no safe threshold level below which exposure to a carcinogen poses no risk of cancer; the risk of getting cancer increases the more carcinogens a person breathes;

and this risk does not dissipate or lessen over time. ROA.63905; ROA.17566:2–17568:16; ROA.17573:16–17575:3; ROA.17576:4–23.

618 days of violations involved particulate matter. *Supra* p. 54. There is no safe exposure threshold for exposure to fine particulates. ROA.63905.

Many thousands of violations involved ozone precursors (VOCs, NO_x, carbon monoxide). Harris County is out of compliance with national ozone standards. ROA.64373–75; ROA.16360:12–16361:20. Ozone is bad for public health. ROA.17593:9–19; ROA.64135; *Allied Local and Reg'l Mfg. Caucus v. EPA*, 215 F.3d 61, 66 n.1 (D.C. Cir. 2000). Exxon's air dispersion modeler testified that emissions of ozone precursors from the Complex can cause ozone formation throughout Harris County (ROA.17906:10–16), and that the best way to prevent the occurrence of elevated ozone levels is to reduce the emission of ozone precursors (ROA.17902:2–5).

Safety thresholds were exceeded. Exxon's air dispersion modeler found more than 150 instances in which the emission events at issue caused pollutant levels in the surrounding community to exceed safety thresholds, and he did not model approximately 100 of the most serious emission events in the case. ROA.17966:6–21. The modeling done by Exxon's expert determined that off-site pollutant concentrations were as high as *21 times* the applicable threshold

(ROA.69407); in 75 instances, off-site concentrations were more than double the safety threshold (ROA.69406; ROA.69418).

Exxon itself admitted to the Baytown City Council, “we really recognize that flaring creates emissions[;] it definitely can be a nuisance to the public.” ROA.63701–02. *See also* ROA.11153, ¶ 965 (constituents frequently call Baytown city councilman with concerns about flaring). It is little wonder that Exxon admitted that reducing emission events at the Exxon Complex would mean “cleaner air” and would “help[] public health” in Baytown and Houston. ROA.63704–05.

In sum, the record supports a finding that the violations are serious, and that the district court’s balancing of the penalty factors to apply a 50% enhancement of economic benefit is not an abuse of discretion. In light of the extensive factual record regarding the effects of the myriad pollutants unlawfully emitted, the district court’s finding, in a footnote, that there was no potential risk of actual harm (ROA.13291 n.256) was clearly erroneous. *Boudreaux v. United States*, 280 F.3d 461, 466 (5th Cir. 2000) (“A finding is clearly erroneous if a review of the record leaves a definite and firm conviction that a mistake has been committed.”) (internal quotes and citations omitted).

V. THE DISTRICT COURT DID NOT ABUSE ITS DISCRETION IN CONCLUDING THAT THE “DURATION” FACTOR WEIGHS IN FAVOR OF A PENALTY.

Exxon argues that the district court erred in basing its evaluation of the “duration of the violation” penalty factor on the “period of time over which the violations occurred.” Exxon Br. 60 (quoting the district court at ROA.13282).

In this argument Exxon misrepresents both the prevailing case law and the district court’s opinion.

In discussing this penalty factor in its earlier opinion in this litigation, this Court observed:

[T]here is some authority in support of the proposition that, when multiple ‘intermittent’ violations over a span of time are at issue, a court may consider the overall length of the period during which the violations occurred (rather than assessing each violation individually).

ETCL 824 F.3d at 531 (citations omitted). This Court also noted that it “need not resolve whether the ‘duration of the violation’ factor requires scrutiny of the length of each individual violation or allows for assessment of an overall violation period,” but added that because the district court chose the former approach, it “should have considered whether any violation, standing alone, was sufficiently long to justify imposition of a penalty.” *Id.* at 531–32.

The district court’s opinion on remand is consonant with this Court’s earlier opinion. First, it evaluated the overall period of violations:

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.

ROA.13282–83. The district court cited decisions from four other district courts in support of this approach, noted that this Court directed its attention to that authority, and pointed out that Exxon “does not address” those decisions in its papers. ROA.13282.³⁵

The district court then evaluated duration under the approach favored by Exxon, and came to the same conclusion regarding the appropriateness of penalties:

The Court finds even . . . looking to the individual violations’ duration . . . 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.

ROA.13283 n.240 (citations to record omitted). As set forth in the Fact Section, *supra* pp. 12–13, many of the violations lasted a long time, many even more than 48 hours. Under either approach to this penalty factor, then, the district court was well within its discretion to find that this factor weighed in favor of a penalty.

³⁵ Exxon wrongly chides the district court for “suggest[ing] that ExxonMobil did not rely on the plain language of the statute” in arguing for a violation-by-violation approach to the duration factor. Exxon Br. 60, n.8. What the district court actually said was that “Exxon cites no case law to support this position,” ROA.13281 n.239, and that Exxon does not “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,” ROA.13282.

VI. THE DISTRICT COURT DID NOT ERR BY REJECTING EXXON’S “AND SUCH OTHER FACTORS” ARGUMENT.

Exxon’s argument that the district court committed reversible error by not considering “such other factors as justice may require” in determining a penalty fails for several reasons.

First, this Court remanded the penalty assessment in this case based on its holding that the district court had “abused its discretion in assessing three of the CAA’s mandatory penalty factors”—*i.e.*, economic benefit, duration, and seriousness. *ETCL*, 824 F.3d at 533. Consistent with this Court’s ruling, upon remand the district court issued an order expressly limiting the scope of proposed revised findings of fact and conclusions of law to those three factors. ROA.11838–39. Exxon did not object to this order and makes no mention of it in this appeal.

Second, the district court was correct in holding that “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.” ROA.13293 n.260. Exxon’s proposed “Consideration of Penalty Assessment Factors” discussion contained no mention of any “other factors as justice may require.” Instead, Exxon proposed the following:

The Court has carefully considered the ExxonMobil Defendants’ compliance history at the Baytown Complex and good faith efforts to achieve compliance relative to the events and Title V deviations at issue, the lack of credible evidence by Plaintiffs that any of the alleged violations associated with any of the events and Title V deviations at issue were ‘serious,’ and the duration of each of the alleged violations.

ROA.11499–500.

Third, Exxon’s representation that there had been “no reason to raise this specific argument, uniquely focused on the four projects in the Agreed Order, before remand,” because “Plaintiffs . . . did *not* calculate economic benefit . . . based on the projects” at trial, Exxon Br. 63, is false. As this Court previously found, “Plaintiffs . . . elicited detailed testimony from their economic benefit expert, Mr. Shefftz, about the benefit stemming specifically from the four environmental improvement projects contained in the TCEQ agreed enforcement order.” *ETCL*, 824 F.3d at 529.

Fourth, Exxon argues that using the four projects as part of the penalty calculation would “chill regulatory enforcement effort” (Exxon Br. 62), and it cites *dictum* from the Supreme Court’s *Gwaltney* decision to suggest that the penalty here curtails TCEQ’s enforcement discretion (Exxon Br. 61). This Court has already rejected this very argument. *ETCL*, 824 F.3d at 529, n.18. *See also infra* pp. 32–34 (Congress struck a balance between deference to government and encouragement of citizen enforcement).

VII. THE DISTRICT COURT DID NOT ERR IN REJECTING EXXON’S AFFIRMATIVE DEFENSES.

A. The District Court Correctly Rejected The “Act of God” Defense.

The CAA, unlike some other environmental statutes, does not provide an act of God defense. *Cf.* 33 U.S.C. § 2703(a)(1) (Oil Pollution Control Act); 42 U.S.C. § 9607(b)(1) (Comprehensive Environmental Response, Compensation, and Liability Act). Nonetheless, Exxon invokes Tex. Water Code § 7.251 as a statutory act of God defense. However, a state defense to a CAA enforcement action is unavailable unless it is in the State Implementation Plan (“SIP”) approved by EPA under the CAA. *TVA*, 430 F.3d at 1346–50; ROA.13269; Exxon Br. at 65 (“courts have held that a state-law defense must appear in the SIP to be valid”); *cf.* *Missouri v. City of Glasgow*, 152 F.3d 802, 805 (8th Cir. 1998) (state law defense inapplicable to CWA citizen suit). Water Code § 7.251 is not in the Texas SIP. 40 C.F.R. § 52.2270(e) (listing SIP provisions).³⁶ The “catastrophe” provision in Tex. Health & Safety Code § 382.063 *is* in the SIP, but that provision incorporates by reference *another* section of the Water Code, § 5.15, *which Exxon has not invoked*.³⁷

³⁶ It appears from Exxon’s description of the legislative history of § 7.251 that the provision was actually removed from the SIP.

³⁷ Under Tex. Health & Safety Code § 382.063, an act of God could allow TCEQ to issue an “emergency order” under Tex. Water Code § 5.15, but such an order requires a detailed application from the facility (which Exxon has not claimed it filed), cannot be issued unless any resulting increased emissions would be “*de*

Moreover, even if a state act of God defense had been available, Exxon would have had to prove that its violations were “due directly and exclusively to an act of nature and without human intervention,” and that “no amount of foresight or care which could have been responsibly required” could have prevented the violations. *Sentry Select Ins. Co. v. R & R Marine, Inc.*, No. 1:10-CV-53, 2011 WL 7102564, at *5 (E.D. Tex. Aug.19, 2011) (declining to find that Hurricane Ike was not reasonably anticipated), *different portion of recommended decision rejected in part*, 2012 WL 252840 (E.D. Tex. Jan. 26, 2012). Exxon offered no such proof and its appeal brief does not identify any.

While the governor of Texas did issue a proclamation during Hurricane Ike purporting to waive certain regulations, that proclamation was not in the SIP and *did not* suspend all CAA requirements. It required facilities to “apply best engineering practices and good air pollution control practices” (ROA.6652) and specified that facilities shall “[i]n no event . . . create conditions of air pollution or exceed [NAAQS]” (ROA.6654).

B. The District Court Correctly Rejected The 30 Tex. Admin. Code § 101.222 Defense.

The Texas affirmative defense for emissions events “presents a high burden for any company seeking entitlement to it.” *Luminant Generation Co. LLC v.*

minimis,” and can only authorize “immediate action for the addition, replacement, or repair of facilities or control equipment” (not an issue here). Tex. Water Code § 5.15(c).

EPA, 714 F.3d 841, 854 (5th Cir. 2013). A *prima facie* showing is not enough; a defendant must prove all eleven criteria of the defense for each event, and that burden remains with the defendant and does not shift to the plaintiff. *Id.* at 854–55.

Exxon claims that the district court “refused to ‘find the facts specially’” concerning the Texas affirmative defense for 97 emission events, and thus violated Fed. R. Civ. P. 52(a), requiring reversal. Exxon Br. 70. But the district court *did* make factual findings on this issue, and those findings were not clearly erroneous. The district court looked precisely where Exxon directed it to look in the record, and expressly found that Exxon did not meet its burden to direct the court to evidence proving it met all eleven affirmative defense criteria for any of the 97 events. ROA.13273–74.

The district court had every right to reject the affirmative defense on this ground, as Exxon provided only generalized, conclusory claims of its entitlement to the affirmative defense.³⁸ *E.g.*, *Chavez v. Sec’y Fla. Dep’t of Corr.*, 647 F.3d 1057, 1061 (11th Cir. 2011) (“district court judges are not required to ferret out delectable facts buried in a massive record”); *Susan Patterson Interiors, Inc. v.*

³⁸ As the district court reiterated in its order denying Exxon’s motion to alter or amend the judgment, the proposed findings on which Exxon relied consisted only of references to TCEQ’s affirmative defense determinations (which are insufficient as a matter of law to carry Exxon’s burden) and “general citations to expert testimony and reports.” ROA.15556.

Tobias, No. 11 C 221, 2012 WL 4578694, at *4 (N.D. Ill. Oct. 1, 2012) (party with burden of persuasion “cannot simply throw a mountain of unexplained and confused evidence at the fact-finder and expect to meet its burden”); *Mirror Worlds, LLC, v. Apple, Inc.*, 784 F. Supp. 2d 703, 728 (E.D. Tex. 2011) (in a trademark case, denial of a post-trial request for judgment as a matter of law on the ground that Apple did not “provid[e] concise arguments with supporting evidence that highlights its position It is Apple’s burden, not the Court’s, to piece together and present an invalidity defense.”); cf. *Price v. Housing Auth.*, 453 F. App’x 446, 448 (5th Cir. 2011) (“poor briefing” waived claims). “[P]ractical constraints on the time of a judge make it impossible for the judge to examine a record of even moderate size with such finitude as to be both exhaustive and exhausting. Judges are not ferrets!” *Nicholas Acoustics & Specialty Co. v. H & M Constr. Co.*, 695 F.2d 839, 846–47 (5th Cir. 1983).

Plaintiffs, on the other hand, did more. They directed the district court to specific citations in the trial transcript and exhibits, to demonstrate that the 97 events failed to meet one or more of the affirmative defense criteria. ROA.12034–46. In response, Exxon again chose not to provide an emission event-by-emission event, criterion-by-criterion breakdown of its generalized claim that the affirmative defense was applicable to these events.

Only *after* the district court issued its revised opinion did Exxon attempt to cure the defect by filing a motion for amended findings of fact, under Fed. R. Civ. P. 52(b), which provided additional detail. At that point, however, it was too late. *Cf. Excavators and Erectors, Inc. v. Bullard Eng'rs, Inc.*, 489 F.2d 318, 320 (5th Cir. 1973) (contentions first raised in a motion to alter or amend a judgment are “simply too late” to raise on appeal).

Moreover, the chart Exxon submitted with its motion, purporting to show evidence adduced at trial supporting the affirmative defense, *still* failed to provide the specific proof needed. The chart is essentially one page of citations repetitively cut-and-pasted over the span of 125 pages. ROA.13364 *et seq.* And the citations themselves are inadequate: the chart lumps ten of the eleven criteria together, with a single set of references (ROA.13365); the repeated citations to documentary evidence are non-specific references to “Appendices C, D, & E” or “Appendix F,” which are voluminous (ROA.13365); and the repeated transcript citations are to the same general, conclusory snippets of testimony the district court already found insufficient (*e.g.*, “Trial Tr. 11-241:24 to 11-242:25” [ROA.18635:24–18636:25], in which Exxon’s expert states, “In my opinion, ExxonMobil met the criterion in every single case.”).³⁹

³⁹ Later in that same witness’s testimony about his voluminous expert report, the district court warned Exxon’s counsel to inform the court “if you need me

Even if this were a case in which specific findings had not been made, this Court has held that “under Fed. R. Civ. P. 52(a)(1), we have recognized that a remand for specific findings is unnecessary ‘if a complete understanding of the issues may be had without the aid of separate findings.’” *Jenkins & Gilchrist v. Groia & Co.*, 542 F.3d 114, 118 (5th Cir. 2008) (quoting *Armstrong v. Collier*, 536 F.2d 72, 77 (5th Cir. 1976)); *Kratzer v. Capital Marine Supply, Inc.*, 645 F.2d 477, 483 (5th Cir. 1981) (holding remand was “not necessary since the record would not support” a finding in the appellant’s favor on an asserted defense).

Here, a complete understanding of the affirmative defense issue may be had from the findings the district court did make regarding Exxon’s failures of proof, and from the specific evidence adduced by Plaintiffs rebutting the asserted defense. Plaintiffs’ evidence on this issue provides ample additional grounds on which to uphold the district court’s finding that Exxon failed to carry its burden of proving all eleven affirmative defense criteria set forth in 30 Tex. Admin. Code § 101.222(b)(1)–(11) for the 97 Reportable Events in question.

A summary of the evidence Plaintiffs directed to the attention of the district court follows; a fuller recitation of that evidence may be found at ROA.12032–46 (Plaintiffs’ proposed findings on remand).

specifically to look at anything later on when we have it all back there at our leisure” ROA.18641:14–16.

§ 101.222(b)(2) requires proof that the unauthorized emissions were “caused by a sudden, unavoidable breakdown of equipment or process, beyond the control of the owner or operator.” Twenty of the Events for which Exxon seeks the affirmative defense were caused by leaks from corrosion of metal.⁴⁰ Exxon’s own witnesses established that corrosion is neither “sudden” (ROA.18739:7-9), “unavoidable,” nor beyond Exxon’s control (ROA.17442:17-22; ROA.17443:8-25; ROA.17444:11-25; ROA.17642:6-17643:1). *See* ROA.12034-35.

§ 101.222(b)(3) requires proof that the unauthorized emissions “could not have been avoided by better operation and maintenance practices” or by “technically feasible design consistent with good engineering practice.” Exxon’s engineering expert, Dr. Christopher Buehler, testified that Exxon “may have to improve upon” its good engineering practices “to avoid emission events” (ROA.18735:2–5), and identified seven Events⁴¹ “where Exxon could have improved its performance in order to avoid the emission event.” (ROA.18731:10–16; ROA.18733:22–25). The twenty corrosion-caused events also fail to meet this

⁴⁰ Reportable Event numbers 66872, 70677, 78440, 80443, 83410, 83907, 85714, 101421, 124761, 135178, 142015, 143353, 151209, 156361, 156835, 162866, 68364, 159900, 143032, and 81544. *See* ROA.12034.

⁴¹ Reportable Event numbers 68364, 104185, 106496, 112698, 137171, 138413, and 142545. *See* ROA.12036.

criterion, for the reasons stated above. And, as set out in the margin, twelve other events could have been avoided for a variety of reasons.⁴²

§ 101.222(b)(4) requires proof that any relevant air pollution control equipment was up to date, operating, and functional during the Event. Exxon failed to carry its burden of establishing this criterion for Event 76597, in which two pilot flame outages occurred over the course of four hours on flare stack 14 (ROA.51351, at row 6), rendering the pollution control equipment (the flare) non-functional.

§ 101.222(b)(5) requires proof that “prompt” action was taken to achieve compliance as soon as defendant “knew or should have known” emission limitations were being exceeded, and that repairs were made “as expeditiously as practicable.” Exxon did not carry its burden of establishing this criterion for Reportable Events 85714 (leak that was not repaired for 218 hours), 68364 (not corrected for 388 hours), and 109166 (not corrected for 1,704 hours). *See* ROA.12040-41.

⁴² Reportable Event numbers 70677 (corrosion was misclassified and inadequately repaired); 79486 (emergency vent valves should have been connected); 132400 (compressor capacity should have been increased); 135717 (inadequate preventive maintenance); 137570 (inadequate maintenance after previous Event at same spot); (failure to set “useful life” for old valve); 165572 (wrong cap used in violation of design standard;); 82255 (seal should have been replaced); 92944 (failure to install a double seal system); 113195 (faulty design of seal oil system); 155989 (failure to perform preventive maintenance for ten years). *See* ROA.12035–39.

§ **101.222(6)** requires proof that “the amount and duration of the unauthorized emissions . . . were minimized” and that “all possible steps” were taken to minimize the impact of the unauthorized emissions.” The three Reportable Events discussed above under § 101.222(b)(5) (numbers 85714, 68364, and 109166), which ranged from 9 days to 71 days in duration, were not minimized.

§ **101.222(b)(9)** requires proof that the unauthorized emissions “were not part of a frequent or recurring pattern indicative of inadequate design, operation, or maintenance.” In assessing whether an emission event was part of a frequent or recurring pattern, Exxon’s expert Dr. Buehler failed to consider the thousands of recordable emission events in his analysis, and also failed to consider emission events that occurred more than a year previously. ROA.18745:4–17; ROA.18755:21–18756:13. In addition, Dr. Buehler offered no opinion as to this criterion for the Reportable Events 66884, 68629, 69967, 93798, 106240, 120022, 135797, 138187, and 85175, and thus the criterion was not met for those Events. *See* ROA.12042.

§ **101.222(b)(10)** requires proof that the percentage of a facility’s total annual operating hours during which unauthorized emissions occurred was not “unreasonably high.” Exxon has not carried its burden of establishing this criterion for Reportable Events 109166 (lasted 1,704 hours, or 19.4% of Exxon’s annual

operating hours), 68364 (lasted 388 hours, or 4.4% of annual operating hours), 85714 (lasted 218 hours, or 2.5% of annual operating hours), or for an additional 15 Events listed in the margin on which Dr. Buehler offered no opinion.⁴³ *See* ROA.12042-43.

§ 101.222(b)(11) requires proof that the unauthorized emissions did not “cause or contribute” to an exceedance of federal air quality standards or to a condition of “air pollution,” defined in Tex. Health & Safety Code § 382.003(3) as “the presence in the atmosphere of one or more air contaminants or combination of air contaminants in such concentration and of such duration that: (a) are or *may be* injurious to or to adversely affect human health or welfare, animal life, vegetation, or property; or (b) interfere with the normal use or enjoyment of animal life, vegetation, or property” (emphasis added).

Plaintiffs demonstrated Exxon’s failure to carry its burden on this criterion in numerous ways. First, Plaintiffs presented the results of air dispersion modeling performed by Exxon’s own expert, David Cabe, showing that the 12 Reportable Events listed in the margin caused offsite concentrations of one or more pollutants to exceed one or more applicable safety thresholds, or “air comparison values” (*see*

⁴³ Reportable Event numbers 66872, 66884, 68629, 69967, 71852, 72945, 75191, 76448, 80225, 93798, 106240, 120022, 135797, 138187, and 85175.

ROA.17966:22–17967:3), used by Mr. Cabe.⁴⁴ Levels in excess of these values are indicative of conditions that, at a minimum, “may be” injurious to or adversely affect public health or welfare. *See* ROA.10635–36, ¶¶ 753–55 (Exxon’s initial post-trial findings). Accordingly, the eleventh criterion is not met for these Events.

Second, Reportable Events 112732 and 150177 caused violations of the HRVOC Rule, promulgated by Texas to prevent industrial facilities from releasing large amounts of HRVOCs in a short period of time. Because the agency determined that such releases cause or contribute to spikes in ground-level ozone concentrations, these Events do not meet this criterion because they contribute to a condition of air pollution. *See* ROA.12046.

Third, Plaintiffs cast doubt on the results of the air dispersion modeling conducted by Exxon’s consultants, by which Exxon attempted to prove that the remaining emission events did not cause or contribute to a condition of air pollution. Exxon’s predicted offsite concentrations of pollutants were biased downward because its modeling often ignored background pollutant levels, and because simultaneous emissions from multiple sources at the Complex were not all included. ROA.12044.

⁴⁴ Reportable Events 68705, 76501, 102061, 109887, 151209, 153388, 155973, 156361, 164148, 78040, 152760, and 165572 caused exceedances of air comparison values. *See* ROA.69406.

Fourth, Exxon’s toxicology expert, Dr. Lucy Fraiser, relied almost exclusively on this flawed modeling as a basis for her opinions regarding “a condition of air pollution.” ROA.18123:16–18124:12. Moreover, Plaintiffs demonstrated the numerous additional ways in which Ms. Fraiser’s testimony was insufficient to persuasively establish that Exxon’s unauthorized emissions posed no risk or potential risk, which ranged from disregarding the margins of safety built into the relevant safety thresholds to denying that pollutants could pose health risks if emitted at night, among other flaws. ROA.12026–28. Accordingly, Exxon did not carry its burden of proving it met the eleventh criterion.

C. Even If The District Court Erred, The Error Was Not Harmful.

Even if the district court erred in not finding specific facts relating to the 97 events for which the 30 Tex. Admin. Code § 101.222 affirmative defense was claimed, the error was harmless. *See Irby v. Sullivan*, 737 F.2d 1418, 1421 n.2 (5th Cir. 1984) (failure to make specific factual findings on an issue is harmless error if “the omitted findings would not change the outcome of the case”) (internal quotes, citations, and alterations omitted).

First, eliminating these events would not disturb the district court’s seriousness or duration findings, which were based primarily on the large number of violations and their duration, and the large quantity of illegal emissions. The 97 events represent only 2.4% of the 3,976 emission events at issue in the case; the

920 days of violation caused by these events (Exxon Br. at 69) represent just 5.6% of the 16,386 days of violation found by the district court.

Second, eliminating these events would not disturb the district court's economic benefit finding. Acceptance of the affirmative defense criteria would entail a finding that as many as 97 events—but not the remaining 3,879 events—were unavoidable. But the \$14 million in economic benefit found by the district court, for delay in implementing measures to avoid emission events, remains applicable to the other 3,879 events.

CONCLUSION

For the reasons above, the district court's opinion and judgment should be affirmed.

April 13, 2018

Respectfully submitted,

/s/ David A. Nicholas

/s/ Joshua R. Kratka

Counsel of Record for Plaintiffs-Appellees

CERTIFICATE OF SERVICE

I hereby certify that on April 13, 2018, a copy of the foregoing Brief of Appellees was filed electronically with the Clerk of the Court using the Court's ECF System. Notice of this filing will be sent electronically by operation of the Court's electronic filing system to all counsel of record.

/s/ Joshua R. Kratka
Joshua R. Kratka

CERTIFICATE OF COMPLIANCE

1. This brief complies with the type-volume limitations of Fed. R. App. P. 32(a)(7)(B) and this Court's April 4, 2018, Order granting Plaintiffs-Appellees' unopposed motion to file a brief exceeding the word limit but not to exceed 22,500 words, because this brief contains 22,492 words, excluding the parts of the document exempted by Fed. R. App. P. 32(f).

2. This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because this brief has been prepared in a proportionally spaced typeface using Microsoft Word 2011 word processing software in 14-point Times New Roman typeface.

Dated: April 13, 2018

/s/ Joshua R. Kratka
Joshua R. Kratka