BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Petition No. VI-2024-8

In the Matter of

Shell Chemical LP, Deer Park Chemical Plant

Permit No. O1668

Issued by the Texas Commission on Environmental Quality

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ORDER DENYING A PETITION FOR OBJECTION TO A TITLE V OPERATING PERMIT

I. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) received a petition dated June 11, 2024 (the Petition) from Air Alliance Houston (the Petitioner), pursuant to section 505(b)(2) of the Clean Air Act (CAA or Act), 42 United States Code (U.S.C.) § 7661d(b)(2). The Petition requests that the EPA Administrator object to operating permit No. O-1668 (the Permit) issued by the Texas Commission on Environmental Quality (TCEQ) to the Shell Chemical LP, Deer Park Chemical Plant (the Facility) in Harris County, Texas. The operating permit was issued pursuant to title V of the CAA, 42 U.S.C. §§ 7661–7661f, and Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. *See also* 40 Code of Federal Regulations (C.F.R.) part 70 (title V implementing regulations). This type of operating permit is also known as a title V permit or part 70 permit.

Based on a review of the Petition and other relevant materials, including the Permit, the permit record, and relevant statutory and regulatory authorities, and as explained in Section IV of this Order, the EPA denies the Petition requesting that the EPA Administrator object to the Permit. The EPA also finds that cause exists to reopen and revise the Shell Deer Park Chemical Plant permit.

II. STATUTORY AND REGULATORY FRAMEWORK

A. Title V Permits

Section 502(d)(1) of the CAA, 42 U.S.C. § 7661a(d)(1), requires each state to develop and submit to the EPA an operating permit program to meet the requirements of title V of the CAA and the EPA's implementing regulations at 40 C.F.R. part 70. The state of Texas submitted a title V program governing the issuance of operating permits on September 17, 1993. The EPA granted interim approval of Texas's title V operating permit program in 1996 and granted full approval in 2001. See 61 Fed. Reg. 32693

(June 25, 1996) (interim approval effective July 25, 1996); 66 Fed. Reg. 63318 (Dec. 6, 2001). This program, which became effective on November 30, 2001, is codified in 30 TAC Chapter 122.

All major stationary sources of air pollution and certain other sources are required to apply for and operate in accordance with title V operating permits that include emission limitations and other conditions as necessary to assure compliance with applicable requirements of the CAA, including the requirements of the applicable implementation plan. 42 U.S.C. §§ 7661a(a), 7661b, 7661c(a). The title V operating permit program generally does not impose new substantive air quality control requirements, but does require permits to contain adequate monitoring, recordkeeping, reporting, and other requirements to assure compliance with applicable requirements. 40 C.F.R. § 70.1(b); 42 U.S.C. § 7661c(c). One purpose of the title V program is to "enable the source, States, EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements." 57 Fed. Reg. 32250, 32251 (July 21, 1992). Thus, the title V operating permit program is a vehicle for compiling the air quality control requirements as they apply to the source's emission units and for providing adequate monitoring, recordkeeping, and reporting to assure compliance with such requirements.

B. Review of Issues in a Petition

State and local permitting authorities issue title V permits pursuant to their EPA-approved title V programs. Under CAA § 505(a) and the relevant implementing regulations found at 40 C.F.R. § 70.8(a), states are required to submit each proposed title V operating permit to the EPA for review. 42 U.S.C. § 7661d(a). Upon receipt of a proposed permit, the EPA has 45 days to object to final issuance of the proposed permit if the EPA determines that the proposed permit is not in compliance with applicable requirements under the Act. 42 U.S.C. § 7661d(b)(1); *see also* 40 C.F.R. § 70.8(c). If the EPA does not object to a permit on its own initiative, any person may, within 60 days of the expiration of the EPA's 45-day review period, petition the Administrator to object to the permit. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

Each petition must identify the proposed permit on which the petition is based and identify the petition claims. 40 C.F.R. § 70.12(a). Any issue raised in the petition as grounds for an objection must be based on a claim that the permit, permit record, or permit process is not in compliance with applicable requirements or requirements under part 70. 40 C.F.R. § 70.12(a)(2). Any arguments or claims the petitioner wishes the EPA to consider in support of each issue raised must generally be contained within the body of the petition.[1] *Id.*

The petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting authority (unless the petitioner demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period). 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d); *see also* 40 C.F.R. § 70.12(a)(2)(v).

[1] If reference is made to an attached document, the body of the petition must provide a specific citation to the referenced information, along with a description of how that information supports the claim. In determining whether to object, the Administrator will not consider arguments, assertions, claims, or other information incorporated into the petition by reference. *Id*.

In response to such a petition, the Act requires the Administrator to issue an objection if a petitioner demonstrates that a permit is not in compliance with the requirements of the Act. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(c)(1).[2] Under section 505(b)(2) of the Act, the burden is on the petitioner to make the required demonstration to the EPA.[3] The petitioner's demonstration burden is a critical component of CAA § 505(b)(2). As courts have recognized, CAA § 505(b)(2) contains both a "discretionary component," under which the Administrator determines whether a petition demonstrates that a permit is not in compliance with the requirements of the Act, and a nondiscretionary duty on the Administrator's part to object where such a demonstration is made. *Sierra Club v. Johnson*, 541 F.3d at 1265–66 ("[I]t is undeniable [that CAA § 505(b)(2)] also contains a discretionary component: it requires the Administrator to make a judgment of whether a petition demonstrates a permit does not comply with clean air requirements."); *NYPIRG*, 321 F.3d at 333. Courts have also made clear that the Administrator is only obligated to grant a petition to object under CAA § 505(b)(2) if the Administrator determines that the petitioner has demonstrated that the permit is not in compliance with requirements of the Act. *Citizens Against Ruining the Environment*, 535 F.3d at 677 (stating that § 505(b)(2) "clearly obligates the Administrator to (1) determine whether the petition demonstrates noncompliance and (2) object *if* such a demonstration is made" (emphasis added)).[4] When courts have reviewed the EPA's interpretation of the ambiguous term "demonstrates" and its determination as to whether the demonstration has been made, they have applied a deferential standard of review. *See, e.g.*, *MacClarence*, 596 F.3d at 1130–31.[5] Certain aspects of the petitioner's demonstration burden are discussed in the following paragraph. A more detailed discussion can be found in the preamble to the EPA's proposed petitions rule. *See* 81 Fed. Reg. 57822, 57829–31 (Aug. 24, 2016); *see also In the Matter of Consolidated Environmental Management, Inc., Nucor Steel Louisiana*, Order on Petition Nos. VI-2011-06 and VI-2012-07 at 4–7 (June 19, 2013) (*Nucor II Order*).

The EPA considers a number of criteria in determining whether a petitioner has demonstrated noncompliance with the Act. *See generally Nucor II Order* at 7. For example, one such criterion is whether a petitioner has provided the relevant analyses and citations to support its claims. For each claim, the petitioner must identify (1) the specific grounds for an objection, citing to a specific permit term or condition where applicable; (2) the applicable requirement as defined in 40 C.F.R. § 70.2, or requirement under part 70, that is not met; and (3) an explanation of how the term or condition in the permit, or relevant portion of the permit record or permit process, is not adequate to comply with the corresponding applicable requirement or requirement under part 70. 40 C.F.R. § 70.12(a)(2)(i)–(iii). If a petitioner does not identify these elements, the EPA is left to work out the basis for the petitioner's objection, contrary to Congress's express allocation of the burden of demonstration to the petitioner in CAA § 505(b)(2). *See MacClarence*, 596 F.3d at 1131 ("[T]he Administrator's requirement that [a title V petitioner] support his allegations with legal reasoning, evidence, and references is reasonable and

[2] *See also New York Public Interest Research Group, Inc. v. Whitman*, 321 F.3d 316, 333 n.11 (2d Cir. 2003) (*NYPIRG*).
[3] *WildEarth Guardians v. EPA*, 728 F.3d 1075, 1081–82 (10th Cir. 2013); *MacClarence v. EPA*, 596 F.3d 1123, 1130–33 (9th Cir. 2010); *Sierra Club v. EPA*, 557 F.3d 401, 405–07 (6th Cir. 2009); *Sierra Club v. Johnson*, 541 F.3d 1257, 1266–67 (11th Cir. 2008); *Citizens Against Ruining the Environment v. EPA*, 535 F.3d 670, 677–78 (7th Cir. 2008); *cf. NYPIRG*, 321 F.3d at 333 n.11.
[4] *See also Sierra Club v. Johnson*, 541 F.3d at 1265 ("Congress's use of the word 'shall' . . . plainly mandates an objection *whenever* a petitioner demonstrates noncompliance." (emphasis added)).
[5] *See also Sierra Club v. Johnson*, 541 F.3d at 1265–66; *Citizens Against Ruining the Environment*, 535 F.3d at 678.

persuasive.").[6] Relatedly, the EPA has pointed out in numerous previous orders that general assertions or allegations did not meet the demonstration standard. *See, e.g.*, *In the Matter of Luminant Generation Co., Sandow 5 Generating Plant*, Order on Petition Number VI-2011-05 at 9 (Jan. 15, 2013).[7] Also, the failure to address a key element of a particular issue presents further grounds for the EPA to determine that a petitioner has not demonstrated a flaw in the permit. *See, e.g.*, *In the Matter of EME Homer City Generation LP and First Energy Generation Corp.*, Order on Petition Nos. III-2012-06, III-2012-07, and III-2013-02 at 48 (July 30, 2014).[8]

Another factor the EPA examines is whether the petitioner has addressed the state or local permitting authority's decision and reasoning contained in the permit record. 81 Fed. Reg. at 57832; *see Voigt v. EPA*, 46 F.4th 895, 901–02 (8th Cir. 2022); *MacClarence*, 596 F.3d at 1132–33.[9] This includes a requirement that petitioners address the permitting authority's final decision and final reasoning (including the state's response to comments) where these documents were available during the timeframe for filing the petition. 40 C.F.R. § 70.12(a)(2)(vi). Specifically, the petition must identify where the permitting authority responded to the public comment and explain how the permitting authority's response is inadequate to address (or does not address) the issue raised in the public comment. *Id*.

The information that the EPA considers in determining whether to grant or deny a petition submitted under 40 C.F.R. § 70.8(d) generally includes, but is not limited to, the administrative record for the proposed permit and the petition, including attachments to the petition. 40 C.F.R. § 70.13. The administrative record for a particular proposed permit includes the draft and proposed permits; any permit applications that relate to the draft or proposed permits; the statement required by § 70.7(a)(5) (sometimes referred to as the "statement of basis"); any comments the permitting authority received during the public participation process on the draft permit; the permitting authority's written responses to comments, including responses to all significant comments raised during the public participation process on the draft permit; and all materials available to the permitting authority that are relevant to the permitting decision and that the permitting authority made available to the public according to § 70.7(h)(2). *Id.* If a final permit and a statement of basis for the final permit are available

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[6] *See also In the Matter of Murphy Oil USA, Inc.*, Order on Petition No. VI-2011-02 at 12 (September 21, 2011) (denying a title V petition claim where petitioners did not cite any specific applicable requirement that lacked required monitoring); *In the Matter of Portland Generating Station*, Order on Petition at 7 (June 20, 2007) (*Portland Generating Station Order*).

[7] *See also Portland Generating Station Order* at 7 ("[C]onclusory statements alone are insufficient to establish the applicability of [an applicable requirement]."); *In the Matter of BP Exploration (Alaska) Inc., Gathering Center #1*, Order on Petition Number VII-2004-02 at 8 (April 20, 2007); *In the Matter of Georgia Power Company*, Order on Petitions at 9–13 (January 8, 2007) (*Georgia Power Plants Order*); *In the Matter of Chevron Products Co., Richmond, Calif. Facility*, Order on Petition No. IX-2004–10 at 12, 24 (March 15, 2005).

[8] *See also In the Matter of Hu Honua Bioenergy*, Order on Petition No. IX-2011-1 at 19–20 (February 7, 2014); *Georgia Power Plants Order* at 10.

[9] *See also, e.g.*, *Finger Lakes Zero Waste Coalition v. EPA*, 734 Fed. App'x *11, *15 (2d Cir. 2018) (summary order); *In the Matter of Noranda Alumina, LLC*, Order on Petition No. VI-2011-04 at 20–21 (Dec. 14, 2012) (denying a title V petition issue where petitioners did not respond to the state's explanation in response to comments or explain why the state erred or why the permit was deficient); *In the Matter of Kentucky Syngas, LLC*, Order on Petition No. IV-2010-9 at 41 (June 22, 2012) (denying a title V petition issue where petitioners did not acknowledge or reply to the state's response to comments or provide a particularized rationale for why the state erred or the permit was deficient); *Georgia Power Plants Order* at 9–13 (denying a title V petition issue where petitioners did not address a potential defense that the state had pointed out in the response to comments).

during the agency's review of a petition on a proposed permit, those documents may also be considered when determining whether to grant or deny the petition. *Id*.

D. Reopening for Cause

"If the Administrator finds that cause exists," he may order the permitting authority to "reopen" a title V permit. 42 U.S.C. § 7661d(e); 40 C.F.R. § 70.7(g). The Administrator can find cause to reopen a title V permit, *inter alia*, if reopening is necessary to "assure compliance with applicable requirements." 40 C.F.R. § 70.7(f)(1)(iv). If the Administrator orders the reopening of a title V permit, the permitting authority must respond within 90 days, but the Administrator can, under certain circumstances, extend the time for a response by an additional 90 days. 42 U.S.C. § 7661d(e); 40 C.F.R. § 70.7(g)(2). In responding, the permitting authority must follow the same procedures as for the initial permit issuance, but only those parts of the permit that cause the Administrator to reopen the permit shall be affected. 40 C.F.R. § 70.7(f)(2).

III. BACKGROUND

A. The Shell Deer Park Facility

Located at 5900 Highway 225 in Harris County, Texas, Shell Chemical LP's Deer Park Chemical Plant is primarily engaged in the production of olefins, heavy olefins, aromatics, phenol, and acetone. These base chemicals or raw material chemicals are typically sold to other chemical companies that transform them into thousands of consumer products ranging from plastics to building materials. These products are transferred via pipeline, marine loading, and rail and tank truck loading. The Facility is a major source for volatile organic compounds (VOC), sulfur dioxide, particulate matter, nitrogen oxides, hazardous air pollutants (HAPs), and carbon monoxide.

B. Permitting History

Shell Chemical LP first obtained a title V permit for the Facility on November 22, 2004. On October 1, 2018, Shell Chemical LP applied to the TCEQ for a renewal of the title V permit for the Deer Park Chemical Plant. TCEQ published notice of a draft permit on June 20, 2021, subject to a public comment period that ended on July 20, 2021. Public comments were received by TCEQ on July 21, 2021. TCEQ submitted a response to comments and an Initial Proposed Permit to the EPA for its 45-day review on September 20, 2022. The EPA's 45-day review period ended on November 4, 2022, during which time the EPA objected to the Proposed Permit on November 2, 2022 ("*Objection Order*").[10]

In response to the EPA's objection, a Revised Proposed Permit and response to objections were submitted to the EPA on February 26, 2024, for its 45-day review. The EPA's 45-day review period ended on April 12, 2024, during which time the EPA did not object to the Revised Proposed Permit. TCEQ issued the final Permit for the Facility on April 24, 2024.

[10] *See* EPA Objection to Title V Permit No. O1668, Shell Chemical LP, Deer Park Chemical Plant, Harris County, TX (November 2, 2022), available at *https://www.epa.gov/system/files/documents/2024-08/2022.11.02_shell.objection.letter.o1668.pdf*.

C. Timeliness of Petition

Pursuant to the CAA, if the EPA does not object to a proposed permit during its 45-day review period, any person may petition the Administrator within 60 days after the expiration of the 45-day review period to object. 42 U.S.C § 7661d(b)(2). Because the EPA objected to the Initial Proposed Permit, there was no opportunity for the public to petition the EPA to object to that particular version of the permit. *See id*; 40 C.F.R. § 70.8(d). Instead, the public petition opportunity was delayed until after the state transmitted the Revised Proposed Permit to the EPA in order to resolve the EPA's objection. *See, e.g.*, 40 C.F.R. § 70.8(c)(4). Specifically, the EPA's 45-day review period of the Revised Proposed Permit expired on April 12, 2024. Thus, any petition seeking the EPA's objection to the Revised Proposed Permit was due on or before June 11, 2024. The Petition was received June 11, 2024, and, therefore, the EPA finds that the Petitioner timely filed the Petition. The petition opportunity associated with the Revised Proposed Permit includes all issues that could have been raised on the Initial Proposed Permit (including issues to which EPA did not object), as well as changes reflected in the Revised Proposed Permit.

D. Environmental Justice

The EPA conducted an analysis using EPA's EJScreen[11] to assess key demographic and environmental indicators within a five-kilometer radius of the Shell Deer Park facility. This analysis showed a total population of approximately 44,013 residents within a five-kilometer radius of the facility, of which approximately 56 percent are people of color and 24 percent are low income. In addition, EPA reviewed the EJScreen Environmental Justice Indexes, which combine certain demographic indicators with 13 environmental indicators. The following table identifies the Environmental Justice Indexes for the five-kilometer radius surrounding the facility and their associated percentiles when compared to the rest of the State of Texas.

EJ Index	Percentile in State
Particulate Matter 2.5	71
Ozone	54
Nitrogen Dioxide	63
Diesel Particulate Matter	69
Toxic Releases to Air	80
Traffic Proximity	56
Lead Paint	57
Superfund Proximity	82
RMP Facility Proximity	74
Hazardous Waste Proximity	76
Underground Storage Tanks	61
Wastewater Discharge	77
Drinking Water Non-Compliance	0

[11] EJScreen is an environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. *See https://www.epa.gov/ejscreen/what-ejscreen.* The information herein is based on a November 21, 2024, report using EJScreen Version 2.3.

IV. EPA DETERMINATION ON PETITION CLAIM

The Petitioner Claims That "Flare Monitoring Fails to Assure Compliance With Tier I BACT [Best Available Control Technology] Requirements and Represented Destruction and Removal Efficiency."

Petition Claim:

The Petitioner cites the EPA's *Objection Order*, explaining that "Shell's Title V permit was deficient because it failed to include monitoring requirements that assured compliance with represented levels of flare DRE [destruction and removal efficiency] and emission limits using the represented DRE for assisted flares authorized by NSR Permit Nos. 3219 and 3179, which are incorporated by reference as applicable requirements into Shell's Title V permit." *Id*. at 3 (citing *Objection Order* at 4). The Petitioner states that "this failure rendered Shell's Title V permit deficient, because it did not include monitoring, testing, and recordkeeping requirements that assured compliance with all applicable requirements." *Id*. (citing 42 U.S.C. § 7661c(a), (c)).

The Petitioner also cites to TCEQ's Tier 1 BACT Guidance in support of its claim that the Permit is deficient. The Petitioner contends that TCEQ's Tier I BACT guidance requires that flares achieve 99 percent DRE for VOC compounds with up to three carbon atoms and 98 percent for all other VOC compounds. *Id*. (citing TCEQ's *Current BACT for all Chemical Unit Types Guidance*).[12] The Petitioner claims that the 2017 renewal application[13] for NSR Permit No. 3219 specifically identifies "the DRE requirement as applicable for ground flare and the limits calculated for other permits and flares included in Shell's Title V permit apply a 98%/99% DRE." *Id*. Additionally, the Petitioner claims that "a subsequent application[14] identifies this DRE representation as applicable to all Shell's olefins plant flares" and claims that this information shows the 98%/99% DRE "is an enforceable application representation and an applicable requirement for purposes of Title V." *Id.* at 3–4. (citing 30 TAC § 116.116(a)).

The Petitioner then explains why it considers the TCEQ's response to the EPA's *Objection Order* and the Revised Proposed Permit to be deficient. The Petitioner states that "In response to the [EPA's November 22, 2022] Objection Order, the TCEQ altered Permit Nos. 3219 and 3179 to include Special Conditions requiring Shell to comply with flare requirements in EPA's updated Part 63, Subpart F and Subpart YY regulations." Petition at 4 (citing the EPA's *Objection Order* and the alteration of NSR Permit

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[12] *See* Current Tier I BACT Requirements: Chemical Sources (specifying that the presumptive VOC control requirements for flares: "Meets 40 CFR § 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required."), available at *https://www.tceq.texas.gov/permitting/air/nav/air_bact_chemsource.html*.

[13] *See* Permit No. 3219 (Project 278537), Project File Folder, WCC Content ID 4343575 at 34-83 (September 9, 2019). available at *https://records.tceq.texas.gov/cs/idcplg?IdcService=TCEQ_EXTERNAL_SEARCH_GET_FILE&dID=4656896&Rendition=Web; see also* Permit No. 3219 (Project 278537), Project File Folder, WCC Content ID 4857596 at 8-9 (Sept. 9, 2019). available at *https://records.tceq.texas.gov/cs/idcplg?IdcService=TCEQ_EXTERNAL_SEARCH_GET_FILE&dID=5244364&Rendition=Web.*

[14] *See* Permit No. 3179 (Project 160508), Project File Folder, WCC Content ID 4343575 at 4 (Mar. 07, 2011), available at *https://records.tceq.texas.gov/cs/idcplg?IdcService=TCEQ_EXTERNAL_SEARCH_GET_FILE&dID=5440692&Rendition=Web*.

Nos. 3219 and 3179).[15] The Petitioner also references TCEQ's February 23, 2024, letter in response to the EPA's *Objection Order* ("*Response to Objection"*),[16] in which TCEQ amended Permit Nos. 3219 and 3179 to include Special Conditions requiring Shell to comply with flare requirements in EPA's updated Part 63, Subpart F and Subpart YY regulations. *Id*. at 5 (citing *Response to Objection* at 3; *Permit Alteration Source Analysis & Technical Review,* Permit No. 3219, Project No. 365078; *Permit Alteration Source Analysis & Technical Review*, Permit No. 3179, Project No. 365077).[17] The Petitioner asserts that TCEQ "did not explain how these changes assure compliance with the applicable DRE and emission limits" and that "These revisions may be sufficient to assure that Shell's flares achieve a 98% DRE, but they are not sufficient to ensure that they continuously comply with the represented 99% DRE for compounds with three or fewer carbon atoms." *Id*. at 5.

The Petitioner suggests that "because much of the gas flared at Shell's Deer Park Chemical Plant consists of compounds with three or fewer carbon atoms, continuous performance at 98% DRE may result in nearly twice as much pollution as Shell presumes." *Id*. The Petitioner asserts that the precise types and amounts of compounds that are sent to Shell's flares are not known because "the company improperly marks its speciated flare emissions submitted to the TCEQ confidential," but claims that "off-specification flaring at olefins plants often includes the following compounds with three or fewer carbon atoms: ethylene, propylene, methane, ethane, and propane." *Id*. at 5–6.

To support its position that the EPA's updated Part 63, Subpart F and Subpart YY regulations do not ensure 99 percent DRE for flares, but rather only requires 98 percent DRE, the Petitioner also references a memorandum including an analysis of comments EPA received on its proposed revisions to the NESHAP for petroleum refineries ("*RTI Memorandum"*), [18] stating that it "includes test data indicating that flares at sources that vent large amounts of olefins, like propylene, have difficulty continuously achieving the 98 percent destruction efficiency required by Part 63, Subparts CC, YY, and F." *Id*. at 6. The Petitioner asserts the RTI Memorandum and the study it relies on "suggest that it is unreasonable to presume that compliance with the 270 BTU/scf NHVcz requirement in Permit Nos. 3219 and 3179 assures compliance with the 99 percent destruction efficiency for compounds with three or fewer carbon atoms." *Id*. The Petitioner asserts that TCEQ should provide the basis for its determination "that the revisions to Permit Nos. 3219 and 3179 are sufficient to assure at least 98% DRE for all compounds vented to Shell's flares." *Id*.

The Petitioner claims that "neither Shell's Title V permit nor Permit Nos. 3219 and 3179 explain how Shell must calculate VOC emissions from its flares to determine compliance with applicable representations and emission limits." Petition at 7. The Petitioner contends that this "failure" constitutes an additional deficiency and states that the title V permit "must include or incorporate a

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[15] *See* Permit No. 3219 (Project 365078), Technical Review, WCC Content ID 6912098 (February 7, 2024), available at *https://records.tceq.texas.gov/cs/idcplg?idcservice=tceq_external_search_get_file&did=7702138&rendition=web*; Permit No. 3179 (Project 365077), Technical Review, WCC Content ID 6912122 (February 7, 2024), available at *https://records.tceq.texas.gov/cs/idcplg?idcservice=tceq_external_search_get_file&did=7704795&rendition=web.*

[16] *See* Executive Director's Response to EPA Objection, Shell Deer Park Chemical Plant (February 23, 2024), available at *https://www.epa.gov/system/files/documents/2024-02/o1668-shell-chemical-lp-ltr.022624.docx*.

[17] *See* supra notes 15 and 16.

[18] *See* Memorandum from Jeff Coburn, RTI International to Andrew Bouchard and Brenda Shine, Office of Air Quality and Standards, Sector Policies and Programs Division, EPA, Flare Control Option Impact for Final Refinery Sector Rule, EPA-HQ-OAR-2010-0682-0748 (July 31, 2015), available at *https://www.regulations.gov/document/EPA-HQ-OAR-2010-0682-0748.*

method for accurately determining compliance with applicable requirements using monitoring, testing, and/or recordkeeping methods in the permit." *Id*.

Finally, the Petitioner asserts that the EPA should not remand the deficient permit back to TCEQ for further work. The Petitioner states that, "Because the TCEQ failed to correct the deficiencies identified by EPA's Objection Order within 90 days, as required by the Clean Air Act, it is now EPA's duty to revise and issue or deny Shell's Title V permit." *Id*. at 2 (citing 42 U.S.C. § 7661d(c); 40 C.F.R. § 70.8(c)(4)). The Petitioner argues that the EPA should not reassert its objection and remand the permit back to the TCEQ "for further work and additional delay," instead noting that "the Clean Air Act requires EPA to expeditiously correct the problem it identified, given Texas's failure to do so." *Id*. at 2–3.

EPA Response: For the following reasons, the EPA denies the Petitioner's request for an objection on this claim.

The Petitioner's concerns with flare monitoring and represented destruction and removal efficiency were not raised during the public comment period, and the Petitioner has not demonstrated that it was impracticable to do so or that the grounds for doing so arose after the public comment period.

Pursuant to Section 505(b)(2) of the CAA, a "petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting agency." 42 U.S.C. § 7661d(b)(2), *see also* 40 C.F.R. § 70.8(d). The Act does provide for an exception to this threshold requirement if the petitioner "demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period." 42 U.S.C. § 7661d(b)(2); *see* 40 C.F.R. §§ 70.8(d), 70.12(a)(2)(v). The key to this inquiry is whether the grounds for objection were readily ascertainable during the public comment period and could have been raised at that time, regardless of whether a petitioner was aware of the grounds at that time. *See, e.g.*, *In the Matter of Appleton Coated, LLC*, Order on Petition Nos. V-2013-12 & V-2013- 15 at 17–18 (October 14, 2016) ("Whether or not the . . . Petitioners were . . . aware of the grounds does not change the fact that the grounds were reasonably ascertainable.").

The Petition includes a single sentence on this issue: "Changes to Shell's NSR permits to address EPA's Objection Order are properly raised by Air Alliance Houston for the first time in this petition, because they arose after the public comment period on Shell's Title V permit had closed." Petition at 2 (citing 42 U.S.C. § 7661d(b)(2)). This statement misses the point. It is true that the facility's NSR permits (and more importantly, its title V permit) were revised following the EPA's objection to the Initial Proposed Permit, in an attempt to resolve the EPA's objection. But the fact that the Permit was revised after the public comment period does not necessarily mean the grounds for objection to the Permit arose after the public comment period.

Here, the Petitioner's alleged "grounds for objection" is that the Permit lacks sufficient monitoring or other requirements to assure compliance with VOC limits on the flare, in large part due to issues concerning VOC destruction efficiency assumptions. This underlying issue—the absence of sufficient permit terms—was readily ascertainable in the Draft Permit that was subject to review during the public comment period. This is evidenced by the fact that the EPA objected to essentially this same issue when reviewing the Initial Proposed Permit (which was not materially different from the Draft

Permit, in relevant part). This is also evidenced by the Petitioner's own arguments. Throughout the Petition, the Petitioner argues that the changes that TCEQ made were insufficient to resolve the EPA's objection. Petition at 2, 5, 7. In other words, the central thrust of the Petitioner's claim is that the Permit *still suffers the same flaw* that the EPA identified in its prior objection.[19]

Because that underlying flaw could have been raised in public comments on the Draft Permit, but was not, this claim cannot now be raised by the Petitioner in a title V petition, and the EPA denies the Petition. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. §§ 70.8(d), 70.12(a)(2)(v).

V. REOPENING FOR CAUSE

Although the Petitioner's request for an EPA objection is barred for the reasons described above, based on the EPA's discretionary review of the information presented by the Petitioner, the EPA finds and hereby provides TCEQ notice that cause exists to reopen and revise the Shell Deer Park Permit to assure compliance with all applicable requirements. 42 U.S.C. § 7661d(e); 40 C.F.R. § 70.7(g)(1), (f)(1)(iv). Specifically, the EPA has determined that the Permit lacks adequate monitoring necessary to assure compliance with emission limitations, such as those that rely on 99 percent DRE, and the permit record does not explain or justify the DRE assumptions for flaring.

Section 504(c) of the CAA requires all title V permits to contain monitoring requirements to assure compliance with permit terms and conditions. EPA's Part 70 monitoring rules (40 C.F.R. § 70.6(a)(3)(i)(A) and (B) and 70.6(c)(1)) must be interpreted consistent with section 504(c) of the Act's directive.[20] As a general matter, permitting authorities must take steps to satisfy the monitoring requirements in EPA's Part 70 regulations; this includes permitting authorities requiring supplemental monitoring to ensure such compliance, even if there is some periodic monitoring in the applicable requirement, but that monitoring is not sufficient to assure compliance with permit terms and conditions. 40 C.F.R. § 70.6(c)(1). *In the Matter of CITGO Refining & Chemicals Co., Petition No. VI-2007-01* (Order on Petition) at 6–7 (May 28, 2009) (*CITGO Order*). Additionally, 40 C.F.R. § 70.7(a)(5) provides that the rationale for the monitoring requirements selected by a permitting authority must be clear and documented in the permit record (e.g., in the Statement of Basis). *CITGO Order* at 7.

The title V permit, as revised by TCEQ in response to the EPA's *Objection Order*, incorporates by reference the February 7, 2024, version of NSR Permit Nos. 3179 and 3219/PSDTX974. Permit at 476. These NSR permits, in turn, include applicable lb/hr and ton per year (TPY) limits on VOC emissions from several flares during routine operations and during maintenance, startup, and shutdown. Specifically, NSR Permit No. 3219/PSDTX974 prescribes numeric VOC limits for various flares including

[19] Among other things, the EPA's objection noted problems with the Permit's apparent reliance on both a 98 percent and 99 percent VOC destruction efficiency. *See Objection Order* at 4. The Petition now questions the sufficiency of permit terms that were added to the Permit following the EPA's objection, including certain requirements from the EPA's updated NESHAP rules. The Petitioner concedes that these new requirements may assure a 98 percent destruction efficiency, but the Petitioner argues that they remain insufficient to assure a 99 percent destruction efficiency. Petition at 5–6. As the Petitioner's arguments show, these new permit terms did not *give rise to* new grounds for objection after the public comment period. Instead, the new permit terms arguably *removed* one of the grounds for objection that had previously existed during the public comment period.

[20] *See Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008).

the OP-2 Elevated Flare (EPN OP2ELFLA), OP-3 Elevated Flare (EPN OP3ELFLA), and OP-3 Ground Flare (EPN OP3GRFLA).[21] NSR Permit No. 3179 includes numeric VOC limits for the HIPA Flare (EPN A1333).[22]

With respect to flare-related changes made to the Permit, TCEQ's *Response to Objection* states:

> NSR permit 3219 (project 365078) issued 02/07/2024 and NSR permit 3179 (project 365077) issued 02/07/2024, contain revised special conditions 9 and 14 respectively to include *sufficient monitoring requirements for flare units to demonstrate compliance with the applicable requirements, including compliance with the specified destruction efficiency*. NSR permits 3219 and 3179 are incorporated by reference in the proposed permit (New Source Review Authorization References table at page 475).

Response to Objection at 3 (emphasis added).[23] These changes represent the only flare-related modifications made to the Permit.

Revised Special Condition 9.E of NSR Permit No. 3219/PSDTX974 states:

> The permit holder shall comply with the work practice standards, emission limitations, and monitoring/sampling, recordkeeping, and reporting requirements applicable to each flare that is an affected source under 40 CFR Part 63, including, without limitation, Subpart YY. (02/24)

Revised Special Condition 13.F of NSR Permit No. 3179 states:

> The permit holder shall comply with the work practice standards, emission limitations, and monitoring/sampling, recordkeeping, and reporting requirements applicable to each flare that is an affected source under 40 CFR Part 63, including, without limitation, Subpart F. (02/24)

While these revised permit terms incorporate additional requirements for the plant's flares, neither the Permit nor the incorporated NSR permit terms specify the monitoring, recordkeeping, or reporting requirements that are specifically designed to assure compliance with the lb/hr and TPY VOC emission limits established in the Maximum Allowable Emission Rate Tables ("MAERT") of NSR permits 3179 and 3219. Moreover, TCEQ's response offers no technical support for the state's conclusion that the amended Permit terms are sufficient to assure compliance with all applicable requirements. Instead of explaining *how* the revised terms assure compliance, TCEQ's response simply concludes that they do.

Neither the title V permit nor the NSR permit expressly state the means by which the facility will demonstrate compliance with the VOC limits at issue. It seems likely that TCEQ intends to require the

[21] *See* Permit No. 3219 (Project 278537), MAERT, WCC Content ID Number 4857597 (September 9, 2019), available at *https://records.tceq.texas.gov/cs/idcplg?idcservice=tceq_external_search_get_file&did=5244365&rendition=web*.
[22] *See* Permit No. 3179 (Project 334136), MAERT, WCC Content ID Number 5900242 (Jan. 26, 2022) available at *https://records.tceq.texas.gov/cs/idcplg?idcservice=tceq_external_search_get_file&did=6484336&rendition=web*.
[23] TCEQ's *Response to Objection* letter incorrectly cites revised Special Condition 14 of NSR Permit No. 3179. The revision at issue was made to Special Condition 13 – specifically, 13.F – of NSR Permit No. 3179. *See* Permit No. 3179 (Project 365077), Conditions, WCC Content ID 6912127 (Feb. 7, 2024) available at *https://records.tceq.texas.gov/cs/idcplg?idcservice=tceq_external_search_get_file&did=7700729&rendition=web*.

facility to demonstrate compliance by calculating emissions using a formula that includes consideration of destruction and removal efficiency, among other variables. TCEQ may also consider the relevant destruction and removal efficiencies to be binding, enforceable requirements, since TCEQ's response references, in part, a "specified destruction efficiency" for which the revised permit terms are to assure compliance with. However, neither this emissions calculation methodology nor this destruction and removal efficiency ("DRE") appear to be specified anywhere in the Permit (nor on the face of the NSR permits that are incorporated into the Permit). This information might be included in applications associated with the NSR permits. If TCEQ wishes to rely on a source's application representations (or some other representation) to satisfy the monitoring and compliance assurance requirements of title V, such representations must be specifically identified in, or incorporated by reference into, the title V Permit.

The EPA understands that TCEQ's EPA-approved regulations provide that sources in Texas are bound by representations made in their application for NSR permits, such that these application representations become legally enforceable.[24] However, the fact that an application representation may be legally enforceable in Texas is not relevant to whether these representations are properly "set forth," "included," or "contained" in a title V permit, as required by the Act, the EPA's part 70 regulations and TCEQ's EPA-approved title V program regulations. *See* 42 U.S.C. § 7661c(c), 30 TAC § 122.140. That is, a source's obligation to independently comply with a requirement to which it is subject—whether it be contained in a NSPS, NESHAP, SIP, court-approved Consent Decree, NSR permit, or NSR permit application representation—does not inherently or automatically result in that requirement being included in a title V permit. For a requirement to be included in a title V permit, the permit must include it in the text of the permit itself. A permit may "set forth," "include," or "contain," requirements, in certain circumstances, by incorporating requirements like application representations into the title V permit by reference (or even by incorporating them into an NSR permit that is then incorporated by reference into the title V permit).[25] However, the current title V permit does not appear to do this with respect to any calculation methodologies or DRE values used in assuring compliance with the VOC emission limits.

The permit record also does not explain how the Permit's monitoring regime assures that Shell is achieving the "specified" or presumed DRE; nor does it explain how the Permit assures compliance with the hourly and annual VOC emission limits for its flares that may depend, in part, on any "specified" DRE. Thus, it does not appear that the Permit assures compliance with all applicable requirements. The EPA has previously communicated technical concerns related to TCEQ's flare DRE assumptions and the lack of adequate monitoring and operating requirements necessary to assure continuous compliance with emission limitations, such as those that rely on 99 percent DRE.[26] TCEQ

[24] *See* 30 TAC § 116.116(a) ("The following are the conditions upon which a permit, special permit, or special exemption are issued: (1) representations with regard to construction plans and operation procedures in an application for a permit, special permit, or special exemption; and (2) any general and special conditions attached to the permit, special permit, or special exemption itself.").

[25] *See generally* White Paper Number 2 for Improved Implementation of The Part 70 Operating Permits Program, 36–41 (Mar. 5, 1996) (White Paper Number 2) (explaining how incorporation by reference can satisfy the requirements of CAA § 504).

[26] *See* Letter from David Garcia, Director, Air and Radiation Division, Region 6, U.S. EPA to Corey Chism, Director, Office of Air, TCEQ, *Texas Commission on Environmental Quality Flare Operating and Monitoring Requirements as Specified in Clean Air Act New Source Review and Title V Operating Permits* (July 15, 2024), available at *https://www.epa.gov/system/files/documents/2024-07/2024.07.15.epa-comments-on-tceq-flare-assumptions.pdf*.

routinely permits flares under the assumption that they will reliably reduce the concentration of VOCs (containing three carbon atoms or less) by 99 percent. The 99 percent DRE assumption is used to set hourly and annual permit limits for VOCs from flares and is also used when sources are demonstrating that they are complying with these limits.[27] Without adequate monitoring and recordkeeping to assure a specific DRE is maintained, there is potential for underestimating actual emissions when sources do not achieve the presumptive 99 percent DRE in practice.

For the foregoing reasons, the EPA finds that cause exists to reopen the Permit. 40 C.F.R. § 70.7(g), 70.7(f)(1)(iv). This Order serves as written notice to TCEQ and Shell Chemical LP pursuant to 40 C.F.R. § 70.7(g)(1).

***Direction to TCEQ*:** TCEQ must modify the Permit to ensure that the Permit contains sufficient monitoring and recordkeeping requirements to assure compliance with the lb/hr and TPY VOC emission limitations for the plant's flares. TCEQ must also revise the permit record to fully explain how the Permit's monitoring, recordkeeping, and/or operational requirements (including 40 C.F.R. Part 63, Subpart F, and Subpart YY) are sufficient to assure compliance with the lb/hr and TPY VOC emission limitations for the OP-2 Elevated Flare (EPN OP2ELFLA), OP-3 Elevated Flare (EPN OP3ELFLA), OP-3 Ground Flare (EPN OP3GRFLA), and HIPA Flare (EPN A1333). This explanation should also identify the specific monitoring, recordkeeping, and/or operational limitations in the Permit that TCEQ has determined will ensure Shell will achieve the specific DRE's utilized in any VOC-limit compliance demonstrations.

TCEQ should also revise the Permit to include a term that specifies Shell's VOC-limit compliance demonstration methodology for each flare. TCEQ may be able to accomplish this in various ways. For example, TCEQ could detail a material balance calculation procedure that explicitly identifies *what* parameters are used (e.g., VOC mass flow, DRE, etc.) and *how* these parameters are used to calculate actual VOC emissions for comparison against the applicable MAERT limitations for each flare.[28] In addition to the flare inlet VOC concentration of the Vent Gas, EPA anticipates that another critical input parameter required to calculate actual flare emissions is the VOC DRE of each flare. However, the Permit does not currently require Shell to periodically monitor or determine the actual DRE of any flare. As such, to ensure the material balance calculation yields reliable VOC emission estimates, Shell could determine flare DRE (as a function of Combustion Zone Net Heating Value)[29] at a frequency that

[27] *See* TCEQ Air Permits Divison, APD-ID 6v1, New Source Review (NSR) Emission Calculations (Revised March 2021), available at *https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf.*

[28] As the EPA has explained, to the extent TCEQ intends to rely on information in a permit application to explain why such a calculation methodology/recordkeeping term is unnecessary, it must identify what part of the application contains the relevant information and explain why that information is relevant. Additionally, if TCEQ intends for a calculation methodology contained in a permit application to be an enforceable component of the facility's compliance demonstration obligations, the Permit itself must either include or properly incorporate by reference the relevant portions of the permit application. *See, e.g.*, *In the Matter of BP Amoco Chemical Company, Texas City Chemical Plant*, Order on Petition No. VI-2017-6 at 18, 30–32 (July 20, 2021).

[29] For the steam-assisted elevated flares, Shell could estimate DRE as a function of NHVcz using the PFTIR data-derived correlation equations contained the federal rulemaking docket for 40 C.F.R. part 63, subpart CC. EPA anticipates that Shell will need to develop and utilize an alternative empirical correlation equation for the steam-assisted olefins enclosed ground flare. *See* Memorandum from Jeff Coburn, RTI International to Andrew Bouchard and Brenda Shine, Office of Air Quality and Standards, Sector Policies and Programs Division, EPA, Flare Control Option Impact for Final Refinery Sector Rule, EPA-HQ-OAR-2010-0682-0748 at 13-15 (July 31, 2015), available at *https://www.regulations.gov/document/EPA-HQ-OAR-2010-0682-0748.*

is commensurate with the relevant applicable compliance periods established for flares at 40 C.F.R. Part 63, Subpart F, and Subpart YY (e.g., hourly average, rolled every 15 minutes).[30] Together, such Permit revisions would identify what monitoring and calculation methodology-related information is collected and how it is used for the purpose of determining and assuring compliance with the hourly and annual VOC limits for Shell's ground and elevated flares.

TCEQ could either add such monitoring and recordkeeping requirements directly to Shell's title V permit, or it could add these requirements to Permit Nos. 3219 and 3179 and then promptly revise the title V permit to incorporate the updated version of these permits. In either case, TCEQ, as the title V permitting authority, should ensure that the Permit clearly identifies, or incorporates by reference, any emission calculation procedures, parameters, and variables (e.g., calculation methodologies, emission factors, DRE assumptions, etc) that are relevant to Shell's compliance demonstration obligations. These provisions should be sufficient to assure compliance with any existing VOC emissions limitations that rely on any such calculation procedures, parameters, or variables. *See, e.g.*, 42 U.S.C. § 7661c(c); 40 C.F.R. § 70.6(c)(1); 30 TAC 122.142(c).

VI. CONCLUSION

For the reasons set forth in this Order and I hereby deny the Petition requesting an objection pursuant to CAA § 505(b)(2) and 40 C.F.R. § 70.8(d), but I find cause to reopen the Permit under CAA § 505(e) and 40 C.F.R. § 70.7(g), as described in this Order.

Dated: December 19, 2024

Michael S. Regan
Administrator

[30] EPA notes that the time period associated with monitoring or other compliance assurance provisions must bear a relationship to the limits with which the monitoring assures compliance. *See* 40 C.F.R. § 70.6(a)(3)(i)(B)).