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Bursting the Bubble: Moving Toward "The Common Sense Principle" When Considering Air Aggregation of Oil and Gas Facilities

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BURSTING THE BUBBLE: MOVING TOWARD "THE COMMON SENSE PRINCIPLE" WHEN CONSIDERING AIR AGGREGATION OF OIL AND GAS FACILITIES

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I. INTRODUCTION

The dramatic increase in natural gas production in the United States has created new challenges for administrative agencies tasked with protecting the nation's environment. One such challenge concerns the application of the Clean Air Act (CAA) to an industry with a myriad of interconnected pipelines, production wells, and treatment plants. The U.S. Environmental Protection Agency (EPA) has a policy that favors the aggregation, or grouping together, of upstream and midstream natural gas facilities connected by pipelines. Aggregation often has the effect of combining several otherwise minor sources of emissions into one major source. Justification for a policy of widespread aggregation stems from the EPA's broad interpretation of "adjacent"—one of the regulatory boundaries of the agency's ability to aggregate—which the agency defines through the functional interrelatedness test. The functional interrelatedness test analyzes the utilitarian relationship between multiple emissions points, inquiring whether each individual point could be economically productive without the existence of the others.

The functional interrelatedness test has recently faced challenges to its validity before both state environmental review boards and federal courts. A growing number of oil and natural gas producing states, including Pennsylvania, Louisiana, Oklahoma, and Texas, are clamoring for agencies to replace the functional interrelatedness interpretation of "adjacent" with one that focuses on the common sense notion of proximity. Some oil and natural gas producing states recently developed an informal policy of automatically aggregating emissions points within a quarter mile of each other. These states then deploy the functional interrelatedness test beyond the quarter mile limit. At least one state, Texas, has bucked this trend by enacting legislation banning the aggregation of emis-

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sion points separated by distances greater than a quarter mile. A strict outer limit, found in the Texas model, comports with the common sense notion of "adjacent" and fulfills the duty to promulgate regulations which are both consistent and easy to predict.

II. BACKGROUND

This Part surveys the background issues necessary to understand the functional interrelatedness test, the common sense principle, and the stakes involved in the administrative choice between the two. Part II.A examines the CAA's statutory and regulatory scheme for regulating air pollutants and explains the difference between major and minor sources. Part II.B describes how the statutory scheme applies to the oil and natural gas industry and analyzes the stakes involved with respect to source classification. Finally, Part II.C explains the development of the bubble concept by which several minor sources of emissions are grouped together to form one major source.

A. The Clean Air Act's Statutory Scheme

The CAA, passed in 1970, is designed "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare. . . ."[1] In 1990, Congress amended the CAA to institute a national air quality permitting system referred to as Title V.[2] Title V works to augment the CAA's preexisting framework by requiring regulated sources of air pollution to "obtain operating permits that include emission limitations, standards, monitoring requirements, compliance schedules, and other conditions necessary to assure compliance with the CAA."[3] This scheme primarily regulates two types of pollutants: pollutants reasonably anticipated to endanger the public health, called criteria pollutants, and those pollutants which are known to cause either an increase in fatalities or serious, irreversible illnesses, called hazardous air pollutants (HAPs).[4]

The CAA regulates six criteria pollutants reasonably anticipated to endanger the public health: ozone, particulate matter, car-

1. 42 U.S.C. §§ 7401-7671q (1990).

2. *Air Pollution Operating Permit Program Update: Key Features and Benefits*, ENVTL. PROT. AGENCY, http://www.epa.gov/oaqps001/permits/permitupdate/brochure.html (last updated July 26, 2011) (outlining air permit program and policy concerns).

3. Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012) (outlining compliance requirements of CAA).

4. *See* 40 C.F.R. §§ 61, 63 (defining pollutant criteria).

bon monoxide, nitrogen oxides, sulfur dioxides, and lead.[5] Of these six, ozone, particulate matter, and nitrous oxides represent the most common emissions resulting from natural gas production.[6] On a national level, regulation of criteria pollutants takes place through the National Ambient Air Quality Standards (NAAQS).[7] A much more stringent regulatory scheme applies to HAPs, which pose acute hazards to human and ecological health.[8] Upstream and midstream oil and natural gas operations may release a variety of HAPs, including n-hexane, formaldehyde, benzene, toluene, ethylbenzene, xylene, and hydrogen sulfide.[9]

The CAA, which allows state implementation of NAAQS programs, depends on a system of cooperative federalism for the implementation of its provisions.[10] States that wish to operate their own permitting processes must submit State Implementation Plans (SIPs) to the EPA.[11] These implementation plans, at a minimum, must meet the floor regulatory requirements set forth by the EPA.[12] If a state does not meet the floor requirements, the EPA may im-

5. *What are the Six Common Air Pollutants?*, ENVTL. PROT. AGENCY, http://www.epa.gov/air/urbanair/ (last visited Nov. 7, 2014) (outlining common air pollutants).

6. Colin G. Harris & Ivan L. London, *There's Something in the Air: New and Evolving Air Quality Regulations Impacting Oil and Gas Development*, 58 RMMLF-INST 6-1, 6-7 (2012) (discussing changing regulations in light of oil and gas development). Carbon dioxide is a major emission source from electric plants, which use natural gas as a fuel. *See also Clean Energy*, ENVTL. PROT. AGENCY, http://www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html (last visited Nov. 7, 2014).

7. *See National Ambient Air Quality Standards (NAAQS)*, ENVTL. PROT. AGENCY, http://www.epa.gov/air/criteria.html (last updated Dec. 14) (outlining air quality standard).

8. *See Pollutants and Sources*, ENVTL. PROT. AGENCY, http://www.epa.gov/ttnatw01/pollsour.html (last visited Nov. 7, 2013) (discussing HAP regulatory scheme).

9. Harris & London, *supra* note 6 (discussing impact of new oil and gas production on regulation); *see also The Clean Air Act Amendments of 1990 List of Hazardous Air Pollutants*, ENVTL. PROT. AGENCY, http://www.epa.gov/ttn/atw/orig189.html (last visited Nov. 7, 2014) (enumerating CAA list of hazardous air pollutants).

10. William Session, *Cooperative Federalism and the Clean Air Act Encounter Turbulence*, AM. COLL. OF ENVTL. LAW., *available at* http://www.acoel.org/post/2012/12/14/COOPERATIVE-FEDERALISM-AND-THE-CLEAN-AIR-ACT-ENCOUNTER-TURBULENCE.aspx (last updated Nov. 7, 2014) (discussing federal and state responsibilities in CCA).

11. *See* North Carolina v. EPA, 531 F.3d 896, 902 (D.C. Cir. 2008); 42 U.S.C. § 7410 (1990) (outlining state responsibilities under CAA).

12. 42 U.S.C. §§ 7661a(d)(3), (i)(3) (1990) (outlining baseline state responsibilities under CAA).

pose a Federal Implementation Plan (FIP).[13] States try to avoid FIPs because the EPA's federal regulations and accompanying sanctions tend to be more stringent and less flexible than delegated state programs.[14]

Under the CAA, new major sources must receive both a pre-construction permit, through New Source Review (NSR), and a post-construction operating permit through Title V.

With respect to a pre-construction permit, if a facility qualifies as a major source in an attainment area, the requirements of the Prevention of Significant Deterioration Program (PSD) govern the permitting process.[15] The PSD permit process requires the applicant to show that the new source of emissions will not have an unacceptable impact on air quality and that it will control emissions using the best available control technology (BACT).[16] EPA regulations define BACT as the maximum reduction of emissions possible, taking into account a variety of industry factors such as economic feasibility and other available methods and techniques.[17]

In a nonattainment area, the permit applicant must obtain a nonattainment NSR permit prior to the commencement of construction.[18] It must show that it satisfies the lowest achievable emissions rate (LAER), which the regulations define as the more stringent of: (1) the most stringent emissions limitation found in any SIP for the relevant class of industrial emissions or (2) "the

13. 42 U.S.C. § 7410 (1990) (outlining state plan requirements of NASQs). Federal Operating Permit Programs, 40 C.F.R. Pt. 71 sets forth a comprehensive federal permit program consistent with the requirements of Title V, and defines the procedures pursuant to which EPA will issue Title V permits in the absence of an approved state or tribal program. 40 C.F.R. Pt. 71.

14. *See generally* EME Homer City Generation, L.P. v. EPA, 696 F.3d 7 (D.C. Cir. 2012) cert. granted in part, 133 S. Ct. 2857 (U.S. 2013); Virginia v. U.S., 74 F.3d 517, 520 (4th Cir. 1996); Virginia v. EPA, 108 F.3d 1397, 1406 (D.C. Cir. 1997) (noting that state's failure to submit qualified implementation plan could result in the loss of federal highway funds).

15. Harris & London, *supra* note 6, at 6-8, 6-9 (discussing new regulatory requirements for oil and gas production).

16. *Id.* at 6-11; 42 U.S.C. §§ 7475, 7479 (1990) (discussing control technology requirements).

17. 42 U.S.C. § 7479(3) (1990) (outlining statutory control requirements). The term "best available control technology" means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this chapter emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant.

18. *See* Permit Requirements, 40 C.F.R. § 51.165(a)(1)(xiii)(2011) (outlining requirements of production in nonattainment area).

most stringent emissions limitation achieved in practice by a class or category of stationary sources."[19]

Under Title V, every new major source must obtain an operating permit.[20] Several factors determine whether a facility constitutes a major source, but in general, a source of emissions triggers major source classification if it emits more than 100 tons per year (tpy) of any criteria pollutant.[21] Major stationary sources face exposure to extremely detailed, and sometimes cumbersome, federal regulations under NSR and Title V while minor sources must comply with only "the barest of requirements".[22]

Because the pre- and post-construction requirements for major sources of air pollution are considered difficult to meet, industrial emissions sources have significant incentives to be classified as minor, rather than major, sources.[23]

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19. *See id.*; *see also Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, PA. DEP'T OF ENVTL. PROT. (Oct. 6, 2012), http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-90745/Final%20Guidance%20for%20Performing%20Single%20Stationary%20Source%20Determinations%20for%20OG%20Industries_Technical%20Guidance10-6-12.pdf.

20. 42 U.S.C. § 7661a(a) (1990) (outlining new source responsibilities).

21. *Air Permits*, ENVTL. PROT. AGENCY, http://www.epa.gov/region9/air/permit/defn.html#majorsource (last visited Nov. 7, 2014); 40 C.F.R. § 71.2; *see also* Harris & London, *supra* note 6 (discussing standard of categorizing whether source qualifies as major).

> To determine if a facility has a [potential to emit (PTE)] above a permitting threshold, the operator generally must assume worst-case operating conditions. In other words, PTE is the maximum amount of emissions that a facility could emit if it operated at 100% design capacity, 24 hours per day, 365 days per year.

Id. at 6-9.

22. *See* Luminant Generation Co., L.L.C. v. EPA, 675 F.3d 917, 922 (5th Cir. 2012) (finding that major and minor sources have vastly different regulatory requirements).

> For "major" NSR, which applies to the construction or modification of stationary sources that meet certain threshold emissions levels, the CAA sets forth the parameters for the permit programs in considerable detail. The implementing regulations for major NSR are similarly extensive and complex, spanning 88 pages in the Code of Federal Regulations. In stark contrast, the CAA prescribes only the barest of requirements for "minor" NSR, which governs the construction or modification of stationary sources that do not meet the emissions thresholds for major NSR. For minor NSR, the Act requires simply that each SIP include . . . regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that [NAAQS] are achieved. The implementing regulations for minor NSR are likewise sparse, spanning less than two pages in the Code of Federal Regulations

Id. at 922 (internal citations omitted).

23. *See generally* Gary McCutchen, July 28, 1987 Letter Concerning Best Available Control Technology (BACT) Determinations, ENVTL. PROT. AGENCY, (July 28, 1987), http://www.epa.gov/NSR/ttnnsr01/psd1/p8_20.html; *see also Air Permits*,

In addition, state agencies often allow minor sources to use general permits and permits by rule, a practice that allows applicants to streamline the permit approval process.[24] Applicants may use general permits when they have many similar minor facilities within a jurisdiction.[25] Once the state regulatory agency issues one permit, the applicant may simply duplicate the permit's terms for each additional facility.[26] Similarly, state agencies can design permits by rule for minor facilities that are relatively common in the state.[27] For example, in states that traditionally produce oil and natural gas, environmental agencies may choose to automatically grant a permit on pre-determined terms for certain types of minor sources such as compressor stations.[28] Finally, while the applicant must provide copies of major source permits to the EPA, which in turn presents them for public notice and comment, applicants face no such requirement during review of new minor sources.[29]

The EPA has implemented a regulatory scheme for HAPs similar to the one for criteria pollutants.[30] The HAP regulatory scheme allows for less significant differences between major and minor sources of emissions because science has shown that even limited exposure to extremely hazardous materials damages public

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supra note 21 (mentioning that new source review under Title V can take up to three years).

24. Review of New Sources and Modifications in Indian Country; Final Rule, 76 Fed. Reg. 38,748, (July 1, 2011) (to be codified at 40 C.F.R. pts. 49 and 51); *see e.g.*, *General Operating Permits*, TEX. COMM'N ON ENVTL. QUALITY, http://www.tceq.texas.gov/permitting/air/nav/air_genoppermits.html (last visited Nov. 7, 2014); *Indexes to Air Permits by Rule*, TEX. COMM'N ON ENVTL. QUALITY, http://www.tceq.texas.gov/permitting/air/permitbyrule/air_pbr_index.html (last visited Nov. 7, 2014) (discussing exceptions allowed for minor sources).

25. *Permits: Permit Classifications*, AZ. DEP'T OF ENVTL. QUALITY, http://www.azdeq.gov/environ/air/permits/class.html (last visited Nov. 7, 2014) (discussing general permits).

> A general permit is a pre-approved permit and certificate that covers a specific class of sources. A general permit differs from an individual permit in that it can be applied to more than one source, is usually more restrictive, less expensive, and requires a shorter period of time for the processing and issuance of an Authorization to Operate (ATO).

Id.

26. *Id. (discussing permits).*

27. *See Permit-by-Rule Application;* GA. DEP'T OF NATURAL RES., ENVT'L PROT. DIV., AIR PROT. BRANCH, http://www.georgiaair.org/airpermit/html/sspp/pbrapplic.htm (last visited Nov. 7, 2014); *Air Permits by Rule*, TEX. COMM'N ON ENVTL. QUALITY, http://www.tceq.texas.gov/permitting/air/nav/air_pbr.html (last visited Nov. 7, 2014) (discussing permit by rule exception for minor sources).

28. *See e.g.*, *Indexes to Air Permits by Rule*, *supra* note 24 (discussing permit advantages of minor sources).

29. 40 C.F.R. § 70.7(h) (showing no public comment requirement for minor source).

30. *Id.* (outlining HAP scheme).

health.[31] Instead of employing the major/minor distinction adopted by the criteria pollutants control scheme, environmental agencies use HAPs to differentiate between major sources and area sources.[32] Major sources have the potential to emit either 10 tpy of any one HAP or 25 tpy of a mixture of HAPs, whereas agencies consider area sources as those which simply emit less than the major source thresholds.[33] The EPA mandates that major HAP sources use maximum achievable control technology (MACT), defined as "the emission limitation achieved in practice by the best controlled similar source."[34] For area sources, the EPA has some discretion to modify technology standards on a pollutant-by-pollutant basis.[35] Currently, the regulations require area sources to comply with MACT standards, but the EPA may downgrade less serious HAPs to generally available control technology on a pollutant-by-pollutant basis.[36] Unlike major sources, the regulations generally do not subject area sources to Title V permitting requirements and therefore area sources face less administrative restrictions during modification.[37]

B. Applying the Statutory Scheme to the Natural Gas Industry

Natural gas development can subject upstream producers to the air permitting process at several stages of production.[38] Gener-

31. *Taking Toxics Out of the Air Pt. 1*, ENVTL. PROT. AGENCY, http://www.epa.gov/airquality/takingtoxics/p1.html (last visited Nov. 7, 2014) (outlining public health effects of air pollutants). "A key component of the Clean Air Act is a requirement that the U.S. Environmental Protection Agency (EPA) significantly reduce daily, so-called routine emissions of the most potent air pollutants: those that are known or suspected to cause serious health problems such as cancer or birth defects." (internal quotations omitted). *Id.*

32. *Pollutants and Sources*, ENVTL. PROT. AGENCY, http://www.epa.gov/ttnatw01/pollsour.html (last visited Nov. 7, 2014) (defining between major sources and area sources of pollution).

33. *Id.* (defining between major sources and area sources of pollution). *Id.*

34. 40 C.F.R. § 63.41 (defining regulatory terms and outlining control technology requirements); *see also* 42 U.S.C. § 7412 (1990) (defining hazardous air pollutants).

35. 42 U.S.C. § 7412(d)(1)-(2) (1990) (outlining emission standards); *see* Nat'l Min. Ass'n v. EPA., 59 F.3d 1351, 1353 (D.C. Cir. 1995) (interpreting EPA regulations for major and area source standards).

36. 42 U.S.C. § 7412(d)(5) (1990) (discussing alternative standards for area sources); *see Nat'l Min. Ass'n*, 59 F.3d at 1353 (holding area source standards less stringent than major sources.

37. *Nat'l Min. Ass'n*, 59 F.3d at 1353 (denying petition for review on regulatory except question why EPA criteria for federal approval and consequences are related to ensuring practical effectiveness of state goals under § 112).

38. *See generally Oil and Natural Gas Air Pollution Standards*, ENVTL. PROT. AGENCY, http://www.epa.gov/airquality/oilandgas/ (last visited Nov. 7, 2014) (outlining EPA regulatory scheme and policy goals).

ally speaking, air regulations touch on four stages of the natural gas production process: the well pad itself, the gathering facility, the compressor station, and the processing facility, also known as a treatment plant.[39] First, the collection well pad itself may trigger permitting requirements.[40] In enhanced production wells, such as in the instance of hydraulic fracturing, portions of the fracturing fluid might evaporate during flow-back and emit volatile organic compounds into the atmosphere.[41] Engineers usually design the well to trap as much of the gaseous material coming out of the ground as possible upon its completion, and therefore the capped well typically produces only a negligible amount of emissions after the operator removes the flow-back water.[42] However, under certain circumstances operators may choose to flare natural gas either in preparation for collection or to alleviate pressure on the gas collection equipment.[43]

Small gathering pipelines, which combine the output of several wells as the pipeline network advances to its destination, transport

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39. *See Air Permitting Requirements Changed in Pa. and Oh.* GROUNDWATER AND ENVT'L SERV., INC. (Feb. 9, 2012), http://www.gesonline.com/node/224 (listing production steps at which natural gas operators might be exposed to air permit regulation).

40. *Id.* (discussing production steps wherein natural gas operators may face air permit regulation).

41. Harris & London, *supra* note 6, at 6-17 (discussing changing regulations of oil and gas production).

42. David G. Mandelbaum, *One Air Emission Source or Many?*, LEGAL INT. (June 28, 2011), http://www.environmentalandenergylawblog.com/uploads/file/6_28_11_One_Air_Emission_Source_or_Many.pdf (discussing 2011 appeals to Pennsylvania Environmental Hearing Board).

> In some places, the gas that comes out of the well is 'wet,' meaning that when it cools and becomes less pressured at the surface, some of the larger molecules other than methane will condense into liquids. The well may require a condensate tank to collect these liquids, and some of those liquids will evaporate if left uncontrolled. Nevertheless, natural gas wells themselves are highly unlikely to be major sources of air emissions.

Id.

43. Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012); *see also Space View of Natural Gas Flaring Darkened by Budget Woes*, NAT'L GEO., (last visited Nov. 7, 2014), http://news.nationalgeographic.com/news/energy/2013/10/131009-budget-woes-darken-space-view-of-gas-flaring/ (noting problem of flaring is particularly concerning in some areas of shale boom, such as North Dakota); *but see* Jim Wedeking, *Up in the Air: The Future of Environmental Management for Hydraulic Fracturing will Be About Air, Not Water*, 49 IDAHO L. REV. 437 (discussing state's response to increase in natural gas production). "Despite these standard industry practices, many seem to believe that flaring is a rarity and that well service companies and their clients prefer to vent methane directly to the atmosphere. . . [T]his causes considerable controversy in estimating greenhouse gas emissions from hydraulically fractured wells." *Id.* at 463.

the natural gas from the well pad to a gathering facility.[44] The gathering facility creates the pressure necessary to move the gas through the main pipeline running from the gathering facility to the processing facility.[45] The gas compressors used to create this artificial pressure typically run on processed natural gas and therefore release emissions.[46] Once at the processing facility, the natural gas undergoes treatment to purify the gas by removing unwanted components such as water, helium, and carbon dioxide.[47] Because of the enormous amount of natural gas that treatment plants must process to become profitable, processing facilities are often either major sources of emissions in their own right or extremely close to being classified as such.[48]

Treatment plants aside, oil and natural gas operators do not usually create enough emissions to qualify as major sources because the industry has found it far more efficient to use many small, local facilities instead of larger, more regional installations.[49] The industry's preference for smaller facilities arises from the decreased cost and increased efficiency local facilities can provide.[50] Natural gas producers have such a strong preference for the flexibility and cost efficiency that local facilities can provide that they seem unlikely to make a strategic shift toward larger, more regional facilities even if agencies promulgate more stringent air quality standards through aggregation.[51]

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44. *How Does the Natural Gas Delivery System Work?*, AM. AMERICAN GAS ASS'N, http://www.aga.org/Kc/aboutnaturalgas/consumerinfo/Pages/NGDeliverySystem.aspx (last visited Nov. 7, 2014) (outlining pipeline transportation process of natural gas delivery system).

45. *Id.* (detailing purpose of gathering facility).

46. *Id.* (describing inner workings of gas compressors).

47. *Processing Natural Gas*, NATURALGAS.ORG, http://naturalgas.org/naturalgas/processing-ng/ (last visited Nov. 7, 2014) (explaining natural gas purification process).

48. *See* Mandelbaum, *supra* note 44, at 2 (noting processing facilities' negative consequences).

49. *See* Harris & London, *supra* note 6, at 6-12 (describing industry standard of using multiple small facilities).

50. *See* Response of CDPHE, Air Pollution Control Div., to Order Granting Petition for Objection to Permit at 8-23, 34-42 (July 14, 2010), *In re* Kerr-McGee/Anadarko Petroleum Corp., Frederick Compressor Station, EPA Pet. No. VIII-2008-02 (EPA Adm'r Oct. 8, 2009) (Responding to petition).

51. *See* John R. Jacus, *Developments and Trends in Clean Air Act Source "Aggregation"*, Presentation to Rocky Mountain Mineral Law Foundation, Special Institute: Air Quality Issues Affecting Oil, Gas, and Mining Development in the West (Feb. 28, 2011), http://www.dgslaw.com/images/materials/Jacus-RMMLF-010313.pdf. In considering the proximity of various oil and gas facilities, one must also be mindful that oil and gas conservation concepts and rules, as well as the economics of drilling, completing and operating producing oil and gas wells, largely dictate how far apart producing oil and gas wells are located, as noted above. Oil and gas

Beyond avoiding more stringent emissions standards, the natural gas industry seems particularly incentivized to avoid major source classification for two reasons.[52] First, once an implementing agency classifies a series of facilities as a major source, any modification of the point sources becomes significantly more difficult.[53] The natural gas industry places a premium on infrastructure flexibility, in part because well pad, compressor station, and pipeline needs may change as a field matures and becomes more geologically certain.[54] Second, major sources subject to the Title V program must file, under penalty of perjury, annual compliance certifications and deviation reports, which list the failures of the emissions points to comply with the issued permitting standards.[55] Oil and gas producers subject to the Title V program expend significant legal fees preparing and filing what amounts to a type of public confession.[56] Deviation reports can leave the oil and gas

conservation laws and regulations were largely developed after experiencing the waste that can result from adherence to a pure "capture rule," as was the case in the early days of the oil and gas industry. So the proximity of wells to one another is not necessarily a function of their interrelationship, but more a function of how far apart or close together wells should be in order to efficiently extract the resource and promote its development, while preventing waste. Indeed, spacing orders and rules are intended to prevent wells from being too "near or close" to one another. *See* Response of CDPHE, *supra* note 50; *In re* Kerr-McGee/Anadarko Petroleum Corp., *supra* note 52 (arguing benefits of local facilities).

52. *See* 40 C.F.R. § 60.2957 (establishing requirements for deviation report); *Air Permits*, *supra* note 21 (giving overview of classification).

53. *See Air Permits*, *supra* note 21 (reporting that modifications of major sources which result in further emissions might require installation of Best Available Control Technology, air quality analysis, additional impacts analysis; and public participation).

54. *See Multi-Well Pad Drilling: Octopus*, SHALE STUFF (July 28, 2013), http://shalestuff.com/controversy-2/multi-well-pad-drilling-octpus/article08580 (describing multiple well pad drilling developments); Luke Geiver, *Flexible Pipeline Provider Expands Into ND*, THE BAKKEN MAGAZINE (Aug. 28, 2013), http://thebakken.com/articles/302/flexible-pipeline-provider-expands-into-nd (providing specific example of new pipeline facility).

55. *See* 40 C.F.R. § 60.2957 (imposing NSPS deviation requirements); 40 C.F.R. § 70.6(a)(3)(iii) (imposing Title V deviation requirements); 40 C.F.R. § 70.6(c)(5).

56. *See* 40 C.F.R. § 60.2958 (stating requirements of deviation reports). The requirements of the deviation reports include:

> (a) the calendar dates and times unit deviated from emission limitations or operating limit requirements, (b) averaged and recorded data for those dates, (c) durations and causes of each deviation from emission limitations or operating limits and corrective actions, (d) a copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels, (e) dates, times, number, duration, and causes for monitor downtime incidents, (f) Whether each deviation occurred during a period of startup, shutdown, or malfunction, or during another period. (g) The dates, times, and durations of any bypass of the control device.

operator exposed to citizen suits that request civil penalties for the mandatory, self-reported deviations.[57]

The importance of achieving operational flexibility and avoiding citizen suits can sometimes overshadow industry concerns over the different regulatory treatment standards applied to major and minor sources.[58] The overshadowing occurs in part because the regulatory standards applied to major and minor sources of oil and natural gas related emissions are more similar than the categorizations might imply at first glance.[59] The New Source Performance Standards (NSPS) program, which mandates emissions standards for particular industries, applies to oil and natural gas production and development, largely diminishing the regulatory difference between major and minor sources in the natural gas industry.[60] The NSPS standards for oil and gas facilities, while below the BACT major source standard, remain nonetheless fairly rigorous and a clear step up from what other minor sources would face.[61] For example, NSPS regulations require production wells to perform "green completion" on minor source well pads.[62] Green completions use capture technology designed to remove 95% of the volatile organic compounds (VOCs), such as oil and natural gas particles, that oth-

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Id.

57. *See e.g.*, Hughes v. Benedict, Appeal No. lO-03-AQB, West Virginia Air Quality Board, Charleston, WV, http://www.wvaqb.org/finalorders/10-03-aqb%20-%20final%20order.pdf (last accessed Nov. 9, 2013) (dismissing citizen suit bringing challenge to major source permit granted to oil and gas development company).

58. *See generally* Standards for Oil and Natural Gas Production, Transmission and Storage, 77 Fed. Reg. 49490 (2012)(to be codified at 40 C.F.R. pt. 60) (stating EPA oil and natural gas emissions standards); BRACEWELL & GIULIANI; *West Virginia Dismisses Challenge to Marcellus Oil and Gas Development Clean Air Act Permits*, (May 26, 2011), http://www.bracewellgiuliani.com/news-publications/updates/west-virginia-dismisses-challenge-marcellus-oil-and-gas-development-clean-. As an example of how EPA has stretched these terms, EPA has found sources more than 20 miles apart to be contiguous and adjacent, defying the Webster's dictionary definition of "contiguous" and "adjacent." Such EPA actions have allowed various interest groups to use the Clean Air Act appeals and permitting process to try to halt oil and gas development in the United States. *Id.*

59. *Overview of Final Amendments to Air Regulations for the Oil and Gas Industry*, ENVTL. PROT. AGENCY, http://www.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf (last visited Oct. 27, 2013) (anticipating amended air regulation industry impact).

60. *Id.* (generalizing industrial emissions standards).

61. *New Source Performance Standards and State Implementation Plans*, ENVTL. PROT. AGENCY, http://www.epa.gov/compliance/monitoring/programs/caa/newsource.html (last visited Oct. 27, 2013) (describing NSPS standards for compliance).

62. *See* 77 Fed. Reg. 49,490, 49,490-1 (highlighting one example of new NSPS regulations).

erwise might escape into the air from flow-back water.[63] Furthermore, while many industries define an actionable NEHAP leak at 1,000 ppm, the NSPS program mandates that the natural gas industry use a 500 ppm definition.[64] Avoiding major source classification can affect the permitting of well pads, gathering facilities, compressor stations, and treatment plants while helping to avoid mandatory deviation reports and associated penalties.[65]

C. Development of the Bubble Concept

Although the law seems clear on what applicants must demonstrate to achieve PSD and Title V compliance, regulators and energy producers have wrangled over the administrative practice of combining several points of energy production-related emissions together through a holistic concept of "source."[66] The practice of combining several otherwise minor sources of emissions into one major source is often referred to as air aggregation.[67]

The CAA does not extrapolate on "stationary source," but the EPA has defined a "stationary source" as "any building, structure, facility, or installation which emits or may emit a regulated air pollutant."[68] This list, though vague, is exclusive, and therefore several emissions activities must be of the same building, structure, facility, or installation or they may not be aggregated together.[69] The vagueness of the air aggregation regulations was tested in *Alabama Power*, in which the D.C. Circuit Court ordered the EPA to develop further regulations to give more definition and predictability to the exclusive list of emissions points which it could aggregate together.[70] In response, the EPA developed a three-pronged test to determine whether agencies could aggregate otherwise minor

63. *Id.* (explaining green completions).

64. *Leak Detection and Repair: A Best Practices Guide*, ENVTL. PROT. AGENCY, http://www.epa.gov/compliance/resources/publications/assistance/ldarguide.pdf (last visited Oct. 27, 2013) (providing leak regulation breakdown).

65. *See generally* Randy E. Brogdon & Mark McGuffy, *Recent Trends in CAA Citizen Suits: Managing Risk in the Serengeti*, http://www.troutmansanders.com/files/upload/BrogdonCAAarticle.pdf (last visited Oct. 27, 2013) (describing necessity for scrupulous reporting due to increased citizen involvement).

66. *See e.g.*, Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012) (debating the correct application of "source").

67. Laurens H. Rhinelander, *The Proper Place for the Bubble Concept Under the Clean Air Act*, 13 ENVTL. L. REP. 10406, (1983) (defining air aggregation).

68. 40 C.F.R. § 52.21(b)(5) (defining stationary source).

69. Alabama Power Co. v. Costle, 636 F.2d 323, 397 (D.C. Cir. 1979) (limiting definition of source under NSPS provisions).

70. *Id.* (allowing aggregation of individual units into a single source).

sources.[71] Agencies may consider multiple emissions points part of the same building, structure, facility, or installation if the emissions points are; (1) under common control, (2) "located on one or more contiguous or adjacent properties," and (3) belong to the same industrial group.[72] If the emission points fail to satisfy all three prongs, agencies may not aggregate them for the purposes of NSR permitting.[73]

The first and third prongs of the test for the most part have been less controversial. 40 C.F.R. § 71.2 employs a relatively straightforward analysis to determine whether common ownership or control of emissions points exists.[74] The regulations consider emissions activities under the same ownership or control when one company either (1) owns all of the emissions points or (2) has at least a 50% interest in all entities that have ownership of emissions points throughout the area under determination.[75] Recently, there has been some controversy caused by implementing agencies suggesting that a contract, such as a gas gathering agreement, can create common control.[76]

Similarly, the third prong of the test, that the sources belong to the same industrial grouping, applies in a less subjective manner than it might appear at first blush.[77] The 1980 PSD regulations established the use of two-digit major Standard Industrial Classification (SIC) codes to select which industry group applies to a given activity.[78] To determine if the sources of emissions fall under the same industrial grouping, the regulatory agency simply compares the SIC code numbers for each activity.[79] If all the SIC codes

71. *See* 40 C.F.R. § 71.2 (defining relevant emissions factors under Clean Air Act).

72. *Id.* (providing elements of "major source").

73. Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012) (demonstrating Summit Petroleum's failure to aggregate).

74. *See generally* 45 C.F.R. 59, 878 (Sept. 11, 1980) (defining control).

75. *Id.* (expanding definition of control).

76. *See e.g.*, Application for Authorization to Use General Plan Approval and/or General Operating Permit General Permit or BAQ-GPA/GP-5 Natural Gas Compression and/or Processing Facilities, PADEP Doc No: 2700-PM-BAQ0205, http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-106065/2700-PM-BAQ0205%20GP-5%20Application%20Form.pdf (requesting contracts for service agreements between nearby wells, compressor stations, and processing facilities to receive general permit).

77. Richard Alonso & Sandra Snyder, *The Functional Interrelatedness Test: Is the End in Sight?* 14 No. 1 ABA ENVTL. ENFORCEMENT & CRIMES COMM. NEWSL., 5 (Sept. 30, 2013) (discussing merits of interrelatedness test).

78. *Id.* (commenting on ease of adjacent determination upon introduction of SIC codes).

79. *Id.* (reiterating ease with use of SIC codes).

match, as one would expect for various oil and natural gas production activities, §71.2 considers the emissions points part of the same industrial grouping.[80]

Generally speaking, air aggregation determinations remain most controversial with respect to the second prong of the analysis.[81] While the meaning of "contiguous" seems relatively straightforward, for a majority of the past 30 years the EPA has defined adjacent through the functional interrelatedness test.[82] The functional interrelatedness test determines the degree to which multiple emissions points relate to one another in their utility to industry.[83] When using the functional interrelatedness test to determine if multiple emissions points are related and therefore adjacent, the EPA has informally sought to determine whether; (1) "the locations of two facilities were selected to enable integration;" (2) "any physical link or transportation of materials between the two emission sources" exists; (3) "workers travel between the two emission sources;" and (4) "one facility will produce an intermediate product that requires further processing by the other."[84] The functional interrelatedness test does not comport with the more simplistic theory that the proximity of multiple emissions points should trump as the primary factor in determining whether regulators may consider the points adjacent.[85]

The Wehrum Memorandum (Wehrum Memo), issued by the EPA for the purposes of air aggregation guidance during the George W. Bush Administration, attempted to bring the issue of

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80. *See id.* (giving hypothetical breakdown of SIC code process); *see also* Tex. Health & Safety Code Ann. § 382.051961 (West) (citing relevant Standard Industrial Classification Codes, including; 1311 (Crude Petroleum and Natural Gas), 1321 (Natural Gas Liquids), 4612 (Crude Petroleum Pipelines), 4613 (Refined Petroleum Pipelines), 4922 (Natural Gas Transmission), and 4923 (Natural Gas Transmission and Distribution)).

81. *See e.g.*, *id.* (referring to requirement that plant be under control of same person).

82. Memorandum from Stephen D. Page, Director, Office of Air Quality Planning and Standards, to Regional Air Division Directors, Regions 1-10, at 1 (Dec. 21, 2012) (showing former practice of using functional interrelatedness test when interpreting adjacent).

83. *See id.* (describing purpose of interrelatedness test).

84. *See* Wedeking, *supra* note 43, at 452 (quoting informal EPA elements of "functional interrelatedness" test); Memorandum from Douglas E. Hardesty, EPA Region X, to Robert R. Robichaud, EPA Region X, at 5-6 (Aug. 21, 2001), http://www.epa.gov/region7/air/nsr/nsrmemos/20010821.pdf (discussing criteria for adjacent facilities).

85. *See generally* William L. Wehrum, Memorandum to Regional Administrators I-X (Jan. 12, 2007) (providing guidance for making stationary source determinations).

proximity back to the forefront of the adjacency determination.[86] Specifically, it encouraged the EPA's regional offices to understand the meaning of "adjacent" as expanding upon "contiguous" so as to aggregate facilities that might skirt the letter of the rule through separation by a city block or road.[87] In other words, "adjacent" allows for aggregation if there is a brief break in surface area ownership, which does nothing to change the common sense notion that the multiple emissions points operate together as a cohesive industrial unit.[88] The memo also underscored the uniqueness of oil and natural gas production with respect to the industry's vast network of pipelines and reasoned that such pipeline connections made the industry particularly ill-suited for aggregation determinations based on the functional interrelatedness test.[89] Finally, the guidance foresaw that an insistence on the functional interrelatedness test would embroil the EPA in complex, fact-specific inquires when the agency might better deploy its limited resources elsewhere.[90]

The Wehrum Memo advocated for an understanding of "adjacent" consistent with provisions of the CAA as well as the EPA's more specific regulations governing the aggregation of emissions under the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for oil and natural gas production facilities.[91] In fact, for the purposes of NESHAPs, the EPA's regulations expressly provide that emissions from wells located on separate tracts, leases, and surface sites may not be considered as part of the same facility

86. *See id.* (discussing importance of physical location for analysis).

87. *See id.* (seeking to expand definition of adjacent).

88. *See id.* (arguing for common sense application of emissions aggregation to industrial plants).

89. *Id.* (highlighting unique operation of oil and gas industry via pipelines defeats logical aggregation); *see also* Wedeking, *supra* note 43, at 453.

> The separation of surface property rights and subsurface mineral rights also complicates the question of what is "contiguous or adjacent" as oil and gas companies typically only control the surface area necessary for well pads and related equipment. This means that a well field will include small and scattered islands of land controlled by the company amidst a sea of property owned and controlled by third parties.

Id.

90. *See generally* Wehrum Memorandum, *supra* note 85 (discussing EPA administrative burden).

91. *Compare id.*, *with* 40 C.F.R. §63.761, *and* 42 U.S.C. §7412(n)(4).

> Emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources, and in the case of any oil or gas exploration or production well (with its associated equipment), such emissions shall not be aggregated for any purpose under this section.

42 U.S.C. §7412(n)(4).

when determining whether the activities constitute a "major source."[92] With respect to oil and natural gas production, these regulations even define "facility" as "oil and natural gas production equipment located within the boundaries of an individual surface site" and further define "site" as "any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed."[93] While HAP definitions do not affect regulations for criteria pollutants, they certainly present persuasive authority.[94]

In 2009, the Obama Administration withdrew the Wehrum Memo in favor of the McCarthy Memorandum (McCarthy Memo), which reemphasizes a case-by-case analysis for aggregation determinations.[95] Finding the Wehrum Memo's reliance on proximity too simplistic, the McCarthy Memo stresses the necessity of adopting a holistic approach to each determination.[96] The McCarthy Memo does admit, however, that in some circumstances physical proximity should remain the overwhelming factor in determining whether or not aggregation should occur.[97] Specifically, the McCarthy Memo has reinstated the use of the functional interrelatedness test as the initial focus in aggregation determinations.[98]

The McCarthy Memo seems to react to two regulatory fears with respect to oil and natural gas development.[99] First, regulators could fear that producers will take advantage of any bright-line geographic criteria for adjacency, strategically deploying equipment, assets, and facilities just outside the boundaries of major source classification, skirting the letter of the regulations.[100] Second, regulators could argue that the economic and logistical requirements of the industry seem especially conducive to aggregation. For example, producers usually must deploy well pads, compressor stations, and treatment facilities within a certain geographic proximity to

92. 40 C.F.R. § 63.761.

93. *Id.*

94. *See id.*

95. *See* Gina McCarthy, Memorandum to Regional Administrators Regions I through X (Sept. 22, 2009), *available at* http://www.epa.gov/region7/air/nsr/nsrmemos/oilgaswithdrawal.pdf (emphasizing that "no single determination can serve as an adequate justification for how to treat any other source determination for pollutant-emitting activities with different fact-specific circumstances.").

96. *Id.*

97. *Id.*

98. *See id.*

99. *See generally id.*

100. *Compare id.*, *with* Wehrum Memorandum, *supra* note 85, at 4-5 (endorsing geographic proximity analysis and suggesting that multiple emissions points should not be aggregated beyond city street or block).

each other for the entire process to become profitable.[101] In this respect the oil and gas industry differs from other industries, such as computer manufacturers, where the geographic proximity of the individual steps of the production process is just one factor in determining profitability.[102]

III. THE COMMON SENSE PRINCIPLE

The functional interrelatedness test's rejection of the proximity interpretation of "adjacent" was successfully challenged in the Sixth Circuit Court of Appeals, and it seems likely that other natural gas producers will similarly litigate the legality of the test in other circuits in the foreseeable future. This litigation raises the very real probability of an oncoming split in the circuits and potentially creates an opportunity for the U.S. Supreme Court to settle the issue conclusively. This Part examines the legal and prudential arguments behind the functional interrelatedness test and then proceeds to examine the possibility that the EPA will attempt to checkerboard its policy among the circuits when faced with adverse decisions.

A. Setbacks to the Functional Interrelatedness Test

Summit Petroleum, a case in which the Sixth Circuit Court of Appeals struck down the functional interrelatedness definition in favor of proximity, presents a challenge to the EPA's current aggregation practices.[103] Summit Petroleum, a relatively small natural gas producer, owned a natural gas sweetening plant and sour gas production wells across forty-three square miles in Rosebush, Michigan.[104] Although all the wells fed into the same natural gas sweetening plant, the distances between the wells and the plant varied from 500 feet to eight miles away.[105] Summit Petroleum did not

101. *See generally* Wedeking, *supra* note 43, at 6-39.

102. *See* Alexander Schmitt & Johannes Van Biesebroeck, *Proximity Strategies in Outsourcing Relations*, J. INT'L BUS. STUDIES, http://www.palgrave-journals.com/jibs/journal/v44/n5/full/jibs201310a.html (last visited Dec. 3, 2013).

103. Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012). Because wells and sweetening facility were in Saginaw Chippewa Indian Tribe's Isabella Reservation, Michigan's SIP did not apply to wells or plant. *Id.* Instead, the EPA had direct control of the CAA's implementation. *Id.*

104. *Id.* at 735-36. Natural gas is considered "sour" when it has too much hydrogen sulfide for effective use. *Id.* Sour gas is sweetened by removing the excess hydrogen sulfide. *Id.*

105. *Id.* at 736 ("None of the well sites share a common boundary with each other, nor do any of the well sites share a common boundary with Summit's production plant.").

own the land between the wells and the sweetening facility.[106] After an extensive, multi-year administrative review, the EPA made a determination to aggregate the wells and sweetening plant as a major source because they were functionally related.[107]

The Sixth Circuit reversed and remanded on the basis that the functional interrelatedness test did not constitute a permissible interpretation of the word "adjacent," and it instead found that the word, as used in the regulation, carries a connotation of proximity.[108] The Court's holding, which affirms the common sense meaning of the term "adjacent," has set off an avalanche of research, scholarship, and blog discussions about replacing the functional interrelatedness test with the common sense interpretation of the word.[109] A move to the proximity definition would bolster industry's ability to determine which emissions points to aggregate, allow the EPA to more efficiently deploy its resources away from fact-intensive aggregation determinations, and more aptly fulfill the mandate of *Alabama Power*.[110]

The EPA argued in *Summit Petroleum* that the term "adjacent" somehow takes on a different, non-proximity meaning in a regulatory setting.[111] The regulatory context of the word, however, reinforces the notion that its drafters intended to connote a sense of proximity.[112] At its most liberal reading, "contiguous or adjacent" modifies "facility," and not "building, structure . . . or installation."[113] Regulators and courts, however, cannot ignore the presence of these words, which tend to present persuasive reasons for a

106. *Id.*

107. *Id.*

108. *Summit Petroleum*, 690 F.3d at 736.

109. *See e.g.*, Michael Krancer, *Litigation "Air War" About DEP's Air Aggregation Decision Continues*, ENERGY TRENDS WATCH (July 5, 2013), http://energytrendswatch.com/?s=Summit&submit=Search (discussing *Summit* with respect to its impact on Pennsylvania aggregation determinations and advocating for proximity reading of adjacent); Kelly Becker, *Air Permitting: Sixth Circuit Vacates Single Stationary Source Aggregation Determination for E&P Facilities Due to EPA's Unreasonable Interpretation of Adjacent*, ENERGY LAW BLOG (Aug. 16, 2012), http://www.theenergylawblog.com/2012/08/articles/environmental/air-permitting-sixth-circuit-vacates-single-stationary-source-aggregation-determination-for-ep-facilities-due-to-epas-unreasonable-interpretation-of-adjacent/.

110. *See* Alabama Power Co. v. Costle, 636 F.2d 323, 397 (D.C. Cir. 1979) (finding that EPA's regulations for air aggregation were overly vague and did not allow private parties to accurately predict whether aggregation should occur; *Wehrum Memorandum*, *supra* note 86, at 3-5 (suggesting that EPA deploy its limited resources away from long-distance air aggregation determinations).

111. Brief for Respondents at 26-29, *Summit Petroleum*, 690 F.3d 733.

112. *See* 40 C.F.R. § 71.2.

113. *See generally id.*

common sense use of proximity when "facility" is considered within the larger context of the phrase "building, structure, facility, or installation."[114] Because the words "building," "structure," and "installation" carry a singular sense, it seems more probable that the addition of the word "adjacent" intended to encompass the rare situation in which a public road or other insignificant break in surface area ownership splits a facility than to be so encompassing that "building," "structure," and "installation" either no longer have any additive meaning to the phrase or are duplicative.[115] If "facility" becomes so broad as to erode "building," "structure," and "installation" it becomes fair to inquire why the drafters chose to include them at all.[116]

The functional interrelatedness test, which understands "adjacent" as being a matter of degree, not only breaks with the contextual meaning of the word in the regulations, but also clashes with the notion that the term has any objective sense.[117] If regulators hold that whether two points are adjacent depends on what activities cause the emissions, they disregard the common sense interpretation which suggests that the industrial actions giving rise to the emissions have no bearing on their geographical proximity.[118] The agency's relativist interpretation of the word therefore discards any objective, logical limitations, causing the Sixth Circuit to remark

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114. *See generally id.*

115. *American Heritage Dictionary of the English Language* [hereinafter Dictionary], www.ahdictionary.com (search "building") (last visited Oct. 11, 2012) (building: something that is built, as for human habitation; a structure); *Dictionary*, www.ahdictionary.com (search "structure") (last visited Oct. 11, 2012) (structure: something made up of a number of parts that are held or put together in a particular way); *Dictionary*, www.ahdictionary.com (search "installation") (last visited Oct. 11, 2012) (installation: a system of machinery or other apparatus set up for use).

116. *See generally* 40 C.F.R. § 71.2.

117. *See e.g., Respondents' Brief, supra* note 111, at 26-29.

> [In] Petitioners' view, the term "adjacent" can *only* be defined by reference to concepts of physical distance. The plain dictionary definition of adjacent contains no such absolute prohibition. To the contrary, to have contextual meaning, adjacency *must* be evaluated by reference to some concept in addition to distance. . .Clearly distance alone does not answer the question of whether two objects are close to one another: are two properties separated by one mile "close" to one another? A second question must be asked to arrive at a conclusion: for what purpose?". . ."It is common sense that the inquiry into "adjacency" cannot stop at exclusively physical distance or geography. . .In certain contexts, the term "adjacent" may contain some absolute distance or geographical limitation beyond which two objects are no longer considered "adjacent." However, EPA is not interpreting the term "adjacent" here in the narrowly defined context. . .

Id. (internal quotations omitted).

118. *See* Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012).

that the "EPA makes an impermissible and illogical stretch when it states that one must ask the *purpose* for which two activities exist in order to consider whether they are adjacent to one another."[119] The interpretation of "adjacent" giving rise to the functional interrelatedness test, an interpretation which removes the word from the time-space continuum, seems at odds with a holistic and significantly more plausible reading of the phrase "building, structure, facility, or installation."[120]

The common sense interpretation seems not only more intuitive with respect to the larger context of the CAA and its interpretations, but also with respect to the nation's environmental protection scheme as a whole.[121] Even though different statutes often give the same word different meanings, the Sixth Circuit found it significant that Summit Petroleum's understanding of "adjacent" yielded consistency between the CAA and the Clean Water Act (CWA).[122] At times, the Supreme Court has interpreted the Congressional intent behind the CWA and CAA as preferring consistency in language across the statutes.[123] In *Rapanos v. United States*, for example, a plurality of the Supreme Court concluded that although there might be some ambiguity in the term "adjacent," the Court's jurisprudence had consistently used "adjacent" and "adjoining" interchangeably.[124] The Sixth Circuit read this broad language to have implications beyond the confines of the CWA in lending credence to the narrower, more objective, sense of the word for the purposes of administrative regulation.[125]

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119. *Id.*

> Even the etymology of the term belies the EPA's position that the term's definition is even partially based on the contextual relationship, as opposed to the geographic location, of two activities. Here, our study reveals that the word "adjacent" originated in the early fifteenth century from the combination of syllables "ad" and "jet." "Ad" is a "prefix expressing direction toward or in addition to, . . . with regard to, [or] in relation to . . . space or time False" As incorporated in "adjacent," the verb "jet" implies an action resulting in a certain physical resting place for an object: "to throw, cast . . . with notion of 'to cast (oneself) down.'" Thus, quite literally, two things are adjacent if they have been "throw [n], cast . . . down . . . in relation to [one another] .

Id.

120. *See id.*

121. *Id.* at 743.

122. *Id.; see also* Rapanos v. United States, 547 U.S. 715 (2006) (Scalia, J., plurality opinion); United States v. St. Anthony R.R. Co., 192 U.S. 524, 530 (1904).

123. *Rapanos*, 547 U.S. at 748.

124. *Id.*

125. *Summit Petroleum*, 690 F.3d at 743.

> Together with the ordinary and dictionary definitions of the term 'adjacent,' the *Rapanos* decision, and similar case law, points clearly toward the

The use of the functional interrelatedness test also tends to blur prongs one and three of the EPA's three-part test originally issued to guide regulators in determining whether to aggregate a group of emission points as part of the same facility, building, structure, or installation.[126] If prong two determines whether the activities are so closely related that one does not generally occur without the other—or in other words whether they have a functional relationship—then prong one becomes redundant if it solely determines whether the sources fall in the same industrial grouping by comparing their SIC codes.[127] It seems unlikely that the EPA could envision even a theoretical scenario where industrial activities satisfy the functional interrelatedness test and yet do not have the same SIC codes.[128]

Furthermore, the EPA does not stand on solid legal ground when it asserts that a long and well-documented history of consistent interpretation of the word "adjacent" gives it a quasi-protected status during judicial review.[129] First, the Wehrum Memo's proximity interpretation makes any such claims of consistency slightly dubi-

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> conclusion that the regulatory requirement that aggregated activities be located on contiguous or adjacent properties is unambiguous in the context in which it is here considered. For the foregoing reasons, we adopt this position.

Id. (Internal quotations omitted).

126. *See generally* Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans, 45 Fed. Reg. 52,695 (1980)(codified at 40 C.F.R. pts. 51, 52, 124).

127. *See generally id.; see also* Richard Alonso, *supra* note 77 *(*"The 1980 PSD regulations established the use of two-digit major Standard Industrial Classification (SIC) codes for analyzing this factor in lieu of analyzing the functional interdependence of separate units.").

128. *Compare Summit Petroleum*, 690 F.3d at 743 (Brief for Petitioner Summit Petroleum) (questioning whether first and third prongs have analytical difference under functional interrelatedness test), *with* Respondents' Brief, *supra* note 111 (providing no response to difference between non-responsive on how first and third prongs are different under functional interrelatedness test).

129. *See* Rapanos v. United States, 547 U.S. 715 (2006) (Scalia, J., plurality opinion).

> In a curious appeal to entrenched executive error, the dissent contends that "the appropriateness of the Corps' 30–year implementation of the Clean Water Act should be addressed to Congress or the Corps rather than to the Judiciary." Surely this is a novel principle of administrative law—a sort of 30–year adverse possession that insulates disregard of statutory text from judicial review. It deservedly has no precedent in our jurisprudence.

Id. (Internal citations omitted); *see also*, Respondents' Brief, *supra* note 111, at 31 ("The reasonableness of EPA's analysis of adjacent in this case, which included concepts in addition to physical distance, is supported by decades of consistent interpretation of that term.").

ous.[130] Second, if the judiciary's task is to correct error in the three branches of government it makes no analytical difference whether the error has stood for minutes or for centuries.[131] While a long-standing interpretation can provide persuasive authority for the correctness of an interpretation, it by no means stands for the proposition that a court should avoid striking down identifiable error.[132]

Even if the EPA's definition of "adjacent" is statutorily permissible, such a definition appears to place the aggregation regulations at odds with the Court's instructions in *Alabama Power*.[133] In *Alabama Power*, the D.C. Circuit Court considered a host of issues regarding the implementation of the CAA, including air aggregation.[134] Finding that Congress clearly intended for aggregation to occur in some instances because of the law's definition of "source" as "any building, structure, facility, or installation which emits or may emit any air pollutant," the D.C. Circuit required the EPA to develop administrative definitions of the four statutory terms.[135] The Court issued this requirement to aid the EPA in making single source air aggregation determinations while giving "explicit notice" to industries, especially those industries which employ "pipelines, railroads, and transmission lines," such that they could accurately pinpoint when to aggregate multiple emissions points under the same NSR permit.[136]

While the D.C. Circuit almost certainly envisioned giving enforcement agencies some latitude in making aggregation determinations, it seems unlikely that the Court intended for the EPA to develop a definition as vague as the functional interrelatedness test.[137] An interpretation that merely states that aggregation is determined on a case-by-case basis in light of a relative definition of the word "adjacent" does not advance industry's ability to project

130. *Rapanos*, 547 U.S. 715.

131. *See id.*

132. *Compare id., with* Alaska Dep't of Envtl. Conservation v. EPA, 540 U.S. 461, 487 (2004) (holding that courts should have greater deference to agency interpretations which have stood for long periods of time); *see also* Summit Petroleum Corp. v. EPA., 690 F.3d 733, 746 (6th Cir. 2012) (finding that even if statutory language was ambiguous no deference was warranted because agency interpretation is contrary to word's plain meaning).

133. Alabama Power Co. v. Costle, 636 F.2d 323, 397 (D.C. Cir. 1979).

134. *Id.*

135. *Id.* at 398-99.

136. *Id.* at 397.

137. *See generally id.* at 397-99.

whether an environmental agency will aggregate proposed facilities and therefore cuts against the articulated logic of the Court.[138]

Additionally, the functional relatedness test is particularly deficient as applied to the oil and natural gas industry.[139] The industry's dependence on a network of pipelines to move gaseous and liquid materials from their production point to market poses special challenges to the application of the functional interrelatedness test.[140] Simply put, once an environmental agency accepts the premise that physical connection of one facility to another through a pipeline establishes functional interrelatedness, no logical limit on aggregation remains.[141] It seems unlikely that Congress intended for agencies to implement a test which lacks any logical outer geographical limit when it conceived of the possibility of aggregating multiple emissions points.[142]

B. Disproportionate Impact on Vertically Integrated Enterprises

Significant evidence suggests that the EPA's willingness to aggregate under the functional interrelatedness test disproportionately affects vertically integrated enterprises.[143] For example, the EPA previously determined that aggregation should occur in the instance of "(1) a soda processing plant and a mine, forty-four miles distant; (2) a brewery and a farm, six miles apart; (3) a steel mill and a coke plant, separated by 3.7 miles and Lake Calumet, a landfill, and the Little Calumet River; and (4) a wood recycling center and a combined heat and power boiler three miles away" (Wedeking examples).[144] Regulators would have made a determination that no aggregation could occur in these instances if common ownership did not exist.[145] Likewise, in the instance of *Summit Petroleum*, it seems indisputable that if the natural gas wells and the sour gas sweetening facility did not have common ownership, no aggre-

138. *See id.* at 394, 396-99.

139. *See* Wehrum Memorandum, *supra* note 85, at 2-3.

140. *See id.* at 3-4.

141. *See generally id.*

142. *See generally id.* at 2-5; *see also*, Respondents' Brief, *supra* note 111, at 24-25 (attempting to delineate aggregation). "Summit's sweetening plant, gas wells, and flares, which work together as a single, physically interconnected system to produce saleable gas, are exactly the kind of operations that meet a common sense notion of plant and therefore meet the definition of a single source." *Id.* (internal quotations omitted).

143. *See, e.g.*, Wedeking, *supra* note 43, at 451.

144. *Id.*

145. *See* 40 C.F.R. § 71.2.

gation could occur because the two would fail the first prong of the regulations governing aggregation.[146]

In fact, when faced with that very same scenario for BP's Florida River facility, the EPA chose not to aggregate a compression facility with nearby gas wellheads in a mixed-ownership field.[147] BP, seeking an NSR permit for a compression facility, owned a fraction of the natural gas producing wells in a nearby mixed-ownership field that fed into the field compression facility.[148] Because the compressor station could accept gas from wells not under BP ownership and because the BP wells could theoretically supply gas to other compressor stations, the EPA determined that the emissions sources were not adjacent and therefore aggregation should not occur.[149] More simply stated, the EPA's functional interrelatedness test creates two sets of NSR regulations for an identical activity, one for vertically integrated enterprises, in which case the EPA will aggregate, and one for non-integrated enterprises, in which case the EPA will not aggregate.[150]

The functional interrelatedness test's use of different technology regulations for the same activity under the same SIP, without regard to geographic proximity, might create arbitrary and capricious distinctions between vertically integrated enterprises and enterprises with segmented ownership.[151] There does not appear to be a logical explanation for regulating similar emissions results differently solely on the basis of the means by which they arise.[152] The functional interrelatedness test creates this arbitrary and capricious distinction by minimizing the importance of geographic proximity

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146. *See generally id.* (listing prongs of aggregation regulations as "contiguous or adjacent" and "under common control").

147. EPA Region VIII, Response to Comments on the Florida River Compression Facility's March 28, 2008 Draft Title V Permit to Operate 4 (Oct. 1, 2010), *available at* http://www.epa.gov/region7/air/title5/t5memos/singler8.pdf [hereinafter RTC Florida River].

148. *Id.*

149. *Id.* at 9 (addressing why activities are not contiguous nor adjacent).

> As explained below, while gas from Wolf Point and the various wells *can* supply gas to Florida River, they can also supply gas to other non-BP facilities in the field and thus do not have the type of dedicated interrelatedness that was determinative in other EPA statements on this issue.

Id. (emphasis in original).

150. *Compare* Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012), *with* RTC Florida River, *supra* note 147, at 9.

151. *See generally* 5 U.S.C. (1966) (explaining that reviewing courts may "hold unlawful and set aside" agency actions "found to be arbitrary and capricious").

152. *See generally id.*

in aggregation determinations.[153] For example, if a wooden furniture company owned its own lumber mill twenty miles from its manufacturing and assembly facility, the emissions of the two could theoretically be aggregated.[154] Yet, if the lumber mill was owned by a separate party, no aggregation could occur.[155] These distances lie within the range in which the EPA has found aggregation proper in the past but there is simply no sound environmental policy explaining why the same emissions activity under the same SIP should receive different aggregation treatment.[156]

C. Attempted Segmentation of EPA Policy

Not only does the functional interrelatedness test run contrary to the common sense reading of the word "adjacent," but it also cuts against case law and several valid prudential considerations based on the unique character of the natural gas industry. Despite the opportunity after *Summit Petroleum* to disregard the overly expansive definition in favor of a reading emphasizing proximity, the EPA has chosen to continue forward with the functional interrelatedness test with an intention to checkerboard among circuits when faced with adverse decisions.[157]

In response to *Summit Petroleum*, the EPA issued a memorandum to its Regional Air Division Directors of Regions 1-10 (Summit Directive), to advise them that the EPA would respect the Sixth Circuit's decision only within the Court's jurisdictional limits.[158] The EPA based its decision to limit the scope of the Sixth Circuit's decision on the fact that the agency could trace its interpretation of "adjacent" back more than three decades.[159]

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153. *See* McCarthy, *supra* note 95, at 1 (highlighting fact-specific inquiry with regards to proximity to determine whether adjacency or contiguousness exists).

154. *See id.*; *see also* Wedeking, *supra* note 43, at 451 (citing similar examples of aggregation to hypothetical posed here).

155. *See* 45 Fed. Reg. 59,874, 59,878 (Sept. 11, 1980) (providing general definition of "control" used by Securities and Exchange Commission); *see also* EPA Region 8, Single Source Determination for Coors/TriGen 2 (Nov. 12, 1998), *available at* http://www.epa.gov/region7/air/title5/t5memos/coorstri.pdf (noting EPA guidance makes case-by-case determinations of control according to SEC definition)

156. *See* Wedeking, *supra* note 43, at 451 (citing similar examples of aggregation of sites up to forty-four miles apart).

157. *See* Page Memorandum, *supra* note 82, at 1 (applying *Summit* restriction on interrelatedness test to Sixth Circuit only).

158. *Id.*

159. *Id.*

In 2014, the Clean Air Project successfully challenged the EPA's balkanization of *Summit Petroleum* in the D.C. Circuit.[160] The Court in *NEDACAP* found that the Summit Directive impermissibly contradicted EPA's "Regional Consistency" regulations, which "assure fair and uniform application by all Regional Offices of the criteria, procedures, and policies employed in implement and enforcing" the Clean Air Act.[161]

The Court explicitly reserved the question of whether the Summit Directive contradicted the language of the CAA, meaning that the EPA could theoretically remove its regional consistency regulations through a rulemaking and reissue the Summit Directive once more.[162] As of the writing of this article, it appears that the EPA plans to rewrite its regional consistency regulations to exempt adverse judicial determinations.[163]

A rewrite of the regional consistency regulations to exempt adverse judicial determinations and a reissuance of the Summit Directive would likely force a judicial ruling on whether the CAA allows the checkerboarding of adverse judicial determinations.[164] Given that the issue of whether the Summit Directive violated the CAA was briefed extensively in *NEDACAP*, most of the EPA's legal arguments in favor of its ability to checkerboard adverse judicial determinations appear developed.[165]

The crux of the EPA's argument—that the CAA only mandates procedural uniformity—seems curious.[166] First, the CAA seems to go well beyond procedure in mandating uniformity "in the criteria, procedures, and policies applied by the various regions."[167] Al-

160. *See, e.g.,* Nat'l Envtl. Dev. Ass'ns Clean Air Project v. EPA, 752 F.3d 999, 1011 (D.C. Cir. 2014) (finding *Summit* Directive invalid).

161. Id. at 1003.

162. *See id.* at 1011.

163. Bridget DiCosmo & Lea Radick,*Environmentalists Plan Air Permit Lawsuits Absent EPA 'Aggregation Rule'*, Inside EPA's Clean Air Report (Feb. 26, 2015), *available at* http://insideepa.com/sites/insideepa.com/files/documents/current_issue/cleanair_current.pdf, 9 ("In response to the NEDA/ CAP ruling, EPA launched its rulemaking to better define source definitions, and separately also plans to issue a notice of proposed rulemaking this year to 'revise the Regional Consistency regulations to allow an exception for judicial decisions.'").

164. Nat'l Envtl. Dev. Ass'ns Clean Air Project v. EPA, 752 F.3d 999, 1003 (D.C. Cir. 2014) ("We need not decide whether the *Summit* Directive also contravenes the requirements of the CAA.").

165. *Brief* for Resp't. EPA, Nat'l Envtl. Dev. Ass'ns*Respondent United States Environmental Protection Agency.* National Environmental Development Association's Clean Air Project v. EPA, 752 F.3d 999 (2013 WL 3147968 (C.A.D.C. Cir. 2014). (Appellate Brief).

166. *See id.*

167. 42 U.S.C. § 7601(a)(2)(A).

though perhaps not procedural, the functional interrelatedness test certainly appears to encompass a set of criteria, or even a policy, regarding aggregation.[168] The McCarthy Memo alone mentions "criteria" seven times and "policy" once.[169] The American Heritage Dictionary defines "criteria" as "a standard, rule, or test on which a judgment or decision can be based."[170] The definition of "policy," meanwhile, is "a course of action, guiding principle, or procedure considered expedient, prudent, or advantageous."[171]

Second, the principle case repeatedly cited by the EPA in support of its legal authority to checkerboard adverse judicial determinations—*Air Pollution Control Dist. v. EPA*—does not seem to support the proposition that the uniformity requirement goes solely to procedural processes.[172] In *Air Pollution Control Dist.*, the plaintiffs argued that states violated the CAA's uniformity requirement in promulgating SIPs with differing sulfur oxide emissions standards for neighboring states.[173] The Sixth Circuit Court of Appeals reasoned that with respect to SIPs, the CAA's uniformity mandate applies to only procedural and administrative requirements.[174] The Court found that the CAA could not have intended to require that SIPs have uniform standards because to require each state to have an identical SIP seems facially contrary to the very notion of cooperative federalism and delegation of implementation.[175] Congress designed the SIP program for the purpose of displacing federal criteria and policy with respect to implementation, de facto leaving the procedure of SIP approval, as the only federal interaction to which the uniformity requirement could apply.[176] *Air Pollution Control* would therefore not seem to apply here, where the

168. *See* McCarthy, *supra* note 95, at 1-2.

169. *Id.*

170. The American Heritage Dictionary, www.ahdictionary.com (search "criteria") (last visited Oct. 29, 2013) ("criteria: a standard, rule, or test on which a judgment or decision can be based.").

171. *Id.* (search "policy") (last visited Oct. 29, 2013) ("policy: a course of action, guiding principle, or procedure considered expedient, prudent, or advantageous.").

172. *See* Air Pollution Control Dist. of Jefferson Cnty., Ky. v. EPA, 739 F.2d 1071, 1085 (6th Cir. 1984).

173. *Id.*

174. *Id.*

175. *Id.* at 1075, 1085.

176. *See id.*

policy or criteria being challenged is at the federal, not state, level.[177]

The EPA has also raised the issue of the non-acquiescence doctrine by arguing that the government generally can re-litigate adverse holdings in multiple circuit courts.[178] Defending the *Summit* Directive by using the non-acquiescence doctrine presented a risky proposition, however, as the D.C. Circuit Court determined that the Directive *Summit* was invalid.[179] CAA's insistence on uniformity across air regions preempts the common law doctrine.[180]

Finally, the *Summit* Directive also cuts against the Congressional reasoning behind the mandate of regulatory uniformity across jurisdictions, which was to prevent an administrative hodgepodge of regulations that could lead to "the inequitable location of some industries."[181] Even if it seems questionable that the *Summit* Directive would actually influence a natural gas operator to disproportionately invest in the Sixth Circuit, the *Summit* Directive certainly incentivizes such behavior.[182]

IV. TRENDS IN SIP AGGREGATION POLICIES

This Part examines the efforts energy-producing states have undertaken to lend clarity and predictability to the functional interrelatedness test. In large part, these efforts have resulted in automatic aggregation for facilities exceptionally close together, but they have generally failed to lend clarity to multiple emissions points at greater distances. Part IV.B examines and advocates for the Texas model and its use of a strict outer limit beyond which aggregation may not occur.

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177. *See* Air Pollution Control Dist. of Jefferson Cnty., Ky. v. EPA, 739 F.2d at 1085; *see also* Appellate Brief, Nat'l Envtl. Dev. Ass'ns Clean Air Project v. EPA, 752 F.3d 999 (D.C. Cir. 2014).

178. *See, e.g.,* Nat'l Mining Ass'n v. U.S. Army Corps of Eng'rs, 145 F.3d 1399, 1409 (D.C. Cir. 1998).

179. The CAA's mandate for uniformity in federal criteria and procedures at least arguably preempted the non-acquiescence doctrine. The inapplicability of the EPA test in the Sixth Circuit has created the dueling requirements that Congress sought to avoid through the clear language of the statute. It seems unlikely that Congress meant to implement a uniformity standard which could be superseded by the checkerboard nature of circuit courts with differing interpretations of the CAA regulations. *See generally Agency Nonacquiescence: Implementation, Justification and Acceptability*, 42 WASH. & LEE L. REV. 1233 (1985), *available at* http://scholarlycommons.law.wlu.edu/wlulr/vol42/iss4/6 (last visited Dec. 15, 2013).

180. *Id.*

181. *See* 42 U.S.C. § 7601 (1990); *see also* 51 Fed. Reg. 32,176 (Sep. 9, 1986) (to be codified at 40 C.F.R. pts. 51 and 52).

182. *See generally* Page Memorandum, *supra* note 82.

A. The Quarter Mile Rule Inadvertently Stiffens Regulation

Even though the EPA remains insistent on the functional interrelatedness test, some states have seized on the momentum for a common sense interpretation by adjusting their air aggregation guidance memoranda.[183] First, many states with significant unconventional production, including Oklahoma, and Pennsylvania, have implemented a "quarter mile rule" with respect to the functional interrelatedness test.[184] The rule considers multiple emissions points to be automatically adjacent, and therefore part of the same facility, if they have common SIC codes, common ownership, and are located within a quarter mile of each other.[185] Beyond a quarter mile, states utilizing the rule make adjacency determinations on a case-by-case basis.[186]

Generally speaking, environmental groups seem to disfavor the perceived rigidity of the quarter mile rule, and at least some negative judicial treatment of the rule suggests that courts might find the quarter-mile limitation arbitrary and capricious.[187] While in-

183. *See* David Wagner & Jennifer Smokeline, *U.S. Shale Gas in 2012: Top 10 Environmental Legal Issues to Watch*, ENERGY &. ENVTL. L. RES. (Feb. 20, 2012), http://www.environmentallawresource.com/2012/02/articles/marcellus-shale-1/us-shale-gas-in-2012-top-10-environmental-legal-issues-to-watch/; *see also* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (West 2011) (enacting legislation in response to *Summit*).

184. *Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, *supra* note 19, at 6-7.

185. *Id.*

186. *See id.* at 8.

187. *See Clean Air Council v. Commonwealth, Before the Envtl. Hearing Bd.*, 2013 WL 3359657 (June 20, 2013)

> There is no explanation for the cut off of [quarter] mile, and even if the Department had provided an explanation for its chosen cut off distance, it is clearly a factual issue which may not be decided in the context of a motion for partial summary judgment. Why was a distance of [quarter] mile chosen, as opposed to [a half] mile, one mile, or for that matter, [one and a half] miles, the distance between the Houston Plant and the closest compressor station?

Id. See also Major Victory in Shale Air Permitting Case, CLEAN AIR COUNCIL (June 25, 2013), http://www.cleanair.org/program/outdoor_air_pollution/marcellus_shale/major_victory_shale_air_permitting_case (suggesting that quarter mile rule is ineffective by limiting inquiry into multiple emissions points separated by more than quarter mile); Lauren Burge, *Pa. DEP Aggregates Natural Gas Compressor Station with Nearby*, GROUP AGAINST SMOG POLLUTION (Aug. 16, 2013), http://gasp-pgh.org/2013/08/gasps-recent-legal-actions-reduce-compressor-station-emissions.

> Last October, DEP issued a guidance document explaining its policy on how these single source determinations should be made for the oil and natural gas industries. In practice, DEP has applied this policy in an overly restrictive manner that is inconsistent with the definition of a source under the federal Clean Air Act. DEP's policy states that sources located within [quarter] mile of each other are presumed to be adjacent to each other; sources located at a greater distance may be considered

dustrial groups have written in favor of the rule, it remains unclear how the rule analytically deviates from the functional interrelatedness test in any meaningful fashion.[188] Thus far, five states have adopted versions of the quarter mile rule mandating aggregation, although Texas's rule differs in significant respects from the rules adopted in the other four states.[189] While variations of the quarter mile rule exist in a clear minority of jurisdictions, it is significant that the subscribing states jointly form nearly fifty-seven percent of the nation's dry-land natural gas production.[190]

Theoretically, the traditional quarter mile rule stiffens the regulations advocated for by the EPA in *Summit Petroleum*.[191] It

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> adjacent on a case-by-case basis. In practice, however, DEP has tended to ignore any sources located beyond [quarter] mile, even though U.S. EPA has clearly stated that there should be no bright-line rule concerning how far apart sources can be located and still be considered adjacent to each other.

Id.

188. 188. Luke Liben & Nicolle Bagnell, *USEPA Comments on Pennsylvania's Draft Aggregation Policy*, REED SMITH PUBLICATIONS, http://m.reedsmith.com/usepa-comments-on-pennsylvanias-draft-aggregation-policy-12-08-2011/ (last visited Oct. 11, 2013), ("[A]s noted by Kathryn Klaber, head of the Marcellus Shale Coalition, the bright line [quarter] mile test provides an easy to understand, easy to enforce, and predictable rule.").

189. *See Permitting Collocated Facilities*, OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (Feb. 9, 2012), http://www.deq.state.ok.us/aqdnew/resources/factsheets/PermittingCollocatedFacilities.pdf; *see also Field Guide to Environmental Compliance for Oil and Gas Exploration and Production Operations*, LA. ENVTL. RESULTS PROGRAM (Apr. 2012), http://www.deq.louisiana.gov/portal/Portals/0/surveillance/Field%20Guide%20to%20Environmental%20Compliance%202012%20FINAL_with%20cover.pdf; TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (West Year 2011); *Guidance for Performing Single Stationary Source Determinations*, *supra* note 19; *see Order Responding to Petitioner's Request That the Administrator Object to issuance of a State Operating Permit,* Permit Number: 95OPWE035, http://yosemite.epa.gov/oa/eab_web_docket.nsf/Filings%20By%20Appeal%20Number/89A9C5D4C5C4C3A18525784200570883/$File/BP's%20Response%20to%20WildEarth's%20Petition%20for%20Review%20-%20Exhibits%201%20and%202. . .10.01.pdf (last visited Oct. 13, 2013); *Engineering Evaluation/Fact Sheet*, W. VA. DEP'T. OF EVNTL. PROT., http://www.dep.wv.gov/daq/Documents/September%202013/Eval%203102.pdf (last visited Oct. 13, 2013).

190. *See Natural Gas Gross Withdrawals and Production*, U.S. ENERGY INFO. ADMIN. (Sept. 30, 2012), http://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_VGM_mmcf_a.htm.

191. Some states have used the quarter-mile rule to reaffirm the predominance of the common sense interpretation of "adjacent." For example, in the guidance document instituting the quarter-mile rule in Pennsylvania, the Pennsylvania Department of Environmental Protection stated that "while interdependence may be considered when conducting a single source determination, the plain meaning of the terms 'contiguous' and 'adjacent' should be the dispositive factor when determining whether stationary sources are located on contiguous or adjacent properties." *Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, *supra* note 19; *but see* Citizens for Pennsylvania's Future v. Ultra Resources, Inc., No. 4:11-CV-1360 (M.D.Pa. Feb. 23, 2015) (affirming that

removes the discretion of regulators to avoid aggregating sources within a quarter mile while maintaining the integrity of the functional interrelatedness test beyond that limit.[192] Curiously, industry sources have understood the quarter mile rule to be a *de facto* limitation on air aggregation beyond the quarter mile limitation.[193] One potential explanation for the deviation between regulatory guidance and industry enthusiasm is that the states are trying to avoid the EPA's potential threat to partially disapprove SIPs bold enough to openly disregard the functional interrelatedness test.[194] By leaving the regulatory language for the functional interrelatedness test intact beyond the quarter mile limit, albeit on a case-by-case basis, the states can adhere to the letter of the EPA interpretation while comforting industry sources with the understanding that such case-by-case determinations will rarely, if ever, occur in actuality.[195] This sleight-of-hand approach would explain the seemingly contradictory guidance some states have issued on air aggregation.[196]

PADEP should consider functional interrelatedness on case-by-case basis outside the quarter-mile limit).

192. *See id.*

193. *See e.g.*, David R. Overstreet & Tad J. Macfarlan, *PaDEP Issues Interim Guidance on Air Aggregation, Moves Away from "Functional Interdependence" Test*, LEGAL INSIGHT (Nov. 11, 2013), http://m.klgates.com/files/Publication/0d1bf2b2-89f9-4364-9a85-eae0306d206b/Presentation/PublicationAttachment/6d2af6c2-aa67-4a22-8f78-a4b856efeca8/KLGates_Alert_Air%20Aggregation_Overstreet_Macfarlan_111011.pdf

> [I]n taking this approach, PaDEP has departed from EPA staff guidance which has taken an expansive view of what is adjacent based on factors which have little to nothing to do with how close one unit might be to another . . . Thus, when conducting a contiguous or adjacent analysis, PaDEP will not consider interrelatedness or interdependence among oil and gas operation components, such as an extraction well and a compressor station on other property some distance away, in determining adjacency (though this may be taken into account in the analysis under the other prongs). Instead, PaDEP will simply ask whether the extraction, processing and/or compression facilities are close to one another – which, in most cases, they are not. This interpretation will result in determinations that approximate with the common sense notion of what constitutes a "plant"; sources many miles apart will not be aggregated.

Id.

194. *See* Page Memorandum, *supra* note 82.

195. *Pa. DEP Aggregates Natural Gas Compressor Station with Nearby Well Pad, supra* note 187 ("In practice, DEP has applied this policy in an overly restrictive manner that is inconsistent with the definition of a 'source' under the federal Clean Air Act."). Another explanation could be that regulators wish to retain the discretion to aggregate two major sources that appear related under a single permit. Allowing two closely connected major sources to fall under the umbrella of a single Title V permit could ease compliance and enforcement efforts for both the permit holder and implementing agency.

196. *See e.g.*, *Field Guide to Environmental Compliance for Oil and Gas Exploration and Production Operations, supra* note 189.

B. The Texas Model: The Best Alternative

The Texas model for aggregation flips the traditional quarter mile rule by embracing a proximity analysis for emissions points closer than a quarter mile together and altogether banning aggregation of emissions points separated by distances greater than the quarter mile limit.[197] The Texas model enacts the proximity analysis advocated by the Wehrum Memo. This enables most permit applicants to accurately project whether they will be aggregated, and may prove to be far more favorable to the oil and natural gas industry in the long-run.[198] The Texas model was legislatively enacted in 2011, but only applies to natural gas and oil production facilities.[199] Texas's quarter mile limit has not yet received either a court challenge or an official determination, but given the state's historically antagonistic relationship with the EPA, a court challenge might come soon.[200]

> Oil and gas production facilities that are contiguous or adjacent and under common control and separated by a distance less than or equal to 0.25 mile must be aggregated to determine if the group of facilities are a major source for permitting. Facilities separated by a distance of greater than 0.25 mile are considered separate facilities for permitting purposes. Facilities greater than 0.25 miles apart are issued separate air permits. Facilities may be aggregated and can then be issued one permit or a separate permit can be issued for each facility. However, given the particular circumstances for a given case (e.g., interdependency), the DEQ may consider sites separated by a distance greater than 0.25 mile to be contiguous.

Id.

197. TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (West 2011).

198. *See id.*

199. *See id.* ("This section applies only to new facilities or modifications of existing facilities that belong to Standard Industrial Classification Codes 1311 (Crude Petroleum and Natural Gas), 1321 (Natural Gas Liquids), 4612 (Crude Petroleum Pipelines), 4613 (Refined Petroleum Pipelines), 4922 (Natural Gas Transmission), and 4923 (Natural Gas Transmission and Distribution).").

200. *See generally* Jake Tapper, *EPA Regional Administrator Resigns After Outcry Over "Crucify" Comments*, ABC NEWS (Apr. 30, 2012), http://abcnews.go.com/blogs/politics/2012/04/epa-regional-administrator-resigns-after-outcry-over-crucify-comments/

> The 2010 video, publicized by frequent EPA foe Senator James Inhofe, R-Okla., showed Armendariz saying that he gave the following analogy to his staff about his '"philosophy of enforcement," which he acknowledged being crude and perhaps inappropriate, but shared anyway: "It is kind of like how the Romans used to conquer villages in the Mediterranean – they'd go into a little Turkish town somewhere and they'd find the first five guys they saw, they'd crucify 'em, and that little town was really easy to manage for the next few years.

Id.

Oklahoma has informally experimented with a hybrid model that contains both inner and outer limits.[201] The Oklahoma Department of Environmental Quality has published informal guidance which suggests that emissions points less than a quarter mile apart must always aggregate while those greater than five miles apart may never aggregate.[202] Oklahoma's informal guidance benefits environmental agencies through its universal applicability, whereas alternatively, the Texas statute remains limited to enumerated SIC codes related to the oil and natural gas industry.[203]

A hard outer limit directly advances the common sense interpretation of "adjacent" by removing the latitude previously given to regulators under the functional interrelatedness test.[204] The hard outer limit disables regulators from considering emissions points several miles apart as somehow part of the same facility.[205] The Texas statute instead advances the common sense idea that agencies should never aggregate emissions points greater than quarter mile apart under any interpretation of "adjacent."[206] The statute enacts a natural evolution of the definition of "adjacent," adhering to the common sense, proximity-driven interpretation of the word, while maintaining the overall case-by-case flexibility Congress must have intended in issuing a set of criteria for determining aggregation rather than a numerical radial limit.[207]

The EPA correctly argues that Congress intended to give environmental agencies case-by-case discretion in at least some air aggregation determinations.[208] The nature of the guiding phrase

201. *Permitting Collocated Facilities*, *supra* note 189; *see also Application for Authorization to Use General Plan Approval and/or General Operating Permit General Permit or BAQ-GPA/GP-5 Natural Gas Compression and/or Processing Facilities*, PADEP Doc No: 2700-PM-BAQ0205, http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-106065/2700-PM-BAQ0205%20GP-5%20Application%20Form.pdf (requesting map of facilities within five miles, suggesting that outer limit of aggregation determination is five miles).

202. *See Permitting Collocated Facilities*, *supra* note 189 ("Are the entities located in different counties and are the property boundaries located more than five miles apart? . . . If the answer to this question is yes, then based on geographic distance and logistics these air-emitting entities are not considered adjacent.").

203. *Compare id.*, *with* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (West 2011).

204. *See* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (West 2011).

205. *See id.*

206. *See id.*

207. *Compare* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (West 2011) (allowing for case-by-case determinations at distances less than quarter mile while banning aggregation at distances greater than quarter mile), *with* Alabama Power Co. v. Costle, 636 F.2d 323 (D.C. Cir. 1979) (requiring EPA to issue set of administrative criteria to determine whether multiple emissions points were adjacent).

208. *See* 40 C.F.R. § 52.21(b)(5)

"building, structure, facility, or installation" invites a limited subjective analysis and certainly does not comport with a bright line test, which holds that sources must automatically aggregate before a certain point and may never be aggregated beyond a certain point.[209] None of the models suggested thus far challenge this presumption.[210] The EPA model completely embraces a case-by-case analysis, the traditional quarter mile model utilizes a case-by-case analysis at distances greater than quarter mile, and the Texas model uses a case-by-case analysis at distances less than quarter mile.[211] Even the Oklahoma model uses case-by-case analysis at distances between quarter mile and five miles.[212] The most natural use of a proximity-driven case-by-case analysis, however, would be prior to a limitation on aggregation rather than after a mandatory aggregation line.[213]

The proximity-driven reading of adjacent, advocated by the Wehrum Memo, characterizes the regulatory use of "adjacent" as giving administrative officials the flexibility to aggregate where a road or city block separates multiple emissions points.[214] This analysis implies a case-by-case examination concerning facilities that stand close together in distance.[215] The traditional quarter mile rule, however, tends to reject case-by-case analysis of closely related emissions points in favor of individual determinations at greater distances.[216] If case-by-case determinations are proper at close distances, such as in the instance of a facility separated by a city block or road, then the Texas model is the only one which truly embraces

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209. *Clean Air Council v. Commonwealth of Pennsylvania*, *supra* note 187.

> The Department's Guidance suggests that properties separated by a distance of [quarter] mile or less are unequivocally 'proximate,' 'nearby' or 'close enough' to be adjacent, whereas properties separated by more than [quarter] mile must be examined on a case-by-case basis. There is no explanation for the cut off of [quarter] mile, and even if the Department had provided an explanation for its chosen cut off distance, it is clearly a factual issue which may not be decided in the context of a motion for partial summary judgment. Why was a distance of [quarter] mile chosen, as opposed to [quarter] mile, one mile, or for that matter, [one and a half] miles, the distance between the Houston Plant and the closest compressor station?

Id.

210. *See* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (2011); *see also* McCarthy, *supra* note 95; *Permitting Collocated Facilities*, *supra* note 189.

211. *See* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (2011); McCarthy, *supra* note 95.

212. *Permitting Collocated Facilities*, *supra* note 189.

213. *See generally* Wehrum Memorandum, *supra* note 85.

214. *Id.*

215. *See id.*

216. *Compare id.*, *with Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, *supra* note 19.

case-by-case determinations in their proper role.[217] It would seem highly unusual, for example, for a road to have a width stretching a distance greater than a quarter mile.[218] The traditional quarter mile rule's stiffness at the very distances at which the Wehrum Memo seems to specifically endorse proximity-driven, case-by-case analysis seems to place the two in tension.[219]

The quarter mile rule's deficiencies become more apparent when considered against the very types of situations that a proximity-driven analysis is designed to avoid.[220] The traditional quarter mile rule which defaults to the functional interrelatedness test after the quarter mile limit would simply not have affected the final determination in the situation of the Wedeking Examples;

> (1) a soda processing plant and a mine, forty-four miles distant; (2) a brewery and a farm, six miles apart; (3) a steel mill and a coke plant, separated by 3.7 miles and Lake Calumet, a landfill, and the Little Calumet River; and (4) a wood recycling center and a combined heat and power boiler three miles away.[221]

The rule fails to unilaterally enforce a proximity-driven analysis where it is needed most: when common sense dictates that two emissions points separated by several miles are not adjacent.[222]

A true, universal outer limit on aggregation poses no such problems.[223] Texas's statutorily-enacted quarter mile limit, if universally applicable, would allow case-by-case analysis in determinations involving multiple emissions points at close distances, such as those separated by a city block or public road.[224] For example, under a universally applicable Texas model, if a commonly-owned

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217. *Compare* Wehrum Memorandum, *supra* note 85, *with Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, *supra* note 19.

218. *See generally Lane Width*, U.S. DEP'T OF TRANSP., FED. HIGHWAY ADMIN., http://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter3/3_lanewidth.htm (last visited Oct. 28, 2013).

219. *Compare* Wehrum Memorandum, *supra* note 85, *with Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, *supra* note 19.

220. *See generally* Wedeking, *supra* note 43, at 451 (supplying examples).

221. *Id.*

222. *Compare Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, *supra* note 19, *with* Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012) (advocating for proximity-driven interpretation of adjacent where multiple emissions points are spread over forty-three acres as opposed to functional interrelatedness test's long-distance aggregation determination).

223. *Compare* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (2011), *with* Wehrum Memorandum, *supra* note 85.

224. *See generally* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (West 2011) (applying case-by-case determinations at distances less than quarter mile).

soda processing plant and a mine are separated by a short city block, a case-by-case analysis gives environmental agencies the flexibility to decide whether to aggregate the two emissions points based on whether they constitute a single facility.[225]

Unlike the traditional quarter mile rule, the Texas model would address the very types of agency decisions a proximity-driven interpretation of adjacent should avoid.[226] In the Wedeking Examples, even a more generous three mile outer limit would certainly have removed the discretion of regulators to aggregate the multiple emissions points in each instance, such as in the example of a soda processing plant and mine separated by forty-four miles.[227]

Mandating that multiple emissions points stand at most a certain geographic distance in relation to each other reinforces the objective sense of "adjacent" so strongly endorsed by the *Summit* court.[228] Outer limits emphasize the importance of proximity, and they naturally raise analytical questions with respect to the geographic relationship between points.[229] It would seem difficult to conceive of a place for the functional interrelatedness test in a state that embraces strict outer limits because the functional analysis stands in such contrast to geographic determinations.[230] Instead, geographic limits would tend to promote questions of whether multiple emissions points are truly adjoining.[231]

Universally applicable strict outer limits would also significantly advance the goals of *Alabama Power* by aiding industry's ability to project whether or not to aggregate emissions points.[232] Exclusive use of the functional interrelatedness test lends very little predict-

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225. *Compare* Wehrum Memorandum, *supra* note 85, *with Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, *supra* note 19.

226. *See generally* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (2011).

227. *See generally id.;* Wedeking, *supra* note 43, at 451 (supplying examples); see *infra* notes 244-245 and accompanying text for analysis as to whether widespread use of the Texas model will incentivize producers to strategically deploy equipment and facilities to avoid major source classification.

228. *See* Summit Petroleum Corp. v. EPA, 690 F.3d 733, 736 (6th Cir. 2012) (reemphasizing objective definition of "adjacent").

229. *See generally* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (2011) (enacting quarter mile limit and factual analysis with respect to proximity between two emissions points).

230. *Compare id.* (limiting geographic distance between two aggregated points), *with* McCarthy, *supra* note 95 (contemplating whether two points practically act as one industrial unit while acknowledging that proximity might be overriding factor).

231. *See generally Rapanos v. United States*, 547 U.S. 715 (2006) (finding that federal interpretations of regulations tend to use "adjacent" and "adjoining" interchangeably).

232. *See id. See generally* Ala. Power Co. v. Costle, 636 F.2d 323 (D.C. Cir. 1979).

ability to NSR air aggregation determinations and the quarter-mile rule only lends predictability to multiple emissions points within quarter mile of each other.[233] Both of these models contain flaws because the resulting analysis does not contain a logical stop-point beyond which agencies may no longer aggregate facilities.[234] A strict outer limit has the immediate effect of making significantly more finite the number of multiple emissions points eligible for aggregation.[235] In the instance of a universally applicable Texas model, the statutory language would allow for a mere quarter-mile zone in which regulators have discretion to aggregate, meaning that a vast majority of industrial sources could predict early in the project development stages whether aggregation could occur.[236]

With respect to the unique nature of the oil and natural gas industry, strict outer limits on aggregation seem particularly useful.[237] First, any reasonable outer limit virtually guarantees that a plethora of well pads could not aggregate with a treatment plant.[238] Second, an outer limit that remains unpaired with a mandatory aggregation radius allows for common sense case-by-case determinations when one or two well pads occur in close proximity to treatment plants, such as in the instance of *Summit Petroleum.*[239]

A regulator viewing the *Summit Petroleum* treatment plant and the closest well pad, a mere five hundred feet away, might determine under the Texas model that the checkerboard nature of natural gas leasing does not satisfy the type of incidental break in ownership envisioned by the Wehrum Memo.[240] Breaks in ownership which are common, and even purposeful, because of the na-

233. *See Summit Petroleum*, 690 F.3d at 736; *see also* McCarthy, *supra* note 96; *Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries*, *supra* note 19.

234. *See* TEX. HEALTH & SAFETY CODE ANN. § 382.051961 (West 2014); *see also* McCarthy, *supra* note 95 (refusing to set limit beyond which two sources may no longer be aggregated).

235. *See* HEALTH & SAFETY § 382.051961 (enacting five mile limit).

236. *See id.*

237. *See generally* Wehrum Memorandum, *supra* note 85 (acknowledging unique nature of oil and gas production industry).

238. *Processing Natural Gas*, *supra* note 47 ("A complex gathering system can consist of thousands of miles of pipes, interconnecting the processing plant to upwards of 100 wells in the area. According to the American Gas Association's Gas Facts 2000, there was an estimated 36,100 miles of gathering system pipelines in the U.S. in 1999.").

239. *Compare Summit Petroleum*, 690 F.3d at 736 (stating facts of case), *with* Wehrum Memorandum, *supra* note 85 (emphasizing case-by-case analysis where emissions sources are separated by a short distance).

240. *Compare Summit Petroleum*, 690 F.3d at 736, *with* Wehrum Memorandum, *supra* note 85.

ture of the industry, such as checkerboard ownership between natural gas leases, might be treated differently than breaks in ownership which are merely incidental due to the existence of a public road, a wetland preventing development, or a utility easement.[241] Agencies should examine the nature of the break in ownership, and determine whether it is an industry pattern or an anomaly, during case-by-case review. Again, this secondary test seems distinct from the functional interrelatedness determination, which merely encompasses the utilitarian relationship between the two points.

Vertically integrated enterprises would also benefit from the promulgation of outer limits, which would practically end long-distance aggregation determinations where companies own multiple emissions points within the same industrial grouping.[242] Agencies might ask reasonable questions about whether permits should consider multiple emissions points part of the same facility if the steps of the industrial process occur within a quarter mile of each other but certainly not at distances of forty or more miles.[243] While agency determinations in the Texas model might result in some disproportionate aggregation of vertically integrated enterprises if determinations were made on a case-by-case basis at close distances, such determinations would seem more consistent with the overall notion of "facility."[244] Disproportionate aggregation might result from the structure of NSR determinations no matter what the aggregation scheme given the overall goals and purposes of the CAA.[245] It also seems consistent with the plain language of the statute to apply major source classification when industry co-locates several steps of the production process in the same facility or installation.[246] In any event, the increased efficiency gained by locating several steps of the industrial process in the same location would at least superficially seem to far outweigh any benefits of segmenting stages of production at great distances to avoid major source classification.[247]

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241. *See generally* Wehrum Memorandum, *supra* note 85 (arguing some industries are more conducive to case-by-case analysis than others).

242. HEALTH & SAFETY § 382.051961 (limiting adjacency to quarter mile).

243. *See generally* Wehrum Memorandum, *supra* note 85.

244. *Compare Summit Petroleum*, 690 F.3d at 736, *with id.*

245. *See* 40 C.F.R. § 51.166 (2014).

246. *See id.*

247. *Summit Petroleum*, 690 F.3d at 736. The Sixth Circuit leaves open the question of whether the EPA would have actually fared better under the quarter mile rule. The Respondents' Brief argues that "[e]ven if emissions from only one sour gas production well is [*sic*] taken into account, the emissions from that well in conjunction with the emissions from the sweetening plant exceeds one hundred

It appears highly unlikely that the EPA will embrace the Texas model, mostly because outer limits claw back the regulatory discretion that the functional interrelatedness test creates through case-by-case aggregation determinations.[248] Part of the EPA's apprehension to embrace the Texas model might stem from the regulatory fear that setting any strict geographic limit will incentivize industry to strategically plan facilities which fall just outside the outer boundary.[249] The economic principles behind this suggestion, at least for oil and natural gas production, remain far from fully developed.[250] Oil and natural gas producers have less leeway in infrastructure siting and development, particularly with respect to treatment plants, than agencies might imagine.[251] For example, not only is it extremely expensive to lay pipeline from well pads to treatment facilities, but producers must separate these pipelines from the interstate pipeline network until the natural gas meets certain quality standards.[252] Even in the highly unlikely event that

tons per year of sulfur dioxide." Brief for Respondents, *supra* note 111, at 15. Perhaps the result of *Summit Petroleum* would have been different had the EPA aggregated the nearest producing well, which was within a quarter mile, to achieve the desired end of classifying the sweetening plant as a major source. *Compare* Luminant Generation Co., L.L.C. v. Envt'l. Prot. Agency, 675 F.3d 917, 922 (5th Cir. 2012) (outlining requirements of Clean Air Act on major sources), *with Processing Natural Gas*, *supra* note 47 (finding that constructing one mile of pipeline costs an average of one million dollars). *See generally* Jacus, *supra* note 51.

248. Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans, 45 Fed. Reg. 52,676, 52,695 (Aug. 7, 1980) (to be codified at 40 C.F.R. pts. 51, 52, and 124). "EPA is unable to say precisely at this point how far apart activities must be in order to be treated separately. The Agency can answer that question only through case-by-case determinations." *Id. See* Brief for Respondents, *supra* note 111, at 7-8, 15. "EPA recognized that case-specific analysis would be necessary to determine whether certain pollutant emitting activities met the common sense notion of a plant." *Id.*

249. Wedeking, *supra* note 43, 6-39.

250. *Id.*

251. *EIA - Natural Gas Pipelines Network - Transportation Process & Flow*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/process.html (last visited Nov. 9, 2014).

252. *Id.*

> The principal service provided by a natural gas processing plant to the natural gas mainline transmission network is that it produces pipeline quality natural gas. Natural gas mainline transmission systems are designed to operate within certain tolerances. Natural gas entering the system that is not within certain specific gravities, pressures, Btu content range, or water content level will cause operational problems, pipeline deterioration, or even cause pipeline rupture.

Id. See also Unconventional Natural Gas Infrastructure Development in Pennsylvania, KEYSTONE ENERGY FORUM, at 1, *available at* http://www.keystoneenergyforum.com/uploads/files/28/KEF%20Infrastructure.pdf (finding that, on average, it costs one million dollars to lay one mile of pipeline).

hard outer limits do in fact incentivize operators to strategically place their emissions activities just beyond the agency's aggregation reach, Congress or the EPA should address such a problem through either an amendment to the regulations or the CAA, not by redefining the word "adjacent."[253]

V. CONCLUSION

The dramatic increase of domestic natural gas production has brought air aggregation to the forefront of the industry's focus.[254] While there are certainly instances in which air aggregation can and should be used as an effective tool of administrative enforcement, the functional interrelatedness test not only seems contrary to the plain meaning of both the CAA and case law directives, but also unduly burdensome to vertically integrated enterprises.[255] Given the tenuous legal groundwork behind the test and the vast amount of administrative resources currently engaged in the heavily fact-intensive determinations that the functional interrelatedness test requires, the EPA and state agencies should consider adopting more objective aggregation criteria so that they might deploy their limited resources elsewhere.[256]

The Texas model, which could be improved by making it applicable to all aggregation determinations in the state, is just one suggestion for a statutory scheme that favors reasonable, objective limits on aggregation without sacrificing the flexibility necessary to make case-by-case determinations when needed. Outer limits on aggregation would objectively limit the discretion of regulators to aggregate facilities which, under any sense of the word, simply should not be considered adjacent. Outer limits promulgate the common sense interpretation of "adjacent," and have the added bonus of advancing the directives of *Alabama Power*, which advocate for greater predictability in aggregation determinations.[257] In addition, the concept of outer limits is supported by many of the com-

253. *See generally* Rhinelander, *supra* note 67 at 10416.

> Congress, as the ultimate authority over cleaning up the air, has the primary duty to make its policy clear on the use of the bubble concept. EPA and the courts have invested heavily in resolving the uncertainty in the Clean Air Act over the propriety of various sorts of bubbles. While the Supreme Court might clarify the matter, Congress is the proper forum in which to find comprehensive answers.

Id.

254. *See generally* Wedeking, *supra* note 43.

255. *See Summit Petroleum*, 690 F.3d at 746; *see also Ala. Power*, 636 F.2d at 397.

256. *See generally* Jacus, *supra* note 51.

257. *Ala. Power*, 636 F.2d at 397.

mon sense public policy principles undercut by the functional interrelatedness test, such as the recognition of the unique nature of the natural gas production industry. At this critical moment in the nation's natural gas development, it is more important than ever that the regulations make intuitive sense *vis-à-vis* the statutory scheme and allow producers to accurately project their aggregation determinations when deciding where to invest critical resources.