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Livestock production in America was once the province of families who worked the land in order to make a living. These agrarians spent most of their time growing crops. Any livestock produced was an ancillary item used to diversify their output.[2] Since World War II, however, farm ownership has shifted from family farms to today's industry-like livestock operations that focus only on livestock production.[3] Despite this shift in ownership, the United States government still provides billions of dollars annually in subsidies to Concentrated Animal Feeding Operation ("CAFO")[4] owners.[5] These subsidies are given away without sufficient conditions attached to regulate the widespread environmental effects of CAFOs.[6] CAFOs affect water, air, and soil quality due to the heavy concentration of animals and lax regulations presently in effect. Changing the way CAFOs operate and are regulated is especially crucial today since they are a major contributor of

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1. CAFOs are also referred to as factory farms, Controlled Animal Feeding Operations, Large Confined Animal Facilities (or LCAFs), and Concentrated Animal Feeding Operations.

2. FRANK R. SPELLMAN, NANCY E. WHITING, ENVIRONMENTAL MANAGEMENT OF CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOS) 7 (CRC Press 2007).

3. Hatchett, Allison N., Note, *Bovines and Global Warming: How the Cows are Heating Things Up and What Can Be Done to Cool them Down*, 29 WM. & MARY ENVTL. L. & POL'Y REV. 767, 768 (2005).

4. CAFOs are also referred to as factory farms, Controlled Animal Feeding Operations, Large Confined Animal Facilities (or "LCAF"), and Concentrated Animal Feeding Operations.

5. *Id.*

6. *Id.* at 789.

methane to our atmosphere; a greenhouse gas that contributes to global warming.[7]

Before exploring regulatory schemes, a definition of what will be referred to as a CAFO in this comment is necessary. The United States Environmental Protection Agency ("EPA") defines a CAFO as a facility or lot where a) animals are confined or stabled for 45 or more days per year, b) crops or vegetation are not sustained at the facility during the normal growing season, and c) and that meets the threshold for the particular animal in question.[8] The EPA also divides CAFOs into large, medium, and small CAFOs based on the number of the particular livestock raised but this comment will focus on large CAFOs.

This comment assesses environmental regulation (both state and federal) of CAFOs in California, a state that is thought to have very progressive environmental regulation. It will explore the positive aspects of the current regulatory scheme while outlining several ways that the regulations can be amended to ensure environmental quality without devastating the livestock industry. Part I outlines some of the adverse environmental effects of CAFOs felt both in California and abroad. Part II discusses the current federal water regulation of CAFOs through the National Pollutant Discharge Elimination System ("NPDES") permitting system of the Clean Water Act ("CWA"). Part III addresses federal efforts to regulate CAFOs under the Clean Air Act ("CAA"). Part IV discusses possible conflicts between compliance with the regulations of the CAA and CWA. Part V focuses on attempts to regulate CAFOs using California laws. Part V(A) explores California's right to farm law. Part V(B) tracks the development of California's agricultural exemption, including recent revelations concerning the exemption's inclusion in California's original State Implementation Plan ("SIP").[9] Finally, part V(C) compares two local air district CAFO rules which attempt to regulate air pollutant emissions.

I. Environmental Impacts of CAFOs

CAFOs generate widespread environmental damage. The current feed given to animals at CAFOs is not properly formulated. Because of this, it is

7. *Id.* at 775.

8. Concentrated Animal Feeding Operations, 40 C.F.R. § 122.23(b) (2007). For example, the threshold numbers of dairy cows and cattle that a CAFO must contain to qualify as a "large CAFO" are 700 and 1,000 animals, respectively. *Id.*

9. State Implementation Plans (SIPs) lay out the manner in which states will comply with the federal Clean Air Act. EPA must approve SIPs for them to be valid. *See* 42 U.S.C. § 7410 (2007).

converted inefficiently by the animals.[10] For example, it takes around 157 million tons of grain to produce 28 million tons of beef.[11] Inefficient digestion means that many things pass directly through the animals and into their manure, like large amounts of phosphorous and nitrogen in pig waste.[12] Manure is further contaminated by food additives, hormones injected into the animals, and pathogenic microorganisms which can cause sickness in humans.[13] Some of these manure components would be found in any livestock grown using the same feed. However, CAFOs present a particular problem by virtue of their sheer size and the vast quantities of manure they produce.

The principle ways that CAFOs manage their waste is through the creation of lagoons that store manure or through the application of manure to land in order for it to serve as fertilizer (land application).[14] These are also the principle ways that CAFOs pollute the air and water. Most lagoons will leak at least once in their lifetimes and can overflow in extreme weather conditions.[15] These leaks allow manure to seep into shallow underground aquifers or directly into waterways. Land application is also risky because if too much manure is applied to a tract of land, it will run off during routine watering or storms and pollute waterways.[16] This runoff concern is important because there is insufficient land to apply the quantities of manure produced at CAFOs.[17] Additionally, CAFO waste runoff is ten to several hundred times more concentrated than raw sewage.[18]

Land application of manure can lead to soil degradation even if sufficient land exists for such application.[19] This damage is caused by the

10. Hatchett, *supra* note 3, at 785.

11. *Id.*

12. ROBIN MARKS, HOG WASH: FACTORY FARM GIVEAWAYS IN CLEAN WATER ACT PROPOSALS, 3 (Natural Resources Defense Council 1995).

13. *Id.* *See also* Marla Cone, *Stalking a Killer in Our Greens*, L.A. TIMES, Aug. 17, 2007, at A1 (tracing the e. coli bacteria found in California spinach to animal waste); Erin Allday, *Lettuce that Made 80 Sick Traced to Kern County Farm*, SAN FRANCISCO CHRONICLE, Feb. 24, 2008, at B2 (tracing e. coli in lettuce to dairy waste).

14. Moore, Ryan Alan, Note, *Casenote: Waterkeeper Alliance v. EPA: A Demonstration in Regulating the Regulators*, 10 GREAT PLAINS NAT. RESOURCES J. 17, 25 (2006).

15. *Id.*

16. *Id.*

17. *Id.* at 39.

18. Hatchett, *supra* note 3, at 784.

19. MARKS, *supra* note 12, at 3.

overconcentration of minerals and heavy metals in manure, which decreases the fertility of the land and can injure grazing animals that eat the contaminated vegetation.[20] Fertility on CAFO land can be further reduced due to the massive amounts of hoof traffic which compacts the ground. Once overly compacted, the ground no longer retains water, which can lead to desertification (regions of once fertile land that become deserts).[21]

In addition to effects on soil and water, CAFOs (especially those that raise bovine animals) adversely affect air quality in a manner that contributes to global warming. Bovine animals regurgitate and re-chew their food several times a day (a process called "rumination"). Each time they regurgitate, they release methane.[22] Over the course of a day, cows release enough methane to fill 400 party balloons per animal.[23] Manure also contains large amounts of methane.[24] Apart from having an unpleasant odor, methane is a greenhouse gas that contributes to global warming.

Methane actually warms the planet 30 times more effectively than carbon dioxide, making it an important pollutant to regulate if global warming is to be slowed. Methane is a particularly good target for regulation because methane in the atmosphere breaks down in about a decade, unlike carbon dioxide which can take more than a century to break down.[25] The rapid breakdown means that focusing on methane reductions could lead to faster real world reductions of greenhouse gases. However, as this comment will explain, regulation of air pollution from CAFOs is almost non-existent at the federal level and insufficient in that region of California with the most CAFOs, the San Joaquin Valley. Finally, CAFOs contribute to environmental degradation and global warming through their use of natural resources. Exorbitant amounts of fossil fuels are used to grow the food to feed animals in CAFOs and raise the animals themselves.[26] Also, more than half of the water used in the United States goes toward raising crops to feed CAFO animals.[27]

II. Regulation Using the CWA's NPDES Permitting Process

Given the environmental degradation that CAFOs cause through their use of lagoons and land application of manure, regulating CAFOs under the

20. *Id.*
21. Hatchett, *supra* note 3, at 787.
22. *Id.* at 775.
23. *Id.*
24. *Id.* at 792.
25. *Id.* at 786.
26. *Id.* at 787.
27. *Id.* at 784.

federal Clean Water Act should be a priority. One of the main methods of regulating water pollution under the CWA is the National Pollutant Discharge Elimination System ("NPDES") permitting process. The EPA delegates permitting authority for NPDES permits to the state of California.[28] NPDES permits are required in any operation that a) discharges pollutants, b) from a discrete conveyance, c) directly in the waters of the United States.[29]

There are two types of NPDES permits: general and individual. Both types typically last for five years before requiring renewal.[30] If a general NPDES permit is promulgated in a given region, CAFOs can apply to be part of the general permit.[31] However, if a CAFO does not meet the definition for the general permit in an area or there is no general NPDES permit for a particular region, the discharging CAFO must apply for an individual NPDES permit.[32]

Following a lawsuit challenging the EPA's failure to sufficiently regulate CAFOs, the EPA promulgated rules governing CAFOs in 2003 ("2003 Rule"). NPDES permits for CAFOs under the 2003 Rule have four main requirements.[33] First, permits must include effluent limitations for both production discharges and land application. Second, special conditions are listed which always include the development of a Nutrient Management Plan ("NMP") and a duty to maintain permit coverage. Third, standard conditions are always part of a NPDES permit. Finally, the fourth main section includes monitoring, record keeping, and reporting requirements that CAFOs must follow.[34]

The reporting duties for CAFOs subject to NPDES permits require the creation of annual reports by each regulated CAFO. These reports must include: 1) the number of animals at the CAFO, 2) the amount of manure generated during the past year, 3) the amount of manure transferred to others in the past year, 4) the total land application acres covered by the CAFO's NMP, 5) the number of acres used for land application in the past year, 6) the date, time, and estimated amount of any discharges within the

28. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, PRODUCER'S COMPLIANCE GUIDE FOR CAFOS 1 (2003).

29. *Id*. at 3. "Waters of the United States" includes most aquatic areas of the United States but does not include man-made waste management lagoons or wetlands converted to cropland before Dec. 23, 1985. 40 C.F.R. § 122.2 (2007).

30. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *supra* note 28, at 21.

31. *Id*.

32. *Id*. An explanation of exactly which CAFOs must obtain NPDES permits will follow.

33. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *supra* note 28, at 33.

34. *Id*.

past year, and 7) a statement of whether a certified NMP drafter created the NMP.[35]

The 2003 Rule required all CAFOs to apply for NPDES permits because of the great potential for discharges from CAFOs, as discovered by the EPA during its investigation of CAFOS.[36] Immediately after promulgation, environmental groups and CAFO representatives challenged the rule in the Second Circuit Court of Appeals case of *Waterkeeper Alliance v.* EPA.[37] The *Waterkeeper* court struck the provision of the rule requiring all CAFOs to obtain NPDES permits because the EPA cannot impose a NPDES requirement without a showing that an operation actually discharges pollutants.[38] The court based its decision on language in the EPA's administrative record that there was only a potential for discharge of pollutants from all CAFOs.[39]

Despite the court's decision striking the blanket NPDES requirement, in a footnote the court suggested that it would have had more reason to defer to the agency had the EPA argued that blanket CAFO regulation was essential because of the difficulty of catching CAFOs in the act of discharging, the efforts of CAFOs in the past to circumvent regulation, and evidence demonstrating that most CAFOs actually discharge.[40] This led commentators to argue that all the EPA needed to do when promulgating a new record for CAFOs was to substitute "potentially discharge" with "actually discharge" to retain the blanket duty.[41]

Another aspect of the 2003 Rule that the *Waterkeeper* court invalidated involved the establishment of NMPs by CAFOs subject to NPDES regulation.[42] The NMP requirements set forth in the 2003 Rule instructed CAFOs to establish NMPs for their operations. NMPs are important because, among other things, they determine the amount of manure that can be used in land application projects at a CAFO. The 2003 Rule allowed CAFOs to set their own limits, providing them with an opportunity to create plans that set dangerously high land application rates.[43] This was problematic because when land application rates are set too high, the potential for pollutant runoff into waterways increases. However, under the scheme developed by the 2003 Rule, as long as a CAFO complied with its

35. *Id.* at 37.
36. Moore, *supra* note 14, at 29.
37. *Waterkeeper v.* EPA, 399 F.3d 486 (2nd Cir. 2005).
38. *Id.* at 504.
39. *Id.*
40. *Id.* at 506, n. 22.
41. Moore, *supra* note 14, at 29.
42. *Waterkeeper*, 399 F.3d at 502.
43. *Id.*

self-imposed NMP, it could not be held liable for such runoff because the pollutants would be considered "agricultural stormwater discharge," which is immune from EPA regulation.[44] Finally, the court noted that since NMPs under the 2003 Rule did not need to be part of the NPDES permit, they were not subject to the public notice and comment procedures that are of paramount importance to regulating the nation's waters.[45]

In response to the court's decision in *Waterkeeper*, the EPA published a proposed rule on June 30, 2006 to revise the 2003 Rule.[46] EPA finalized this Proposed Rule on November 20, 2008 ("Final Rule" or "2008 Final Rule").[47] Despite the *Waterkeeper* court's acknowledgement that the EPA could impose an industry-wide duty to obtain a NPDES permit by re-wording the existing administrative record, the Final Rule only requires those CAFOs that actually "discharge or propose to discharge" pollutants to obtain permits.[48] The Final Rule minimizes the number of CAFOs required to obtain NPDES permits. As the *Waterkeeper* court noted, CAFOs have, "historically at least, improperly tried to circumvent the permitting process."[49] The difficulty of catching CAFOs in the act of discharging pollutants means that, for the most part, only CAFOs that are particularly egregious in their practices or that have a big leak will have to obtain a NPDES permit.[50] This narrow class of CAFOs subject to NPDES permits is unacceptable given the *Waterkeeper* court's acknowledgment that CAFOs are "important contributors to water pollution."[51]

The Final Rule also makes NMPs a mandatory part of the NPDES permit, thereby making the NMPs subject to public comment.[52] Forcing CAFOs to include their NMPs in the NPDES permit is an important step toward promoting and enforcing environmentally responsible land application of pollutant-ridden manure. Also, it appears that this integration will almost certainly be part of the new final rule because a

44. Moore, *supra* note 14, at 39. This exception to CWA regulation is a major problem with the current Act but criticisms of it are beyond the scope of this comment. For criticisms of the exemption, see generally Scott Jerger, *EPA's New CAFO Land Application Requirements: An Exercise in Unsupervised Self-Monitoring*, 23 STAN. ENVTL. L.J. 91, 94 (2004).

45. *Waterkeeper*, 399 F.3d at 503.

46. 71 Fed. Reg. 37744-01 (2006).

47. 73 Fed. Reg. 70418 (2008).

48. 73 Fed. Reg. 70418 (2008).

49. *Waterkeeper*, 399. F.3d at 506, n. 22.

50. *Id.*

51. *Id.*

52. 73 Fed. Reg. 70418 (2008).

Michigan court recently held that integration of NMPs into NPDES permits for CAFOs is statutorily required.[53]

The 2008 Final Rule takes one small step forward but a giant leap backward. The integration of NMPs into NPDES permits will allow the public to comment on NMP proposals, which is likely to keep NMPs within environmentally responsible limits. Proper NMPs will keep CAFOs from taking advantage of the "agricultural stormwater discharge" exemption for land applications that exceed the limits set in the NMP. CAFOs' inability to take advantage of this exemption will open them up to liability for egregious pollution through either citizen suits or EPA enforcement.

The leap backwards is the drastic narrowing of the number of CAFOs that must obtain NPDES permits. Under the 2003 Rule, all CAFOs had to obtain permits. Had this duty been retained in the Final Rule, *all* CAFOs would be subject to environmentally responsible NMPs. The fear of prosecution once the "agricultural stormwater discharge" immunity disappeared might force CAFOs to comply with the NMP limits. However, the Final Rule drastically lowers the number of CAFOs required to obtain NPDES permits by limiting it to those CAFOs who are caught discharging. This relaxation of permitting requirements in the current Final Rule is unacceptable. Even if the EPA does not believe that the Clean Water Act allows it to impose the blanket duty struck down in W*aterkeeper*, alternatives to self regulation should have been explored. In sum, the Final Rule will result in better NMPs but far less NPDES permits total, which will do little to decrease the water pollution caused by CAFOs.

III. Clean Air Act Regulation

The federal Clean Air Act ("CAA") delegates primary responsibility to each state for assuring air quality within the state's geographic area.[54] Each state is supposed to submit a state implementation plane that explains the manner in which air quality standards in the state will be met.[55] The federal government first enforced the CAA against CAFOs during the Clinton Administration.[56] However, the Bush Administration has basically eliminated the Clinton Administration pollution monitoring efforts. [57]

53. *Sierra Club v. Mich. Dep't. of Envtl. Quality*, 2008 WL 161188 (Mich. Ct. App. 2008).

54. Clean Air Act § 107(a), 42 U.S.C. §7407 (2007).

55. *Id.*

56. Hatchett, *supra* note 3, at 793.

57. *Id.*

IV. Conflicts Between Compliance with Federal Pollution Laws

The major drawback of current federal regulations is that each Act focuses on a particular type of pollutant (namely air or water) instead of taking a holistic approach to solving environmental problems. The lack of a holistic approach can mean that compliance with one set of regulations causes non-compliance with another. For example, while the Clean Water Act attempts to protect water by requiring practices aimed at preventing pollutants from reaching bodies of water, it does nothing to protect soil or the air.[58] Best Management Practices, such as land application under the current regulatory scheme, do not mandate that CAFOs investigate whether land application will cause overconcentration of pollutants on land.[59] Also, both lagoon storage and land application do not prevent the release of methane from manure into the atmosphere, leading to greater air pollution and contributing to global warming.[60] Similarly, using Best Available Control Technologies ("BACT") for Clean Air Act regulation can lead to water pollution.[61]

There are alternatives to the management practices required under both the CWA and CAA to control pollution in a holistic manner. For example, anaerobic digesters can be used instead of manure lagoons. These digesters use the bacteria found in manure to release methane.[62] The digesters then capture that methane and use it to generate energy that can be sufficient to power the CAFO and several surrounding homes.[63] Thus, unlike lagoons that are used to comply with the CWA, digesters reduce methane emissions from CAFOs.[64] Despite the promise of such technology, (which has existed for several years) it is not widely used by farmers in the United States. The EPA should amend its regulations under both the CAA and CWA to reflect a preference for digesters and other such practices that reduce pollution while providing benefits like electricity.

A. California's Right to Farm Law

One of the traditional obstacles to regulating CAFOs under state law are right to farm laws.[65] Right to farm laws exist in 43 states.[66] Legislatures

58. *Id.* at 804.

59. MARKS, *supra* note 12, at 3.

60. Hatchett, *supra* note 3, at 792.

61. Elizabeth A. McGee, Comment, *Cleaning the Air at the Dairy: Dairy Permitting in the San Joaquin Valley and the Controversy Surrounding the Science*, 15 SAN JOAQUIN AGRIC. L. REV. 235, 253 (2005).

62. Hatchett, *supra* note 3, at 800.

63. *Id.*

64. *Id.*

65. CAL. CIV. CODE § 3482.5 (West 2007).

enacted these laws to immunize farmers from nuisance suits brought by neighbors, especially when the neighbors moved to an area where a farm was pre-established.[67] Commentators criticize the application of right to farm laws to CAFOs because they were probably not originally intended to immunize such large-scale operations.[68]

California's right to farm law asserts that farms maintained in a manner consistent with proper or accepted customs in the same locality will not be considered nuisances.[69] This immunity applies as long as the farm has been in existence for at least 3 years and was not a nuisance when it began operating.[70] There are no cases of CAFOs invoking right to farm laws to defend their operations. This is probably due to the regulations that the various local air districts impose upon CAFOs, which effectively establish norms for localities for the purposes of the right to farm law. Therefore, a CAFO could only invoke California's right to farm law if it was operating in compliance with the various air rules for a given locality. In light of the local regulations in place in California, its right to farm law is not a particularly difficult barrier for those challenging CAFOs to overcome.

Although CAFOs have not yet invoked California's right to farm law to defend their operations, California's right to farm law could be interpreted in a manner that is overly protective when applied to CAFOs. Such an interpretation would only require CAFOs to be maintained based on current norms in the same locality. This self regulation would be similar to the self-imposed NMP process that the Second Circuit struck down in *Waterkeeper*.[71] The ambiguity leading to such an overly protective interpretation could be remedied by an amendment specifying that only CAFOs that operate in an environmentally responsible manner are immune under the right to farm law."[72]

B. California's Agricultural Exemption

In 1972, acting in compliance with Clean Air Act section 110, 42 U.S.C. § 7410, California submitted its State Implementation Plan to the United States EPA for approval. This SIP contained various California statutes that related to the regulation of air pollution. The EPA approved California's SIP in May 1972.[73] This original California SIP included a provision from the

66. Spellman, *supra* note 2, at 47.

67. *Id.*

68. *Id.*

69. CAL. CIV. CODE § 3482.5 (West 2007).

70. *Id.*

71. *Waterkeeper v.* EPA, 399 F.3d 486, 502 (2d. Cir. 2005).

72. Hatchett, *supra* note 3, at 805.

73. *See* Approval and Promulgation of Implementation Plan, 37 Fed. Reg. 10,842, 10,852 (May 31, 1972).

California Health & Safety Code that exempted agricultural sources of pollution from being required to obtain air permits.[74]

In 2002, at the urging of environmental groups, the EPA published a "Notice of Deficiency" that applied to permitting programs in California.[75] This notice explained that California's longstanding agricultural exemption was invalid because it "unduly restrict[ed] the local districts' ability to adequately administer and enforce" the Clean Air Act.[76]

In response to the EPA's actions, California's legislature passed Senate Bill 700 ("SB 700"), which took effect in January 2004. SB 700 removed the agricultural exemption of California Health & Safety Code section 42310(e).[77] California now requires "agricultural sources of pollution" to obtain air pollution permits pursuant to California Health & Safety Code section 42300.[78] "Agricultural sources of pollution" subject to California air district reporting requirements are animal confinements where animals are fed in any manner other than grazing.[79] Section 42300 allows air districts to establish permit systems that require residents to obtain permits before, inter alia, building or altering things that "may cause the issuance of air contaminants."[80]

In response to the removal of this agricultural exemption, air districts in California have promulgated air regulations directed at CAFOs. The two air districts with the highest concentrations of CAFOs in California and high levels of air pollution are the San Joaquin Valley Unified Air Pollution Control District ("SJVUAPCD") and the South Coast Air Quality Management District ("SCAQMD"). Each of these districts promulgated CAFO rules that require the use of Best Management Practices ("BMPs") to reduce air pollutant emissions at CAFOs.[81]

While SB 700 seemed to mark the end of blanket agricultural exemptions in California, one dairy who had recently lost a case challenging a SJVUAPCD regulation introduced a new wrinkle in December 2007. In its Motion for Reconsideration after its loss in *Association of Irritated Residents v.* C. & R. *Vanderham Dairy*, the dairy ("Vanderham") asserted that a blanket

74. *See* CAL. HEALTH & SAFETY CODE § 24265. This provision was later readopted and renumbered as CAL. HEALTH & SAFETY CODE § 42310 in 1975.

75. *See* 67 Fed. Reg. 35,990 (May 22, 2002).

76. *Id.*

77. SB 700 did retain some minor agricultural exemptions but such discussion is beyond the scope of this Comment.

78. CAL. HEALTH & SAFETY CODE § 39011.5(a) (West 2007).

79. *Id.*

80. CAL. HEALTH & SAFETY CODE § 42300(a) (West 2007).

81. The efficacy of these rules will be explored in greater depth in part V(C) below.

agricultural exemption still exists in California's SIP.[82] In its Memorandum of Points and Authorities, Vanderham explained that through discussions with SJVUAPCD officials, it was able to locate the original California SIP in its entirety.[83]

As explained in Vanderham's memorandum, state SIPs are not one document but instead an amalgam of regulations that the EPA approves piecemeal over several decades. Because of this, sections can be overlooked and contradicted for long periods of time and without ever being expressly revoked. This is precisely what seems to have occurred to the agricultural exemption integrated into California's SIP in 1972. Despite California revoking this agricultural exemption in its state laws, provisions integrated into a SIP remain there until the EPA expressly removes the provision.[84] EPA can remove provisions on its own accord or in response to a request from the state. The exemption is problematic because, since SIPs become federal law upon EPA approval, the agricultural exemption technically overrules California's revocation due to the Supremacy Clause. Therefore, if the EPA takes no action in response to this discovery, it is possible that all state and district rules and regulations promulgated in response to SB 700 would be invalid. After receiving the Motion for Reconsideration and contemplating the turbulent state of the law, the *Vanderham* court stayed proceedings until the EPA decides how to proceed.[85]

On January 7, 2008, in response to the great deal of uncertainty surrounding the SIP's agricultural exemption, Earthjustice, on behalf of the Sierra Club and a number of other interested parties, sent a letter to the EPA explaining the importance of removing the agricultural exemption from California's SIP. This letter provides a list of some of the regulations that

82. Defendant's Memorandum of Points and Authorities in Support of Motion for Reconsideration at 7, *Association of Irritated Residents v.* C. & R. *Vanderham Dairy*, No. 1:05-CV-01539 (OWW) (E.D. Cal. Sept. 25, 2007).

83. *Id.* at 9. It appears that the EPA discovered the exemption and informed SJVUAPCD, who then informed Vanderham. It is somewhat unusual that such an important exemption would only be disseminated to a small number of people and only to one side of a case as opposed to both parties being informed.

84. *See Safe Air for Everyone v.* EPA, 475 F.3d 1096, 1105 (9th Cir. 2007) (explaining that an EPA-approved SIP is federal law and does not change until EPA approves such a change).

85. *See Association of Irritated Residents v.* C. & R. *Vanderham Dairy*, No. 1:05-CV-01539 (OWW) Docket Entry #183 (E.D. Cal. Feb. 4, 2008) (order staying the motion pending the rule change proceeding).

would be affected by the continued operation of the blanket exemption.[86] Earthjustice also filed suit on behalf of these same groups in the Ninth Circuit Court of Appeals on January 28, 2008, in an attempt to push the EPA to remove all references to the blanket agricultural exemption from California's SIP.

At time of publication, EPA had not removed the agricultural exemption but other actions taken have signaled that they may do so in the future. On February 20, 2008, the EPA published "Revisions to the California State Implementation Plan, San Joaquin Valley Unified Air Pollution Control District."[87] These revisions correct the portion of California's SIP that the EPA adopted in 2004 which did not have the minor agricultural exemptions called for in SB 700.[88] The important aspect of these revisions for the purposes of this comment is the EPA's brushing aside of the 1972 blanket agricultural exemption. In the revisions, the EPA asserts that regardless of whether the 1972 SIP had a blanket agricultural exemption, as of the promulgation of the 2004 rule (the one being revised by this revision) "there is no exemption from permitting for agricultural sources."[89] The EPA's brushing aside of the 1972 blanket agricultural exemption is troublesome. Instead of taking the easy route of expressly overruling the 1972 SIP exemption, the EPA sidesteps the issue. This sidestepping seems to reflect an assumption on the part of EPA that conflicts in the SIP follow some sort of "last in time rule." The problem, of course, is that there is no such rule, meaning that these assertions by the EPA do not conclusively end the confusion.[90] Moreover, even if the EPA had expressly overruled the 1972 exemption, this revision was only applicable to the San Joaquin Valley and not California as a whole. Because of the confusion that will be abated and the simplicity of explicitly overruling the exemption, the EPA should publish a Federal Register notice expressly overruling the 1972 agricultural exemption and removing all reference to it from California's SIP.

86. These regulations include the EPA's approval of new source review programs that apply to agricultural sources, SJVUAPCD's Agricultural Conservation Management Program, and the particulate matter attainment plan for the San Joaquin Valley.

87. Revisions to the California State Implementation Plan, San Joaquin Valley Unified Air Pollution Control District, 73 Fed. Reg. 9,260-02 (Feb. 20, 2008).

88. *Id.*

89. *Id.* at 9,263..

90. *See Safe Air for Everyone v.* EPA, 475 F.3d 1096, 1105 (9th Cir. 2007) (explaining that an EPA-approved SIP is federal law and does not change until EPA approves such a change).

C. SJVUAPCD and SCAQMD CAFO Air Pollution Rules

As discussed above, local air districts in California began promulgating air regulations targeting CAFOs in response to SB 700's removal of the agricultural exemption in California. Two air districts in California with large numbers of CAFOs are the San Joaquin Valley Unified Air Pollution Control District ("SJVUAPCD") and the South Coast Air Quality Management District ("SCAQMD"). Because of this, SCAQMD adopted Rule 223, "Emission Reduction Permits for Large Confined Animal Facilities," on June 2, 2006.[91] Within the same month, on June 16, 2006, SJVUAPCD adopted Rule 4570, "Confined Animal Facilities."[92] A comparison of these two rules will show that both suffer from deficiencies which hinder proper regulation. In addition to these deficiencies, the comparison will also highlight the ways in which South Coast Rule 223 is superior to SJVUAPCD Rule 4570.

Both rules adopt the California Air Resources Board's ("CARB's") threshold definition for CAFOs.[93] CARB's threshold definitions are based on the type and number of animals at a particular operation.[94] For example, for a dairy to be considered a CAFO subject to permitting requirements, it must have 1,000 dairy cows.[95] Thresholds of this size make only large CAFOs, like those that have been the subject of this comment, subject to the permit requirements.

The CAFO Rules require CAFOs (both new and existing) to obtain operating permits.[96] These permits must include mitigation plans that outline the measures each CAFO will take to control its air pollutant emissions.[97] One distinction between the two rules comes in the frequency with which CAFO permits must be updated. The SCAQMD Rule requires CAFOs to submit update reports each year that include information necessary to determine an emissions inventory of all pollutants emitted

91. Emission Reduction Permits for Large Confined Animal Facilities, SCAQMD Rule 223 (June 2, 2006), *available at* http://aqmd.gov/rules/reg/reg02/r223.pdf.

92. Confined Animal Facilities, SJVUAPCD Rule 4570 (June 16, 2006), *available at* http://www.valleyair.org/rules/currntrules/r4570.pdf.

93. S*ee* CAL. CODE REGS. tit. 17, § 86500 (West 2008). While CARB refers to CAFOs as Large Confined Animal Facilities (LCAFs), it is little more than a semantic distinction. Therefore, in the interest of consistency, CAFO will continue to be the term used to refer to these facilities.

94. I*d*.

95. CAL. CODE REGS. tit. 17, § 86500 (a) (1); *see also* SJVUAPCD Rule 4570 tbl. 1, SCAQMD Rule 223(b)(21).

96. S*ee* SJVUAPCD Rule 4570.5;, SCAQMD Rule 223(c).

97. S*ee* SJVUAPCD Rule 4570.6;, SCAQMD Rule 223(c)(1)(E).

from the operation along with an updated mitigation plan.[98] While the SJVUAPCD Rule requires similar information in its updates, the rule only requires updates to be submitted once every three years.[99] Allowing longer spans of time between mitigation plan updates opens the door for violations during these breaks. While such violations could occur under the SCAQMD Rule, the annual update requirement helps to ensure that any violations will be of a more limited duration.

In addition to general permit requirements, both rules provide animal-specific mitigation measures. The SJVUAPCD Rule has mitigation measures tailored to dairies, beef, other cattle, swine, and poultry CAFOs.[100] The SCAQMD Rule only has mitigation measures tailored to dairies and poultry.[101] The SCAQMD Rule would be stronger if it applied to a broader range of animal types.

Because dairies comprise a large proportion of the CAFOs in California,[102] an in depth analysis of the dairy specific mitigation measures in the CAFO Rules is merited. The mitigation measures in both CAFO Rules fall into seven major categories: animal feed mitigation measures, milk parlor mitigation measures, freestall barn mitigation measures, mitigation for corrals where animals have been housed in the past 30 days, mitigation for operations that store or handle solid or separated waste, mitigation for operations that handle liquid waste, and mitigation for land application of dry or liquid waste to cropland.[103] Within these categories, CAFOs are able to choose a certain number of mitigation measures from a list that they must integrate into their operations.

The multi-category mitigation measure lists are meant to provide CAFOs with sufficient flexibility to reduce pollutant emissions in an economically feasible manner. However, the system currently in place in both air districts is flawed. The category, contained in both CAFO Rules, that requires mitigation measures to be implemented at corrals where animals have been housed in the past thirty days illustrates one of these flaws. One such mitigation measure in the corral category requires CAFOs to keep fence-line animal waste buildup from exceeding twelve inches in

98. SCAQMD Rule 223(c)(4).

99. SJVUAPCD Rule 4570.6.2.

100. SJVUAPCD Rule 4570.5.6 (dairies), 5.7 (beef), 5.8 (other cattle), 5.9 (swine), 5.10 (poultry).

101. SCAQMD Rule 223, app. A, tbls. 1 (dairies) & 2 (poultry).

102. Kodman, Rod, Migrant Children Under Child Welfare Services Jurisdiction: Who Will Guard the Guards Themselves?, 12 San Joaquin Agric. L.R. 1, 2 (2002).

103. SJVUAPCD Rule 4570.5.6; SCAQMD Rule 223, app. A, tbl. 1.

height.[104] Controlling manure buildup is important to both water and air pollution control because it prevents gases in the manure from escaping into the air while keeping the manure itself from washing into and polluting waterways. Therefore, the flaw is not in the mitigation measures themselves.

Instead, the flaw arises due to the sheer number of options both CAFO Rules provide for compliance. While it is important to provide for flexibility in a mitigation plan to keep compliance costs down, too much flexibility may prevent emissions reductions. Under the current CAFO Rules, there are so many options to choose from within each category that almost all CAFOs can find something on the list that is already being done. Using corral requirements as an example, the SJVUAPCD Rule only requires implementation of six out of thirteen measures while the SCAQMD Rule only requires six of twelve.[105] Moreover, many of the options actually allow for a choice between sub-options. When these sub-options are taken into account, the SJVUAPCD Rule actually requires six of nineteen measures while the SCAQMD Rule is only slightly better in its requirement of six of 18 measures.[106] The corral category is illustrative of all the categories, where CAFOs are never required to implement more than half of the listed measures.

While both CAFO Rules provide too many options, the corral category also shows one of the benefits of the SCAQMD Rule. For all of the mitigation categories, the SCAQMD provides fewer options for CAFOs to choose from.[107] This creates a greater likelihood that CAFOs will be forced to implement new measures to control pollution since there are fewer measures that the CAFO could already be using.

Another aspect of the SCAQMD Rule that is more protective of the environment is its treatment of fugitive emissions. Fugitive emissions are those that escape from a non point source.[108] While both the SJVUPACD and

104. SJVUAPCD Rule 4570.5.6 (E)(3);SCAQMD Rule 223, app. A, tbl. 1 (D)(2).

105. SJVUAPCD Rule 4570.5.6 (E);SCAQMD Rule 223, app. A, tbl. 1 (D).

106. I*d*.

107. Animal feed: SJVUAPCD requires 5 of 14 while SCAQMD requires 5 of 11; milk parlor: SJVUAPCD 1/3, SCAQMD 1/3; freestall barn: SJVUAPCD 2/10, SCAQMD 2/9; corrals: SJVUAPCD 6/13, SCAQMD 6/12; solid or separated waste: SJVUAPCD 2/8, SCAQMD 2/7; liquid waste: SJVUAPCD 1/9, SCAQMD 1/8; land application: SJVUAPCD 2/5, SCAQMD 2/4. S*ee* SJVUAPCD Rule 4570.5.6;, SCAQMD Rule 223, app. A, tbl. 1.

108.S*ee* A*labama* P*ower* C*o. v.* C*ostle*, 636 F.2d 323, 368 (D.C. Cir. 1979). The classic example of a point source is that of a smoke stack.

the SCAQMD have other rules which target fugitive emissions directly,[109] the SCAQMD's CAFO Rule 223 requires that CAFOs include fugitive emissions estimates in permit applications so that the district can include them in the emissions inventory for each CAFO.[110] The SJVUAPCD Rule does not include an explicit reference to fugitive emissions in its emissions inventory section.[111] The San Joaquin Valley Rule might just assume that fugitive emissions will be part of the information provided to the district by CAFOs. However, since most, if not all, pollution from CAFOs arguably comes from non point sources, it is important to require the inclusion of fugitive emissions in the information given to the district.

In order to make their Rules more efficacious, the SJVUAPCD and the SCAQMD can do a number of things. First, the air districts could limit the number of available options in the various categories. If the districts limited the number of options to those with the greatest environmental benefits, CAFOs would be forced to implement stringent mitigation measures and would not be able to circumvent regulation by relying solely on their existing mitigation measures. Such a limitation would probably be attacked by CAFOs as reducing the flexibility essential to economically feasible pollution reduction. Flexibility could be retained, however, by allowing CAFOs to petition the district for the use of different mitigation measures not listed in the Rule. A petition process of this sort would allow CAFOs to find more cost effective methods of reducing pollution. One problem with such a petition process is that air districts could use it to allow CAFOs to circumvent the more stringent mitigation measures by trumping up the costs of compliance. Despite the problem of circumvention by CAFOs, a system of petition-based variances from the mitigation options could increase the efficacy of the regulations, thereby reducing air pollution. Indeed, such a system of petition-based variances already exists in some form within some of the categories.[112]

Another method of improving the CAFO Rules could come through maintenance of the current number of options within each category while requiring CAFOs to implement a greater proportion of the options. This would be less susceptible to challenge by CAFOs because they would still have the same number of mitigation measures to choose from. Increasing

109. S*ee* SJVUAPCD Rule 4550 (Aug. 19, 2004); SCAQMD Rule 403 (June 3, 2003).

110. SCAQMD Rule 223(c)(1)(A).

111. S*ee* SJVUAPCD Rule 4570.6.1.5.

112. S*ee* SCAQMD Rule 223, app. A, tbl. 1 (E)(4) ("Implement alternative mitigation measure(s), not listed above, subject to approval" for the handling or storing of solid wastes). S*ee also* SJVUAPCD Rule 4570.5.6 (F)(5).

the number of options that must be implemented would also be superior to a reduction of the number of options to choose from because it would it would ensure that more environmentally responsible management practices were implemented at CAFOs.

A third means of improving the SJVUAPCD and SCAQMD Rules would come through a tiered approach to compliance. Under such an approach, CAFOs would be required to immediately implement a certain number of measures per category. Then, over a series of years the air districts could gradually ratchet up the number of mitigation measures required for each CAFO. Such a system would give CAFOs ample notice of the more stringent regulation that would come in the future, which would allow them to plan for the greater costs associated with implementing more mitigation measures.

A fourth method of improving the CAFO Rules would come through greater regulation of the number of animals in each CAFO. Currently, both CAFO Rules have thresholds for each type of animal that determine whether CAFOs must obtain permits. However, neither rule includes any regulation of the total number of animals CAFOs may raise at a given time. Since many of the environmental problems associated with CAFOs are caused by the overconcentration of vast quantities of animals, one of the best ways to regulate them is to limit the number of animals each CAFO can raise. The air districts could seek out the cooperation of the planning staffs of the various cities within the regions and promulgate ceilings on the number of animals CAFOs could raise.

A ceiling without a geographical limitation might cause some CAFOs to subdivide their operations onto a number of locations to circumvent regulation. However, this could be remedied by imposing a maximum number of animals CAFOs could raise per acre of land used. The establishment of upper limits tied to land would help to spread the adverse effects of each CAFO over a larger portion of land owned by the CAFO. Spreading the animals could also help reduce effects such as desertification. Furthermore, CAFOs would be forced to internalize more of the costs associated with the environmental effects of factory farm production since the effects would occur on the CAFOs' lands. Such internalization would provide CAFOs with greater incentives to run their operations in an environmentally responsible manner in order to minimize the costs associated with having to clean their properties.

The final, and possibly most effective, means of changing the existing CAFO Rules to result in greater emissions reductions could come through the severing of individual categories. Currently, several of the categories in both CAFO Rules include both "Class One" and "Class Two" mitigation measures. For each category with multiple classes of measures, Class One measures are generally more affordable while Class Two measures are more costly but also more environmentally beneficial. For example, within the mitigation measures for the storage or handling of solid waste, one Class

One mitigation measure requires animal waste to be covered with a waterproof cover[113] while one Class Two measure requires the use of a methane digester.[114]

Waterproof covers are far cheaper than digesters because digesters require the purchase of very large machinery and a method of moving the solid waste from the animals to the digester. However, digesters are environmentally superior to covers because they trap gases that would otherwise pollute the air. Digesters can also be set up to convert these captured gases into energy, thereby increasing the amount of energy in a region without the release of air pollutants.[115] Furthermore, since they are closed containers, digesters are less susceptible to inclement weather, which could blow or wash off waterproof covers. This example shows the conflict between the cost effectiveness of Class One measures and the far greater environmental efficiency of the more costly Class Two measures.

Since most CAFOs are businesses focused on financial success rather than minimizing environmental impacts, they will generally be drawn to the most cost effective method of complying with environmental regulations. Under the current CAFO Rules, this means that CAFOs are far more likely to choose Class One measures over the environmentally superior Class Two measures. Given this likelihood, the CAFO Rules would result in greater pollution reduction if Class One and Class Two measures were severed. Such severance would require CAFOs to implement at least some Class Two measures by removing their ability to choose cheaper, less effective measures.

Despite the flaws of both CAFO Rules, the interaction between SCAQMD Rule 223, other SCAQMD regulations, and residential development are causing CAFOs, and particularly dairies, to migrate from the SCAQMD to the SJVUAPCD and other states.[116] Commentators disagree over whether regulation or development is the more important factor. Irrespective of the cause, between 2004 and 2006 almost 80% of the dairies operating in the Inland Empire (which is part of the SCAQMD) migrated elsewhere.[117] Many of the CAFO-sized dairy operators in the SCAQMD are selling off their land in that area for large profits and moving to the SJVUAPCD due to its close proximity to the SCAQMD, cheap land, and the

113. SJVUAPCD Rule 4570.5.6 (F)(1).

114. SJVUAPCD Rule 4570.5.6 (F)(8).

115. Hatchett, *supra* note 3, at 800.

116. John Gibler, *Got Milk*, TERRAIN, Fall 2005, *available at* http://www.ecologycenter.org/terrain/article.php?id=13492.

117. Jerry Hirsch, *Dairies Moving Out of Inland Empire*, L.A. TIMES, Jan. 9, 2006, at C1.

existence of farmers willing to purchase manure.[118] This migration of CAFOs to the SJVUAPCD is and will continue to further deteriorate air quality in the San Joaquin Valley. Due to the increased air pollution that CAFOs will cause in the San Joaquin Valley in the coming years, it is imperative that the SJVUAPCD focus its attention on improving its rules applicable to CAFOs, including Rule 4570.

V. Conclusion

Raising livestock in the United States has come a long way since the idyllic days of Jeffersonian agrarians. Today, CAFOs control an ever-growing market share in the livestock industry and small livestock growers are all but gone. CAFOs create widespread adverse environmental impacts. They impact every facet of the environment from the air we breathe, to the water we drink, to the soil we use to grow our crops. Moreover, CAFOs contribute large amounts of greenhouse gases into the atmosphere. These greenhouse gas emissions are of special concern to this generation since they will only serve to increase the effects of climate change in the coming years.

Given these far reaching environmental effects, CAFOs must be more strictly monitored and regulated. One way to decrease the environmental impacts of CAFOs would be through decreasing American consumption of meat. This would lower the demand for meat, which would decrease the need for the livestock industry to build massive CAFOs. However, since Americans as a whole have a strong appetite for meat, such a decrease in demand will probably not occur any time in the near future. Because of this, improvements to regulations like those suggested in this comment should be implemented in order to limit the environmental impacts of CAFOs.

In addition to more stringent regulation, efforts should be made to inform the livestock industry of environmentally beneficial measures that would also result in savings for CAFOs. Such measures include methane digesters, which decrease air pollution while generating electricity. Even more than information, instead of providing subsidies to the livestock industry with no strings attached, the federal government should provide these subsidies only if CAFOs promise to invest all or at least a percentage of the subsidies in environmentally responsible mitigation measures. Through the use of conditional subsidies and greater regulation, the twin goals of economic prosperity for the livestock industry and environmental prosperity for all can be achieved.

118. *Id.*