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**UNITED STATES DISTRICT COURT
DISTRICT OF WYOMING**

STATE OF WYOMING, et al.,)	
)	2:15-CV-00043-SWS [Lead]
Petitioners,)	
v.)	[Consolidated With 2:15-CV-00041]
)	
UNITED STATES DEPARTMENT OF)	Assigned: Hon. Scott W. Skavdahl
THE INTERIOR, et al.,)	
)	
Respondents,)	RESPONDENT-INTERVENORS' BRIEF
)	IN OPPOSITION TO NORTH DAKOTA'S
SIERRA CLUB, et al.,)	MOTION FOR PRELIMINARY
)	INJUNCTION
Respondent-Intervenors.)	

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INTRODUCTION

Petitioner-Intervenor North Dakota's motion for preliminary injunction (Dkt # 52) should be denied. First, North Dakota (the State) cannot show a likelihood of success on the merits because the Bureau of Land Management (BLM) has clear authority to adopt its new rule on hydraulic fracturing, 80 Fed. Reg. 16128 (Mar. 26, 2015) (the Rule). The Mineral Leasing Act (MLA), 30 U.S.C. § 181 et seq., the Federal Land Policy and Management Act (FLPMA), 43 U.S.C. § 1701 et seq., and other statutes give BLM broad authority to regulate oil and gas development on public lands – including technical aspects of drilling like hydraulic fracturing. Nothing in the Safe Drinking Water Act, 42 U.S.C. § 300f, et seq. (SDWA), or the 2005 Energy Policy Act, Pub. L. No. 109-58, § 322, 119 Stat. 594 (2005) (codified at 42 U.S.C. § 300h(d)) (the 2005 Act), repeal that authority.

Nor will North Dakota suffer any irreparable harm in the absence of an injunction. BLM has merely adopted a regulation setting terms for activities that the agency is charged with managing on federal lands. That does not impair any sovereign right or authority held by the State. And North Dakota's far-fetched claim that the Rule will result in massive losses of taxes and mineral revenues is nothing more than unsupported speculation. Finally, the balance of equities and public interest favor allowing the Rule to take effect because of the environmental benefits it will provide.

Much of North Dakota's argument rests on a false premise: that its federally-approved SDWA regulations cover hydraulic fracturing and the other activities addressed by BLM's Rule. This theory underlies the State's legal argument on the merits as well as its claim that the BLM Rule will provide no environmental benefits in North Dakota. But this suggestion is simply incorrect. North Dakota's SDWA regulations – like the federal statute they implement – do not cover hydraulic fracturing of oil and gas wells. Nor do they address the other activities

addressed by BLM's Rule, like construction of oil and gas wells and the use of pits at those wells. There is no conflict between the Rule and North Dakota's SDWA regulations. And a review of the North Dakota rules that actually apply to oil and gas wells shows that BLM's Rule will represent a substantial improvement in protection for aquifers, lands and public health. North Dakota's motion should be denied.

DISCUSSION

I. STANDARD OF REVIEW

To obtain a preliminary injunction, North Dakota must demonstrate: (a) a likelihood of success on the merits; (b) that it is likely to suffer irreparable harm in the absence of injunctive relief; (c) that the balance of equities favors an injunction; and (d) that an injunction is in the public interest. Winter v. Natural Res. Def. Council, Inc., 555 U.S. 7, 20 (2008); Greater Yellowstone Coal. v. Flowers, 321 F.3d 1250, 1255 (10th Cir. 2003). The State bears the burden of establishing all four factors, and its "right to relief must be clear and unequivocal." Greater Yellowstone Coal., 321 F.3d at 1256. The State cannot meet this standard.

II. NORTH DAKOTA CANNOT SHOW A LIKELIHOOD OF SUCCESS ON THE MERITS BECAUSE BLM HAS AUTHORITY TO PROMULGATE THE RULE UNDER THE MINERAL LEASING ACT, FLPMA, AND OTHER STATUTES.

A. The MLA And FLPMA Give BLM Authority To Promulgate The Rule.

BLM relies on the MLA and FLPMA for its authority to promulgate the Rule. 80 Fed. Reg. at 16217.¹ The agency's interpretation of these statutes is reviewed under the two-step test established in Chevron, U.S.A. Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837 (1984). First, courts consider whether Congress has directly addressed the issue in the statute. Where "the intent of Congress" is clear, that ends the inquiry. Id. at 842-43. Second, if a statute is "silent or

¹ Other statutes also support BLM's authority to promulgate the Rule. See 80 Fed. Reg. at 16217. For example, the Indian Mineral Leasing Act (IMLA), 25 U.S.C. § 396a-g, vests the agency with rulemaking power on Indian lands.

ambiguous” on an issue, courts uphold the agency’s interpretation where it reflects a “permissible construction of the statute.” Id. at 843.

BLM’s interpretation must be upheld under both steps of Chevron. As discussed in response to the Wyoming and Colorado preliminary injunction motion, FLPMA and the MLA assign the Interior Department responsibility for managing oil and gas development on federal lands, and give the agency sweeping authority to issue regulations governing the technical aspects of that development. See Dkt # 67 at 2-9. In the MLA, Congress authorized the Interior Department to impose “exacting restrictions and continuing supervision” over companies developing oil and gas, and to issue “rules and regulations governing in minute detail all facets of the working of the land.” Boesche v. Udall, 373 U.S. 472, 477-78 (1963) (citing 30 U.S.C. § 189); see also, Ventura Cnty. v. Gulf Oil Corp., 601 F.2d 1080, 1083 (9th Cir. 1979) (MLA provides for “extensive regulation of oil exploration and drilling”); Dkt # 67 at 2-3.

FLPMA also assigns BLM responsibility for managing oil and gas development on federal lands. New Mexico ex rel. Richardson v. BLM, 565 F.3d 683, 689 n. 1 (10th Cir. 2009). As part of that authority, BLM must avoid “unnecessary or undue degradation of the lands,” 43 U.S.C. § 1732(b), and apply “multiple use and sustained yield” principles” that balance mineral development with protection of wildlife, water, and other resources. Id. § 1701(a)(7), 1701(a)(8), 1702(c). In FLPMA, Congress also directed BLM to issue regulations implementing these duties. Id. §§ 1701(a)(5), 1733(a), 1740. These provisions give BLM “ample authority” to promulgate regulations addressing mineral development. Humboldt Cnty. v. United States, 684 F.2d 1276, 1283 (9th Cir. 1982); see also, Dkt # 67 at 3-4.

Nothing in the MLA or FLPMA suggests that Congress intended to exempt well stimulation techniques like hydraulic fracturing from the broad regulatory authority granted to

BLM. Contrary to North Dakota’s argument, the Rule does not interfere with “traditional” state authority over water resources or violate FLPMA’s provision regarding water rights. See ND Br. at 18-20, 29-30; 43 U.S.C. § 1701 note (g)(1)–(2), (4) (stating that FLPMA shall not be construed to affect water rights or govern water appropriation).² BLM is not attempting to modify water appropriation laws or limit state water rights. The agency is merely trying to ensure that the oil and gas activities it approves will not contaminate aquifers and other water resources. Dkt # 67 at 4-7. As BLM noted in the preamble: “no commenter has explained how a requirement” that oil and gas wells be constructed to protect aquifers “will preempt or interfere with states’ . . . regulation of their ground water quality or quantity.” 80 Fed. Reg. at 16144; see also, id. at 16186 (noting that “BLM will not be issuing or vetoing rights to use water or discharge permits”). BLM’s view that it has authority to issue the Rule under FLPMA and the MLA should be upheld under the first Chevron step. See Chevron, 467 U.S. at 842-43.

BLM’s authority also should be affirmed under Chevron step two as a permissible reading of the MLA and FLPMA. See id. at 843-44. For the reasons discussed above, BLM’s view represents an entirely reasonable interpretation of the two statutes. Numerous courts have acknowledged BLM’s broad authority to regulate the technical aspects of oil and gas development. See Dkt # 67 at 8-9 (collecting cases); Boesche v. Udall, 373 U.S. at 477-78. Moreover, BLM’s view should get particular deference because it reflects a long-standing agency interpretation. Barnhart v. Walton, 535 U.S. 212, 219–20 (2002); see Dkt # 67 at 7-8.

² The arguments by North Dakota regarding Section 202(c)(8) of FLPMA, 43 U.S.C. § 1712(c)(8), and the savings clause in MLA Section 189, 30 U.S.C. § 189, also are meritless. Dkt # 67 at 4-7; ND Br. at 29-30. In addition, North Dakota’s reliance on Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Eng’rs, 531 U.S. 159 (2001) (SWANCC), is misplaced. See ND Br. at 18, 20, 33. SWANCC addressed the extent of Congress’s Commerce Clause authority to regulate non-federal lands – it did not address regulation of federal property under the Property Clause. 531 U.S. at 162. SWANCC has no applicability to a BLM rule addressing activities the agency is charged with managing on federal lands.

For many decades, Interior Department oil and gas regulations have addressed the same kind of issues covered by the Rule. Dkt # 67 at 7-8. For example, 1942 Interior Department rules addressed activities that “stimulate production by . . . water injection, or any other method” 7 Fed. Reg. 4132, 4135 (June 2, 1942); see also, 31 Fed. Reg. 6414, 6415 (Apr. 28, 1966) (same). And for more than thirty years – since at least 1982 – the Department has interpreted its statutory authority as extending specifically to hydraulic fracturing. 47 Fed. Reg. 47758, 47770 (Oct. 27, 1982) (adopting 30 C.F.R. § 221.27 (1982)).

B. SDWA And The 2005 Act Did Not Repeal BLM’s Authority.

Congress did not repeal the Interior Department’s authority when it passed the underground injection control (UIC) provisions of SDWA in 1974, or amended them with the 2005 Act. Dkt # 67 at 9-13. On their face, SDWA and the relevant section of the 2005 Act do not even mention FLPMA or the MLA. The 1974 legislative history of SWDA, in fact, expressly states that its UIC requirements were not intended to repeal or limit the Department’s authority under other statutes. H.R. Rep. No. 93-1185 (1974), as reprinted in 1974 U.S.C.C.A.N. 6454, 6484-85; Dkt # 67 at 10. Thirty years later, the legislative history of the 2005 Act offered no suggestion that Congress intended to repeal BLM’s well-established authority to regulate hydraulic fracturing and other technical issues on federal lands. Dkt # 67 at 11-13. Even after the 2005 Act, “under the MLA and FLPMA, BLM has direct authority to regulate [hydraulic fracturing] operations when they occur on federal lands.” Rebecca Watson et al., Hydraulic Fracturing and Water Supply Protection – Federal Regulatory Developments, 2012 Rocky Mtn. Min. L. Inst. 6, *6-26 (available on Westlaw at 2012 NO. 3 RMMLF-INST PAPER NO. 6).³

³ North Dakota’s suggestion that the Rule conflicts with SDWA’s federal facilities provision, 42 U.S.C. § 300j-6(a)(4), is also wrong. ND Br. at 21-22. This provision makes a federal agency that is itself “engaged in . . . underground injection” that may endanger drinking water subject to

C. North Dakota’s SDWA UIC Regulations Do Not Cover The Activities Regulated By The Rule.

North Dakota attempts to portray a conflict between the Rule and SDWA by repeatedly (and incorrectly) suggesting that the State’s federally-delegated SDWA UIC program applies to activities covered under BLM’s Rule. See, e.g., ND Br. at 2 (stating that North Dakota “regulates hydraulic fracturing and related activities . . . under the underground injection control program”); id. at 24 (stating that North Dakota’s UIC program “manages flowback water from hydraulic fracture sites” and citing 1983 state UIC regulations on well casing, pressure testing and other requirements related to “fracturing”); id. at 26 (stating that BLM’s Rule involves “regulation of the same sources . . . and setting standards for the same practices” as state UIC regulations).

In particular, North Dakota accuses BLM of “interference” with the State’s UIC program by adopting the Rule. See ND Br. at 21 (asserting that SDWA “clearly prohibits federal interference with state regulation of USDWs [underground sources of drinking water]” under the UIC program), 25-27 (arguing that the Rule “interferes with” North Dakota UIC regulations), 29 (similar), 35 (claiming there is “direct conflict” between the Rule and North Dakota’s jurisdiction under the SDWA UIC program).

In reality, there is no conflict between BLM’s new Rule and the North Dakota UIC program. The State’s UIC rules – like the federal statute they implement – do not regulate hydraulic fracturing of oil and gas wells. North Dakota is incorrect in suggesting that its UIC program covers the same activities as BLM’s Rule.

liability in the same manner as any other entity conducting such activities. 42 U.S.C. § 300j-6(a)(4). The federal facilities provision does not remove any authority that an agency has under statutes other than SDWA. See Pamela King, The Protection of Groundwater and Public Drinking Supplies: Recent Trends in Litigation and Legislation, 42 Vand. L. Rev. 1649, 1660-63 (1989) (discussing function of federal facilities provision).

SDWA's UIC provisions address the underground injection of chemicals and other materials. 42 U.S.C. §§ 300h-300h-8. Federal law, and North Dakota's UIC regulations, prohibit any underground injection unless a permit is issued. See 42 U.S.C. §§ 300h(b)(1)(A)-(D); 40 C.F.R. Part 144; ND Admin. Code § 43-02-05-04.⁴ In the late 1990s, the Eleventh Circuit Court of Appeals ruled that hydraulic fracturing constituted "underground injection" subject to SDWA's UIC requirements. See Legal Assistance Found., Inc. v. U.S. Env'tl. Protection Agency, 118 F.3d 1467, 1474, 1478 (11th Cir. 1997) ("[I]t is clear that Congress dictated that all underground injection be regulated under the" SDWA) (emphasis original). In 2005, however, Congress amended SDWA to exempt hydraulic fracturing from the UIC program except when diesel fuel is used. Energy Policy Act of 2005, Pub. L. No. 109-58 § 322 (2005) (codified at 42 U.S.C. § 300h(d)(1)(B)). Thus, SDWA's UIC requirements today generally do not cover hydraulic fracturing. Id.

A review of North Dakota's UIC regulations illustrates how distinct that program is from BLM's Rule. Consistent with the federal statute, North Dakota's UIC regulations do not mention hydraulic fracturing. See ND Admin. Code Ch. 43-02-05. The State also does not require a UIC permit when a company hydraulically fractures an oil and gas well.⁵ And the UIC regulations impose a variety of requirements for an underground injection well that do not apply

⁴ As in many other states, the United States Environmental Protection Agency has delegated primary authority for enforcing SDWA to North Dakota. 48 Fed. Reg. 38238 (Aug. 23, 1983).

⁵ The one limited exception is when diesel fuel is used. See 42 U.S.C. § 300h(d)(1)(B) (2005 Act excluded hydraulic fracturing from definition of "underground injection," except when diesel used). Since February 2014, pursuant to EPA direction, North Dakota has required a UIC permit for hydraulic fracturing with diesel. North Dakota Diesel Fuel Guidance (Feb. 2014), attached as Ex. 1, available at:

https://www.dmr.nd.gov/oilgas/EPAHFguidelines2014_02_14.pdf. But even in that limited circumstance, there is no conflict: the legislative history of SDWA makes clear that it does not limit the Interior Department's authority under the MLA or other statutes. P. 5, supra. There is no reason BLM and North Dakota cannot both regulate diesel fracturing using different sources of authority.

to oil and gas wells. These include a detailed UIC permit application, quantitative analysis of existing ground water quality in the area as well as of the fluids to be injected, assurances that the injection will not endanger any underground sources of drinking water, and public notice to all landowners within a quarter mile. Compare ND Admin. Code § 43-02-05-04 (UIC permitting regulations) with ND Admin. Code § 43-02-03-16 (permit requirements for drilling oil and gas well).

UIC injection wells are often used to dispose of wastes generated by activities at oil and gas wells. The injection wells, however, typically are located at different sites from the oil and gas wells, and are subject to a different regulatory scheme. BLM's Rule regulates only hydraulic fracturing and other activities at the oil and gas well – not disposal or other activities at UIC injection wells. See, e.g., 80 Fed. Reg. at 16220 (43 C.F.R. § 3162.3-3(h)) (Rule addresses management of fluids recovered from fracturing operations until “approval of a produced water disposal plan under BLM requirements”); 58 Fed. Reg. 47354, 47363 (Sept. 8, 1993) (BLM order addressing produced water disposal plans notes that UIC permits are required for disposal in injection wells).

North Dakota's focus on its UIC program is a red herring. By exempting hydraulic fracturing from UIC requirements, the 2005 Act created a gap in SDWA's program protecting underground sources of drinking water. The Rule takes steps to close that regulatory gap using BLM's independent statutory authority. BLM's effort does not violate SDWA, or conflict with North Dakota's UIC regulations implementing that statute. North Dakota cannot show a likelihood of success on the merits.

III. NORTH DAKOTA WILL NOT SUFFER IRREPARABLE HARM IN THE ABSENCE OF AN INJUNCTION.

North Dakota claims it will suffer two forms of irreparable harm if the Rule takes effect:

(a) impairment of the State’s “sovereign authority” to regulate hydraulic fracturing, and (b) harm to the State’s “economic interests in the form of substantially decreased royalties and taxes.” ND Br. at 7, 11. Both arguments fail.

A. The Rule Does Not Impair Any Sovereign Interest Of North Dakota.

North Dakota has no sovereign right to be the only entity regulating hydraulic fracturing on federal lands. The Property Clause of the United States Constitution makes management of federal property – including federal mineral development – the prerogative of Congress. Kleppe v. New Mexico, 426 U.S. 529, 540 (1976) (quoting Utah Power & Light Co. v. United States, 243 U.S. 389, 405 (1917)); Ventura Cnty., 601 F.2d at 1083. “State jurisdiction over federal land does not extend to any matter that is not consistent with the full power in the United States” under the Property Clause. Wyoming v. United States, 279 F.3d 1214, 1227 (10th Cir. 2002) (internal quotations omitted); see Dkt # 67 at 14-15.

Congress has delegated its authority under the Property Clause to the Interior Department through FLPMA and the MLA. That “federal legislation necessarily overrides conflicting state laws under the Supremacy Clause.” Ventura Cnty., 601 F.2d at 1083. If state laws conflict with federal regulation under the Property Clause, “the law is clear: The state laws must recede.” Kleppe, 426 U.S. at 543; accord Calif. Coastal Comm’n v. Granite Rock Co., 480 U.S. 572, 580-81 (1987); see e.g., Tex. Oil & Gas Corp. v. Phillips Petroleum Co., 406 F.2d 1303, 1304 (10th Cir. 1969) (state police power over oil and gas can apply on federal land “unless and until the federal government has asserted its constitutionally paramount power by appropriate statute and regulation”); Ventura Cnty., 601 F.2d at 1083-86 (local zoning regulation that conflicted with

federally-approved oil and gas development on national forest was preempted by MLA and other federal statutes).

As discussed above, the MLA and FLPMA give BLM the authority to regulate hydraulic fracturing and other technical aspects of federal oil and gas development on federal lands. North Dakota therefore cannot claim to have any sovereign interest that is violated by BLM's promulgation of the Rule. See N. Arapaho Tribe, 2015 WL 872190 at **15-16 (rejecting argument that tribe suffered irreparable harm from Affordable Care Act rules infringing on its sovereign authority where tribe was unlikely to succeed on merits of that claim); Dkt # 67 at 15.

The State's argument that the Rule is "an affront" to its sovereign interests, ND Br. at 1, also ignores North Dakota's own laws. The State has an existing oil and gas regulation addressing "United States government leases" that states: "The commission recognizes that all persons drilling and producing on United States government land shall comply with the United States government regulations." ND Admin. Code § 43-02-03-07. The regulation allows companies to use a variety of federal forms in lieu of state forms on those leases, and requires that companies developing such leases also must comply with state regulations. Id. This rule confirms that North Dakota's claim of a sovereign right to regulate oil and gas without federal involvement is meritless.

The cases cited by North Dakota also do not support its claim of irreparable harm. For example, in Kansas v. United States the federal government designated privately-owned lands as "Indian lands," a decision that transferred authority to the Miami Tribe and limited the ability of the State of Kansas to apply its laws there. 249 F.3d 1213, 1218-19, 1223 (10th Cir. 2001). In contrast, the Rule does not transfer jurisdiction over any lands or change their legal status. The Rule applies only to lands and minerals owned by the federal government, where (regardless of

the Rule) the federal government is the primary sovereign. The Rule simply addresses how BLM will manage oil and gas activities on those lands.⁶ Dkt # 67 at 15.

International Snowmobile Manufacturer's Association v. Norton, 304 F. Supp. 2d 1278 (D. Wyo. 2004), also does not help North Dakota's argument. There, the plaintiffs argued that a regulation limiting snowmobile use at Yellowstone and Grand Teton National Parks "infringes on Wyoming's sovereignty." Id. at 1287. But the court did not find any such sovereign impairment. Instead, the court found irreparable harm based on concrete evidence of economic impacts "to a whole group of businesses which supply lodging, dining, gas, and other services to snowmobilers in the Parks." Id. That holding has no bearing on the State's sovereign injury argument. Dkt 52-1 at 8-9.

Nor does the Rule impair North Dakota's ownership and management of state-owned groundwater resources. ND Br. at 10-11. North Dakota cannot identify any provision of the Rule that modifies state water laws or limits water rights. BLM is just trying to ensure that the oil and gas development activities it approves will not harm the State's water resources. See p. 4, supra. If North Dakota's concern is for protection of its state-owned groundwater resources, it should support BLM's effort rather than challenging it.

The presence of split estate lands (where the federal government owns minerals that underlie private or state-owned surface lands) does not mean the Rule "improperly infringes on North Dakota's sovereign regulatory jurisdiction." See ND Br. at 9-10, 35-36. Tellingly, North

⁶ Two other cases cited by North Dakota, Akiachak Native Cmty. v. Jewell, 995 F. Supp. 2d 7 (D.D.C. 2014), and Kiowa Indian Tribe of Okla. v. Hoover, 150 F.3d 1163 (10th Cir. 1998), are distinguishable for similar reasons. Akiachak found that the State of Alaska would suffer irreparable harm if the Interior Department took land into trust for native tribes because doing so would "cause chaos over clouded title to land in Alaska." 995 F. Supp. 2d at 15-16 and n. 6. No such change of title is involved here. Kiowa involved efforts to seize tribal assets by an Oklahoma state court that lacked jurisdiction over the tribe. 150 F.3d at 1171-72. In contrast, BLM here is not seizing or attempting to exert new authority over non-federal property.

Dakota cannot cite a single case supporting this argument. Id.⁷ Congress’s Property Clause power, and BLM’s authority under the MLA and FLPMA, extend to federally-owned minerals as much as they do the federal surface estate. See James D. Harris, [Relative Property Interests on the Federal Oil and Gas Lease](#), 2008 Rocky Mtn. Min. L. Inst. Paper No. 13B (available on Westlaw at 2008 No. 1 RMMLF-INST Paper No. 13B) (Mineral rights are “federal property in the full meaning of the Property Clause of the Constitution.”).

North Dakota’s split estate theory attempts to create a threat to its “sovereign interests” out of a situation that already exists. The presence of split estate lands is nothing new in North Dakota and many other western states. BLM already requires a permit to drill on federal leases, regardless of whether the minerals underlie private lands. See 72 Fed. Reg. at 10336 (Onshore Order No. 1 describing permitting requirements for “Lands With Non-Federal Surface and Federal Oil and Gas”). And North Dakota has coordinated state permitting with BLM for decades when development involves federal minerals. See, e.g., ND Admin Code § 43-02-03-07 (historical note) (North Dakota’s rule acknowledging federal authority over “United States leases” has been in current form since 1994). BLM rules, for example, require a federal mineral

⁷ The two cases cited by North Dakota (Dkt # 52-1 at 35), are inapplicable. In [Hydro Resources, Inc. v. U.S. EPA](#), 608 F.3d 1131 (10th Cir. 2010), the court addressed whether New Mexico or EPA had SDWA permitting authority over a project. There was no dispute, however, that a SDWA permit was required. Id. at 1134. Here, EPA is not involved and SDWA UIC permits are not at issue. Instead, BLM is exercising its authority under the MLA and FLPMA. See pp. 2-5, supra. North Dakota also cites [Hunt Oil Co. v. Kerbaugh](#), 283 N.W.2d 131 (N.D. 1979), for the proposition that state law only allows a mineral owner to use only as much of the surface as “reasonably necessary” to develop the minerals. Dkt # 52-1 at 35. But what is “reasonably necessary” is a question of fact that is determined when on-the-ground activity is proposed. See, e.g., Hunt, 283, N.W.2d at 137. In this facial challenge, there is no basis for concluding that the Rule’s provisions will require using more of the surface than “reasonably necessary.” Moreover, use of the surface to comply with federal laws is considered “reasonably necessary” when developing a federal mineral lease. See, e.g., 72 Fed. Reg. 10308, 10336 (Mar. 7, 2007) (a “Federal mineral lessee has the right to enter [non-federal surface] property” to conduct surveys required by federal law because it is necessary “to develop[] the dominant mineral estate”).

lessee to consult with the non-federal surface owner and attempt to reach agreement on surface use issues. 72 Fed. Reg. at 10336. These same rules will apply under the new Rule. North Dakota cannot claim that it will suffer any irreparable harm to its sovereignty from continuing to coordinate with BLM on split estate and other lands, just as the State has done for years.

B. North Dakota Will Not Suffer Irreparable Harm From Lost Taxes Or Mineral Revenues.

North Dakota's argument that the Rule will cost it billions of dollars in lost taxes and revenues, ND Br. at 14, also fails. The general rule is that potential economic loss does not establish irreparable harm. See, e.g., Port City Props. v. Union Pac. R.R. Co., 518 F.3d 1186, 1190 (10th Cir. 2008). To support a preliminary injunction, moreover, a threatened injury must be imminent and "certain, great, actual 'and not theoretical.'" Heideman v. S. Salt Lake City, 348 F.3d 1182, 1189 (10th Cir. 2003) (quoting Wis. Gas Co. v. FERC, 758 F.2d 669, 674 (D.C. Cir. 1985)). "Speculation or unsubstantiated fear of what may happen in the future cannot provide the basis for a preliminary injunction." Schrier v. Univ. of Colo., 427 F.3d 1253, 1266 (10th Cir. 2005). The Tenth Circuit, for example, has rejected a state government's effort to establish an injury to state revenues based on conclusory affidavits that lacked any substantial supporting analysis. Wyoming v. U.S. Dep't of Interior, 674 F.3d 1220, 1232-33 (10th Cir. 2012).

North Dakota's irreparable harm theory is exactly the kind of speculation the Tenth Circuit has rejected. The State claims that:

- (a) the Rule will delay the issuance of each BLM permit by 6-10 months – supposedly "doubl[ing]" current processing times, ND Br. at 12;
- (b) those delays "will cut the production of oil and gas in half," id.; and
- (c) nearly half of the companies currently drilling on public lands in North Dakota (10 of 22) will "permanently" leave the state to avoid complying with the Rule. Id. at 14.

These far-fetched claims are based on an affidavit from Lynn Helms, the director of the North Dakota Industrial Commission's Department of Mineral Resources (the state oil and gas regulatory agency). See id. at 12, 14. Mr. Helms, however, provides no analysis or evidence to support his remarkable predictions.

For example, his opinion that permitting times will “nearly double[]” under the Rule is based only on (a) “my understanding of BLM’s current drilling permit approval times,” and (b) “my understanding that BLM has not hired additional staff” to implement the Rule in North Dakota. Dkt # 52-4 (Helms Decl.) ¶ 15. But those two assumptions just describe existing conditions. Mr. Helms fails to explain at all how he concluded that the requirements of the new Rule will cause delays of 6-10 months for every permit issued by BLM. Id. ¶¶ 14-15. Based on the affidavit, his opinion is nothing more than speculation.⁸

Mr. Helms also fails to explain why he disagrees with BLM’s conclusions on this issue. Unlike North Dakota, BLM has done an analysis and determined that the Rule will not require significant delays. BLM estimates that applications would require “only 4 hours of additional review time” by agency staff. 80 Fed. Reg. at 16196. “This does not present a measureable delay in processing time.” Id. The Rule also allows companies to seek approval of hydraulic fracturing operations as part of the existing drilling permit process, 80 Fed. Reg. at 16218 (43 C.F.R. § 3162.3-3(c)(1)), in which case no new delays would result. “BLM believes that the additional information that would be required by this rule would be reviewed in conjunction with the [application for permit to drill (APD)] and within the normal APD processing timeframe.” Id. at 16177.

⁸ Mr. Helms’ statement that a 6-10 month delay would “nearly double[]” BLM permitting times also appears inconsistent with his statement earlier in the case that companies “generally wait between nine months and 1.5 years before receiving a [drilling] permit from BLM.” Dkt # 6-3 ¶ 35.

In addition, the Rule allows a company to submit a “master hydraulic fracturing plan” (MHFP) to obtain approval for fracturing multiple wells. Id. at 16217-218 (43 C.F.R. §§ 3160.0-5, 3162.3-3(c)(3)). An MHFP allows BLM to “frontload” and “streamline” the approval process for hydraulic fracturing operations, which should avoid delays. Id. at 16147-48. While some additional time may be required if companies fail to take advantage of either of these procedures, that time is likely to be minimal. See id. at 16177, 16196. North Dakota has offered no reason to doubt these conclusions. Nor has the State shown that any permit processing delays that do occur would be substantial enough to affect oil and gas production.

North Dakota’s prediction that BLM permitting delays caused by the Rule will dramatically cut oil and gas production is even less plausible. ND Br. at 12. Again, this claim relies on Mr. Helms’ affidavit. Mr. Helms provides only a single sentence stating that the claimed 6-10 month permitting delay “will result in approximately one-half the rate of development and in turn result in decreased royalties and taxes. . . .” Helms Decl. ¶ 16. He offers no analysis or explanation to support this statement.

Mr. Helms’ opinion conflicts with BLM statistics, which indicate that federal permitting times are not constraining development in North Dakota. Obtaining a federal drilling permit in North Dakota already takes longer than a state approval. See Dkt # 6-3 ¶ 35 (stating that federal permits require 9-18 months); Deborah Sontag and Robert Gebeloff, The Downside of the Boom, New York Times (Nov. 22, 2014), attached as Ex. 2 (state permits processed in 10 days as of 2011).⁹ Despite the additional time required for BLM approvals, the number of new federal wells drilled each year in North Dakota has nearly doubled since 2010. See Ex. 3 (BLM statistics on wells started (“spudded”). In every year from 2010-2014, BLM also approved

⁹ Available at: http://www.nytimes.com/interactive/2014/11/23/us/north-dakota-oil-boom-downside.html?_r=0.

more permits than companies drilled. Compare id. with Ex. 4 (BLM statistics on drilling permits approved).¹⁰ For example, in 2013 and 2014 BLM approved about 50 percent more permits in North Dakota than companies chose to drill. Id. By September 2014, companies had stockpiled 356 approved federal permits in North Dakota, which amounted to a two-year supply based on 2013-2014 drilling rates. See Dkt # 45-4 at p. 284; Ex. 3. Mr. Helms does not explain why he believes the Rule will reverse this situation so dramatically.

Similarly, Mr. Helms provides no support for his prediction that numerous companies will flee federal lands permanently to avoid the “substantial delay and additional costs of complying with the BLM Rule.” Helms Decl. ¶ 18; accord ND Br. at 14. BLM calculated that compliance costs for the Rule will amount to only 0.13 to 0.21 percent of the expense of drilling a well. 80 Fed. Reg. at 16130. Even if that figure were doubled or tripled, the requirements of the Rule would represent much less than one percent of the drilling cost. North Dakota offers no basis to question BLM’s numbers. Nor does the State explain why such modest costs will result in a mass exodus of oil and gas companies from federal lands. In particular, Mr. Helms’ opinion does not appear to consider many other factors that go into the drilling decisions of oil and gas companies, and have a much larger impact on the economics of a project. These factors include the price of oil and natural gas, the amount of oil recoverable in North Dakota compared to other states, the number of leases held by each company in the state, costs of equipment and labor, etc. See Dkt # 67 at 20-21. Given the numerous other considerations involved, there is no basis to conclude that the Rule will have any systemic impact on state revenues.

The conclusory opinions offered by Mr. Helms fall far short of what is required to establish irreparable harm. As the Tenth Circuit held in rejecting a similar challenge on standing

¹⁰ Exhibits 3 and 4 are available at:
http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/statistics.html .

grounds, “conclusory” affidavits that “provide[] no underlying evidence to support [the] claim that a reduction in revenue even exists . . . [or that] revenues will decrease in the future” are insufficient to demonstrate that the State faces any injury. Wyoming, 674 F.3d at 1232. The Wyoming decision makes clear that North Dakota’s speculation about hypothetical lost taxes and mineral revenue fails to establish irreparable harm. See id. at 1227, 1232; see also Schrier, 427 F.3d at 1266 (claim of “lost opportunities” by terminated employee was too speculative to support finding of irreparable harm where plaintiff “provided no evidence of actual lost opportunities”).¹¹

If states could rely on conclusory opinions about potential lost tax revenues, the requirement to show irreparable harm would effectively be written out of the preliminary injunction test any time a state challenges a federal decision. The Tenth Circuit recognizes that almost every major federal land management action has some “generalized” impact on the surrounding area. Wyoming, 674 F.3d at 1234-35. But more than that is required to establish an injury for purposes of litigation. Because of “the unavoidable economic repercussions of virtually all federal policies, and the nature of the federal union as embodying a division of national and state powers,” a state must provide specific, direct proof of lost tax revenues where it seeks to challenge a federal action. Id. (quoting Pennsylvania v. Kleppe, 533 F.2d 668, 672-73 (D.C. Cir. 1976)). North Dakota has failed to do so.

¹¹ Moreover, any hypothetical slowdown in state revenues would only be temporary if the Rule is later set aside by this Court. Such a temporary impact does not cause irreparable harm. See Dkt # 67 at 19 n. 6; Heideman, 348 F.3d at 1189-90. While North Dakota relies on Oklahoma v. International Registration Plan, Inc., 264 F. Supp. 2d 990 (W.D. Okla. 2003), ND Br. at 11-12, that case is readily distinguishable. In Oklahoma, the court emphasized that the loss was irreparable because Oklahoma was “as a practical matter, precluded from ever seeking judicial review” of the decision harming it. Id. at 997. Moreover, unlike this case, there was no dispute that Oklahoma actually was suffering a significant injury: an interstate regulatory organization had imposed sanctions directing other states to withhold vehicle registration fees from Oklahoma. Id. at 993, 997.

IV. THE BALANCE OF EQUITIES AND PUBLIC INTEREST FAVOR DENYING NORTH DAKOTA'S REQUEST FOR AN INJUNCTION.

The other two factors – the balance of equities and the public interest – also support denial of North Dakota's motion.¹² The State is not asking the Court to maintain the status quo on the ground. Instead, it seeks to allow companies to drill thousands of new oil and gas wells with outdated and inadequate rules while this case is pending. See 80 Fed. Reg. at 16130 (estimating Rule will affect 2,800-3,800 operations per year). Such an outcome would have a substantial adverse impact on the environment and members of the public who are affected by oil and gas development on public lands. For that reason, the public interest and balance of equities strongly weigh against granting the relief sought by North Dakota.

First, as discussed in response to the preliminary injunction motion filed by Western Energy Alliance, et al. (the Industry Associations), the balance of equities and public interest favor BLM because it is exercising its statutory authority to protect public lands and the environment. See Dkt # 45 at 11-32; Safari Club Int'l v. Salazar, 852 F. Supp. 2d 102, 125 (D. D.C. 2012); N. Arapaho Tribe, 2015 WL 872190 at *16. That public interest is underscored by the almost 1.35 million public comments submitted to BLM urging the agency to adopt protections as strong as or stronger than those in the Rule.

Second, the environmental benefits of the Rule weigh against injunctive relief. The Rule represents a much-needed update to BLM regulations. It will benefit numerous members of the public by reducing damage to land, water, and wildlife from waste pits; by protecting aquifers from contamination due to well construction defects and hydraulic fracturing-related accidents;

¹² The balance of equities and public interest factors are addressed together because they overlap to a great degree in this case. See Nken v. Holder, 556 U.S. 418, 435 (2009) (balance of harms and public interest factors for stay “merge when the Government is the opposing party”).

and by providing informational tools so that members of the public can better protect their health and safety. See Dkt # 45 at 11-32 (response to Industry Associations' motion); Dkt ## 38-2 to 38-4 (declarations supporting intervention). Preserving the environmental benefits of the Rule advances the public interest and outweighs the minimal impacts to North Dakota and the other Petitioners. See Dkt # 45 at 11-32; Amoco Prod. Co. v. Vill. of Gambell, Alaska, 480 U.S. 531, 545 (1987); Kootenai Tribe of Idaho v. Veneman, 313 F.3d 1094, 1124-25 (9th Cir. 2002); San Luis Valley Ecosystem Council v. U.S. Fish & Wildlife Serv., 657 F. Supp. 2d 1233, 1242 (D. Colo. 2009); Wilson v. Amoco Corp., 989 F. Supp. 1159, 1177-78 (D. Wyo. 1998).

A. North Dakota's Arguments Do Not Withstand Scrutiny.

North Dakota's claim that the public interest supports an injunction because "regulatory chaos" will result if the Rule is later struck down fails because the State is not likely to succeed on the merits. ND Br. at 37. BLM has ample authority to issue the Rule under FLPMA and the MLA, and nothing in SDWA or the 2005 Act narrowed that authority. See pp. 2-5, supra; see also N. Arapaho Tribe, 2015 WL 872190 at *16 (ruling that balance of harms and public interest did not support injunction against agency regulations that were authorized by Congress).

North Dakota also is wrong that no environmental harm will result from an injunction because state regulations "adequately protect[]" groundwater. See ND Br. at 16-17, 38-39 (citing State's UIC and other regulations). Here again, the State mistakenly relies on its federally-approved SDWA UIC program for many of its claims about environmental protection and "the comprehensive and protective regulations" that supposedly already apply. See, e.g., ND

Br. at 2-6, 16-17, 23-25. Those UIC regulations do not apply to the activities covered by BLM's new Rule. See pp. 6-8, supra.¹³

When considering the North Dakota laws that do apply, it becomes apparent that the Rule will provide substantial environmental benefits in that state. North Dakota law is unlike FLPMA, and the statutes of some other states, which require agencies to strike a balance between oil and gas development and environmental protection. See, e.g., 43 U.S.C. §§ 1701(a)(7), 1701(a)(8), 1702(c) (FLPMA multiple use mission); id. § 1732(b) (requirement to prevent unnecessary or undue degradation); Colo. Rev. Stat. § 34-60-102(1)(a)(I) (Colorado statutory goal of fostering “responsible, balanced [oil and gas] development . . . in a manner consistent with protection of . . . the environment and wildlife resources”). North Dakota's statutory policy contains no reference to environmental protection. ND Cent. Code § 38-08-01. Instead, it aims “to promote the development, production, and utilization of . . . oil and gas in the state” and to “encourage and to authorize . . . the greatest possible economic recovery of oil and gas” Id.; see also ND Br. at 1 (emphasizing that “North Dakota is required by statute to encourage the development of oil and gas”).

North Dakota's focus on promoting oil and gas production is reflected in its environmental record. According to reports made to the North Dakota Industrial Commission, more than 1,900 spills occurred in the past year at North Dakota oil and gas sites – an average of more than five per day. More than 20 percent of those incidents (approximately 400) were not

¹³ The State also attempts to support its public interest and balance of harms arguments by asserting that “economic harm . . . amounting to \$300 million a year in economic losses” will befall North Dakota under the Rule. ND Br. at 16 (emphasis original); see also, id. at 37-38 (asserting that public interest in “generation of revenue from mineral development” is served by preventing North Dakota's alleged loss of \$300 million per year). These arguments fail for the reasons discussed above: the State's claim of lost taxes and mineral revenue from the Rule is just unsupported speculation. Pp. 13-17, supra.

contained within the facility boundary. See Oilfield Environmental Incidents, available on website of North Dakota Dep't of Public Health.¹⁴ For perspective, those 1,900 incidents represent a rate of spills per well more than twelve times greater than in Colorado.¹⁵ A 2014 analysis of North Dakota records by the New York Times also showed that the per-well spill rate is increasing there.¹⁶

North Dakota's oil and gas regulations are weaker than the BLM Rule in a number of respects. For example, the Rule defines "usable water" that must be protected to include underground sources of drinking water as defined under SDWA, as well as certain other aquifers that states and tribes have determined are usable. 80 Fed. Reg. at 16144; id. at 16217-19, 16222 (43 C.F.R. §§ 3160.0-5, 3162.3-3(e), 3162.5-2). This appears to require companies constructing wells to isolate a broader range of aquifers than are protected by North Dakota. See ND Br. at 26-28.

BLM's Rule also requires a company to take remedial action on any well "if there is an indication of inadequate cement on any casing used to isolate usable waters." 80 Fed. Reg. at 16219 (43 C.F.R. § 3162.3-3(e)(3)). In contrast, North Dakota regulations give the agency

¹⁴ Available at: <http://www.ndhealth.gov/EHS/Spills/> (links to "Oilfield Environmental Incidents" for contained and uncontained spills). The North Dakota Industrial Commission does not appear to post these records on its web page, but the "Department of Health is allowed read-only access to a portion of this data and provides it to the public as received without modification." Id.

¹⁵ In 2013, there were more than 600 reported spills at oil and gas sites in Colorado. Dkt # 45-1 at p. 136. But Colorado has more than four times the number of producing oil and gas wells as North Dakota. Compare COGCC Weekly and Monthly Oil and Gas Statistics (June 1, 2015) at 11 (53,514 producing wells in Colorado), available at: <http://cogcc.state.co.us/documents/data/downloads/statistics/CoWklyMnthlyOGStats.pdf>, with North Dakota Industrial Comm'n, Director's Cut (May 13, 2015) (12,439 producing wells in North Dakota), available at: <https://www.dmr.nd.gov/oilgas/directorscut/directorscut-2015-05-13.pdf>.

¹⁶ See Ex. 2; p. 15 n. 9, supra; see also id. (database of records compiled by New York Times).

discretion to excuse companies from doing remedial cement work on defective cementing. ND Admin. Code § 43-02-03-22.

While North Dakota has a regulation addressing hydraulic fracturing, its rule does not require agency review or approval in advance of fracturing operations. ND Admin. Code § 42-02-03-27.1. Nor does the State require any post-fracturing reporting to the agency. Id. In contrast, BLM's Rule requires submittal of a variety of information in advance so that BLM can ensure the safety of the fracturing operation, including details about the expected length and direction of fractures, the location of nearby wells, the depth of the confining zone and the depth of usable water, the source and volume of water used and anticipated volumes of fluids to be recovered. 80 Fed. Reg. at 16218 (43 C.F.R. § 3162.3-3(c)); see also Dkt # 6-3 ¶ 29.

The pit limits in BLM's Rule also are more protective. The Rule generally requires the use of tanks instead of pits to store fluids recovered from a fracturing operation because tanks are "less prone to leaking, are safer for wildlife, and will have less air emissions." 80 Fed. Reg. at 16162. BLM also mandates that each tank be no larger than 500 barrels in size because larger tanks can be susceptible to failures that "pose particular risks of harm to humans and wildlife because of the amount of fluid involved." Id. at 16163. In contrast, North Dakota allows companies to use pits or tanks, and puts no limit on the size of either the pits or tanks. Dkt # 6-3 ¶ 31.

Finally, if North Dakota does have any state requirements that are more protective than the Rule, the State may continue to apply them. BLM makes clear that "Operators on federal leases must comply both with this rule and any applicable state requirements." See 80 Fed. Reg. at 16178; id. at 16130. The BLM Rule is designed to give groundwater and the environment the benefit of both state and federal regulations, depending on which is most protective.

B. The Recently-Issued EPA Draft Study Illustrates The Environmental Benefits Of BLM’s Rule.

North Dakota and the Industry Associations also claim a recently-released draft report by the United States EPA assessing potential impacts on drinking water shows that concerns about hydraulic fracturing are “unfounded.” ND Br. at 38 n. 4; accord Dkt # 72 at 7 (Industry Associations’ reply). A review of EPA’s report tells a much different story.¹⁷ EPA found ample evidence showing that that hydraulic fracturing fluids, gas, wastewater and produced water can contaminate surface and groundwater. EPA draft report (June 2015) at ES-23. EPA’s draft findings, in fact, illustrate the utility of many of the requirements in the BLM Rule. For example:

- It supports the Rule’s use of 10,000 parts per million (ppm) total dissolved solids (TDS) for the definition of “usable water” that must be protected. 80 Fed. Reg. at 16142. EPA observed that because of drought conditions and other factors, groundwater sources containing up to and above 10,000 ppm TDS “are increasingly being used to meet water demand . . . [t]hrough treatment or desalination.” Id. ch. 3 at 3-3. EPA also emphasized the need to isolate usable aquifers. Id. ch. 6 at 6-19 to 6-20.
- EPA’s findings support the Rule’s stricter requirements for cementing and for reporting cement results to BLM. 80 Fed. Reg. at 16217, 16219 (43 C.F.R. § 3162.3-3(e)). EPA identified wells where “casing or cement are inadequately designed or constructed, or fail,” as a potential pathway for aquifer contamination. EPA draft report at ES-14. EPA surveyed 23,000 wells that were fractured in 2009-2010. It found that in 600 wells, cementing did not isolate the “protected ground water resource identified by well operators.” Id.; id. ch. 6 at 6-19.
- EPA also identified different ways in which hydraulically-induced fractures can “extend beyond their desired extent” or intersect existing wells or natural fractures, and thus provide paths for gas or fluids to reach aquifers. Id. ch. 6 at 6-1 to 6-3. BLM’s new requirement for advance review of fracturing operations allows the agency to identify and avoid such risks. 80 Fed. Reg. at 16147, 16181-82.
- The report highlights the risk of “frack hits” (or “well communications”) when wells are drilled and fractured close to each other. EPA draft report ch. 6 at 6-42 to 6-48. The agency cited a study from Oklahoma finding that “the likelihood of well communication .

¹⁷ The report, including its Executive Summary (ES), all chapters and appendices, is available at: <http://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=244651>.

.. rose to nearly 50% between wells less than 1,000 ft [] apart.” Id. at ES-16. BLM’s advance review of fracturing operations will help avoid frack hits.

- EPA identified spills of fracturing flowback and produced water as a source of impacts to water. Id. ch. 7 at 7-1.
- The draft report discussed several examples in North Dakota, Colorado, Wyoming and other states where well casing or cementing problems resulted in impacts to drinking water resources. Id. at ES-14 to ES-15, ch. 6 at 6-14 to 6-15, 6-26. The Industry Associations incorrectly characterize such examples as a finding by EPA that they were the “only” incidents that may have affected water resources. Dkt # 72 at 7. The EPA report makes clear that these were examples and not intended to represent the entire scope of the problem.
- The draft report shows how widespread the risk is to usable drinking water when fracturing and drilling operations are conducted improperly. It states that approximately 6,800 public drinking water sources lie within one mile of a hydraulically-fractured well. EPA draft report at ES-6. And there are a number of counties in Wyoming, Colorado and New Mexico (among other states) where substantial hydraulic fracturing is occurring and more than 30 percent of the population is served by private water systems (e.g., water wells). Id. ch. 3 at 3-10.
- EPA’s report also emphasizes the need for more complete information about the chemicals used during hydraulic fracturing. Id. at ES-22. This supports the value of the Rule’s chemical reporting requirement and the need to further strengthen it.

EPA did conclude that “data limitations preclude a determination of the frequency of impacts [to drinking water sources] with any certainty.” Id.; see also, id. at ES-22 to 23. That statement of uncertainty, however, was not the stamp of approval claimed by North Dakota and the Industry Associations.¹⁸ While EPA’s report recognizes the many data gaps that remain, it provides

¹⁸ The Industry Associations focus on EPA’s statement that “[w]e did not find evidence that these mechanisms have led to widespread, systemic impacts on drinking water resources in the United States.” Id. at ES-6 (quoted in Dkt # 72 at 8). But they ignore EPA’s explanation that there is “insufficient” data to make such a determination, id. at ES-25, and the “limited amount of information hinders our ability to evaluate” how frequently drinking water contamination is occurring. Id. ch. 6 at 6-57.

Media reports indicate that EPA had originally planned to conduct several studies to provide more definitive information, but those efforts had to be dropped due to lack of cooperation from energy companies. See Neela Banerjee, Can Fracking Pollute Drinking Water? Don’t Ask the EPA, Inside Climate News (Mar. 2, 2015), attached as Ex. 5, available at:

further evidence that the BLM Rule will better protect drinking water and other resources. The balance of equities and public interest weigh in favor of allowing the Rule to take effect.

CONCLUSION

For the reasons stated above, North Dakota's motion for preliminary injunction should be DENIED.

Dated: June 19, 2015

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<http://insideclimatenews.org/news/02032015/can-fracking-pollute-drinking-water-dont-ask-epa-hydraulic-fracturing-obama-chesapeake-energy> ; see also EPA draft report at ES-22 (noting resulting lack of data on pre-fracturing water quality). Some of the other reasons for insufficient data identified by EPA include: (a) widespread withholding of information about fracturing chemicals that companies claim are trade secrets, *id.* at ES-22, (b) “very limited information” on actual performance and “as-built construction” of wells used in hydraulic fracturing (as opposed to the design goals and best practices for such wells), *id.* ch. 6 at 6-55 to 6-56, and (c) the absence of a definitive count of the number of oil and gas wells and private water wells, which “limit[s] any kind of cumulative impact assessment” regarding total water use or wastewater volumes. *Id.* at ES-23.

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CERTIFICATE OF SERVICE

I hereby certify that on June 19, 2015, I filed a true and correct copy of **RESPONDENT-INTERVENORS' BRIEF IN OPPOSITION TO PETITIONERS' NORTH DAKOTA MOTION FOR PRELIMINARY INJUNCTION** via the Court's ECF system, with notification sent to those listed below.

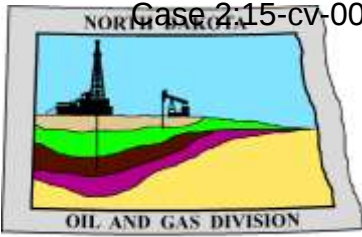
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/s/ Michael S. Freeman

EXHIBIT 1



Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas/

Effective February 12, 2014

RE: Hydraulic Fracture Stimulation using Diesel Fuels

Please be aware that the United States Environmental Agency (USEPA) has published guidelines pertaining to hydraulic fracturing (HF) activities using diesel fuels. The guidelines outline the requirement to obtain an Underground Injection Control, Class II permit, from the Commission prior to commencing any HF stimulation in which any amount of diesel fuel is injected. USEPA identifies diesel fuel as any compound identified with the following Chemical Abstract Service Registry Numbers:

- 68334-30-5 (Primary Name: Fuels, diesel)**
- 68476-34-6 (Primary Name: Fuels, diesel, No. 2)**
- 68476-30-2 (Primary Name: Fuel oil No. 2)**
- 68476-31-3 (Primary Name: Fuel oil, No. 4)**
- 8008-20-6 (Primary Name: Kerosene)**

Please contact Kevin Connors, Oil and Gas Division UIC/CCS Supervisor, if you have any questions.

Also visit the following EPA link for further information:

<http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/hydraulic-fracturing.cfm>

EXHIBIT 2

The Downside of the Boom

North Dakota took on the oversight of a multibillion-dollar oil industry with a regulatory system built on trust, warnings and second chances.

By DEBORAH SONTAG and ROBERT GEBELOFF
NOV. 22, 2014

WILLISTON, N.D. — In early August 2013, Arlene Skurupey of Blacksburg, Va., got an animated call from the normally taciturn farmer who rents her family land in Billings County, N.D. There had been an accident at the Skurupey 1-9H oil well. “Oh, my gosh, the gold is blowing,” she said he told her. “Bakken gold.”

It was the 11th blowout since 2006 at a North Dakota well operated by Continental Resources, the most prolific producer in the booming Bakken oil patch. Spewing some 173,250 gallons of potential pollutants, the eruption, undisclosed at the time, was serious enough to bring the Oklahoma-based company’s chairman and chief executive, Harold G. Hamm, to the remote scene.

It was not the first or most catastrophic blowout visited by Mr. Hamm, a sharecropper’s son who became the wealthiest oilman in America and energy adviser to Mitt Romney during the 2012 presidential campaign. Two years earlier, a towering derrick in Golden Valley County had erupted into flames and toppled, leaving three workers badly burned. “I was a human torch,” said the driller, Andrew J. Rohr.

Blowouts represent the riskiest failure in the oil business. Yet, despite these serious injuries and some 115,000 gallons spilled in those first 10 blowouts, the North Dakota Industrial Commission, which regulates the drilling and production of oil and gas, did not penalize Continental until the 11th.

The commission — the governor, attorney general and agriculture commissioner — imposed a \$75,000 penalty. Earlier this year, though, the commission, as it often does, suspended 90 percent of the fine, settling for \$7,500 after Continental blamed “an irresponsible supervisor” — just as it had blamed Mr. Rohr and his crew, contract workers, for the blowout that left them traumatized.

Since 2006, when advances in hydraulic fracturing — fracking — and horizontal drilling began unlocking a trove of sweet crude oil in the Bakken shale formation, North Dakota has shed its identity as an agricultural state in decline to become an oil powerhouse second only to Texas. A small state that believes in small government, it took on the oversight of a multibillion-dollar industry with a slender regulatory system built on neighborly trust, verbal warnings and second chances.

In recent years, as the boom really exploded, the number of reported spills, leaks, fires and blowouts has soared, with an increase in spillage that outpaces the increase in oil production, an investigation by The New York Times found. Yet, even as the state has hired more oil field

inspectors and imposed new regulations, forgiveness remains embedded in the Industrial Commission's approach to an industry that has given North Dakota the fastest-growing economy and lowest jobless rate in the country.

For those who champion fossil fuels as the key to America's energy independence, North Dakota is an unrivaled success, a place where fracking has provoked little of the divisive environmental debate that takes place elsewhere. Its state leaders rarely mention the underside of the boom and do not release even summary statistics about environmental incidents and enforcement measures.

Over the past nine months, using previously undisclosed and unanalyzed records, bolstered by scores of interviews in North Dakota, The Times has pieced together a detailed accounting of the industry's environmental record and the state's approach to managing the "carbon rush."

The Times found that the Industrial Commission wields its power to penalize the industry only as a last resort. It rarely pursues formal complaints and typically settles those for about 10 percent of the assessed penalties. Since 2006, the commission has collected an estimated \$1.1 million in fines. This is a pittance compared with the \$33 million (including some reimbursements for cleanups) collected by Texas' equivalent authority over roughly the same period, when Texas produced four times the oil.

"We're spoiling the child by sparing the rod," said Daryl Peterson, a farmer who has filed a complaint seeking to compel the state to punish oil companies for spills that contaminated his land. "We should be using the sword, not the feather."

North Dakota's oil and gas regulatory setup is highly unusual in that it puts three top elected officials directly in charge of an industry that, through its executives and political action committees, can and does contribute to the officials' campaigns. Mr. Hamm and other Continental officials, for instance, have contributed \$39,900 to the commissioners since 2010. John B. Hess, chief executive of Hess Oil, the state's second-biggest oil producer, contributed \$25,000 to Gov. Jack Dalrymple in 2012.

State regulators say they deliberately choose a collaborative rather than punitive approach because they view the large independent companies that dominate the Bakken as responsible and as their necessary allies in policing the oil fields. They prefer to work alongside industry to develop new guidelines or regulations when problems like overflowing waste, radioactive waste, leaking pipelines, and flaring gas become too glaring to ignore.

Mr. Dalrymple's office said in a statement: "The North Dakota Industrial Commission has adopted some of the most stringent oil and gas production regulations in the country to enhance protections for our water, air and land. At the same time, the state has significantly increased staffing to enforce environmental protections. Our track record is one of increased regulation and oversight."

Researchers who study government enforcement generally conclude that "the cooperative approach doesn't seem to generate results" while "the evidence shows that increased monitoring and increased enforcement will reduce the incidence of oil spills," said Mark A. Cohen, a

Vanderbilt University professor who led a team advising the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling.

With spills steadily rising in North Dakota, evidence gathered by The Times suggests that the cooperative approach is not working that well for the state, where the Industrial Commission shares industry oversight with the state's Health Department and federal agencies.

One environmental incident for every 11 wells in 2006, for instance, became one for every six last year, The Times found.

Through early October of this year, companies reported 3.8 million gallons spilled, nearly as much as in 2011 and 2012 combined.

Over all, more than 18.4 million gallons of oils and chemicals spilled, leaked or misted into the air, soil and waters of North Dakota from 2006 through early October 2014. (In addition, the oil industry reported spilling 5.2 million gallons of nontoxic substances, mostly fresh water, which can alter the environment and carry contaminants.)

The spill numbers derive from estimates, and sometimes serious underestimates, reported to the state by the industry. State officials, who rarely discuss them publicly, sometimes use them to present a rosier image. Over the summer, speaking to farmers in the town of Antler, Lynn D. Helms, the director of the Department of Mineral Resources, announced "a little bit of good news": The spill rate per well was "steady or down." In fact, the rate has risen sharply since the early days of the boom.

Presented with The Times's data analysis, and asked if the state was doing an effective job at preventing spills, Mr. Helms struck a more sober note. "We're doing O.K.," he said. "We're not doing great."

He noted it is a federal agency, the Pipeline and Hazardous Materials Safety Administration, that regulates oil transmission pipelines. "You can't use the spills P.H.M.S.A. was responsible for and conclude my approach to regulation is not working," he said.

Indeed, as the tangle of buried pipelines has grown, there have been no federal pipeline inspectors based in North Dakota. But there have been no state inspectors, either, to oversee the much larger network of gathering pipelines unregulated by the federal government — a fount of many spills.

Penalizing companies for every violation is imprudent and can be counterproductive, Mr. Helms said, potentially "leaving the citizens of North Dakota with enormous liabilities on their hands when bankrupt operators walk away."

Continental Resources hardly seems likely to walk away from its 1.2 million leased acres in the Bakken. It has reaped substantial profit from the boom, with \$2.8 billion in net income from 2006 through 2013.

But the company, which has a former North Dakota governor on its board, has been treated with leniency by the Industrial Commission.

From 2006 through August, it reported more spills and environmental incidents (937) and a greater volume of spillage (1.6 million gallons) than any other operator. It spilled more per barrel of oil produced than any of the state's other major producers. Since 2006, however, the company has paid the Industrial Commission \$20,000 out of \$222,000 in assessed fines.

Continental said in a written response to questions that it was misleading to compare its spill record with that of other operators because "we are not aware other operators report spills as transparently and proactively as we do." It said that it had recovered the majority of what it spilled, and that penalty reductions came from providing the Industrial Commission "with precisely the information it needs to enforce its regulations fairly."

What Continental paid Mr. Rohr, the injured driller, is guarded by a confidentiality agreement negotiated after a jury was impaneled for a trial this September. His wife, Winnie, said she wished the trial had gone forward "so the truth could come out, but we just didn't have enough power to fight them."

Looking back now, one thing gnaws at her.

"You know what really bothered me?" Mrs. Rohr said. "Harold Hamm flew up to see the damage to the rig but didn't go see the guys who were burned."

Embracing the Oil Industry as Economic Salvation

Given the state's history of population loss and economic decline, state officials delighted in the arrival of oil companies eager to exploit the tremendous untapped potential of the primeval Bakken formation deep beneath the sweeping prairies and rugged badlands of western North Dakota.

Especially during the first years, officials were anxious that this oil boom, like previous ones, could be fleeting, that oil companies, if not embraced, could shift their rigs and capital investment to fields with less severe winters and better access to markets.

"There was a mentality that we should be helping things along, not getting in the way with regulations," said Todd Sattler, a lawyer who served as a state oil and gas hearing officer through mid-2011. "It wasn't blatant disregard for bad things, just permissive."

Mr. Sattler said he tried to establish a protocol for field investigations, preparing a three-page checklist of procedures, including how to conduct witness interviews. The response from the state's chief inspector, he said, was: "I'm not going to be a cop out there, Todd."

In 2006, the Industrial Commission issued 419 drilling permits, processing applications in five days. By 2011, when it handed out 1,927 permits, it was still managing to issue them in 10 days. At that point, concerned that the Environmental Protection Agency might establish a moratorium

on fracking — the legislature set aside \$1 million to sue the E.P.A. — there was a desire to establish facts on the ground.

Some officials in western North Dakota challenged the accelerating pace. “It was so ragtag and breathless,” said Dan Kalil, the Williams County Commission chairman. “Infrastructure in every facet wasn’t able to keep up.”

Ron Ness, president of the North Dakota Petroleum Council, said: “It’s easy to say it’s been too fast, too much. But this is what North Dakotans have hoped for, prayed for.” Investors from all over the country are now drawn to tiny, remote places like Watford City, where “there wasn’t a damn thing” seven years ago, he said.

“We’ve got the largest-producing Cinnabon anywhere in the world,” he said. (The Williston Cinnabon, more precisely, has the highest sales in a travel plaza, the company said.) In the first five years, the “slow, nasty drip, drip, drip” of routine spills — as Edmund Baker, environmental director for the Fort Berthold Reservation in the heart of the oil patch, calls it — went largely unnoticed and sometimes unreported to the authorities.

In the spring thaw of 2011, however, after a winter of record snowfall, scores of oil waste pits overflowed at once. The large, open pits, adjacent to rigs throughout the Bakken at that point, disgorged oil-based drilling mud that mixed with snowmelt and streamed across farmland and into stock ponds, creeks and river tributaries.

Farmers were horrified; the local news media took note. And, in concert with the development of a new regulation outlawing liquid waste pits, the Industrial Commission undertook its first — and so far only — crackdown on spills. It filed several dozen formal complaints against companies that, Mr. Helms said, had defied the Mineral Resources Department’s warning to take precautions to prevent the predicted overflows.

Hess Oil was one target. It paid its fines in full: \$112,500.

Continental, like some other companies, disputed its responsibility.

Its lawyer, a former counsel to the Industrial Commission, proposed that consent agreements state that the overflows were caused by unforeseeable extreme weather. Instead, the agreements attributed the violations “in part” to bad weather “unforeseen by Continental.”

Still, the Industrial Commission accepted \$12,500 rather than \$125,000.

That fall, at a commission meeting in Bismarck, Mr. Helms explained the logic behind the waste pit settlements.

Most companies would make “a voluntary 10 percent payment” and 90 percent would be suspended for a year, during which the operator would have to “keep completely clean” of the offense, Mr. Helms said, according to the meeting minutes. This works, he added, because

“keeping that 90 percent hanging over their head for a year creates a culture change within the company.”

Mr. Helms said this had been departmental practice since the early 2000s when officials were trying to prod Earl Schwartz of GoFor Oil — his logo was a gopher in a hard hat — to plug some wells and start production on others.

Sarah Vogel, a former Industrial Commission member, said she considered it a startling admission that current policy was based on “the treatment of a small wildcatter from an earlier era.”

“It’s absurd to compare an Earl Schwartz to a Hess or any of these other enormous companies worth billions,” she said. “To me, announcing publicly that it is your practice to suspend the bulk of all fines makes a mockery of the whole enforcement system. Should we tell the general public that if they’re caught speeding, the fine is \$100, but they only have to pay \$10? It’s an invitation to violate the law.”

Bearded and deliberative, Mr. Helms is a petroleum engineer by trade, with a hand that bears the burn scars of an industrial accident. The state’s senior oil official since 2005, he previously worked at Texaco for two years and at Hess for 18.

To his critics, Mr. Helms personifies a cozy relationship between the commission and oil companies. His dual mission heightens this, they say, as he is compelled by statute both to promote “the greatest possible economic recovery of oil and gas” and to enforce regulations.

Mr. Helms, however, said that his background gives him access and authority, and that his job is to promote responsible development, not the industry.

“In order to effectively do that I have to be on a first-name basis with C.E.O.s and managers,” he said. “If they didn’t trust me, and if they expected every time they made a mistake they were going to get slapped with a great big fine or be singled out or profiled, I wouldn’t get straight answers.”

The commission has imposed its stiffest penalties on smaller companies. Last year, it fined Halek Operating, whose leader had a history of swindling investors in Texas, a record \$1.5 million for a defective waste disposal well that threatened a town’s water supply. But Halek has gone out of business, and the state is unlikely to obtain more than the \$140,000 in bonds it has seized.

Mr. Helms said that problems in the oil patch were often the fault not of the major companies but of the contractors who do their physical labor.

“The large independents — the bread and butter of the North Dakota oil industry — really understand their social license to operate and really try to emphasize environment, health and safety,” he said. “But there’s a disconnect.”

L. David Glatt, Mr. Helms's counterpart in the Health Department's environmental division, has voiced the same sentiment. Though the state's chief environmental regulator, he described himself on a radio show last year as "not a regulations guy" — after the host said that "the word 'regulation' is like Lucifer" in North Dakota.

Before the boom, Mr. Glatt said in an interview, the Health Department had "a very hands-on, personalized approach, going out and helping people solve their problems."

"Now with the oil boom bringing in people who are just here to make a living or make money," he said, "we are being forced to change our regulatory approach to in some cases a very heavy-handed one, which is a paradigm shift for us."

Judging by the data, the Health Department, overseen by civil servants and not elected officials, appears to have been tougher on the oil industry than the Industrial Commission has. It has collected over three-quarters of the fines levied, amounting to at least \$4.1 million since 2006.

Still, most of that revenue derived from a single industrywide enforcement action that, Mr. Glatt said, the industry itself requested.

After years of underestimating volatile emissions from its oil storage tanks in the Bakken and allowing them to vent directly into the air, the industry "self-reported" the potential pollution and safety problem to the government.

A task force was formed; the companies devised a new model for estimating the emissions and pledged to control them through devices. And then they made a request: "They wanted fines to be collected by the state to reduce their exposure to lawsuits," Mr. Glatt said. "We said, 'Sure, we'd be more than happy to take your money.'"

The Health Department did not publicize that it collected record penalties for these violations last year: \$2.64 million, including unprecedented sums like \$418,500 from Hess and \$305,400 from Continental.

"We are not wired like that," Mr. Glatt said. "It goes to the fact that, honestly, when I get to the point where I have to collect a penalty, I look at that as a failure on our part."

A Record Spill Puts the Focus on the Costs of a Boom

At her isolated farmhouse near Tioga, Patricia Jensen disarms guests — pipeline executives, oil spill cleaners — with a glistening berry pie fresh from the oven. She and her husband, Steven, are firm but nonconfrontational in their approach to what he calls the "ecological nightmare" in the backyard of the family's century-old homestead.

"We've kind of taken a route of not being too sour, but yet we're really concerned," Mr. Jensen said.

What happened to them last fall — considered the largest on-land oil spill in recent American history — confronted North Dakota with the potential costs of the boom.

It shined a light on the state government's lack of transparency when it went unreported to the public for 11 days. It raised awareness that spills of all magnitudes were daily and routine. It highlighted the inadequacy of pipeline monitoring.

And it made clear that even in the worst cases the authorities are hesitant to use punitive sanctions. More than a year after the spill, neither the federal nor the state government has penalized the company responsible, Tesoro Logistics of San Antonio.

“Clearly, they have impacted the groundwater system,” Mr. Glatt said. “There will be an enforcement action. But we use a carrot and stick approach. The carrot is if you get into it and clean it quickly, the stick won't be as severe.”

Late last September, Mr. Jensen was harvesting waist-high durum wheat when he found his combine's tires wet with an unmistakable sheen. His wife called the operator of a nearby well, which contacted Tesoro, and both companies immediately sent out representatives.

“It was dark out at this point,” Mrs. Jensen said. “We went to drive wide around what we thought was the spill and realized that we were not at the edge of it. We were still in it.”

Mr. Jensen continued: “There was a question of, well, whose line is it? It was squirting out of the ground. But the minute Tesoro shut its valve, there was a loud sucking sound.”

In its initial report, Tesoro seriously underestimated the contamination. A week and a half later, after a “subsurface assessment” request by the state, it tripled its estimate to 20,600 barrels, or 865,200 gallons. The lost oil had soaked a large stretch — equal to about six football fields — of the windswept land where the Jensens run cattle and rotate crops like sunflowers and sunshine-yellow canola.

The spill was publicly disclosed only after local reporters learned of it, provoking an outcry from environmentalists that led to the creation of a spills website.

In Tioga, a preliminary investigation found a small hole in the pipeline that appeared to have been caused by lightning, said the federal pipeline administration, whose final investigation has yet to be completed.

That cast the incident as an act of nature, but Tesoro officials now acknowledge that the hole had gone undetected for as long as two months.

“How do you lose over 20,000 barrels of oil and not realize it?” Mr. Glatt said. “That does kind of boggle the mind a little bit.”

In a statement to The Times, Tesoro expressed “deep regret.”

“Our systems did not prevent the spill, and we find that unacceptable,” it said. “We have put additional systems and controls in place and are committed to operating a safe pipeline system.”

Before the leak sprang in July 2013, Tesoro had not conducted an internal inspection of that segment of pipeline for eight years. Federal officials had last inspected the Tesoro network in North Dakota in 2010.

Pipeline leaks are not the most common cause of spills; valve or piping connection problems are, The Times found. But they spew the greatest volume of oil and wastewater and are the most likely to cause pollution.

Unlike several other major oil-producing states, North Dakota has until now relied on federal inspectors — based in Kansas City, Mo., 950 miles from Tioga — to monitor all its oil transmission lines, interstate and intrastate.

At the time of the spill, Brian Kalk, chairman of the state Public Service Commission, felt keenly frustrated, he said: “The company was not as forthright as they should have been. Everybody in the state was asking what’s going on, and I didn’t have jurisdiction on this pipeline. I didn’t like it.”

As a result, Mr. Kalk’s commission is seeking to take over the monitoring of the crude oil transmission pipelines that travel solely within the state.

Transmission pipelines, which carry oil to market, are not the only problem, however. Until this year, no authority, federal or state, monitored what Mr. Helms estimates to be 18,000 miles of gathering pipelines, which transport oil and wastewater from wells to collection sites. In fact, the North Dakota government does not even know their precise locations.

But, with legislative permission, Mr. Helms is taking the gathering lines under his aegis and hiring the state’s first three hazardous-liquid pipeline inspectors.

In Tioga, the Jensens are inclined to look at the bright side, though 33 acres of their farmland have been cordoned off for an industrial cleanup operation expected to take at least another year. They are glad that their spill was oil, not wastewater — “There’s no cleaning up of that,” Mr. Jensen said — and hope it served as “an eye-opener.”

“The industry really wants to fight putting monitoring devices on pipelines, but it’s a no-brainer, seems like,” Mr. Jensen said. “The cost of monitoring equipment is obviously far cheaper than the cost of cleanup.”

Tesoro said the cleanup would cost more than an initial estimate of \$4 million and “less than \$25 million.” It hired a Canadian company, Nelson Environmental Remediation, to treat the contaminated soil by burning it on site in “thermal desorption units.”

“We’re kind of like the proctologists of the industry,” said Warren Nelson, the company’s vice president. “We deal with the problems nobody wants to talk about.”

From Wastewater Contamination, Sterilized Soil and Shriveled Crops

One August evening this year, after a barbecue dinner beneath an elaborate skull-and-antler chandelier in the Outlaw Shack at Antler Memorial Park, Mr. Helms and Mr. Glatt faced an audience of farmers disgruntled by the wastewater contamination of northwestern North Dakota.

Their corner of the state is like a cautionary tale. It is pocked with the remnants of 1980s oil production: abandoned wastewater ponds, some of which leached brine downward and outward, sterilizing the soil and shriveling crops. State officials have estimated it would cost \$2 million each to reclaim what might amount to 1,000 ponds, said State Representative Marvin E. Nelson.

“Well, we have more than \$2 billion in our Legacy Fund,” he said, referring to a set-aside fund containing oil tax revenues. “So why not take the legacy from this oil boom to fix the legacy from the last oil boom?”

Though the industry now disposes of oil field brine primarily by injecting it deep underground, it still needs to be transported to disposal wells and remains a stubborn pollution problem. For every barrel of oil, about 1.4 barrels of brine is produced, state officials say, and far more of it spills than does oil.

And while the industry calls it saltwater — “which makes it sound harmless, like something you would gargle with,” said Derrick Braaten, a lawyer who represents farmers — it is highly saline and can be laced with toxic metals and radioactive substances.

Three years ago, a farmer in the Antler audience experienced one of the largest oil field wastewater spills ever in North Dakota. A leaking wastewater line contaminated some 24 acres of farmland and eight surface ponds, and the site has yet to be restored to health.

After the leak was detected, cleanup crews pumped out two million gallons of severely contaminated water, with chloride levels 2,700 times higher than normal, and a generator was still pumping out contaminants this summer.

“Three years!” the farmer, Darwin Peterson, exclaimed at the meeting. “Three years, and this spill has been addressed in a Band-Aid fashion. Meanwhile, that 24 acres has expanded, with Mother Nature, to the neighbors. When is enough enough?”

State officials say the spill far exceeded the 12,600 gallons originally reported by the company, Petro Harvester, though it remains listed that way on the state’s spills website. Mr. Helms, in an email last year to his spokeswoman, Alison Ritter, estimated it at 332,000 gallons. Mr. Nelson, the legislator and agronomist, thinks it probably was three times that much.

The state has not yet penalized Petro Harvester.

Underlying the state's regulatory posture is the premise that spills are all but inevitable and will increase alongside increases in drilling. But that is not a universally shared perspective.

"There's this idea that spills are just the cost of doing business," said Amy Mall, a senior policy analyst with the Natural Resources Defense Council. "But there's no technical justification for all these spills. And it's not acceptable. It's just not. It just shows how poorly the oil and gas industry is doing its job, and that nobody is making them do it right."

To a skeptical audience in Antler, Mr. Helms proclaimed that North Dakota was "head and shoulders above our sister states" in the region for its vigilance as measured by the ratio of wells to inspectors, the frequency of inspections and the authority to fine up to \$12,500 per offense a day.

He said that almost all problems found by his inspectors were corrected within 30 days of verbal warnings. Some 2,500 warnings were issued last year, Ms. Ritter said; only 4 percent resulted in a written violation and only nine complaints were filed (up from four in 2012).

In the park, Mr. Helms offered a boardroom-style PowerPoint presentation, including a graphic that he said contained the "good news" that the spill rate per well was steady or down.

His figures, however, provided to The Times later, show that the number of spills continued to grow faster than the number of wells — just not as fast as before. All told, the number of wells is up 200 percent and spills 650 percent since 2004.

The farmers in Antler said they assumed Mr. Helms's spills data was comprehensive, but he told The Times later that he was including only spills under his jurisdiction. That omitted hundreds of incidents, including the Jensens' spill and the 464,000 gallons of oil that gushed from a fiery train derailment near Casselton last December.

The most encouraging statistic, Mr. Helms told the farmers, was that a higher proportion of individual spills were being contained to production sites. That is true according to the numbers he uses. But, looking at the actual volume of pollutants and all reported spills, The Times found a decline, not an improvement, in spill containment — with 45 percent contained from 2011 to 2013, down from 62 percent in the previous three years.

Without engaging in any data analysis, the farmers in Antler were suspicious of the spill estimates because they were based on self-reporting by the industry. "You take the word of the operators? That's your first mistake," one man said, to laughter. They remarked that their own spills were often drastically underestimated on the state's spills website.

Indeed, The Times found scores of cases on that website where the release of pollutants was not just undercounted but marked as zero. One supposedly zero-volume wastewater spill in Bottineau County last year required the removal of 600 dump-truck loads of contaminated soil.

For a North Dakotan trying to make sense of the state's environmental and enforcement records, numbers are essentially inaccessible. The state spills site posts incidents in chronological order,

without summary statistics, and it is not searchable. Oil and gas enforcement data is not made public at all, unlike in Texas, where the legislature mandates quarterly reports.

The Times built a database to analyze the state's raw information from a variety of perspectives, including a company-by-company assessment. It found that companies in the Bakken spill at different rates. This suggests to some experts that companies could do more to prevent and minimize environmental incidents.

"Whether it's maintaining equipment properly, monitoring equipment routinely, training individuals well, having backup equipment on site or having containment machinery — there are all kinds of things that can be done," Professor Cohen of Vanderbilt said. "But they all require money and attention."

Statoil, a multinational company whose largest shareholder is the Norwegian government, now ranks as the state's fifth-biggest producer. With a professed goal of "zero incidents, zero releases," according to Russell Rankin, its regional manager, it has reported no blowouts and has the best record in the state among the major producers in terms of how many gallons of oil it produces for each incident.

Based on volume, Statoil has produced 9,000 gallons of oil for every gallon of spillage; Continental has produced 3,500. Statoil contained some 70 percent of its spill volume to production sites. Continental contained less than half, The Times found.

In its written response, Continental disputed The Times's "math," but did not respond further after it was sent a spreadsheet of reported incidents that formed the basis for the findings.

Continental, which on its website calls itself "America's oil champion," said it has "implemented a corporate policy focused on reporting, spill reduction and, ultimately, elimination." It emphasized that it was the largest producer in the Bakken and "managed the largest volume of liquids." It underscored that "our diligent spill response efforts have enabled us to recover the majority of all volumes spilled."

And, Continental said, The Times should not imply that "volumes spilled remain in the environment in perpetuity and that we and other operators have no concern for doing anything more than reporting spills as 'an inevitable byproduct of oil production.' "

The Golden Egg

When the Skurupey well blew out last summer, Continental waited some 10 hours to notify the local authorities.

"They should have called us a lot sooner, but when these things happen, the oil companies pretty much take over," said Sheriff Dave Jurgens of Billings County. "They have their own security, and they don't let anybody on location, unless you're with Continental or the state Industrial Commission. And I totally understand why. It's specialized-type stuff."

The public never knew the blowout had occurred because the well, like many new wells, had been granted confidential status by the state for competitive reasons; almost everything except its existence was off the record for six months.

Oil, water and chemicals shot 40 feet into the air from the wellhead but did not ignite. One worker was injured with a broken finger and bruises to his head and chest, the sheriff said. “They didn’t call an ambulance, just put him in a pickup and took him to the E.R.,” he said. “That was not very wise on their part.”

The oil misted over hundreds of acres, contaminating hundreds of bales of hay and alfalfa fields.

“They redid the land, washed all the tanks,” Mrs. Skurupey said. “Continental was super-nice. They left no stones unturned, as far as I was concerned. They paid us all for damages, and we signed agreements that we wouldn’t sue.”

Defending itself against the commission’s enforcement action this year, Continental argued that its own investigation revealed that “an irresponsible supervisor’s callous disregard of” its “well-established standard operating procedures” caused the Skurupey blowout.

At the Williston courthouse in September, Continental’s lawyer, Steven J. Adams of Tulsa, Okla., placed the responsibility for the previous blowout in Golden Valley County squarely on Mr. Rohr and his crew, who worked for Cyclone Drilling of Wyoming.

“It was the Cyclone crew that failed to do its job,” he told the jury.

Mr. Rohr’s lawyer, Justin L. Williams of Corpus Christi, Tex., opened by suggesting that Continental prized speed over safety: “Pedal to the metal, no brakes, lives shattered.”

During the voir dire process, many prospective jurors had revealed just how interwoven their lives were not only with the oil industry, but also with Continental. Some had worked for or done business with Continental; others owned its stock or received royalty checks from Continental wells.

Asked if they had strong feelings about the oil boom, almost all, even those who saw the positive, raised their hands to say they thought it had had negative consequences, too. A landowner referred to oil sludge buried and flares burning on her property, a nurse to injured oil workers treated at her clinic, an oil field technician to a “hurry up and wait world” that put profits first.

The next morning, a settlement was reached.

Later, in a nearby hotel, sitting with his lawyers, his wife and a former co-worker, Mr. Rohr lifted his T-shirt to reveal what he had been prepared to show the jury: his pink, waffled back, patched together through skin grafts after the rig at the Beaver Creek State 1-36H well exploded into flames on July 24, 2011.

“My memories of it are bad,” he said. “I seen a big, bright, white light, and I didn’t think I’d make it out. And then that big blast hit me. I was a big ball of flame, running out of there, my safety glasses melting around my eyes. I thought I was blind. Dying.”

Mr. Rohr, who is called A.J., stared into his coffee cup, crying.

Erick Hartse, 23, who had been his assistant driller and escaped injury in the blowout, winced. “I have a lot of guilt,” he said. “I sent A.J. down to check the inside choke that day. It was per our blowout procedures, but I was the last one to see this guy unhurt, unscathed.”

Mr. Rohr and two colleagues were airlifted to a burn center in Minneapolis. With serious burns over 60 percent of his body. Mr. Rohr spent a month hospitalized. Still in constant pain and reliant on painkillers, he has not returned to the oil fields, the only job he has ever known.

The two men and their boss, Wally Dschaak, said they thought from the start that the well, situated in a remote, serene spot about a mile from the Little Missouri River, was going to give them trouble.

“From the day we moved onto that miserable, slimy, dirty location, things had been fighting us,” Mr. Hartse said.

Mr. Dschaak said, “That well was one step away from getting out of control at all times.”

Continental, which declined to discuss the case, imported oil fire specialists from Texas to extinguish the blaze. Later, Cyclone sent Mr. Hartse to Wyoming to help build a replacement rig, he said, but did not allow him to accompany it back to North Dakota. “Continental wanted no part of anybody who was there that day,” Mr. Hartse said.

“I understood Cyclone’s position,” he added. “You can’t kill the goose that lays the golden egg.”

Deborah Sontag reported from Williston, and Robert Gebeloff from New York. Michael Wines contributed reporting from Bismarck, N.D.

Sources: [North Dakota Department of Health](#), [analysis by The New York Times](#), [Department of Mineral Resources of North Dakota](#), satellite imagery from Google

Produced by Gregor Aisch, Hannah Fairfield, John Niedermeyer, Matt Ruby and Jeremy White

Correction: November 30, 2014

An article last Sunday about the environmental record and state regulation of the North Dakota oil industry erroneously attributed a distinction to an oil spill last fall on the farm of Steven and Patricia Jensen near Tioga. It is considered the largest on-land oil spill in recent American history, not the largest ever.

EXHIBIT 3

Data last updated October 29, 2014

Number of Well Bores Started (Spud) During the Fiscal Year on Federal Lands

Geographic State	FY 1984 ⁽¹⁾	FY 1985 ⁽¹⁾	FY 1986 ⁽¹⁾	FY 1987 ⁽¹⁾	FY 1988 ⁽¹⁾	FY 1989 ⁽¹⁾	FY 1990 ⁽¹⁾	FY 1991 ⁽¹⁾	FY 1992 ⁽¹⁾	FY 1993 ⁽¹⁾	FY 1994 ⁽¹⁾	FY 1995 ⁽¹⁾	FY 1996 ⁽¹⁾	FY 1997 ⁽¹⁾	FY 1998 ⁽²⁾	FY 1999 ⁽²⁾	FY 2000 ⁽²⁾	FY 2001 ⁽²⁾	FY 2002 ⁽²⁾	FY 2003 ⁽²⁾	FY 2004 ⁽²⁾	FY 2005 ⁽³⁾	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014		
Alabama			1		3	5	10	10	2	1		1						1	1		6	0				1			1	0	0		
Alaska		3	7			2	2	4			1	2	1		1	6	12	13	13	7	7	6	6	7	9	7			2	6	6		
Arizona		2		3	1			1			1														1								
Arkansas		5	28	7	5	7	12	5	6	6	7	9	18	6	4	6	11	1	7	5	4	6	11	13	12	14	13	7	3	13	14		
California		213	28	106	38	105	124	174	39	133	121	125	143	154	480	223	108	91	100	108	97	147	135	155	231	162	210	414	284	205	210		
Colorado		83	194	27	162	98	149	124	83	146	164	87	49	26	58	67	121	158	156	206	195	207	386	400	527	340	411	453	318	215	229		
Connecticut																																	
Delaware																																	
Florida				1	1	1	2	2																									
Georgia																																	
Hawaii																																	
Idaho		1	1		1																												
Illinois					1		2	2	2	5	1	2	1		1																		
Indiana																																	
Iowa																																	
Kansas		7	4	2	7	7	5	10	10	6	14	8	22	21	7	1	5	8	3	6			5	5		2	1	1					
Kentucky					5	6	3	11	5	9	5	1		2				2															
Louisiana		24	7	2		7	9	5		8	5	9	6	29	14	6	9	5	2	9	14	15	39	39	24	6		2		1	1		
Maine																																	
Maryland																																	
Massachusetts																																	
Michigan		2		1	5	2	6	3	2	5	3	15	8	7	1		2	1	1	1	7		1	2		1	2						
Minnesota																																	
Mississippi			6	8	17	15	9	14	8	5	7	9	10	7	1	7	7	5	7	6	3	4	11	11	1	3	1	1	2	7	9		
Missouri		6																															
Montana		165	78	76	66	77	88	76	46	16	30	62	19	81	63	91	108	117	109	124	98		107	131	120	51	63	23	29	21	22		
Nebraska		2	3	3	9	2	1	1	1	4	1	2		2	1					1			1	1	1	1	1	1	1	1	1	1	
Nevada		27	20	13	16	23	23	22	24	20	26	23	21	13	9	1				3	4	4	5	8	8	4	2	2	3	1	3	3	
New Hampshire																																	
New Jersey																																	
New Mexico		369	534	353	482	441	778	862	402	505	646	624	586	663	792	609	920	1,000	821	1,077	726	218	968	1,088	1,000	706	731	709	851	672	702		
New York							2			1						1				1						2							
North Carolina										1																							
North Dakota		43	42	14	28	6	25	26	25	18	17	18	21	10	36	2	19	35	54	65	48		96	114	66	66	95	118	144	167	174		
Ohio		3	1	4	5		1	9	14	5	5			2	1	4	1	8	1	1	2		2	3	1	1	2	2	2	2	2		
Oklahoma		5	10	4	53	13	4	10	21	9	3	9	28	32	7	7	13	11	6	7	5		13	13	18	6	2	1	8	9	9		
Oregon		1																															
Pennsylvania					3										1					1				5	5		5	1		6	21		
Rhode Island																																	
South Carolina																																	
South Dakota		9	7	3	5	4	10	6	5	2	5	6	2	5	9	2	1	2			3		7	8	2	2		3	4	1	2		
Tennessee							12																										
Texas		14	10	12	11	7	14	10	8	23	29	31	32	19	6	3	13	21	10	10	15		17	18	14	13	25	43	15	18	18		
Utah		103	85	81	107	55	59		200	173	95	126	123	159	249	100	252	363	233	275	226	37	181	582	736	429	317	431	584	447	457		
Vermont																																	
Virginia								96	2	3	1	1			2					1						2	2						
Washington					1	1															1												
West Virginia				1	1		5	9		4					4	2		4	4	1													
Wisconsin																																	
Wyoming		381	487	302	493	347	472	291	307	435	443	282	320	498	605	480	1,259	1,602	1,338	1,041	1,244	1,097	2,709	2,740	2,275	1,446	1,290	1,049	776	620	665		
TOTAL		1,468	1,553	1,023	1,526	1,231	1,827	1,783	1,214	1,541	1,630	1,452	1,410	1,736	2,352	1,619	2,861	3,448	2,871	2,957	2,702	1,742	4,708	5,343	5,044	3,267	3,166	3,260	3,022	2,413	2,544		

⁽¹⁾ Data from Public Lands Statistics.

⁽²⁾ Data from AFMSS.

⁽³⁾ Due to AFMSS shut down in FY 2005 data is incomplete as of 11/18/2005. Data will be updated as soon as system is fully updated for FY 2005.

EXHIBIT 4

Data last updated October 29, 2014

Number of Drilling Permits Approved by Fiscal Year on Federal Lands

Geographic State	FY 1984 ⁽¹⁾	FY 1985 ⁽¹⁾	FY 1986 ⁽¹⁾	FY 1987 ⁽¹⁾	FY 1988 ⁽¹⁾	FY 1989 ⁽¹⁾	FY 1990 ⁽¹⁾	FY 1991 ⁽¹⁾	FY 1992 ⁽¹⁾	FY 1993 ⁽¹⁾	FY 1994 ⁽¹⁾	FY 1995 ⁽¹⁾	FY 1996 ⁽¹⁾	FY 1997 ⁽¹⁾	FY 1998 ⁽²⁾	FY 1999 ⁽²⁾	FY 2000 ⁽²⁾	FY 2001 ⁽²⁾	FY 2002 ⁽²⁾	FY 2003 ⁽²⁾	FY 2004 ⁽²⁾	FY 2005 ⁽³⁾	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	
Alabama							9	19	1	2							2			6	6		1			1				2		
Alaska		2	4	1		2	2			1	1	3	5	1	3	6	11	12	12	8	14	9	9	7	12	8			2	10	8	
Arizona		1	2	3	1	1			1		1		1																			
Arkansas							14	8	11	8					2	7	5		3	6	5	23	11	14	25	28	18	12	12	18	25	
California		298	189	115	86	227	156	172	108	140	173	137	175	281	408	172	88	74	104	72	109	203	165	313	231	169	281	369	355	181	181	
Colorado		196	88	63	119	140	203	151	127	175	184	51	79	94	47	107	155	201	175	252	378	488	650	765	684	473	593	509	422	314	316	
Connecticut																																
Delaware																																
Florida							1	2																								
Georgia																																
Hawaii																																
Idaho		2		1																												
Illinois							7	1	4	2																						
Indiana																																
Iowa																																
Kansas							8	8	12	8					6	1	7	6	3	7	1		2	10		3	2			1	1	
Kentucky								2	14	2								2			4			3								
Louisiana							11	1	6	5					19	2	8	4	2	16	27	62	26	65	45	2	1	3	2	6	6	
Maine																																
Maryland																																
Massachusetts																																
Michigan							11	4	2	10					2		1	1				11		8	4	5		1			1	1
Minnesota																																
Mississippi							4	19	4	10					4	1	6	5	4	14	9	15	4	7	3	2	1	1	3	6	10	
Missouri																																
Montana		246	118	85	97	90	101	80	52	30	71	88	95	186	76	95	106	114	120	206	134		119	150	141	57	66	26	51	26	26	
Nebraska							1	2	1	4										1	1	1		2								
Nevada		39	23	17	19	32	38	25	30	33	25	29	23	34	7	1			4	3	10	9	8	14	7	7	3	3	2	7	7	
New Hampshire																																
New Jersey																																
New Mexico		1,258	654	512	685	805	1,255	828	782	966	951	802	890	911	658	564	864	904	1,009	1,164	1,319	583	1,414	1,213	1,224	1,105	945	883	1,073	925	920	
New York																			1						4							
North Carolina																																
North Dakota							40	27	28	28					22	2	15	41	46	50	66		109	72	88	65	147	135	197	255	254	
Ohio							1	16	15	3						4	1	8		2	3					1	3		1	1	1	
Oklahoma							7	9	15	9					4	8	10	4	4	9	10		18	16	18	4	10	7	17	33	33	
Oregon		3																														
Pennsylvania							3																			6						
Rhode Island																																
South Carolina																																
South Dakota							9	8		2					6	2	1	2	4	1			1	4	4		1	3	3	2	2	
Tennessee																																
Texas							9	12	25	31					3	6	14	16	15	26	29		44	13	23	24	78	31	37	18	18	
Utah		209	124	124	145	59	84	158	276	162	127	220	173	254	236	123	248	378	317	323	517	66	458	896	943	557	402	602	848	965	963	
Vermont																																
Virginia							8	5	4	4					2			1								2						
Washington																1																
West Virginia							8	1							4	1	2	2	1	1												
Wisconsin																																
Wyoming		1,001	612	534	559	458	627	410	430	587	536	478	472	767	661	536	1,524	1,662	1,548	1,635	3,399	3,120	3,692	3,557	3,155	1,975	1,538	1,660	1,229	1,001	997	
Eastern States		63	72	31	61	37					44	62	46	52																		
TOTAL		3,318	1,886	1,486	1,772	1,851	2,617	1,969	1,947	2,222	2,113	1,870	1,959	2,580	2,171	1,639	3,066	3,439	3,372	3,802	6,052	4,579	6,738	7,124	6,617	4,487	4,090	4,244	4,256	3,770	3,769	

⁽¹⁾ Data from Public Lands Statistics in which APDs were portrayed by BLM administrative office (e.g., the Eastern States Office).
⁽²⁾ Data from AFMSS as of January 31, 2005. Data is shown by geographic State (e.g., Alabama, Arkansas, etc.).
⁽³⁾ Due to AFMSS shut down in FY 2005 data is incomplete as of 11/18/2005. Data will be updated as soon as system is fully updated for FY 2005.

EXHIBIT 5



Published on *InsideClimate News* (<http://insideclimatenews.org>)

[Home](#) > Can Fracking Pollute Drinking Water? Don't Ask the EPA

Can Fracking Pollute Drinking Water? Don't Ask the EPA

The EPA has been unable to collect the data it needs from the multibillion dollar oil and gas sector, which has stymied a five-year federal study.

By Neela Banerjee, InsideClimate News

Mar 2, 2015



When a draft of the EPA's long-awaited fracking water study is released this spring, the agency may still be unable to provide a definitive answer to the question of whether fracking pollutes drinking water. That's because the study won't have baseline comparisons of water chemistry before and after fracking due to opposition from industry. Credit: A hydraulic fracturing operation in Pinedale, Wyo./Ecoflight

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Can fracking pollute drinking water?

The Environmental Protection Agency embarked in 2010 on what was intended to be a definitive study to find out. The answer could prove critical to future U.S. regulation of the multibillion-dollar fossil fuel sector and to ensuring water safety for millions of Americans.

But after five years of fighting with the oil and gas industry, the agency may still be unable to provide a clear answer when a draft of the study is published this spring, based on internal EPA documents and interviews with people who have knowledge of the study.

"We won't know anything more in terms of real data than we did five years ago," said Geoffrey Thyne, a geochemist and a member of the EPA's 2011 Science Advisory Board, a group of independent scientists who reviewed the draft plan of the study. "This was supposed to be the gold standard. But they went through a long bureaucratic process of trying to develop a study that is not going to produce a meaningful result."

More than a half-dozen former high-ranking EPA, administration and congressional staff members echoed Thyne's opinion, as did scientists and environmentalists. Nearly all the former government employees asked not to be identified because of ongoing dealings with government and industry. Two hundred pages of EPA emails and other documents about the study point to the same conclusions. The documents were acquired by Greenpeace under the Freedom of Information Act and shared with InsideClimate News.

(To view the emails and other documents, click [HERE](#) [2], [HERE](#) [3] and [HERE](#) [4].)

The EPA's failure to answer the study's central question partly reflects the agency's weakness relative to the politically potent fossil fuel industry. The industry balked at the scope of the study and sowed doubts about the EPA's ability to deliver definitive findings. In addition, concerns about the safety of drinking water conflicted with the Obama administration's need to spur the economy out of recession while expanding domestic energy production.

For the study's findings to be definitive, the EPA needed prospective, or baseline, studies. Scientists consider prospective water studies essential because they provide chemical snapshots of water immediately before and after fracking and then for a year or two afterward. This would be the most reliable way to determine whether oil and gas development contaminates surface water and nearby aquifers, and the findings could highlight industry practices that protect water. In [other studies](#) [5] that found toxic chemicals or hydrocarbons in water wells, [the industry argued](#) [6] that the substances were present before oil and gas development began.

Prospective studies were included in the EPA project's final plan in 2010 and were still described as a possibility in a December 2012 progress report to Congress. But the EPA couldn't legally force cooperation by oil and gas companies, almost all of which refused when the agency tried to persuade them.

The abortive attempt to conduct prospective studies serves as "a microcosm of the relationship between industry and EPA," said a former senior EPA official involved in fracking issues.

Over the past 35 years, Congress has passed laws exempting the oil and gas industry from many environmental rules, including [parts of the Clean Air Act](#) [7] and the [Resource Conservation and Recovery Act](#) [8], which governs hazardous waste. In 2005, upon the recommendation of Vice President Dick Cheney's energy task force, Congress exempted fracking fluids, except for the underground injection of diesel, from the Safe Drinking Water Act. This measure is known as the "[Halliburton loophole](#) [9]," a reference to the oilfield services giant once led by Cheney.

Eventually, two companies agreed to participate in the prospective studies, though ultimately the collaborations fell through. One of them, Chesapeake Energy, chipped away at the scope of the plan

over two years of talks, limiting when and where the EPA could monitor water, the EPA documents show. EPA officials and scientists offered Chesapeake considerable influence over the process in some instances. For example, when one site fell through after a year of talks, the EPA and Chesapeake jointly drafted talking points to use with the media, according to EPA emails.

By 2012, as President Barack Obama was campaigning for reelection, a public, confrontational approach to the fracking water study was out of the question, according to former EPA officials.

"While all this was going on, the president was talking about the virtues of natural gas," said one former EPA official close to the work. "The nation's energy policy was shifting, and that fuel source was the basis of it. The president was very gung-ho on it."

The White House did not respond to a request for comment. Dan Whitten, a spokesman for America's Natural Gas Alliance, said the EPA has the best perspective on why the prospective studies fizzled.

After three years looking for suitable locations for baseline research, the EPA determined it had to move on or risk further delays to the overall study. Originally due in 2012, the final study is now expected in 2016 after the completion of reviews. The project is expected to cost \$29 million, more than double the initial budget of \$12 million. A draft version will be made public this spring when it goes to the Science Advisory Board, the EPA said in January.

"Despite our efforts, we were unable to find a location and determine a timeline to meet the [study] criteria and that also worked for Chesapeake," said EPA spokeswoman Liz Purchia in a written Feb. 13 statement. "However, from a scientific point of view and working with the budget Congress gave us, we have been gathering the data necessary to best answer the scientific questions that were posed in the hydraulic fracturing study."

A Brief History

The oil and gas boom, ranging from North Dakota to Pennsylvania, took off as Obama began his first term in 2009. Quickly, the administration came to see the rush as an advantage. While the economy dragged, fossil fuel development created jobs, which the president often mentioned. Cheap natural gas came to be seen as a substitute for coal in generating electricity as the EPA moved to reduce airborne pollutants such as mercury, arsenic and, more recently, carbon dioxide.

At the same time, a backlash was brewing. The increased oil and gas production comes from high-volume hydraulic fracturing, which entails the underground injection at high pressure of millions of gallons of water laced with sand and chemicals to crack rock formations containing hydrocarbons. As fracking grew more widespread, high-profile cases of water contamination generated fears of a link between the two. In 2008, the EPA began sampling well water in Pavillion, Wyo., because of residents' complaints. In 2009, families in Dimock, Pa., filed a federal lawsuit against an oil and gas company for allegedly contaminating their well water with methane, the main component of natural gas. In 2010, the film "Gasland" contained footage of people near fracking sites who set their well water on fire.

"We were getting our asses kicked in the natural gas debate. The story was not playing well with the public," said a former senior EPA official. "If we want to move off a reliance on coal, we have to do something. Natural gas is a good transitional fuel. We need to ensure that there aren't unmanageable problems with increased production."

When the Democratic-controlled House Appropriations Committee urged the EPA to conduct the water study in March 2010, the agency seized on the idea. At first, hopes were lofty.

"There is every opportunity for this study to clarify and give knowledge and insight about the [fracking] operations so that the American people can be confident that their drinking water is pure and uncontaminated," said Paul Anastas, then-director of the EPA's Office of Research and Development, which ran the study, at a [congressional hearing in May 2011](#). [10]

Hydraulic Fracturing at a Glance

America's oil and gas boom was made possible by hydraulic fracturing, which uses a mix of water, sand and hazardous chemicals to blast through shale rock to release hydrocarbons. High-profile cases of water contamination have generated fears that fracking might endanger water supplies.

THE PROCESS

- 1** A well is drilled several thousand feet deep into a layer of shale, which contains deposits of natural gas or oil.

HAZARD
Pits collect fracking waste, though the majority of the fracking fluids stay underground.

HAZARD
Hazardous chemicals have been detected underground, and in the water and air around fracking pads.

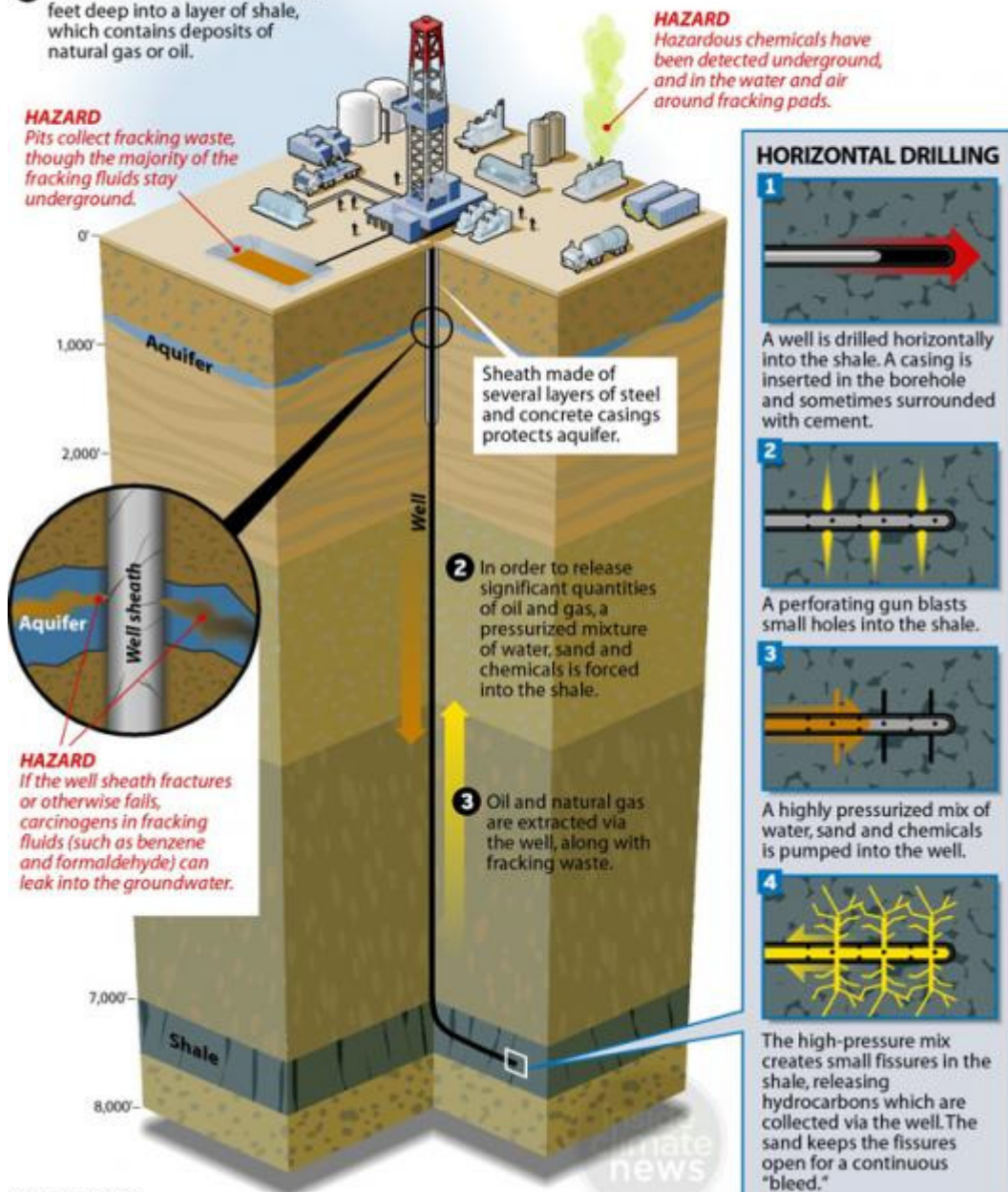


Diagram not to scale

SOURCES: Greenpeace; Reuters; InsideClimate news research

PAUL HORN / InsideClimate News [11]

Industry Pushes Back

The EPA [designed the water study](#) [12] around these elements:

- Analysis of data from companies about the ingredients in fracking fluids, fracking procedures and the health effects of fracking chemicals.
- Computer modeling to understand whether fracking could contaminate water.
- Laboratory studies of how fracking fluids might create new compounds in geological formations.
- Toxicology assessments of fracking fluids.
- Case studies, including retrospective research that would examine cases of reported water contamination at fracked sites.
- Prospective, or baseline, studies in places where fracking had not yet happened.

When reviewing the plan, some members of the 2011 Science Advisory Board suggested the EPA focus on a smaller range of research activities, in particular the prospective studies, given its budget and tight timetable.

"The single most important thing you could do is prospective studies for a year or two at a few wells," said Thyne, the board member.

Those comments didn't make it into the final draft of the study plan, and the EPA proceeded with its sweeping effort. The industry at first reacted cautiously. But in 2011, control of the House of Representatives flipped to Republicans friendly to oil and gas. Suddenly, the industry had an audience open to its concerns about the study, and it pushed back.

Groups such as the American Petroleum Institute (API) and America's Natural Gas Alliance (ANGA) contended the scope of the study was too broad. In its plan, the EPA took a "lifecycle" approach to water and fracking. That meant looking at the impact on surface water and aquifers at each step: the withdrawal of water from local sources, mixing chemicals and sand with it, injecting the fluid into the well during fracking, flowback up the well of fluid and wastewater, and the treatment and disposal of wastewater. The industry argued that "hydraulic fracturing" meant only the period of several weeks when the process is used at a well.

"It's inarguable that the scope of the study expanded beyond the narrow focus Congress had recommended," said Peter Robertson, the head lobbyist for ANGA in 2011 and 2012. "The question was, does the activity of injecting water, sand and a small amount of chemicals produce concerns about water? It wasn't about the rest of the process."

API and ANGA proposed that an outside consultant hired by the industry, the Battelle Memorial Institute, conduct "[a collaborative, side by side study with EPA](#). [13]" The goal was for the industry to shadow the EPA during the study, rather than wait for the project to be peer-reviewed, when it might be too late to address disputes over methodology or results, Robertson said.

The EPA declined "because we felt it was important that we provide the public an independent analysis," said Purchia, the spokeswoman.

Battelle, a nonprofit research and development firm based in Columbus, Ohio, that also does water treatment for fracking activities in Ohio and Pennsylvania, published a report in mid-2012 commissioned by the [industry that slammed the study](#) [14] design.

Still, the industry and the EPA remained optimistic about the baseline studies, said Robertson and former EPA officials. With retrospective studies, there's often a dispute between industry and regulators about whether anything actually happened at a site. With the prospective studies, the industry and the EPA would start together with a clean slate.

Chesapeake Is on Board—or Is It?

For prospective studies, the EPA needed companies to volunteer. But almost all of them refused, with the exception in 2010 of Chesapeake Energy.

The company was one of the country's biggest gas producers at the time. For more than two years, the EPA negotiated with Chesapeake to conduct prospective studies at its fracking sites. The first one under discussion was in the Haynesville shale of northwest Louisiana. EPA scientists wanted to sample water before the site was developed and drilled, after the well was constructed, before and after fracking occurred, and for a period while the well was producing gas, said Robert Puls, the head scientist for the Louisiana prospective study who is now retired from the EPA.

Chesapeake worked to narrow the study's focus to the few weeks of hydraulic fracturing only, the same position as taken by industry trade groups, [according to a Quality Assurance report that the EPA prepared for the Louisiana site](#) [3]. Throughout the report, which is riddled with Chesapeake's edits and comments in the margins, the company insists that the "study should be focused on hydraulic fracturing."

The EPA and Chesapeake could not agree on where the agency could put monitoring wells to test groundwater. In the Haynesville Shale, the land is flat, so underground water moves slowly, perhaps a few inches a year compared with a few inches a day in other places, Puls said. That means any contaminants near the gas well would move very little in the course of a year. So the EPA asked to place a monitoring well on Chesapeake's well pad. The company refused to allow that well, or another that would be further away from the pad, Puls said.

"The process of trying to finalize a prospective study with Chesapeake was very, very difficult," Puls said. "Industry, I think, honestly did want to collaborate. At the same time, when I was there, we didn't see eye to eye on the full scope of the study. So because of that, there was a tug and pull on it, with us saying, 'We need to do this,' and them saying, 'We don't want to do that.'"

Chesapeake declined to comment.

The company started drilling at its Louisiana site before the terms of the prospective study were concluded, which meant that the EPA had to start from scratch elsewhere. The second time, at a new site in Oklahoma, the EPA gave Chesapeake what it wanted, the documents show.

[In a May 2012 email to an EPA scientist on the Oklahoma study](#) [15], Chesapeake's lead engineer on the effort, Chris Hill, wrote that based on an April talk, "EPA agrees with the timing (i.e. after well construction and pre-HF) of the installation of horizontal wells, if they are even necessary...EPA is willing to maintain a buffer of 30 ft. when installing the horizontal wells...EPA plans to include

language in the final study plan regarding our concern and the limitations of horizontal monitoring wells."

Thirty minutes later, [the EPA scientist responded](#) [16], confirming that monitoring wells would be put in only after the well was drilled and that none would be close to the Chesapeake well.

The [EPA also worked with Chesapeake to draft talking points](#) [17] to explain the shift of the baseline studies to Oklahoma from Louisiana. In an August 2012 email to John Satterfield, the company's director of environmental and regulatory affairs, [lead EPA scientist Jeanne Briskin wrote](#) [18] that several months earlier she and one of Chesapeake's lobbyists drafted a text to "explain why we are changing locations. The attachment contains the language we agreed to at that time. Would you please review the proposed text to make sure that it still works for Chesapeake and let me know whether it is ok as is?"

The EPA's Purchia said the two sides developed talking points independently. "When we thought we were going to announce a prospective study with CHK [Chesapeake], we emailed them to ensure that we had the same understanding of the work that would be done before it was announced," she wrote in an email.

The results from the Oklahoma study were due in 2014, according to the talking points. Ultimately, the study never took place. It is unclear in the documents when or why talks between the EPA and Chesapeake ended. One reason may be the ouster by 2013 of much of Chesapeake's top management in a shareholder revolt over the financial practices of [Aubrey McClendon](#) [19], the former chief executive officer.

"The industry's strategy, which is evident here, is one that has worked really well in the past: constraining the study and keeping it from having any teeth," said Jesse Coleman, a researcher at Greenpeace who requested and reviewed the documents. "Legally EPA couldn't demand companies do things. It all speaks to the influence that industry has over EPA."

In early 2012, the EPA entered into a "non-binding" agreement with Range Resources to participate in a prospective study, as part of deal to drop legal action against Range for allegedly contaminating homeowners' drinking water in Parker County, Texas, according to a 2013 EPA Inspector General report. That study also was not undertaken. The legal action was not reinstated.

Asked why the study fell through, Range spokesman Matt Pitzarella said: "We just didn't hear back" from the EPA.

Purchia said the two sides "could not come to agreement on the terms of access to the property."

At the same time the prospective studies crumbled, the EPA retreated from three high-profile investigations of alleged water contamination by oil and gas development. From 2008 to 2012, the EPA sampled water in [Dimock, Pa.](#) [20]; [Pavillion, Wyo.](#) [21]; and Parker County, Texas. In each case, it found evidence of contamination. Nonetheless, the EPA declined to pursue further water sampling or disciplinary action against the energy companies.

Environmentalists and critics among current and former EPA staff contend the administration gave in to political and industry pressure to shield natural gas development from scandal. None of the three sites is included in the fracking water study.

A year ago, the EPA Inspector General initiated a review of the EPA's and states' ability to prevent water pollution from hydraulic fracturing. The IG's office hopes to issue its report this spring, possibly in May, said Jennifer Kaplan, a spokeswoman.

A Different Outcome?

In the five years since the study's launch, academic research into fracking's effect on water has taken off and provided some answers that the EPA study was intended to find. For instance, Duke University researchers found in a June 2013 study that drinking-water wells in northeastern Pennsylvania within a kilometer of fracking had methane concentrations six times greater on average than wells farther away. A July 2013 study by scientists from the [University of Texas-Arlington](#) [22] indicated that groundwater near fracking sites in Texas' Barnett Shale had higher levels of arsenic and other heavy metals.

Could the EPA have sidestepped oil and gas companies and asked homeowners' permission to monitor their well water near fracking sites, as academics did? No, according to Purchia. Groundwater moves slowly, and the EPA had planned to gather samples near fracking sites for a minimum "of four seasons," she wrote in an email. Therefore, the EPA needed to place monitoring wells as close as possible to oil and gas wells, which would have meant on company, rather than homeowner, property.

Though many environmentalists and even some former EPA staff are disappointed with the absence of prospective studies, most said that the broader project could provide some useful, if limited, information.

"Our expectations are low about getting anything conclusive about whether the risks with fracking are insurmountable or manageable," said Briana Mordick, a staff scientist with the Natural Resources Defense Council. "When the report comes out, each side will be able to say what they want about it. I don't think it will necessarily change the landscape."

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