



Sent via email to
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July 6, 2018

Sent via U.S.P.S. to
Mr. Jeffrey H. Wood
Assistant Attorney General
U.S. Department of Justice—ENRD
P.O. Box 7611
Washington, D.C. 20044–7611

Re: Comments on the Proposed Consent Decree in *United States et al. v. United States Steel Corporation*, Civ. A. No. 2:18-cv-00127 (N.D. Ind.), D.J. Ref. No. 90–5–2–1–06476/2

Dear Mr. Wood,

On behalf of The Surfrider Foundation (“Surfrider”), the Abrams Environmental Law Clinic at the University of Chicago respectfully submits these comments regarding the proposed consent decree (“CD”) between the United States, the State of Indiana and the United States Steel Corporation (“U. S. Steel” or the “Company”). Though the public comment period formally closed on June 6, 2018, these comments are to be considered timely pursuant to a written commitment made on behalf of the federal and state parties by the U.S. Department of Justice (“DOJ”) attorney responsible for this matter.

During the past several years, U. S. Steel has repeatedly violated federal and state law and NPDES Permit No. IN0000337 (the “Permit”) under which the company’s Midwest Plant in Portage, Indiana operates. The Company has flouted basic managerial responsibilities and dumped illegal levels of pollutants, including potent carcinogens, into the Burns Waterway, which flows directly into recreational areas in Lake Michigan. Most saliently, in April 2017, U. S. Steel’s illegal spill of carcinogenic toxics shut down a National Lakeshore and threatened the drinking water of millions of Americans. But the April 2017 incident was only the most severe of multiple violations of federal and state environmental requirements that have occurred at the plant during the past several years. While Surfrider appreciates that the United States and the State of Indiana have now taken some action in response, the proposed Consent Decree is

insufficient to correct longstanding technical failures at U. S. Steel and fails to vindicate the public interest.

I. Background of Surfrider's Involvement and Interest in this Matter

Surfrider is a national grassroots non-profit organization that works to promote the protection and enjoyment of the world's oceans, waves, and beaches. Through its powerful activist network, Surfrider advocates for clean water, ocean protection, coastal preservation, public beach access, and the prevention of marine plastic pollution. Surfrider's vision is to keep beaches open to everyone, to promote smart coastal development that avoids environmental impacts, to ensure that water is clean for surfing and swimming, to keep beaches free of plastic litter, and to protect special ocean and coastal places when and before they are threatened.

Surfrider has more than 250,000 supporters and members, 79 local chapters, and 60 school clubs in the United States, including its Chicago Chapter and three other chapters in the Great Lakes region. Surfrider's Chicago Chapter currently has more than 125 members, while Surfrider has more than 200 additional members throughout the Great Lakes region. Surfrider additionally has more than 6,000 supporters in the Great Lakes region who engage with the organization's activities and programs by attending Surfrider events, receiving and responding to Surfrider Action Alerts, signing up for Surfrider emails, and following Surfrider Chapters' Facebook pages.

Surfrider members and others love surfing year-round at the Portage Lakefront beach on Lake Michigan immediately adjacent to U. S. Steel's Midwest Plant in Portage, Indiana because the beach has some of the best waves on Lake Michigan, beautiful scenery, and excellent amenities. Unfortunately, Surfrider members have been harmed and continue to be harmed by U. S. Steel's repeated discharges in violation of its NPDES permit limits and by the company's failure to warn beach users after violations.

Surfrider members are intimately aware of the health consequences that can result from large discharges of dangerous chemicals, having experienced them first-hand. Several Surfrider members have experienced serious and strange health problems that they believe to be the result of surfing in polluted waters (e.g., male surfers suffering from urinary tract infections, a young surfer contracting shingles in his eye, etc.). Others complain of milder, but more frequent symptoms, including bloodshot, itchy or infected eyes, sore throats, nausea, ear infections, and flu-like symptoms. Many surfers observe and are harmed by detrimental water quality conditions at the Portage Lakefront, including oily, ashy or metallic smells.

Due to these well-substantiated concerns about health risks from exposure to pollution, many Surfrider members have frequented the beach in Portage near U. S. Steel's facility less and less. Some surfers who had previously surfed at the Portage Lakefront have ceased to surf there

altogether, while others go less often. Even those who continue to surf at Portage Lakefront feel that the dirty water and their health-related anxieties mar their experiences.

Surfrider members who live in Chicago and Northwest Indiana and whose drinking water comes from Lake Michigan are also concerned about the threat to public drinking water sources posed by U. S. Steel's illegal discharges.

In addition, Surfrider members are deeply concerned about the damage being done to these beloved natural places and landscapes by U. S. Steel's illegal discharges. Surfrider members share a deep appreciation for the natural beauty of the Indiana Dunes and the Lake. Surfrider members feel passionately about conservation and working to preserve the health of the lakeshore, and they feel that companies like U. S. Steel thwart these aims when the companies violate the Clean Water Act ("CWA").

By its letter of December 14, 2017 to the U.S. Department of Justice ("DOJ") and the U.S. Environmental Protection Agency ("USEPA"), Surfrider sought to participate directly in the negotiations that produced this proposed CD; however, federal officials denied that request. Many problems with the proposed CD that Surfrider could have aided in resolving during negotiations must now be addressed through these public comments.

This comment presents Surfrider's review of the proposed CD at this time and in light of currently-available information. It reflects the unique first-hand knowledge of Surfrider members and the technical perspective of experts retained by Surfrider, as well as publicly-available information related to its ongoing litigation against U. S. Steel. *The Surfrider Foundation v. United States Steel Corporation*, 18-cv-00020 (N.D. Ind. Jan. 17, 2018).

We hope that DOJ will take into account the interests and concerns of Surfrider at this juncture by significantly revising the proposed CD. Moreover, if necessary, Surfrider may intervene in the Governments' litigation to ensure that the Court itself directly considers Surfrider's positions on the proposed CD.

II. Failure of the Proposed CD to Meet Applicable Standards for Judicial Approval.

A court reviewing a proposed CD must not be a "rubberstamp" and is obliged to conduct an independent evaluation to ensure that the proposed CD is "fair, reasonable, and adequate" and consistent with the public interest. *United States v. B.P. Exploration & Oil Co.*, 167 F. Supp. 2d 1045, 1049 (N.D. Ind. 2001); *United States v. Metro. Water Reclamation Dist. of Greater Chicago*, 2014 WL 64655, at *4 (N.D. Ill. Jan. 6, 2014), *aff'd*, 792 F.3d 821 (7th Cir. 2015). In determining reasonableness, a court considers: "(1) whether the decree is technically adequate to accomplish the goal of cleaning the environment, (2) whether it will sufficiently compensate the

public for the costs of remedial measures, and (3) whether it reflects the relative strength or weakness of the government's case against the environmental offender." *United States v. Telluride Co.*, 849 F. Supp. 1400, 1402 (D. Colo. 1994). Additionally, the proposed CD must be procedurally and substantively fair, as assessed by factors including a "comparison of the strengths of the plaintiff's case versus the amount of the settlement offer" and "the amount of opposition to the settlement among affected parties." *EEOC v. Hiram Walker & Sons, Inc.*, 768 F.2d 884, 889 (7th Cir. 1985); *see also United States v. Bayer Healthcare, LLC*, 2007 WL 4224238, at *3 (N.D. Ind. Nov. 27, 2007).

As an initial matter, we understand that there is significant "opposition to the settlement among the affected parties." *EEOC v. Hiram Walker & Sons, Inc.*, 768 F.2d 884 at 889. The length and detail of Surfrider's comments herein demonstrate meaningful and substantial opposition. In addition, we understand that the atypically-voluminous public submissions during the public comment period demonstrate consensus among the affected public that the proposed CD is insufficient. The volume and sophistication of public comments speak to both the gravity of U.S. Steel's violations at issue and the inadequacy of the civil penalty and injunctive provisions of the proposed CD.

The proposed CD fails to meet any of the three factors that summarize the reasonableness inquiry and is wholly inadequate to achieve its stated goals. As explained further below:

- 1) The injunctive provisions of the proposed CD are inadequate to assuredly prevent future CWA violations or accomplish the goal of a clean environment. Based on the content of the proposed CD and available information, the proposed requirements for facility upgrades and assessments are not sufficient to prevent future illegal discharges, and the proposed CD does not include a sufficiently detailed maintenance plan or provide for sufficient government and/or third-party inspections. Unless U. S. Steel makes serious and robust changes to its facility and maintenance procedures, the goal of preventing future violations will be unattainable.
- 2) The proposed penalty is grossly inadequate under federal law and policy. The penalty is too small to deter U. S. Steel or others from similar illegal conduct in the future, is not large enough to compensate the public for the grievous nature of the offenses here (which shut down public drinking water intakes and a national lakeshore), is far smaller than other penalties in comparable cases, and is inconsistent with applicable federal policy. In addition, the unusual strength of the Governments' enforcement action against U. S. Steel underscores the weaknesses of the proposed civil penalty: U. S. Steel has already admitted to a number of violations in answering Surfrider's Complaint in *The Surfrider*

Foundation v. United States Steel Corporation, 18-cv-00020 (N.D. Ind. Jan. 17, 2018). Thus, the Governments face no litigation risk with respect to liability on those violations, which is highly atypical in these kinds of cases. Relatedly, the proposed CD fails to compensate the local public because it does not include any supplemental environmental project (“SEP”) that would be targeted toward helping affected areas and communities.

- 3) The proposed CD is the product of a procedurally unfair process and is structured in such a way as to frustrate or preclude public scrutiny and input. Federal officials shut Surfrider out of negotiations, and even USEPA itself appears not to have had highly relevant information during negotiations, as it appears the federal agency only learned of additional chromium violations by U. S. Steel in October 2017 through media inquiries, i.e. not from U. S. Steel or USEPA’s state counterpart, the Indiana Department of Environmental Management (“IDEM”). DOJ submitted the proposed CD to the court and published it for public comment before U. S. Steel submitted key technical documents, and DOJ closed the public comment period before U. S. Steel provided other documents or finalized any technical plans—all of which the public should have had the full opportunity to review and to comment on given that such documents provide the actual content of technical requirements that U. S. Steel will be obliged to meet to prevent future violations of law. The lack of public involvement, transparency, and functional state-federal partnership mars the process that created this proposed CD.

Because of the proposed CD’s unfairness, unreasonableness, and inadequacy, we urge DOJ to use its authority under 28 C.F.R. § 50.7 to withdraw its consent from the proposed judgment in its current form and negotiate a more robust, transparent and adequate CD. If DOJ does not significantly improve the proposed CD, the Court should withhold approval of it.

III. The Technical Failures of the Proposed CD Based on Currently-Available Information.

As explained above, in determining if a proposed CD is reasonable, a court must decide whether the “decree is technically adequate to accomplish the goal of cleaning the environment.” *Telluride Co.*, 849 F. Supp. at 1402. This proposed CD fails that test. Neither the proposed CD’s stated goals nor its methods of achieving compliance with those goals are adequate to remediate the damage U. S. Steel has done to water quality in Lake Michigan and to protect the environment there from further degradation by the Company.

First, the stated goal of the proposed CD is insufficient to meet the legally-required standard for a CD. The proposed CD’s stated goal, set forth in ¶ 1, is merely to “cause U.S. Steel

to take those steps that are necessary to bring the . . . Midwest Plant Facility into compliance with . . . the CWA,” Indiana law, U. S. Steel’s Permit, and the Emergency Planning and Community Right-to-Know Act (“EPCRA”). To promote a clean environment near Portage Lakefront, the proposed CD should require U. S. Steel to go beyond minimal compliance with preexisting requirements; however, the proposed CD stops at just that stunted goal.

Second, even if the proposed CD’s more modest ambition of compliance with existing requirements were an acceptable target, the proposed CD fails to clear that bar. U. S. Steel has consistently failed to comply with its existing legal obligations, and those failures have jeopardized Lake Michigan. Consequently, U. S. Steel needs more robust regulatory oversight and more detailed regulatory requirements; the Governments should subject U. S. Steel to more stringent controls than those outlined in the Permit. Therefore the proposed CD should include more frequent monitoring, more inspections, tougher penalties for non-compliance, and more specific mandates related to how U. S. Steel must respond to violations.

Surfrider has retained a technical expert, Dr. Ranajit Sahu, to assist in its review of the proposed CD and the associated documents that are currently publicly available. As you can see from Dr. Sahu’s curriculum vitae, attached hereto as Exhibit A, he has served as an expert for DOJ on numerous occasions and brings decades of relevant experience to bear here, including experience working with the steel industry. The technical failures of the proposed CD identified by Dr. Sahu and discussed herein render the proposed CD inadequately protective of the environment and improperly present as new compliance actions facility improvements that should be properly considered as the delayed fulfillment of already binding legal obligations.

A. The proposed CD effectively credits U. S. Steel for actions taken in response to the April 2017 spill that should have been performed years ago and are too narrowly focused on the circumstances of that spill.

Paragraph 9 of the proposed CD recites certain activities undertaken by U.S. Steel in the wake of the April 2017 spill.

As an initial matter, U. S. Steel and the Governments have failed to make public any documentation of these activities thus far. To the extent such documentation is provided now, the public has had no opportunity to review it before the close of this comment period, which is yet another example of the flawed, closed process that was used to develop and to consider this proposed CD.

In any event, from the text of the proposed CD, it appears that the activities in Paragraph 9 amount to no more than basic steps, long-overdue and necessary to maintain a compliant wastewater treatment system. Several examples follow.

Paragraph 9(a)(iv) describes repairs to the concrete containment trench that failed during the April 2017 incident. U. S. Steel reportedly only initiated these repairs in December 2017, roughly eight months after the incident, and it apparently needed at least more than six months to complete them based on the proposed CD's deadline of June 2018 to apply the epoxy coating to that single trench. In any event, if applying such epoxy is necessary to prevent breaches like that which allowed the April 2017 spill, then U. S. Steel was already required to take such measures before that spill. If such epoxy coating is necessary in this particular trench, the Governments must require it for any containment device that may be exposed to hexavalent chromium throughout the Midwest Plant. Furthermore, if this step is important, why was completing it delayed until more than 14 months after the April 2017 spill? Basic upkeep of its wastewater infrastructure is the bare minimum that U. S. Steel must do.¹ Moreover, and as an aside, there is no publicly-available information demonstrating that U. S. Steel even met the June 2018 deadline for this repair.

Paragraphs 9(a)(iii) and 9(a)(v) set out specific changes to the physical plant—replacing PVC piping with stainless steel and replacing a single-walled heat exchanger with a double-walled unit—that were reportedly made after the April 11, 2017 spill. Based on available information, it appears that these changes are also long overdue and should have been made previously to prevent the violations in the first place. The actions in these paragraphs appear to be fortifying the hexavalent chromium treatment facility and appear to be correcting instances in which U. S. Steel decided to cut corners in the original construction of that treatment plant. U. S. Steel should provide an explanation of why it had not made these changes previously, and why the failure to have done so does not represent an ongoing failure of maintenance obligations. In other words, these actions are not new commitments by the Company to go above and beyond compliance; U. S. Steel was already *required by law* to take these actions in order to be in compliance with its NPDES permit.

The specific shortcomings of these actions described in ¶ 9 speak to a much larger question that remains unanswered: given that the hexavalent chromium line appears to have been constructed within the last decade, why did it fail so catastrophically? And the corollary: how much money did U. S. Steel save by designing the line in a way which it could fail thus?

Ultimately, the proposed CD must penalize U. S. Steel for its maintenance and facility design failures and ensure that U. S. Steel did not benefit economically from delaying required tasks. The CD should not, in effect, provide extensions to the Company for performing basic, critical and legally-required actions.

¹ See Permit at 61 (Part II.B – Management Requirements) (“The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment [of wastewater] ... and which are necessary for achieving compliance with the terms and conditions of this permit . . .”).

B. The proposed CD provides for Operations and Maintenance requirements that are largely undefined and are inadequate where they are defined.

The proposed CD does not provide sufficient detail with respect to the Preventive Maintenance Program Plan and the Facility Wastewater Operation and Maintenance Plan (“O&M Plan”), which are described in CD ¶ 10. These plans are to be submitted by U. S. Steel to USEPA and IDEM; after agency review, comment, and eventual approval, adherence to the final plans will become a binding CD obligation, per CD ¶ 16. Further, per proposed CD ¶¶ 10 and 11, the O&M Plan and Wastewater Process Monitoring System evaluation and design are being submitted to USEPA and IDEM and may be finalized after the proposed CD is entered by the court.² In other words, the proposed CD is set up such that the most meaningful technical components of the injunctive relief may be determined *after* public comment and judicial review.³ Without the ability to review the actual content of the ultimate technical requirements being proposed, the public and court cannot evaluate the adequacy of the technical requirements; thus neither the public nor the court can be assured that U.S. Steel will be specifically required to take steps necessary to prevent future violations.

After receiving multiple public requests, DOJ ultimately made U.S. Steel’s draft O&M Plan available to the public. After reviewing the draft O&M Plan, Surfrider and its expert Dr. Sahu found that the draft plan was inadequately detailed, technically insufficient, and rife with unanswered questions. A few of the most salient shortcomings were:

- More than 80 pages of the 116 pages were simply a copy of the existing NPDES permit and descriptions of the NPDES permit in the text. That is unnecessary and misleading; it suggests that U. S. Steel is even still making a meager effort to address its prior failings.
- While there were brief tables presented listing the relevant operating procedures, the Plan did not include those procedures themselves—undermining both the usefulness of the plan and the ability to perform any independent review thereof.

² Indeed, even then, key documents related to U. S. Steel’s compliance with these to-be-determined technical requirements may be withheld from public scrutiny that would be otherwise facilitate by routine public information requests of the agencies. See CD ¶ 11(e) (requiring U. S. Steel to retain records rather than submit them contemporaneously to USEPA and IDEM).

³ Relatedly, the proposed CD (in ¶¶ 77, 79–81) provides mechanisms for modification, but it fails to provide for meaningful public participation in or court oversight over all modifications. Given that U. S. Steel has failed to maintain its facilities and regulators have failed to ensure compliance over a period of years, it is unsatisfactory that the only parties that would review and agree on such modifications would be U. S. Steel, USEPA, and IDEM. This feature of the proposed CD is additionally problematic because technical plans may be finalized after the CD is entered by the Court, creating real risks that key substantive terms of the eventual CD will never be subject to public and judicial scrutiny.

- Critical operating procedures dealing with how specific maintenance activities (i.e., visual checks, non-destructive testing, etc.) are conducted were missing. There should have been Operating Procedures for each of the maintenance activities listed.
- There was no discussion of the current condition of each piece of relevant equipment. The April 2017 spill happened because of the neglected state of disrepair in some of the equipment. Yet, the draft O&M Plan did not have any discussion of the state of the equipment—making it fairly useless as a practical matter. An independent audit of the facility would be an effective means to correct this deficiency. Alternatively, U. S. Steel might remedy this failure by providing, in an attachment, the findings of past and more recent maintenance inspections, to the extent such maintenance records exist.
- The heart of this draft O&M Plan consisted of tables describing preventative actions, maintenance activities, and equipment calibration. This is where the frequency of each type of maintenance and calibration was specified. Yet, there was no discussion of the rationale for: (a) the particular maintenance items listed for each piece of equipment; or (b) the frequency of the maintenance and inspections proposed (i.e., semi-annual, annual, every 5 years, every 10 years, etc.). Thus, the adequacy of the overall plan itself was impossible to assess. Once more, an independent facility audit could address this absence and is particularly warranted given U. S. Steel’s history of inadequate maintenance and irresponsible management in the absence of independent technical oversight.

In short, the draft O&M Plan was perfunctory and did not include the thorough review of U. S. Steel’s O&M procedures that is necessary to bring the plant into compliance and end its continuous maintenance and effluent violations.

On May 30, 2017—just as the public comment period was about to close—USEPA rejected U. S. Steel’s draft O&M Plan.⁴ The USEPA rejection letter noted several of the deficiencies identified above. Some of those deficiencies include most basic components of a proper O&M Plan, such as including relevant supporting documents and actually describing how basic documentation of work and recordkeeping will be handled. That U. S. Steel did not include such basic information in its initial draft plan is evidence that U. S. Steel is either unable or unwilling to take its compliance obligations seriously. Thus, while Surfrider is heartened that USEPA is scrutinizing U. S. Steel’s submissions, the basic question remains of whether the Company is willing and able to correct its past illegal practices.

And just this week, on July 2, 2018, USEPA made publicly available U. S. Steel’s revised O&M Plan, which the Company dated June 26, 2018, and U. S. Steel’s Enhanced Wastewater Process Monitoring Design, required under CD ¶ 11 and dated June 29, 2018. Obviously, Surfrider and its expert have not had a meaningful opportunity to review these documents and, therefore, cannot comment on their adequacy with respect to the USEPA rejection letter, the

⁴ Letter from Patrick F. Kuefler, USEPA, to David M. Shelton, U. S. Steel (May 30, 2018).

proposed CD requirements, or more broadly.⁵ In any event, the general public will have no opportunity whatsoever to provide comments on these documents, as the public comment period closed weeks ago.

The proposed CD as a whole leaves many questions unanswered and what little detail does appear in the proposed CD is troubling. The existing proposed CD provisions are myopically focused on preventing a precise recurrence of the same events at the same parts of the facility that precipitated the April 2017 spill. The proposed CD lacks requirements addressing how U. S. Steel must maintain the rest of its facilities. Given the age and physical condition of the Midwest Plant and its history of maintenance problems, it is crucial to ensure that all of the Midwest Plant's wastewater processing is safe, not just those aspects of its system that catastrophically failed last April. This is evident by the litany of CWA and Permit violations alleged in the Governments' complaint, violations that cover time periods and pollutants far beyond the hexavalent chromium that U. S. Steel dumped into Lake Michigan last April. Indeed, based on his decades of experience, including working with DOJ to develop enforcement consent decrees, Dr. Sahu expected a more thorough focus and a set of directives in the CD itself, with regards to:

- an inventory of all hazardous materials handling/processing/generating processes at the Plant;
- an inventory of all of the containment and conveyance systems for all such materials whether they are products, intermediates, or wastes;
- the assessment of each containment system for such materials including all tanks, vessels, pumps, pipes, trenches, etc.;

⁵ Even without a full technical review of these documents, it is immediately evident that significant problems and information gaps persist. The revised O&M Plan does appear to provide some of the previously absent supporting documents, however the fundamental and conceptual problems identified above with respect to the rejected draft persist in the revised version. The Enhanced Wastewater Process Monitoring Design document submitted by U. S. Steel raises serious and troubling questions. That document reports unexplained inconsistencies in flow meter readings that might suggest ongoing hexavalent chromium leaks (page 2), repeatedly references specific monitoring thresholds that U. S. Steel apparently proposes to set unilaterally at some uncertain future time (see, *e.g.*, pages 2 & 4), and describes several facility improvements undertaken in the last year that provide further evidence of past irresponsible management (i.e. according to the Company, it only recently "identified" the presence of a problematic drain (page 4), only now sealed a corroded manhole cover that could facilitate toxic spills (page 5), and formerly lacked any means to even access portions of lamella clarifiers that require regular cleaning (page 6)).

- the need to have monitoring and leak detection systems at the more critical locations where the margin for release might be low and the adverse consequences high; and
- the need to have specific spill abatement systems and procedures that can contain any spills, especially those into water.

Indeed, this broader review is necessary simply to meet the proposed CD's modest stated purpose of assuring compliance with existing obligations.⁶ A May 4, 2017 USEPA inspection report reveals several extremely troubling related facts: U.S. Steel apparently had no preventative maintenance program at all, and U.S. Steel did not record inspection or maintenance activities in any systematic manner. Fixing a few specific pipes does not address systemic and managerial problems and failures to maintain the facility adequately; whack-a-mole is not an acceptable maintenance strategy.

C. The proposed CD terms must be augmented by specific additional requirements to ensure robust and independent oversight moving forward.

In general, the proposed CD needs to have stronger and more detailed monitoring and oversight requirements. U. S. Steel's history of maintenance problems and of managing the Midwest Plant in ways that create environmental hazards demonstrates that additional independent oversight is required to ensure compliance.

Accordingly, USEPA and IDEM should both commit to conducting more frequent and more searching inspections. USEPA should expressly commit, in the CD, to conduct at least biannual inspections of the facility, and U. S. Steel should commit to reimburse the agency for associated costs. In many contexts such "future response costs" are provided for in enforcement consent decrees, and repayment of such costs would be particularly appropriate here.

Additionally, the CD should require U. S. Steel to retain an independent third-party to perform a facility-wide audit and to generate or evaluate its plans for corrective actions—including a new, more rigorous O&M Plan, Preventive Maintenance Program Plan, and Wastewater Process Monitoring System Evaluation. This third-party audit should also consider and make binding recommendations with respect to staffing, training, changes to relevant policies, and necessary infrastructure investments. The proposed CD currently allows U. S. Steel to evaluate its own facility needs and generate its corrective plans itself without independent expertise, but the Company's previous efforts to design and implement effective O&M

⁶ The proposed CD also does not clearly require U. S. Steel to comply with its final O&M Plan and Preventive Maintenance Program Plan moving forward. Compliance and increased monitoring should be required for more than 24 months. CD ¶ 79. DOJ should ensure there is still a requirement for compliance after the proposed CD is no longer in effect.

procedures have led to chronic and significant maintenance failures and have demonstrated an inability to comply with the law or permit conditions.

Moreover, the proposed CD should require U. S. Steel to implement company-wide best practices for compliance with NPDES permits across all of its facilities, not just at the Midwest Plant in Portage. The proposed CD's current focus is primarily on preventing another hexavalent chromium spill of the type that took place in April 2017 from occurring at the Midwest Plant. Instead, the proposed CD should require improvements designed both to prevent: (1) any chromium spill from happening at all U. S. Steel facilities nationwide (through improved chromium management at other facilities) and (2) all other types of NPDES permit violations that could occur at the U. S. Steel Midwest Plant. U. S. Steel has already indicated to the press that it will use lessons learned at the Midwest Plant as the basis for best practices to be implemented company-wide.⁷ The proposed CD should be revised to hold U. S. Steel to that commitment.

D. The injunctive relief in the proposed CD fails to address whatsoever numerous violations alleged in the Complaint and contains numerous potential loopholes that could frustrate its stated purpose.

The Governments' Complaint, like Surfrider's before it, alleges that U. S. Steel has repeatedly violated terms of its NPDES permit related to effluent temperature, whole effluent toxicity and stormwater management. Government Complaint ¶¶ 77–79 (temperature and toxicity); ¶¶ 101–105 (fifth claim for relief related to stormwater plans). Despite these allegations, there are no provisions in the proposed CD that require U. S. Steel take any specific steps to correct these persistent violations.⁸ The proposed CD is a failure on its face when judged against its own stated purpose of requiring U. S. Steel to correct its past violations and prevent recalcitrance.

Even as to violations to which the proposed CD does speak explicitly, the language of the proposed CD provides U. S. Steel with multiple potential loopholes to exploit. For example:

⁷ See Michael Hawthorne, *U.S. Steel to pay nearly \$900,000 to settle lawsuit over chromium spill into Lake Michigan*, CHICAGO TRIBUNE (April 2, 2018) (<http://www.chicagotribune.com/news/ct-met-us-steel-chromium-lake-michigan-settlement-20180402-story.html>) (“U.S. Steel continually seeks opportunities for improvement in its environmental compliance program, and will apply lessons learned from this process to future operations company-wide,” a spokeswoman said in statement.”).

⁸ It should be noted that the thermal discharge limits in U. S. Steel's permit cover non-contact cooling water, stormwater, and treated wastewater. Permit at 70 (Part III. A.) Accordingly, there is no basis to conclude that thermal violations are addressed or will be prevented by compliance with the provisions of the proposed CD related to planning for and assessment of wastewater treatment systems.

- While the addition in ¶ 12(a) of a requirement for daily hexavalent chromium monitoring is useful, ¶ 12(b) allows U. S. Steel to “request a change in monitoring frequency” through its next application for a permit modification or renewal. The proposed CD should not allow IDEM to walk back on this monitoring requirement as soon as U. S. Steel requests it, but instead should simply mandate continued daily monitoring for hexavalent chromium and such requirement should persist in future versions of the facility’s permit.
- Similarly, ¶ 18(e) creates a loophole in which failing to report a spill in compliance with the reporting protocol in Appendix B technically means that U. S. Steel need not include such spill in its semi-annual progress report. Paragraph 18(e) requires inclusion of “spills and unpermitted Discharges . . . reported pursuant to the requirements of Appendix B.” There should be no confusion that all violations must be reported in each deliverable, even if the violation was not reported as required initially.
- Paragraph 20 stipulates that when U. S. Steel learns of a CD or other violation that “may pose an immediate threat to public health or welfare or the environment,” it must notify authorities “as soon as possible. . . . but no later than 24 hours” after knowledge of the event. This is unacceptable. First, the threshold phrase “may pose an immediate threat” is vague and appears to allow U. S. Steel to judge the severity of a possible threat in the first instance. All violations of the CD or Permit should be subject to the reporting requirement in ¶ 20 and U. S. Steel the proposed CD cannot rely on U. S. Steel making such judgments. Second, U. S. Steel should make notifications immediately upon learning of a spill and should be penalized if there is a delay in obtaining knowledge of any excessive discharge. In other words, there must be an absolute time limit on U. S. Steel’s notification requirements that is not triggered by U. S. Steel’s becoming aware of the violation, particularly where the Company’s reliance on third-party contractors creates additional risk of dangerous lags in identification, assessment and communication of violations. Any response short of immediate action has the potential to cause serious harm to recreators and other water users.

While the first two points may be more easily-corrected issues of ambiguous drafting, this final point is of crucial importance moving forward because U. S. Steel has a demonstrated practice of failing to identify violations promptly and refusing to investigate violations adequately even once identified.

Even after the April 2017 spill of hexavalent chromium, U. S. Steel violated chromium limits again in October 2017 and the circumstances of that illegal discharge illustrate the problems identified in the previous paragraph. After a contractor alerted U. S. Steel to the

ongoing violation, U. S. Steel estimated a volume of chromium discharged, but chose not to test that illegal discharge to determine how much of that chromium was comprised of hexavalent chromium.⁹ Had U. S. Steel made such a determination, it may have discovered that the volume of hexavalent chromium exceeded thresholds of mandatory emergency response measures.¹⁰ Unfortunately, because U. S. Steel unilaterally decided not to test that illegal discharge, neither regulators nor the public can ever know the true extent of the public danger created or the legal obligations failed.

The October 2017 illegal discharge demonstrates that it is inappropriate to anchor U. S. Steel's notification obligations only to the point in time when U. S. Steel itself comes to be aware of violations. There must be short and absolute timeframes for notifications from the beginning of a violation to ensure that U. S. Steel effectively manages its contractors, proactively monitors its facility, and responds adequately to identified problems or violations.¹¹

U. S. Steel's response to the October 2017 illegal discharge also demonstrates that the proposed CD must be improved by the inclusion of specific obligations to require sufficient follow-up sampling after violations. It should not give U. S. Steel the discretion to argue that refusing to test is reasonable under the circumstances.¹² This issue may be partially addressed by application of the Indiana Spill Rule discussed below.

E. The proposed CD lacks adequate improvements to notification requirements necessary to protect and to assuage concerns of water recreators and the residents of Northwest Indiana.

While the technical provisions of the proposed CD fail to guarantee future violations will be prevented, the notice provisions of the proposed CD are similarly insufficient to protect the public when future violations do occur. The proposed CD (in Appendix B) contains no more stringent monitoring and notice requirements than what U. S. Steel was already required to comply with all along—beyond adding a few specific contact numbers to the Spill Response

⁹ Letter from Rick Massoels, IDEM, to Joe Hanning, U. S. Steel (Dec. 11, 2017).

¹⁰ While the volume of chromium reported did not exceed the reportable quantity for chromium that would have triggered the obligation to alert the National Response Center, the volume was larger than the reportable quantity for hexavalent chromium. Thus, the question of how much hexavalent chromium was within that illegal chromium discharge would dictate what U. S. Steel's notification obligations were.

¹¹ In addition to strict time limits for reporting, the ultimate CD should require U. S. Steel to direct all contractors to notify government regulators immediately when they observe a discharge in violation of U. S. Steel's permit. Potentially dangerous situations should be made public immediately rather than going through multiple parties before being reported to regulators, and U. S. Steel should not unilaterally control communication of information related to spills at its facility.

¹² See Letter from Joseph Hanning, U. S. Steel, to Bridget S. Murphy, IDEM (Jan. 4, 2018) at 2.

obligation. Once it detects a spill, U. S. Steel must take steps to protect against further damage and to ensure that all affected parties receive adequate notice of spills, including the City of Chicago, surrounding municipalities, and Portage Lakefront-goers. That general obligation was already in place in the permit; because U. S. Steel failed to meet it, more prescriptive requirements are necessary. Such improvements could, for example, include electronic signage to activate during violations or connecting automated monitoring technology to communications or alert systems.

One specific improvement would be to incorporate both the spill containment obligations as well as the two-hour notice provisions prescribed by the Indiana Spill Rule 327 IAC 2-6.1-7.¹³ These may not currently apply because of 327 IAC 2-6.1-3 Sec. 3.¹⁴ Given U. S. Steel's history of devastating spills and irresponsible responses, to ensure the protection of public health and prompt, effective responses to illegal discharges, the proposed CD should be revised to require replacing the current Permit language with the more stringent notice and spill response requirements in the Indiana Spill Rule.

The imperative to buttress notification requirements is not some idle procedural addition. In October 2017, in the hours and days after yet another illegal chromium discharge at U. S. Steel's Midwest Plant, surfers were in the water adjacent to the facility, launching from just across the Burns Waterway and, quite possibly, unknowingly paddling through U. S. Steel's illegal chromium discharge. That must never happen again.

In sum, the technical components of the proposed CD represent a target that is both too low and too speculative. The requirements are vague, inadequate and uncertain. More is required of both U. S. Steel and its regulators to assure future compliance and to correct past

¹³ “(1) Contain the spill, if possible, to prevent additional spilled material from entering the waters of the state. (2) Undertake or cause others to undertake activities needed to accomplish a spill response. (3) As soon as possible, but within two (2) hours of discovery, communicate a spill report to the Department of Environmental Management, Office of Land Quality, Emergency Response Section. . . If new or updated spill report information becomes known that indicates a significant increase in the likelihood of damage to the waters of the state, the responsible party shall notify the department as soon as possible but within two (2) hours of the time the new or updated information becomes known. (4) Submit to the Indiana Department of Environmental Management, Office of Land Quality, Emergency Response Section. . . a written copy of the spill report if requested in writing by the department.”

¹⁴ “Notwithstanding any other section of this rule, the reporting requirement of this rule does not apply to the following occurrences: (1) Discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur.”

illegal activities. As it stands, based on available information, the technical components of the proposed CD are inadequate and fail to protect the public interest.

IV. The total civil penalty in this case—just over \$600,000—is inadequate to achieve necessary goals and unreasonably inconsistent with USEPA policy.

When you visit the National Parks Services' beautiful facility at the Portage Lakefront, you are a literal stone's throw across the Burns Waterway to U. S. Steel's Outfall 004. When you drive to the Portage Lakefront, you come to a stop sign before you cross the Waterway and turn into the park. The entrance to the U.S. Steel Portage facility is at that same intersection, and, at the front gate, hangs a sign listing the companies' "Carnegie Way" principles. First among U. S. Steel's "Critical Success Factors" is the "[r]elentless focus on economic profit." Nowhere among its litany of goals and strategies is there any reference to complying with the law or valuing the company's workers, neighbors, or surrounding environment. The proposed CD will not vindicate the public interest unless its financial penalty forces U. S. Steel to recognize that compliance with the law is a "critical success factor" as well.

When assessing the reasonableness of a proposed CD, courts must consider whether the penalties provided sufficiently compensate the public for damage done and whether the penalty is adequate to achieve additional goals such as specific and general deterrence and eliminating any economic benefit associated with the violations. USEPA guidance explains that penalties in a settlement must be arrived at in light of four environmental goals:

First, penalties should be large enough to deter noncompliance. Second, penalties should help ensure a level playing field by ensuring that violators do not obtain an economic advantage over their competitors. These two goals generally require that penalties recover the economic benefit of noncompliance, plus an appropriate gravity amount. Third, CWA penalties should be generally consistent across the country. ... Fourth, settlement penalties should be based on a logical calculation methodology.¹⁵

The penalty provided for in the proposed CD does not sufficiently advance those four goals. The unreasonableness of this provision of the proposed CD is revealed by the federal government's deviations from its own guidance documents and historical practice regarding appropriate financial penalties. The proposed CD, with its low penalty figure and lack of SEP, appears to be an outlier that DOJ should reconsider.

¹⁵ UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, INTERIM CLEAN WATER ACT SETTLEMENT PENALTY POLICY (Mar. 1, 1995) ("USEPA Penalty Policy") at 3.

A. The proposed CD’s proposed financial penalties do not adhere to federal guidelines for calculating civil penalties.

First, the proposed CD contains no explanation for how the total penalty of \$601,242 was determined. If the Governments applied the USEPA Penalty Policy, then they need to show their work. If not, the Governments need to explain the rationale behind their decision to deviate from longstanding policy. In any event, as discussed below, under a straightforward reading of the USEPA Penalty Policy, it is evident that the penalty proposed is unjustifiably low.

The USEPA Penalty Policy provides a formula to calculate “the lowest penalty figure that the Federal Government should accept in a settlement.”¹⁶ The federal government is to follow a specific methodology to consider factors including the seriousness of the offense, the strength of the government’s case, the offender’s ability to pay, the deterrence effects of a penalty, and how much the offender profited from their violations.¹⁷ The USEPA Penalty Policy includes several worksheets for calculating suggested penalties based on counting days of violation and applying a gravity-based per-day penalty to each of those days of violation. Once that penalty is set, mitigating factors may apply to reduce the calculated amount; such mitigating factors may apply where the violator has a limited ability to pay or where the government’s case is uncertain.

The gravity of U. S. Steel’s violations is severe. The statutory maximum penalty for only those Clean Water Act violations covered in the First Claim of the Governments’ complaint amounts to over \$10,750,848.¹⁸ This sum – nearly 20 times the civil penalty provided for in the proposed CD – does not even capture the Clean Water Act violations alleged in the Second, Third, Fourth, or Fifth Claims for relief. Nor does this sum include penalties for the EPCRA violations alleged in counts Six and Seven of the Governments’ complaint, which could amount to millions of dollars in addition.¹⁹ The gravity of U. S. Steel’s violations is evident from facts

¹⁶ USEPA Penalty Policy at 2.

¹⁷ See generally USEPA Penalty Policy at 4–21.

¹⁸ This sum counts each monthly or quarterly violation alleged as a violation on each day of the time period covered, as instructed by USEPA policy. USEPA Penalty Policy at 4 (“In general, the statutory maximum penalty for violations of an effluent limit for a period longer than one day includes a separate penalty for each day in the time period . . .”). For quarterly violations, 90 days of violation was used as a conservative assumption. Per the Governments’ complaint, this penalty amount was calculated using a maximum penalty of \$37,500 per day of violation for violations occurring before November 2, 2015 and \$53,848 per day of violation thereafter.

¹⁹ Inexplicably, it appears to have taken U. S. Steel nearly 10 months to correct its deficient written notifications under EPCRA. According to DOJ’s website for this matter, U. S. Steel only submitted an EPCRA follow-up notification letter on February 2, 2018. See Letter from Joseph E. Hanning, U. S. Steel, to Joseph E. Wainscott, State Emergency Response Commission (Feb. 2, 2018) available at <https://www.epa.gov/sites/production/files/2018-05/documents/20180202132333869.pdf>. Under EPCRA, that notification is required “as soon as

addressed in detail elsewhere: years of cutting corners and irresponsible management led to hundreds of pounds of potent carcinogen entering Lake Michigan, jeopardizing the drinking water of millions, and shutting down a unique National Lakeshore. And that was just last April; the Governments' Complaint details a myriad of other CWA violations that span years and many of which relate to entire months or quarters of violations.

Moreover, there are no mitigating factors under the USEPA Penalty Policy that would support lowering the penalty amount that the federal government should accept. U. S. Steel certainly has the ability to pay a larger penalty, and the Governments' liability case is unquestionable given that U. S. Steel admitted to so many of the violations at issue in its Answer to Surfrider's Complaint—a pleading U.S. Steel filed *before* that Governments filed their case. Per USEPA's own guidance, there appears to be no justification for the meager civil penalty proposed here.

B. The penalties are insufficient to deter U. S. Steel or other violators.

An appropriate penalty must be large enough to deter the particular violator from recalcitrance. The USEPA Penalty Policy describes a key purpose of any settlement penalty is “detering future violations by the same violator.”²⁰ U. S. Steel's overall financial situation is appropriate context to assess the impact of the proposed CD's financial penalties on the Company's behavior and incentives. According to Forbes, U. S. Steel has more than \$12 billion in annual revenue and more than \$10 billion in assets.²¹ This means that U. S. Steel generates more than \$600,000 in revenue every half hour. If a penalty is to be a meaningful deterrent, it must mean more than 30-minutes of a corporate violator's year.

U. S. Steel is responsible for numerous previous violations at this facility and at its facilities across the country, and it has been the subject of numerous environmental enforcement actions and consent decrees. First and foremost, the Governments' Complaint articulates a variety of CWA violations at the Midwest Plant over the past five years. Relevant information about the need to effectively deter U. S. Steel from future violations with far larger penalties is also evident from broader view of the Company's environmental compliance problems. A multi-million-dollar consent decree was filed in 2016 related to Clean Air Act violations at U. S. Steel's Gary, Indiana facility, which featured \$1.9 million for seven SEPs, \$2.2 million in civil penalties, and \$800,000 for an environmentally beneficial project.²² From public documents, it

practicable after a release which requires notice.” 42 U.S.C. § 11004(c). Clearly, it was “practicable” for U. S. Steel to have satisfied this obligation in fewer than roughly 298 days and each of those days of delay constitutes a day of violation that could—and should—be assessed the statutory maximum penalty of \$55,907 per day. See Governments' Compl. ¶ 114.

²⁰ USEPA Penalty Policy at 2.

²¹ See <https://www.forbes.com/companies/us-steel/> (last visited June 26, 2018).

²² See <https://www.justice.gov/opa/pr/u-s-steel-corporation-agrees-end-litigation-improve-environmental-compliance-its-three> (last visited July 2, 2018).

appears that the Portage facility shares management with the Gary facility, including those responsible for environmental compliance, and that same management team allowed the April 2017 spill to happen just months after that Clean Air Act CD went into effect.²³ Indeed, just last week, county health officials in western Pennsylvania issued an enforcement order to U. S. Steel, including a \$1 million fine, in relation to air quality violations resulting from “ongoing and deteriorating issues” even after that particular facility was the subject of a different 2016 consent decree related to other air quality violations.²⁴ These are just a few examples of many violations of environmental laws at U. S. Steel’s facilities. Given that U. S. Steel has not been deterred from violating by previous enforcement actions, a much stronger penalty is required for effective deterrence.

With all of this in mind, the \$601,242 in total state and federal civil penalties are too low and cannot be expected to have any real impact on how U. S. Steel makes compliance and investment decisions in the future. Moreover, such an insufficient penalty similarly fails the additional goal of deterring violations by other dischargers.

C. There is no evidence that the civil penalty deprives U. S. Steel of the economic benefits of noncompliance.

From news reports and publicly available documents, it appears that U. S. Steel has profited significantly from the irresponsible practices that precipitated the violations at issue here. U. S. Steel has laid off maintenance workers at the Portage facility and has engaged in a broader corporate cost-cutting strategy to defer or to avoid maintenance and investments in capital improvements. This strategy is sometimes referred to as the “Carnegie Way” philosophy advertised on the sign outside the Midwest Plant. Additionally, publicly available documents suggest a connection between these maintenance failures and concerted corporate cost-cutting strategies.²⁵ Understanding how this affirmative strategy of under-investing in maintenance and facility upkeep relates to the violations at issue and developing a penalty sum that deprives U. S. Steel of any savings it enjoyed from noncompliance may require additional research and directed discovery, but that is precisely what is required to support an adequate resolution of these violations.²⁶

²³ Additionally, a cursory search of USEPA’s Enforcement Compliance History Online database reveals persistent Clean Water Act violations at that Gary facility that have not been subject of any enforcement action. This further supports the need for the proposed CD to be revised to include company-wide requirements.

²⁴ Leslie A. Pappas, *U.S. Steel Fined \$1M for Air Pollution Violations Near Pittsburgh (1)*, BLOOMBERG ENVIRONMENT (June 29, 2018).

²⁵ See, e.g., Joseph S. Pete, *Steelworkers say Longhi’s legacy one of layoffs, cost-cutting*, NORTHWEST INDIANA TIMES (May 10, 2017), available at

http://www.nwitimes.com/business/local/update-steelworkers-say-longhi-s-legacy-one-of-layoffs-cost/article_f8b7e638-e63a-534d-bd44-aa1860e03421.html.

²⁶ The USEPA Penalty Policy instructs that “every effort should be made to calculate and

From what is known already, it is clear that in order to comply with its Permit, U. S. Steel already had an obligation to improve its facilities and maintenance practices, and it profited from its failure to meet that obligation. Any economic gain enjoyed by U. S. Steel by virtue of these illegal practices must be identified and eliminated. The penalty must be at least as large as the amount the company saved or earned through these practices to have a deterrent effect, and if additional investigation is necessary to determine what that amount should be, the proposed CD cannot be finalized until that is done.

D. The penalties in this proposed CD are significantly lower than those assessed in comparable scenarios, undermining the goal of national uniformity.

Compared to other, similar USEPA Enforcement Actions, the total civil penalty proposed to be assessed to U. S. Steel, roughly \$600,000, is on the low end of the spectrum. Reviewing consent decrees available through USEPA's Enforcement Compliance History Online database provides a few examples:

- Steel company ArcelorMittal, USA, Inc. was assessed a \$3.5 million penalty and performed a \$25 million SEP to resolve Lake Michigan pollution violations in 1988.
- Pipe manufacturer Griffin Pipe Products Company, Inc. had a less harmful spill and was assessed a higher penalty of \$950,000.
- Cast iron pipe manufacturer McWane was assessed an \$800,000 penalty, performed a \$4 million SEP, and had \$13.6 million in demonstrated compliance costs.
- Clow Water Systems was assessed a \$1 million penalty, \$3.6 million SEP, and \$6.3 million in demonstrated compliance costs.

From our review of the 18 federal CWA enforcement action consent decrees in the metal industry over the past 10 years:

- The average federal penalty was \$948,559.50.
- In the seven cases that featured SEPs, the average SEP value was \$5,144,456.14.
- The average cost to comply with injunctive relief was \$7,502,907.56.

Viewed against this universe of comparable consent decrees, the civil penalty here is revealed as an extremely low outlier. If anything, the scenario here justifies a civil penalty that is at the high end of the spectrum: U. S. Steel's persistent and deliberate corporate strategy to shirk

recover the economic benefit of noncompliance" and notes that CWA violators "are likely to have obtained an economic benefit as a result of delayed or completely avoided pollution control expenditures during the period of noncompliance." USEPA Penalty Policy at 4.

its maintenance obligations resulted in dumping hundreds of pounds of carcinogens into a waterbody that supplies drinking water to millions and is immediately adjacent to a popular recreational beach and treasured National Lakeshore.

V. The penalties do not reflect the strength of the Governments' case given that U. S. Steel has already admitted to many of the violations.

The Governments' litigation risk in this case is unusually low. Given the strength of the Governments' case against U. S. Steel, fairness, reasonableness and the USEPA Penalty Policy demand a higher penalty. Unlike in any other CWA enforcement action of which we are aware, **thanks to Surfrider's litigation, U. S. Steel had already admitted to the violations at the heart of the Governments' complaint prior to the Governments filing their complaint and proposed CD.**²⁷ Specifically, U. S. Steel had already admitted to the following violations alleged in the Government's complaint when it in answered Surfrider's complaint:

- Total recoverable chromium daily maximum quantity limit violations on February 3, 2013; April 10, 2017; April 11, 2017; and October 25, 2017.
- Monthly average rate for total recoverable chromium in April 2017.
- Daily maximum limit for hexavalent chromium violations on January 12, 2017; April 11, 2017; and April 12, 2017.
- Monthly average rate for hexavalent chromium in April 2017.
- Failures of quarterly toxicity tests on *C. dubia* for the weeks of August 4, 2013; June 8, 2014; and June 22, 2014.
- Exceedances of daily maximum downstream temperature limits at Outfall 500 on February 26, 2017; February 27, 2017; and February 28, 2017.
- Exceedances of the daily maximum receiving water temperature difference limit at Outfall 500 on October 1, 2014; September 7, 2016; and November 2, 2016.
- Violation of the daily maximum quantity limit for oil and grease on March 19, 2015.
- Violation of narrative water quality standards for discoloration on April 11, 2017.²⁸
- Reporting or monitoring violations on 20 different days for temperature differences improperly calculated.

²⁷ See Answer, *Surfrider Foundation v. United States Steel Corporation*, No. 2:18-cv-00020 (Mar. 9, 2018) (the "Answer").

²⁸ U. S. Steel skirted the issue of other discoloration violations until much later in its Answer, but admits in paragraph 137 to reporting violations of qualitative permit limits for discoloration on December 12, 2013; April 1, 2016; April 5, 2016; and April 10, 2017, in addition to the violation on April 11, 2017 mentioned above.

- Reporting violation for failure to report Total Toxic Organics in October 2016.
- One violation for inadequate monitoring frequency for the following five parameters in December 2016: total suspended solids, oil & grease, cyanide, zinc, and chromium.²⁹

Moreover, U. S. Steel admitted in its Answer to Surfrider’s complaint that its maintenance failures caused violations of its NPDES permit.³⁰

With these binding admissions already made in a filing with the same court that is responsible for reviewing the proposed CD, the Government faces no litigation risk as to establishing liability. Indeed, the only affirmative defenses pled by U. S. Steel in answering Surfrider are categorically inapplicable to the Governments’ enforcement action as a matter of law. These admissions should be considered binding legal admissions of 131 days of violation with a statutory maximum penalty of \$5,370,448.³¹ This amount—though far less than the statutory maximum penalty for the violations alleged in the Governments’ complaint³²—is nearly 10 times larger than the civil penalty in the proposed CD.

E. The proposed CD lacks sufficient provisions to remedy the environmental harm caused by U. S. Steel’s violations of law.

Beyond the four goals set forth in the USEPA Penalty Policy, a penalty must meet the general reasonableness test and vindicate the public interest by redressing the environmental harms caused by U. S. Steel’s irresponsible and illegal actions and borne by the local public. To provide such redress, the proposed CD must be improved to provide a real local environmental benefit. There are two central ways this should be addressed: 1) a SEP should be added to the existing penalty provisions to deliver real environmental benefits to the Southend of Lake Michigan; and 2) the provisions related to System Unit Resource Protection Act (“SURPA”) natural resource damages need to be expanded upon to ensure that the financial valuation of those damages is adequate and that such funds are spent effectively and with public input and support.

²⁹ Note that Surfrider’s complaint characterized this as ten independent violations, since U. S. Steel failed to adequately monitor each pollutant at two different outfalls, but U. S. Steel admitted more generally to “a permit violation for the following five parameters.”

³⁰ Answer ¶ 141.

³¹ Consistent with the USEPA Penalty Policy, this sum was calculated assigning a day of violation for each day of a month in which a monthly limit was violated and using a maximum penalty of \$37,500 per day of violation for violations occurring before November 2, 2015 and \$53,848 per day of violation thereafter.

³² Note that the statutory maximum penalty for the violations alleged in Surfrider’s complaint is higher still. Surfrider’s complaint alleges Clean Water Act violations that are both broader and more numerous than those alleged in the Governments’ complaint.

First, to remediate the environmental harm caused by U. S. Steel's violations and for the company to make good to its neighbors, the proposed CD should include a SEP or multiple SEPs. As explained above, the monetary penalty included in the proposed CD is woefully inadequate; the civil penalty must be increased, and additional penalty amounts should be discharged through performance of SEPs. Surfrider's members and other members of the public who recreate near the U. S. Steel facility have suffered physical and psychological harm as a result of U. S. Steel's actions. Many people no longer recreate at the Portage Lakefront because of both the fear of what U. S. Steel is dumping into the water and the uncertainty of not being able to rely on adequate, timely warnings about violations.³³ To be cured, these types of harms require more than a simple monetary penalty. To address environmental harms adequately, the proposed CD should be revised to require U. S. Steel to support projects aimed at improving and ensuring water quality in the vicinity of its facilities. U. S. Steel should not only stop illegally polluting Lake Michigan, but also it should fund projects to assure local users that their lakefront is safe and adequately monitored. Surfrider would welcome the opportunity to discuss such projects, and meaningful public input in developing such projects is both substantively important and compelled by USEPA policies related to SEPs.

Second, the proposed CD should provide further direction and transparency with respect to the SURPA damages component in ¶ 28. The proposed CD should be revised to explain how the SURPA damages payment will be spent at the impacted federal resources (i.e. Indiana Dunes National Lakeshore) and specify how public input will influence such expenditure. SURPA, specifically 54 U.S.C. § 100724(a)(2), states that response costs and damages may be used not only to "restore" or "replace" system unit resources subject to the action, but also to "monitor and study" those resources. The public should be informed about how the SURPA response costs of \$12,564 were incurred and should be involved in determining how the compensatory restoration costs of \$240,504 may be used to restore, monitor, and study the Indiana Dunes National Lakeshore to ensure it remains a safe and usable public resource for years to come.

F. The proposed CD should require U. S. Steel to pay the Governments' fees.

The public has suffered another financial harm at the hands of U. S. Steel and one that the proposed CD should be revised to redress. The proposed CD, in ¶ 72, currently waives the Governments' right to recover those fees, indicating that each party bears its own legal costs. U. S. Steel should pay the agencies' costs and attorneys' fees, instead of forcing taxpayers to foot the bill. In some CDs, government attorneys' fees are included in "response costs," and it appears that some such legal costs may be included in the past response cost provisions of this CD. In any event, the proposed CD, ¶8(cc), defines "Past Response Costs" as costs incurred before September 14, 2017. There is no reason U. S. Steel should be able to avoid reimbursing the government agencies for costs incurred since then and moving forward—costs like reviewing

³³ See Complaint, *Surfrider Foundation v. United States Steel Corporation*, No. 2:18-cv-00020 (Jan. 17, 2018) ¶¶18, 26.

this very comment, prosecuting litigation, and overseeing U. S. Steel’s compliance with any final CD moving forward through document review and facility inspections. Were it not for U. S. Steel’s violations of law, the Governments would never have to incur those costs. U. S. Steel—not the public through the various agencies’ budgets—should bear this financial burden.

VI. The proposed CD is not “procedurally fair,” resulting in a proposed CD that is opposed by the public and affected parties.

To merit judicial approval, the process that led to a proposed consent decree must be fair to affected parties and courts consider as a factor “the amount of opposition to the settlement among affected parties.” *EEOC v. Hiram Walker & Sons, Inc.*, 768 F.2d 884, 889 (7th Cir. 1985).

Having initiated citizen enforcement under the Clean Water Act by sending a 60-day notice of intent to sue U. S. Steel in November 2017, Surfrider asked USEPA and DOJ to allow it participate in negotiations so that it might raise concerns such as those set forth herein prior to the development of this proposed CD.³⁴ USEPA rejected Surfrider’s request after a month, without any dialogue on the matter.³⁵ While excluding a citizen-suit plaintiff from negotiations may be within DOJ’s enforcement discretion, that does not make it a wise or fair choice in this instance. Many of the allegations in the Governments’ complaint track allegations in Surfrider’s complaint directly. Another distinguishing factor here is the manner in which Surfrider’s November 2017 notice of intent to sue letter brought to light U. S. Steel’s illegal chromium discharge in October 2017. While DOJ and USEPA were reportedly already negotiating with U. S. Steel at that time, USEPA apparently only heard of the October violation when the Chicago Tribune asked about it during the course of research for an article on Surfrider’s litigation.³⁶ While U. S. Steel could have informed USEPA of this violation, or IDEM could have passed along U. S. Steel’s report, neither of the federal government’s negotiating partners did so. If press reports are true, that episode both highlights the dysfunctional negotiations process among the government entities involved as well as reveals the important role that Surfrider has already played, despite being formally shut out of negotiations.

Again, as of this writing, the public does not yet have access to all of the documents and reports referenced in the proposed CD that would provide actual information about what U. S. Steel will be doing to improve its facilities and prevent future violations. Once it was provided

³⁴ Letter from Mark N. Templeton, Abrams Environmental Law Clinic, to Robert Kaplan, USEPA (Dec. 14, 2017).

³⁵ Letter from Cathy Steep, USEPA, to Mark Templeton, Abrams Environmental Law Clinic (Jan. 18, 2018).

³⁶ Michael Hawthorne, *U.S. Steel tried to keep toxic spill into lake a secret; Group to file pollutant dumping suit*, CHICAGO TRIBUNE (Nov. 15, 2017) (“An EPA spokeswoman said Indiana officials didn’t tell the agency about the spill until Tuesday morning, following inquiries from the Tribune.”)

to the public, the initial draft O&M Manual and Preventive Maintenance Program Plan was first posted along with the proposed CD on IDEM's Air Quality page. While that misdirection appears to have been corrected, obscuring the draft O&M Plan and other relevant documents from public review is unacceptable and contributes to a process that has been unfair to the impacted public. Additionally, under the Permit, U. S. Steel must submit monthly monitoring reports to IDEM ("DMRs"). These DMRs are public information and are typically posted to IDEM's publicly-accessible "virtual file cabinet" as a general matter of CWA administration. IDEM has not yet posted U. S. Steel's DMRs for March, April, or May of 2018 and, as of the date that the public comments were due in this matter, had not posted any 2018 DMR. This failure to keep its publicly-available files up to date effectively delays from public scrutiny key information about ongoing CWA compliance at the U. S. Steel facility. Lack of straightforward and timely access to relevant information impairs the public's ability to assess meaningfully the proposed CD. Furthermore, the lack of transparency regarding penalty calculations and specific allocation of SURPA funds discussed above present additional procedural fairness issues.

More generally, there appears to be widespread public opposition to the proposed CD. Surfrider understands that DOJ has already received an unusual volume of negative comments. We know that some local organizations requested that USEPA or DOJ host a public meeting to explain the proposed CD. We note that DOJ has thus far rejected that request, in yet another example of frustrating and minimizing public participation.

As Surfrider has indicated for months, Surfrider remains ready to help the government and U. S. Steel craft a resolution to U. S. Steel's violations of law based on a sufficient civil penalty and robust, effective injunctive provisions. Surfrider would welcome the opportunity to discuss the issues presented herein and looks forward to doing so in every available forum including—as needed and at the very least—in filings with the Court.

Respectfully,



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EXHIBIT A

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EXPERIENCE SUMMARY

Dr. Sahu has over twenty eight years of experience in the fields of environmental, mechanical, and chemical engineering including: program and project management services; design and specification of pollution control equipment for a wide range of emissions sources including stationary and mobile sources; soils and groundwater remediation including landfills as remedy; combustion engineering evaluations; energy studies; multimedia environmental regulatory compliance (involving statutes and regulations such as the Federal CAA and its Amendments, Clean Water Act, TSCA, RCRA, CERCLA, SARA, OSHA, NEPA as well as various related state statutes); transportation air quality impact analysis; multimedia compliance audits; multimedia permitting (including air quality NSR/PSD permitting, Title V permitting, NPDES permitting for industrial and storm water discharges, RCRA permitting, etc.), multimedia/multi-pathway human health risk assessments for toxics; air dispersion modeling; and regulatory strategy development and support including negotiation of consent agreements and orders.

He has over twenty five years of project management experience and has successfully managed and executed numerous projects in this time period. This includes basic and applied research projects, design projects, regulatory compliance projects, permitting projects, energy studies, risk assessment projects, and projects involving the communication of environmental data and information to the public.

He has provided consulting services to numerous private sector, public sector and public interest group clients. His major clients over the past twenty five years include various trade associations as well as individual companies such as steel mills, petroleum refineries, cement manufacturers, aerospace companies, power generation facilities, lawn and garden equipment manufacturers, spa manufacturers, chemical distribution facilities, and various entities in the public sector including EPA, the US Dept. of Justice, several states, various agencies such as the California DTSC, various municipalities, etc.). Dr. Sahu has performed projects in all 50 states, numerous local jurisdictions and internationally.

In addition to consulting, Dr. Sahu has taught numerous courses in several Southern California universities including UCLA (air pollution), UC Riverside (air pollution, process hazard analysis), and Loyola Marymount University (air pollution, risk assessment, hazardous waste management) for the past seventeen years. In this time period he has also taught at Caltech, his alma mater (various engineering courses), at the University of Southern California (air pollution controls) and at California State University, Fullerton (transportation and air quality).

Dr. Sahu has and continues to provide expert witness services in a number of environmental areas discussed above in both state and Federal courts as well as before administrative bodies (please see Annex A). Annex B contains details of Dr. Sahu's groundwater and process waste water experience.

EXPERIENCE RECORD

2000-present **Independent Consultant.** Providing a variety of private sector (industrial companies, land development companies, law firms, etc.) public sector (such as the US Department of Justice) and public interest group clients with project management, air quality

consulting, waste remediation and management consulting, as well as regulatory and engineering support consulting services.

- 1995-2000 Parsons ES, **Associate, Senior Project Manager and Department Manager for Air Quality/Geosciences/Hazardous Waste Groups**, Pasadena. Responsible for the management of a group of approximately 24 air quality and environmental professionals, 15 geoscience, and 10 hazardous waste professionals providing full-service consulting, project management, regulatory compliance and A/E design assistance in all areas.
- Parsons ES, **Manager for Air Source Testing Services**. Responsible for the management of 8 individuals in the area of air source testing and air regulatory permitting projects located in Bakersfield, California.
- 1992-1995 Engineering-Science, Inc. **Principal Engineer and Senior Project Manager** in the air quality department. Responsibilities included multimedia regulatory compliance and permitting (including hazardous and nuclear materials), air pollution engineering (emissions from stationary and mobile sources, control of criteria and air toxics, dispersion modeling, risk assessment, visibility analysis, odor analysis), supervisory functions and project management.
- 1990-1992 Engineering-Science, Inc. **Principal Engineer and Project Manager** in the air quality department. Responsibilities included permitting, tracking regulatory issues, technical analysis, and supervisory functions on numerous air, water, and hazardous waste projects. Responsibilities also include client and agency interfacing, project cost and schedule control, and reporting to internal and external upper management regarding project status.
- 1989-1990 Kinetics Technology International, Corp. **Development Engineer**. Involved in thermal engineering R&D and project work related to low-NO_x ceramic radiant burners, fired heater NO_x reduction, SCR design, and fired heater retrofitting.
- 1988-1989 Heat Transfer Research, Inc. **Research Engineer**. Involved in the design of fired heaters, heat exchangers, air coolers, and other non-fired equipment. Also did research in the area of heat exchanger tube vibrations.

EDUCATION

- 1984-1988 Ph.D., Mechanical Engineering, California Institute of Technology (Caltech), Pasadena, CA.
- 1984 M. S., Mechanical Engineering, Caltech, Pasadena, CA.
- 1978-1983 B. Tech (Honors), Mechanical Engineering, Indian Institute of Technology (IIT) Kharagpur, India

TEACHING EXPERIENCE

Caltech

- "Thermodynamics," Teaching Assistant, California Institute of Technology, 1983, 1987.
- "Air Pollution Control," Teaching Assistant, California Institute of Technology, 1985.
- "Caltech Secondary and High School Saturday Program," - taught various mathematics (algebra through calculus) and science (physics and chemistry) courses to high school students, 1983-1989.
- "Heat Transfer," - taught this course in the Fall and Winter terms of 1994-1995 in the Division of Engineering and Applied Science.
- "Thermodynamics and Heat Transfer," Fall and Winter Terms of 1996-1997.

U.C. Riverside, Extension

- "Toxic and Hazardous Air Contaminants," University of California Extension Program, Riverside, California. Various years since 1992.
- "Prevention and Management of Accidental Air Emissions," University of California Extension Program, Riverside, California. Various years since 1992.
- "Air Pollution Control Systems and Strategies," University of California Extension Program, Riverside, California, Summer 1992-93, Summer 1993-1994.
- "Air Pollution Calculations," University of California Extension Program, Riverside, California, Fall 1993-94, Winter 1993-94, Fall 1994-95.
- "Process Safety Management," University of California Extension Program, Riverside, California. Various years since 1992-2010.
- "Process Safety Management," University of California Extension Program, Riverside, California, at SCAQMD, Spring 1993-94.
- "Advanced Hazard Analysis - A Special Course for LEPCs," University of California Extension Program, Riverside, California, taught at San Diego, California, Spring 1993-1994.
- "Advanced Hazardous Waste Management" University of California Extension Program, Riverside, California. 2005.

Loyola Marymount University

- "Fundamentals of Air Pollution - Regulations, Controls and Engineering," Loyola Marymount University, Dept. of Civil Engineering. Various years since 1993.
- "Air Pollution Control," Loyola Marymount University, Dept. of Civil Engineering, Fall 1994.
- "Environmental Risk Assessment," Loyola Marymount University, Dept. of Civil Engineering. Various years since 1998.
- "Hazardous Waste Remediation" Loyola Marymount University, Dept. of Civil Engineering. Various years since 2006.

University of Southern California

- "Air Pollution Controls," University of Southern California, Dept. of Civil Engineering, Fall 1993, Fall 1994.
- "Air Pollution Fundamentals," University of Southern California, Dept. of Civil Engineering, Winter 1994.

University of California, Los Angeles

- "Air Pollution Fundamentals," University of California, Los Angeles, Dept. of Civil and Environmental Engineering, Spring 1994, Spring 1999, Spring 2000, Spring 2003, Spring 2006, Spring 2007, Spring 2008, Spring 2009.

International Programs

- "Environmental Planning and Management," 5 week program for visiting Chinese delegation, 1994.
- "Environmental Planning and Management," 1 day program for visiting Russian delegation, 1995.
- "Air Pollution Planning and Management," IEP, UCR, Spring 1996.
- "Environmental Issues and Air Pollution," IEP, UCR, October 1996.

PROFESSIONAL AFFILIATIONS AND HONORS

President of India Gold Medal, IIT Kharagpur, India, 1983.

Member of the Alternatives Assessment Committee of the Grand Canyon Visibility Transport Commission, established by the Clean Air Act Amendments of 1990, 1992-present.

American Society of Mechanical Engineers: Los Angeles Section Executive Committee, Heat Transfer Division, and Fuels and Combustion Technology Division, 1987-present.

Air and Waste Management Association, West Coast Section, 1989-present.

PROFESSIONAL CERTIFICATIONS

EIT, California (#XE088305), 1993.

REA I, California (#07438), 2000.

Certified Permitting Professional, South Coast AQMD (#C8320), since 1993.

QEP, Institute of Professional Environmental Practice, since 2000.

CEM, State of Nevada (#EM-1699). Expiration 10/07/2017.

PUBLICATIONS (PARTIAL LIST)

"Physical Properties and Oxidation Rates of Chars from Bituminous Coals," with Y.A. Levendis, R.C. Flagan and G.R. Gavalas, *Fuel*, **67**, 275-283 (1988).

"Char Combustion: Measurement and Analysis of Particle Temperature Histories," with R.C. Flagan, G.R. Gavalas and P.S. Northrop, *Comb. Sci. Tech.* **60**, 215-230 (1988).

"On the Combustion of Bituminous Coal Chars," PhD Thesis, California Institute of Technology (1988).

"Optical Pyrometry: A Powerful Tool for Coal Combustion Diagnostics," *J. Coal Quality*, **8**, 17-22 (1989).

"Post-Ignition Transients in the Combustion of Single Char Particles," with Y.A. Levendis, R.C. Flagan and G.R. Gavalas, *Fuel*, **68**, 849-855 (1989).

"A Model for Single Particle Combustion of Bituminous Coal Char." Proc. ASME National Heat Transfer Conference, Philadelphia, **HTD-Vol. 106**, 505-513 (1989).

"Discrete Simulation of Cenospheric Coal-Char Combustion," with R.C. Flagan and G.R. Gavalas, *Combust. Flame*, **77**, 337-346 (1989).

"Particle Measurements in Coal Combustion," with R.C. Flagan, in "**Combustion Measurements**" (ed. N. Chigier), Hemisphere Publishing Corp. (1991).

"Cross Linking in Pore Structures and Its Effect on Reactivity," with G.R. Gavalas in preparation.

"Natural Frequencies and Mode Shapes of Straight Tubes," Proprietary Report for Heat Transfer Research Institute, Alhambra, CA (1990).

"Optimal Tube Layouts for Kamui SL-Series Exchangers," with K. Ishihara, Proprietary Report for Kamui Company Limited, Tokyo, Japan (1990).

"HTRI Process Heater Conceptual Design," Proprietary Report for Heat Transfer Research Institute, Alhambra, CA (1990).

"Asymptotic Theory of Transonic Wind Tunnel Wall Interference," with N.D. Malmuth and others, Arnold Engineering Development Center, Air Force Systems Command, USAF (1990).

"Gas Radiation in a Fired Heater Convection Section," Proprietary Report for Heat Transfer Research Institute, College Station, TX (1990).

"Heat Transfer and Pressure Drop in NTIW Heat Exchangers," Proprietary Report for Heat Transfer Research Institute, College Station, TX (1991).

"NO_x Control and Thermal Design," Thermal Engineering Tech Briefs, (1994).

"From Purchase of Landmark Environmental Insurance to Remediation: Case Study in Henderson, Nevada," with Robin E. Bain and Jill Quillin, presented at the AQMA Annual Meeting, Florida, 2001.

"The Jones Act Contribution to Global Warming, Acid Rain and Toxic Air Contaminants," with Charles W. Botsford, presented at the AQMA Annual Meeting, Florida, 2001.

PRESENTATIONS (PARTIAL LIST)

"Pore Structure and Combustion Kinetics - Interpretation of Single Particle Temperature-Time Histories," with P.S. Northrop, R.C. Flagan and G.R. Gavalas, presented at the AIChE Annual Meeting, New York (1987).

"Measurement of Temperature-Time Histories of Burning Single Coal Char Particles," with R.C. Flagan, presented at the American Flame Research Committee Fall International Symposium, Pittsburgh, (1988).

"Physical Characterization of a Cenospheric Coal Char Burned at High Temperatures," with R.C. Flagan and G.R. Gavalas, presented at the Fall Meeting of the Western States Section of the Combustion Institute, Laguna Beach, California (1988).

"Control of Nitrogen Oxide Emissions in Gas Fired Heaters - The Retrofit Experience," with G. P. Croce and R. Patel, presented at the International Conference on Environmental Control of Combustion Processes (Jointly sponsored by the American Flame Research Committee and the Japan Flame Research Committee), Honolulu, Hawaii (1991).

"Air Toxics - Past, Present and the Future," presented at the Joint AIChE/AAEE Breakfast Meeting at the AIChE 1991 Annual Meeting, Los Angeles, California, November 17-22 (1991).

"Air Toxics Emissions and Risk Impacts from Automobiles Using Reformulated Gasolines," presented at the Third Annual Current Issues in Air Toxics Conference, Sacramento, California, November 9-10 (1992).

"Air Toxics from Mobile Sources," presented at the Environmental Health Sciences (ESE) Seminar Series, UCLA, Los Angeles, California, November 12, (1992).

"Kilns, Ovens, and Dryers - Present and Future," presented at the Gas Company Air Quality Permit Assistance Seminar, Industry Hills Sheraton, California, November 20, (1992).

"The Design and Implementation of Vehicle Scrapping Programs," presented at the 86th Annual Meeting of the Air and Waste Management Association, Denver, Colorado, June 12, 1993.

"Air Quality Planning and Control in Beijing, China," presented at the 87th Annual Meeting of the Air and Waste Management Association, Cincinnati, Ohio, June 19-24, 1994.

Annex A

Expert Litigation Support

1. Occasions where Dr. Sahu has provided Written or Oral testimony before Congress:

- (a) In July 2012, provided expert written and oral testimony to the House Subcommittee on Energy and the Environment, Committee on Science, Space, and Technology at a Hearing entitled “Hitting the Ethanol Blend Wall – Examining the Science on E15.”

2. Matters for which Dr. Sahu has provided affidavits and expert reports include:

- (b) Affidavit for Rocky Mountain Steel Mills, Inc. located in Pueblo Colorado – dealing with the technical uncertainties associated with night-time opacity measurements in general and at this steel mini-mill.
- (c) Expert reports and depositions (2/28/2002 and 3/1/2002; 12/2/2003 and 12/3/2003; 5/24/2004) on behalf of the United States in connection with the Ohio Edison NSR Cases. *United States, et al. v. Ohio Edison Co., et al.*, C2-99-1181 (Southern District of Ohio).
- (d) Expert reports and depositions (5/23/2002 and 5/24/2002) on behalf of the United States in connection with the Illinois Power NSR Case. *United States v. Illinois Power Co., et al.*, 99-833-MJR (Southern District of Illinois).
- (e) Expert reports and depositions (11/25/2002 and 11/26/2002) on behalf of the United States in connection with the Duke Power NSR Case. *United States, et al. v. Duke Energy Corp.*, 1:00-CV-1262 (Middle District of North Carolina).
- (f) Expert reports and depositions (10/6/2004 and 10/7/2004; 7/10/2006) on behalf of the United States in connection with the American Electric Power NSR Cases. *United States, et al. v. American Electric Power Service Corp., et al.*, C2-99-1182, C2-99-1250 (Southern District of Ohio).
- (g) Affidavit (March 2005) on behalf of the Minnesota Center for Environmental Advocacy and others in the matter of the Application of Heron Lake BioEnergy LLC to construct and operate an ethanol production facility – submitted to the Minnesota Pollution Control Agency.
- (h) Expert Report and Deposition (10/31/2005 and 11/1/2005) on behalf of the United States in connection with the East Kentucky Power Cooperative NSR Case. *United States v. East Kentucky Power Cooperative, Inc.*, 5:04-cv-00034-KSF (Eastern District of Kentucky).
- (i) Affidavits and deposition on behalf of Basic Management Inc. (BMI) Companies in connection with the BMI vs. USA remediation cost recovery Case.
- (j) Expert Report on behalf of Penn Future and others in the Cambria Coke plant permit challenge in Pennsylvania.

Duke Energy Carolinas, LLC, Case No. 1:08-cv-00318-LHT-DLH (Western District of North Carolina, Asheville Division).

- (w) Declaration (August 2008) on behalf of the Sierra Club in the matter of Dominion Wise County plant MACT.us
- (x) Expert Report (June 2008) on behalf of Sierra Club for the Green Energy Resource Recovery Project, MACT Analysis.
- (y) Expert Report (February 2009) on behalf of Sierra Club and the Environmental Integrity Project in the matter of the air permit challenge for NRG Limestone's proposed Unit 3 in Texas.
- (z) Expert Report (June 2009) on behalf of MTD Products, Inc., in the matter of *Alice Holmes and Vernon Holmes v. Home Depot USA, Inc., et al.*
- (aa) Expert Report (August 2009) on behalf of Sierra Club and the Southern Environmental Law Center in the matter of the air permit challenge for Santee Cooper's proposed Pee Dee plant in South Carolina).
- (bb) Statements (May 2008 and September 2009) on behalf of the Minnesota Center for Environmental Advocacy to the Minnesota Pollution Control Agency in the matter of the Minnesota Haze State Implementation Plans.
- (cc) Expert Report (August 2009) on behalf of Environmental Defense, in the matter of permit challenges to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (dd) Expert Report and Rebuttal Report (September 2009) on behalf of the Sierra Club, in the matter of challenges to the proposed Medicine Bow Fuel and Power IGL plant in Cheyenne, Wyoming.
- (ee) Expert Report (December 2009) and Rebuttal reports (May 2010 and June 2010) on behalf of the United States in connection with the Alabama Power Company NSR Case. *United States v. Alabama Power Company*, CV-01-HS-152-S (Northern District of Alabama, Southern Division).
- (ff) Pre-filed Testimony (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed White Stallion Energy Center coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (gg) Pre-filed Testimony (July 2010) and Written Rebuttal Testimony (August 2010) on behalf of the State of New Mexico Environment Department in the matter of Proposed Regulation 20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions*, No. EIB 10-04 (R), to the State of New Mexico, Environmental Improvement Board.
- (hh) Expert Report (August 2010) and Rebuttal Expert Report (October 2010) on behalf of the United States in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana) – Liability Phase.
- (ii) Declaration (August 2010), Reply Declaration (November 2010), Expert Report (April 2011), Supplemental and Rebuttal Expert Report (July 2011) on behalf of the United States in the matter of DTE Energy Company and Detroit Edison Company

(Monroe Unit 2). *United States of America v. DTE Energy Company and Detroit Edison Company*, Civil Action No. 2:10-cv-13101-BAF-RSW (Eastern District of Michigan).

- (jj) Expert Report and Deposition (August 2010) as well as Affidavit (September 2010) on behalf of Kentucky Waterways Alliance, Sierra Club, and Valley Watch in the matter of challenges to the NPDES permit issued for the Trimble County power plant by the Kentucky Energy and Environment Cabinet to Louisville Gas and Electric, File No. DOW-41106-047.
- (kk) Expert Report (August 2010), Rebuttal Expert Report (September 2010), Supplemental Expert Report (September 2011), and Declaration (November 2011) on behalf of Wild Earth Guardians in the matter of opacity exceedances and monitor downtime at the Public Service Company of Colorado (Xcel)'s Cherokee power plant. No. 09-cv-1862 (District of Colorado).
- (ll) Written Direct Expert Testimony (August 2010) and Affidavit (February 2012) on behalf of Fall-Line Alliance for a Clean Environment and others in the matter of the PSD Air Permit for Plant Washington issued by Georgia DNR at the Office of State Administrative Hearing, State of Georgia (OSAH-BNR-AQ-1031707-98-WALKER).
- (mm) Deposition (August 2010) on behalf of Environmental Defense, in the matter of the remanded permit challenge to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (nn) Expert Report, Supplemental/Rebuttal Expert Report, and Declarations (October 2010, November 2010, September 2012) on behalf of New Mexico Environment Department (Plaintiff-Intervenor), Grand Canyon Trust and Sierra Club (Plaintiffs) in the matter of *Plaintiffs v. Public Service Company of New Mexico* (PNM), Civil No. 1:02-CV-0552 BB/ATC (ACE) (District of New Mexico).
- (oo) Expert Report (October 2010) and Rebuttal Expert Report (November 2010) (BART Determinations for PSCo Hayden and CSU Martin Drake units) to the Colorado Air Quality Commission on behalf of Coalition of Environmental Organizations.
- (pp) Expert Report (November 2010) (BART Determinations for TriState Craig Units, CSU Nixon Unit, and PRPA Rawhide Unit) to the Colorado Air Quality Commission on behalf of Coalition of Environmental Organizations.
- (qq) Declaration (November 2010) on behalf of the Sierra Club in connection with the Martin Lake Station Units 1, 2, and 3. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Case No. 5:10-cv-00156-DF-CMC (Eastern District of Texas, Texarkana Division).
- (rr) Pre-Filed Testimony (January 2011) and Declaration (February 2011) to the Georgia Office of State Administrative Hearings (OSAH) in the matter of Minor Source HAPs status for the proposed Longleaf Energy Associates power plant (OSAH-BNR-AQ-1115157-60-HOWELLS) on behalf of the Friends of the Chattahoochee and the Sierra Club).

- (ss) Declaration (February 2011) in the matter of the Draft Title V Permit for RRI Energy MidAtlantic Power Holdings LLC Shawville Generating Station (Pennsylvania), ID No. 17-00001 on behalf of the Sierra Club.
- (tt) Expert Report (March 2011), Rebuttal Expert Report (June 2011) on behalf of the United States in *United States of America v. Cemex, Inc.*, Civil Action No. 09-cv-00019-MSK-MEH (District of Colorado).
- (uu) Declaration (April 2011) and Expert Report (July 16, 2012) in the matter of the Lower Colorado River Authority (LCRA)'s Fayette (Sam Seymour) Power Plant on behalf of the Texas Campaign for the Environment. *Texas Campaign for the Environment v. Lower Colorado River Authority*, Civil Action No. 4:11-cv-00791 (Southern District of Texas, Houston Division).
- (vv) Declaration (June 2011) on behalf of the Plaintiffs MYTAPN in the matter of Microsoft-Yes, Toxic Air Pollution-No (MYTAPN) v. State of Washington, Department of Ecology and Microsoft Corporation Columbia Data Center to the Pollution Control Hearings Board, State of Washington, Matter No. PCHB No. 10-162.
- (ww) Expert Report (June 2011) on behalf of the New Hampshire Sierra Club at the State of New Hampshire Public Utilities Commission, Docket No. 10-261 – the 2010 Least Cost Integrated Resource Plan (LCIRP) submitted by the Public Service Company of New Hampshire (re. Merrimack Station Units 1 and 2).
- (xx) Declaration (August 2011) in the matter of the Sandy Creek Energy Associates L.P. Sandy Creek Power Plant on behalf of Sierra Club and Public Citizen. *Sierra Club, Inc. and Public Citizen, Inc. v. Sandy Creek Energy Associates, L.P.*, Civil Action No. A-08-CA-648-LY (Western District of Texas, Austin Division).
- (yy) Expert Report (October 2011) on behalf of the Defendants in the matter of *John Quiles and Jeanette Quiles et al. v. Bradford-White Corporation, MTD Products, Inc., Kohler Co., et al.*, Case No. 3:10-cv-747 (TJM/DEP) (Northern District of New York).
- (zz) Declaration (February 2012) and Second Declaration (February 2012) in the matter of *Washington Environmental Council and Sierra Club Washington State Chapter v. Washington State Department of Ecology and Western States Petroleum Association*, Case No. 11-417-MJP (Western District of Washington).
- (aaa) Expert Report (March 2012) and Supplemental Expert Report (November 2013) in the matter of *Environment Texas Citizen Lobby, Inc and Sierra Club v. ExxonMobil Corporation et al.*, Civil Action No. 4:10-cv-4969 (Southern District of Texas, Houston Division).
- (bbb) Declaration (March 2012) in the matter of *Center for Biological Diversity, et al. v. United States Environmental Protection Agency*, Case No. 11-1101 (consolidated with 11-1285, 11-1328 and 11-1336) (US Court of Appeals for the District of Columbia Circuit).

- (ccc) Declaration (March 2012) in the matter of *Sierra Club v. The Kansas Department of Health and Environment*, Case No. 11-105,493-AS (Holcomb power plant) (Supreme Court of the State of Kansas).
- (ddd) Declaration (March 2012) in the matter of the Las Brisas Energy Center *Environmental Defense Fund et al., v. Texas Commission on Environmental Quality*, Cause No. D-1-GN-11-001364 (District Court of Travis County, Texas, 261st Judicial District).
- (eee) Expert Report (April 2012), Supplemental and Rebuttal Expert Report (July 2012), and Supplemental Rebuttal Expert Report (August 2012) on behalf of the states of New Jersey and Connecticut in the matter of the Portland Power plant *State of New Jersey and State of Connecticut (Intervenor-Plaintiff) v. RRI Energy Mid-Atlantic Power Holdings et al.*, Civil Action No. 07-CV-5298 (JKG) (Eastern District of Pennsylvania).
- (fff) Declaration (April 2012) in the matter of the EPA's EGU MATS Rule, on behalf of the Environmental Integrity Project.
- (ggg) Expert Report (August 2012) on behalf of the United States in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana) – Harm Phase.
- (hhh) Declaration (September 2012) in the Matter of the Application of *Energy Answers Incinerator, Inc.* for a Certificate of Public Convenience and Necessity to Construct a 120 MW Generating Facility in Baltimore City, Maryland, before the Public Service Commission of Maryland, Case No. 9199.
- (iii) Expert Report (October 2012) on behalf of the Appellants (Robert Concilus and Leah Humes) in the matter of Robert Concilus and Leah Humes v. Commonwealth of Pennsylvania Department of Environmental Protection and Crawford Renewable Energy, before the Commonwealth of Pennsylvania Environmental Hearing Board, Docket No. 2011-167-R.
- (jjj) Expert Report (October 2012), Supplemental Expert Report (January 2013), and Affidavit (June 2013) in the matter of various Environmental Petitioners v. North Carolina DENR/DAQ and Carolinas Cement Company, before the Office of Administrative Hearings, State of North Carolina.
- (kkk) Pre-filed Testimony (October 2012) on behalf of No-Sag in the matter of the North Springfield Sustainable Energy Project before the State of Vermont, Public Service Board.
- (lll) Pre-filed Testimony (November 2012) on behalf of Clean Wisconsin in the matter of Application of Wisconsin Public Service Corporation for Authority to Construct and Place in Operation a New Multi-Pollutant Control Technology System (ReACT) for Unit 3 of the Weston Generating Station, before the Public Service Commission of Wisconsin, Docket No. 6690-CE-197.
- (mmm) Expert Report (February 2013) on behalf of Petitioners in the matter of Credence Crematory, Cause No. 12-A-J-4538 before the Indiana Office of Environmental Adjudication.

- (nnn) Expert Report (April 2013), Rebuttal report (July 2013), and Declarations (October 2013, November 2013) on behalf of the Sierra Club in connection with the Luminant Big Brown Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 6:12-cv-00108-WSS (Western District of Texas, Waco Division).
- (ooo) Declaration (April 2013) on behalf of Petitioners in the matter of *Sierra Club, et al., (Petitioners) v Environmental Protection Agency et al. (Respondents)*, Case No., 13-1112, (Court of Appeals, District of Columbia Circuit).
- (ppp) Expert Report (May 2013) and Rebuttal Expert Report (July 2013) on behalf of the Sierra Club in connection with the Luminant Martin Lake Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 5:10-cv-0156-MHS-CMC (Eastern District of Texas, Texarkana Division).
- (qqq) Declaration (August 2013) on behalf of A. J. Acosta Company, Inc., in the matter of *A. J. Acosta Company, Inc., v. County of San Bernardino*, Case No. CIVSS803651.
- (rrr) Comments (October 2013) on behalf of the Washington Environmental Council and the Sierra Club in the matter of the Washington State Oil Refinery RACT (for Greenhouse Gases), submitted to the Washington State Department of Ecology, the Northwest Clean Air Agency, and the Puget Sound Clean Air Agency.
- (sss) Statement (November 2013) on behalf of various Environmental Organizations in the matter of the Boswell Energy Center (BEC) Unit 4 Environmental Retrofit Project, to the Minnesota Public Utilities Commission, Docket No. E-015/M-12-920.
- (ttt) Expert Report (December 2013) on behalf of the United States in *United States of America v. Ameren Missouri*, Civil Action No. 4:11-cv-00077-RWS (Eastern District of Missouri, Eastern Division).
- (uuu) Expert Testimony (December 2013) on behalf of the Sierra Club in the matter of Public Service Company of New Hampshire Merrimack Station Scrubber Project and Cost Recovery, Docket No. DE 11-250, to the State of New Hampshire Public Utilities Commission.
- (vvv) Expert Report (January 2014) on behalf of Baja, Inc., in *Baja, Inc., v. Automotive Testing and Development Services, Inc. et. al*, Civil Action No. 8:13-CV-02057-GRA (District of South Carolina, Anderson/Greenwood Division).
- (www) Declaration (March 2014) on behalf of the Center for International Environmental Law, Chesapeake Climate Action Network, Friends of the Earth, Pacific Environment, and the Sierra Club (Plaintiffs) in the matter of *Plaintiffs v. the Export-Import Bank (Ex-Im Bank) of the United States*, Civil Action No. 13-1820 RC (District Court for the District of Columbia).
- (xxx) Declaration (April 2014) on behalf of Respondent-Intervenors in the matter of *Mexichem Specialty Resins Inc., et al., (Petitioners) v Environmental Protection Agency et al.*, Case No., 12-1260 (and Consolidated Case Nos. 12-1263, 12-1265, 12-1266, and 12-1267), (Court of Appeals, District of Columbia Circuit).

- (yyy) Direct Prefiled Testimony (June 2014) on behalf of the Michigan Environmental Council and the Sierra Club in the matter of the Application of DTE Electric Company for Authority to Implement a Power Supply Cost Recovery (PSCR) Plan in its Rate Schedules for 2014 Metered Jurisdictional Sales of Electricity, Case No. U-17319 (Michigan Public Service Commission).
- (zzz) Expert Report (June 2014) on behalf of ECM Biofilms in the matter of the US Federal Trade Commission (FTC) v. ECM Biofilms (FTC Docket #9358).
- (aaaa) Direct Prefiled Testimony (August 2014) on behalf of the Michigan Environmental Council and the Sierra Club in the matter of the Application of Consumers Energy Company for Authority to Implement a Power Supply Cost Recovery (PSCR) Plan in its Rate Schedules for 2014 Metered Jurisdictional Sales of Electricity, Case No. U-17317 (Michigan Public Service Commission).
- (bbbb) Declaration (July 2014) on behalf of Public Health Intervenors in the matter of *EME Homer City Generation v. US EPA* (Case No. 11-1302 and consolidated cases) relating to the lifting of the stay entered by the Court on December 30, 2011 (US Court of Appeals for the District of Columbia).
- (cccc) Expert Report (September 2014), Rebuttal Expert Report (December 2014) and Supplemental Expert Report (March 2015) on behalf of Plaintiffs in the matter of *Sierra Club and Montana Environmental Information Center (Plaintiffs) v. PPL Montana LLC, Avista Corporation, Puget Sound Energy, Portland General Electric Company, Northwestern Corporation, and PacifiCorp (Defendants)*, Civil Action No. CV 13-32-BLG-DLC-JCL (US District Court for the District of Montana, Billings Division).
- (dddd) Expert Report (November 2014) on behalf of Niagara County, the Town of Lewiston, and the Villages of Lewiston and Youngstown in the matter of CWM Chemical Services, LLC New York State Department of Environmental Conservation (NYSDEC) Permit Application Nos.: 9-2934-00022/00225, 9-2934-00022/00231, 9-2934-00022/00232, and 9-2934-00022/00249 (pending).
- (eeee) Pre-filed Direct Testimony (March 2015), Supplemental Testimony (May 2015), and Surrebuttal Testimony (December 2015) on behalf of Friends of the Columbia Gorge in the matter of the Application for a Site Certificate for the Troutdale Energy Center before the Oregon Energy Facility Siting Council.
- (ffff) Expert Report (March 2015) and Rebuttal Expert Report (January 2016) on behalf of Plaintiffs in the matter of *Conservation Law Foundation v. Broadrock Gas Services LLC, Rhode Island LFG GENCO LLC, and Rhode Island Resource Recovery Corporation (Defendants)*, Civil Action No. 1:13-cv-00777-M-PAS (US District Court for the District of Rhode Island).
- (gggg) Direct Prefiled Testimony (May 2015) on behalf of the Michigan Environmental Council, the Natural Resources Defense Council, and the Sierra Club in the matter of the Application of DTE Electric Company for Authority to Increase its Rates, Amend its Rate Schedules and Rules Governing the Distribution and Supply of Electric Energy and for Miscellaneous Accounting Authority, Case No. U-17767 (Michigan Public Service Commission).

- (hhhh) Expert Report (July 2015) and Rebuttal Expert Report (July 2015) on behalf of Plaintiffs in the matter of *Northwest Environmental Defense Center et. al., v. Cascade Kelly Holdings LLC, d/b/a Columbia Pacific Bio-Refinery, and Global Partners LP (Defendants)*, Civil Action No. 3:14-cv-01059-SI (US District Court for the District of Oregon, Portland Division).
- (iiii) Declaration (August 2015, Docket No. 1570376) in support of “Opposition of Respondent-Intervenors American Lung Association, et. al., to Tri-State Generation’s Emergency Motion;” Declaration (September 2015, Docket No. 1574820) in support of “Joint Motion of the state, Local Government, and Public Health Respondent-Intervenors for Remand Without Vacatur,” *White Stallion Energy Center, LLC v. US EPA*, Case No. 12-1100 (US Court of Appeals for the District of Columbia).
- (jjjj) Expert Report (December 2015) and Rebuttal Expert Report (February 2016) on behalf of Plaintiffs in the matter of *Natural Resources Defense Council, Inc., Sierra Club, Inc., Environmental Law and Policy Center, and Respiratory Health Association v. Illinois Power Resources LLC, and Illinois Power Resources Generating LLC (Defendants)*, Civil Action No. 1:13 CV 01181 (US District Court for the Central District of Illinois, Peoria Division).
- (kkkk) Expert Report (November 2015) on behalf of Appellants in the matter of *Sierra Club, et al. v. Craig W. Butler, Director of Ohio Environmental Protection Agency et al.*, ERAC Case No. 14-256814.
- (llll) Affidavit (January 2016) on behalf of Bridgewatch Detroit in the matter of *Bridgewatch Detroit v. Waterfront Petroleum Terminal Co., and Waterfront Terminal Holdings, LLC.*, in the Circuit Court for the County of Wayne, State of Michigan.
- (mmmm) Expert Report (February 2016) regarding the Geyer Well Site in Pennsylvania.

3. Occasions where Dr. Sahu has provided oral testimony in depositions, at trial or in similar proceedings include the following:

- (nnnn) Deposition on behalf of Rocky Mountain Steel Mills, Inc. located in Pueblo, Colorado – dealing with the manufacture of steel in mini-mills including methods of air pollution control and BACT in steel mini-mills and opacity issues at this steel mini-mill.
- (oooo) Trial Testimony (February 2002) on behalf of Rocky Mountain Steel Mills, Inc. in Denver District Court.
- (pppp) Trial Testimony (February 2003) on behalf of the United States in the Ohio Edison NSR Cases, *United States, et al. v. Ohio Edison Co., et al.*, C2-99-1181 (Southern District of Ohio).
- (qqqq) Trial Testimony (June 2003) on behalf of the United States in the Illinois Power NSR Case, *United States v. Illinois Power Co., et al.*, 99-833-MJR (Southern District of Illinois).

- (rrrr) Deposition (10/20/2005) on behalf of the United States in connection with the Cinergy NSR Case. *United States, et al. v. Cinergy Corp., et al.*, IP 99-1693-C-M/S (Southern District of Indiana).
- (ssss) Oral Testimony (August 2006) on behalf of the Appalachian Center for the Economy and the Environment re. the Western Greenbrier plant, WV before the West Virginia DEP.
- (tttt) Oral Testimony (May 2007) on behalf of various Montana petitioners (Citizens Awareness Network (CAN), Women's Voices for the Earth (WVE) and the Clark Fork Coalition (CFC)) re. the Thompson River Cogeneration plant before the Montana Board of Environmental Review.
- (uuuu) Oral Testimony (October 2007) on behalf of the Sierra Club re. the Sevier Power Plant before the Utah Air Quality Board.
- (vvvv) Oral Testimony (August 2008) on behalf of the Sierra Club and Clean Water re. Big Stone Unit II before the South Dakota Board of Minerals and the Environment.
- (wwww) Oral Testimony (February 2009) on behalf of the Sierra Club and the Southern Environmental Law Center re. Santee Cooper Pee Dee units before the South Carolina Board of Health and Environmental Control.
- (xxxx) Oral Testimony (February 2009) on behalf of the Sierra Club and the Environmental Integrity Project re. NRG Limestone Unit 3 before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (yyyy) Deposition (July 2009) on behalf of MTD Products, Inc., in the matter of *Alice Holmes and Vernon Holmes v. Home Depot USA, Inc., et al.*
- (zzzz) Deposition (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed Coletto Creek coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (aaaa) Deposition (October 2009) on behalf of Environmental Defense, in the matter of permit challenges to the proposed Las Brisas coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).
- (bbbb) Deposition (October 2009) on behalf of the Sierra Club, in the matter of challenges to the proposed Medicine Bow Fuel and Power IGL plant in Cheyenne, Wyoming.
- (cccc) Deposition (October 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed Tenaska coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH). (April 2010).
- (dddd) Oral Testimony (November 2009) on behalf of the Environmental Defense Fund re. the Las Brisas Energy Center before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (eeee) Deposition (December 2009) on behalf of Environmental Defense and others, in the matter of challenges to the proposed White Stallion Energy Center coal fired power plant project at the Texas State Office of Administrative Hearings (SOAH).

- (fffff) Oral Testimony (February 2010) on behalf of the Environmental Defense Fund re. the White Stallion Energy Center before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (ggggg) Deposition (June 2010) on behalf of the United States in connection with the Alabama Power Company NSR Case. *United States v. Alabama Power Company*, CV-01-HS-152-S (Northern District of Alabama, Southern Division).
- (hhhhh) Trial Testimony (September 2010) on behalf of Commonwealth of Pennsylvania – Dept. of Environmental Protection, State of Connecticut, State of New York, State of Maryland, and State of New Jersey (Plaintiffs) in connection with the Allegheny Energy NSR Case in US District Court in the Western District of Pennsylvania. *Plaintiffs v. Allegheny Energy Inc., et al.*, 2:05cv0885 (Western District of Pennsylvania).
- (iiiiii) Oral Direct and Rebuttal Testimony (September 2010) on behalf of Fall-Line Alliance for a Clean Environment and others in the matter of the PSD Air Permit for Plant Washington issued by Georgia DNR at the Office of State Administrative Hearing, State of Georgia (OSAH-BNR-AQ-1031707-98-WALKER).
- (jjjjj) Oral Testimony (September 2010) on behalf of the State of New Mexico Environment Department in the matter of Proposed Regulation 20.2.350 NMAC – *Greenhouse Gas Cap and Trade Provisions*, No. EIB 10-04 (R), to the State of New Mexico, Environmental Improvement Board.
- (kkkkk) Oral Testimony (October 2010) on behalf of the Environmental Defense Fund re. the Las Brisas Energy Center before the Texas State Office of Administrative Hearings (SOAH) Administrative Law Judges.
- (lllll) Oral Testimony (November 2010) regarding BART for PSCo Hayden, CSU Martin Drake units before the Colorado Air Quality Commission on behalf of the Coalition of Environmental Organizations.
- (mmmmm) Oral Testimony (December 2010) regarding BART for TriState Craig Units, CSU Nixon Unit, and PRPA Rawhide Unit) before the Colorado Air Quality Commission on behalf of the Coalition of Environmental Organizations.
- (nnnnn) Deposition (December 2010) on behalf of the United States in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana).
- (ooooo) Deposition (February 2011 and January 2012) on behalf of Wild Earth Guardians in the matter of opacity exceedances and monitor downtime at the Public Service Company of Colorado (Xcel)'s Cherokee power plant. No. 09-cv-1862 (D. Colo.).
- (ppppp) Oral Testimony (February 2011) to the Georgia Office of State Administrative Hearings (OSAH) in the matter of Minor Source HAPs status for the proposed Longleaf Energy Associates power plant (OSAH-BNR-AQ-1115157-60-HOWELLS) on behalf of the Friends of the Chattahoochee and the Sierra Club).
- (qqqqq) Deposition (August 2011) on behalf of the United States in *United States of America v. Cemex, Inc.*, Civil Action No. 09-cv-00019-MSK-MEH (District of Colorado).

- (rrrrr) Deposition (July 2011) and Oral Testimony at Hearing (February 2012) on behalf of the Plaintiffs MYTAPN in the matter of Microsoft-Yes, Toxic Air Pollution-No (MYTAPN) v. State of Washington, Department of Ecology and Microsoft Corporation Columbia Data Center to the Pollution Control Hearings Board, State of Washington, Matter No. PCHB No. 10-162.
- (sssss) Oral Testimony at Hearing (March 2012) on behalf of the United States in connection with the Louisiana Generating NSR Case. *United States v. Louisiana Generating, LLC*, 09-CV100-RET-CN (Middle District of Louisiana).
- (ttttt) Oral Testimony at Hearing (April 2012) on behalf of the New Hampshire Sierra Club at the State of New Hampshire Public Utilities Commission, Docket No. 10-261 – the 2010 Least Cost Integrated Resource Plan (LCIRP) submitted by the Public Service Company of New Hampshire (re. Merrimack Station Units 1 and 2).
- (uuuuu) Oral Testimony at Hearing (November 2012) on behalf of Clean Wisconsin in the matter of Application of Wisconsin Public Service Corporation for Authority to Construct and Place in Operation a New Multi-Pollutant Control Technology System (ReACT) for Unit 3 of the Weston Generating Station, before the Public Service Commission of Wisconsin, Docket No. 6690-CE-197.
- (vvvvv) Deposition (March 2013) in the matter of various Environmental Petitioners v. North Carolina DENR/DAQ and Carolinas Cement Company, before the Office of Administrative Hearings, State of North Carolina.
- (wwwww) Deposition (August 2013) on behalf of the Sierra Club in connection with the Luminant Big Brown Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 6:12-cv-00108-WSS (Western District of Texas, Waco Division).
- (xxxxx) Deposition (August 2013) on behalf of the Sierra Club in connection with the Luminant Martin Lake Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 5:10-cv-0156-MHS-CMC (Eastern District of Texas, Texarkana Division).
- (yyyyy) Deposition (February 2014) on behalf of the United States in *United States of America v. Ameren Missouri*, Civil Action No. 4:11-cv-00077-RWS (Eastern District of Missouri, Eastern Division).
- (zzzzz) Trial Testimony (February 2014) in the matter of *Environment Texas Citizen Lobby, Inc and Sierra Club v. ExxonMobil Corporation et al.*, Civil Action No. 4:10-cv-4969 (Southern District of Texas, Houston Division).
- (aaaaa) Trial Testimony (February 2014) on behalf of the Sierra Club in connection with the Luminant Big Brown Case. *Sierra Club v. Energy Future Holdings Corporation and Luminant Generation Company LLC*, Civil Action No. 6:12-cv-00108-WSS (Western District of Texas, Waco Division).
- (bbbbb) Deposition (June 2014) and Trial (August 2014) on behalf of ECM Biofilms in the matter of the *US Federal Trade Commission (FTC) v. ECM Biofilms* (FTC Docket #9358).

- (ccccc) Deposition (February 2015) on behalf of Plaintiffs in the matter of *Sierra Club and Montana Environmental Information Center (Plaintiffs) v. PPL Montana LLC, Avista Corporation, Puget Sound Energy, Portland General Electric Company, Northwestern Corporation, and PacifiCorp (Defendants)*, Civil Action No. CV 13-32-BLG-DLC-JCL (US District Court for the District of Montana, Billings Division).
- (ddddd) Oral Testimony at Hearing (April 2015) on behalf of Niagara County, the Town of Lewiston, and the Villages of Lewiston and Youngstown in the matter of CWM Chemical Services, LLC New York State Department of Environmental Conservation (NYSDEC) Permit Application Nos.: 9-2934-00022/00225, 9-2934-00022/00231, 9-2934-00022/00232, and 9-2934-00022/00249 (pending).
- (eeeeee) Deposition (August 2015) on behalf of Plaintiff in the matter of *Conservation Law Foundation (Plaintiff) v. Broadrock Gas Services LLC, Rhode Island LFG GENCO LLC, and Rhode Island Resource Recovery Corporation (Defendants)*, Civil Action No. 1:13-cv-00777-M-PAS (US District Court for the District of Rhode Island).
- (ffffff) Testimony at Hearing (August 2015) on behalf of the Sierra Club in the matter of *Amendments to 35 Illinois Administrative Code Parts 214, 217, and 225* before the Illinois Pollution Control Board, R15-21.
- (gggggg) Deposition (May 2015) on behalf of Plaintiffs in the matter of *Northwest Environmental Defense Center et. al., (Plaintiffs) v. Cascade Kelly Holdings LLC, d/b/a Columbia Pacific Bio-Refinery, and Global Partners LP (Defendants)*, Civil Action No. 3:14-cv-01059-SI (US District Court for the District of Oregon, Portland Division).
- (hhhhhh) Trial Testimony (October 2015) on behalf of Plaintiffs in the matter of *Northwest Environmental Defense Center et. al., (Plaintiffs) v. Cascade Kelly Holdings LLC, d/b/a Columbia Pacific Bio-Refinery, and Global Partners LP (Defendants)*, Civil Action No. 3:14-cv-01059-SI (US District Court for the District of Oregon, Portland Division).

Annex B

Wastewater/Groundwater/Geology/Hydrogeology Experience

Dr. Sahu has:

- conducted and/or evaluated waste water treatment engineering analyses for various refineries (1993-present)
- conducted and/or evaluated waste water treatment compliance evaluations for small, medium, and large sized businesses including chemical distribution facilities, metal processing facilities, steel mini-mills, (1995-present)
- evaluated specific treatment options and regulatory analyses for waste water streams in coal-fired power plants (mid-2000 through present)
- prepared and reviewed stormwater pollution prevention plans for various clients since 1992
- prepared and reviewed NPDES permit applications for various clients since 2000
- obtained Certified Environmental Manager (CEM) certification in Nevada since 2000, requiring written certification based on proficiency in geology, well construction, hydrogeology, groundwater fate and transport, groundwater contaminant flow and transport and related topics
- managed (and continues to manage) a large scale groundwater assessment and remediation project located in Henderson, NV since 2000 including groundwater site characterization, extensive groundwater monitoring well installation, interpretation of groundwater data, groundwater modeling, and preparation of various assessment studies including aquifer connectivity analyses