MESSAGE FROM THE CHAIRS
Peter Condron and Shelly Geppert

Happy New Year! We hope you and your friends and loved ones had a wonderful holiday season. Our committee is starting off the new year by making sure you have the latest news in environmental litigation in hand. Our team of case law highlights contributors tackle noteworthy opinions from across the country, including the New Hampshire Supreme Court’s decision to uphold a $236 million verdict against Exxon Mobil Corporation, an Eighth Circuit decision addressing the commonality requirement under F.R.C.P 23(a), and a decision by an Indiana federal district court awarding damages in a class action against the former operators of a waste dump and processing facility, among others. In addition, Jim Martin and Malinda Morain of Beatty & Wozniak explore the Gold King Mine incident; Jerry Anderson, Distinguished Professor of Law at Drake University Law School, offers an analysis of the Des Moines Water Works Clean Water Act litigation against three Iowa counties; and Lisa Bailey and Robyn Prueitt of Gradient explain genomics and the possible use of the science in toxic torts litigation.

Our committee has also been working on two free program calls you will not want to miss. On February 3, dial in to SEER’s Special Committee on Young Lawyers’ program on developing relationships inside your firm or organization. Panelists include our own Peter Condron, in addition to stress and resilience expert Paula Davis-Laack and Tom Tyler of the U.S. Environmental Protection Agency. Further, on March 15, ELTT is hosting a program on the use of scientific experts in environmental litigation. Panelists will describe various scientific-based methods for determining, among other things, how and when a discharge occurred and the extent of the impact. The panel will also identify factors to consider in determining whether to retain a scientific expert and whether such experts have survived Daubert challenges. Additional information about both calls—including how to RSVP—will be posted on the ELTT webpage.

Best wishes for a happy and healthy 2016.

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CASE LAW HIGHLIGHTS
NORTHEAST

SECOND CIRCUIT SENDS GENERAL BALLAST WATER DISCHARGE PERMIT BACK TO EPA
Scott E. Kauff and Nathan Short

Natural Resources Defense Council v. U.S. E.P.A., Civ. Nos. 13-1745(L), 13-2393(CON), 13-2757(CON), 2015 WL 9245015 (2d Cir. Dec. 18, 2015) Four environmental groups filed petitions for review of the U.S. Environmental Protection Agency’s (EPA) issuance of a National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (2013 VGP) pursuant to section 402(a) of the Clean Water Act (CWA), 33 U.S.C. § 1342, regulating the discharge of ballast water from ships. Natural Resources Defense Council v. U.S. E.P.A., Civ. Nos. 13-1745(L), 13-2393(CON), 13-2757(CON), 2015 WL 9245015 (2d Cir. Dec. 18, 2015). Ballast water, which is taken on or discharged by ships to compensate for changes in the weight of cargo and fuel, can contain “organisms and their eggs and larvae, as well as sediment and pollutants” that are ejected into surrounding water bodies. Id. at *1. Ballast water discharge is “one of the primary ways that invasive species are spread from one waterbody to another.” Id. (citation omitted). The Second Circuit found that “EPA acted arbitrarily and capriciously in issuing parts of the 2013 VGP, and therefore remand[ed] this matter to the EPA for further proceedings.” Id. at *2.

Technology-Based Effluent Limitations. The court found that EPA acted arbitrarily and capriciously when it did not adequately explain “why standards higher than the [International Convention for the Control and Management of Ships’ Ballast Water and Sediments (IMO Standard)] should not be used given available technology.” Id. at *9. The court reasoned that EPA should have looked at available ballast water technology systems (some of which are identified in a 2011 Science Advisory Report (SAB Report), a report requested by EPA) and adjusted its standard accordingly. Id. at *9–10. As EPA did not, it failed to set permit limits that reflect the CWA’s best available technology economically available (BAT) requirement. Id.

The court similarly criticized EPA’s failure to consider onshore ballast water treatment systems, in addition to shipboard treatment systems. Id. at *11–14. The court found EPA largely to blame, noting EPA’s efforts to exclude information of onshore options in the SAB Report. Id. at *12. Recognizing that while there were not any onshore ballast water treatment facilities, onshore water treatment facilities may be “available” as they do exist in other industries. Id. at *11. Ultimately, the record contained insufficient information for the court to assess whether onshore ballast water treatment systems were “available.” Id at *12.

However, an exemption from numeric ballast water discharge limits for post-2009 vessels that sail exclusively in the Great Lakes (known as “Lakers”) was found to be deficient. Id. at *15–16. In reaching this conclusion, the court cited the technology-forcing purpose of BATs, EPA’s disregard of onshore treatment systems, similar ballast water treatment challenges of pre- and post-2009 Lakers and the absence of an “appropriate and factually-supported cost-benefit analysis.” Id.

Water Quality-Based Effluent Limitations. Recognizing that TBELs are insufficient to maintain water quality-based effluent limitations (WQBELs) in this context, the court found that EPA’s use of narrative, as opposed to a numeric, WQBELs fell short. Id. at *16. The court accepted petitioners’ reasoning that WQBELs must “ensure compliance with water quality standards.” Id. Here, the 2013 VGP narrative WQBEL standard did not provide a shipowner sufficient guidance nor did
it provide information sufficient for a permitting authority to evaluate a shipowner’s compliance. Id.

Monitoring and Reporting Requirements for TBELs and WQBELs. The 2013 VGP’s (1) “functionality monitoring” (i.e., verifying the functionality of a ballast water treatment system) and (2) required testing for two “indicator” bacteria were upheld. Id. at *20–21. These requirements were held to be consistent with CWA regulations that “allow for monitoring quantities other than mass or volume, namely some ‘other measurement specified in the permit for each pollutant limited in the permit.’” Id. at *20 (internal alteration and citation omitted).

However, the 2013 VGP’s monitoring requirements for WQBELs were deemed to be insufficient. Id. at *21. The court reasoned that there was “no requirement to report actual volumes, locations, or composition of ballast water discharges.” Id. As such, determining compliance with the WQBELs, as required by CWA regulations, was not possible and therefore such monitoring requirements were insufficient. Id.

U.S. DISTRICT COURT GRANTS JUDGMENT ON THE PLEADINGS AND SUMMARY JUDGMENT TO SUCCESSORS OF NUCLEAR PROCESSING PLANT
Scott E. Kauff and Nathan Short


Price-Anderson Act Preemption of State Law Claims. The PAA, with certain exceptions, “provides for a federal cause of action for ‘public liability actions,’ and defines ‘public liability’ as ‘any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation.’” Id. at *7. State law substantive rules of decisions are applicable “unless such law is inconsistent with the provisions of the [PAA].” Id. (citing 42 U.S.C. § 2014(hh). Furthermore, the Nuclear Regulatory Commission’s regulations set forth the applicable standard of care. Id. at *7 (citing In re TMI Litig. Cases Consolidated II, 940 F.2d 832, 859 (3d Cir. 1991)). While a previous Third Circuit opinion held that “federal law determines the standard of care and preempts state tort law” (quoting In re TMI, 67 F.3d 1103, 1107 (3d Cir. 1995)), the court nonetheless reviewed plaintiffs’ state law claims to determine whether they were “consistent with the PAA.” McMunn, 2015 WL 5472936, at *9. The court ultimately determined that plaintiffs’ negligence, negligence per se, absolute or strict liability, civil conspiracy, misrepresentation and concealment and wrongful death and survival claims “were preempted by the PAA and that they would impose liability in a manner inconsistent with the standards under the [PAA].” Id. at *11, *30–31.

Breach of Duty. “The regulatory standard applicable to the emission of radionuclides in airborne effluent to off-site areas where they may be inhaled by members of the public during the period when the Apollo facility operated (1957–1983) was 10 C.F.R. § 20.106 [titled ‘Radioactivity in effluents to unrestricted areas.’” Id. at *13. Violations occur when emissions are released to unrestricted areas that exceed average concentrations over a period up to a year. Id. at *14–15. While the plaintiffs provided evidence of discrete instances of emissions that exceeded
numeric emissions limits, the court held that such discrete instances did not amount to a violative exceedance of average concentrations. *Id.* at *17–34. The court also found that plaintiffs’ expert “committed a clear error of law” by “erroneously applying the unadjusted concentration limits as measured at the stacks, not at the boundaries” of the restricted area. *Id.* at *33. Plaintiffs also failed to provide sufficient “evidence of their exposure to inhaled uranium from the Apollo plant and an estimate of the doses they received which caused their cancers.” *Id.* at *44.

**Law of the Case Doctrine and Estoppel.** The court declined to apply the discretionary law of the case doctrine in the context of previous *Daubert* opinions on similar causation issues. The court held that plaintiffs failed to explain how it was acceptable for its experts to rely on dose information provided by an expert in a related case with similar claims involving different individuals. Additionally, the court denied plaintiffs’ argument that defendants were responsible for missing evidence and therefore should be estopped from challenging the sufficiency of plaintiffs’ exposure and dosage evidence. *Id.* at *47. Plaintiffs argued that the defendant-caused missing evidence made a relaxed standard of proof appropriate. The court, however, held that while a relaxed standard of proof had been allowed to prove the amount of loss, plaintiffs failed to explain how a relaxed standard is appropriate for proving the “causation of loss.” *Id.* Moreover, the court in reaching this conclusion found plaintiffs’ failure to employ known “methods for dealing with missing data” was a burden “they [had] not met.” *Id.* at *48.

**NEW HAMPSHIRE SUPREME COURT UPHOLDS $236 MILLION MTBE JURY VERDICT AGAINST EXXON MOBIL AND STRIKES IMPOSITION OF TRUST**

Scott E. Kauff and Nathan Short


Notwithstanding ExxonMobil’s failure to preserve its separation of powers and due process grounds for appeal, the court denied ExxonMobil’s argument and agreed with the trial court’s finding that there is no language in the Oil Discharge and Disposal Cleanup Fund or the Gasoline Remediation and Elimination of Ethers Fund that indicates “a legislative intent to preclude the damages sought by the State in this case.” *Id.* at *5. The court also denied ExxonMobil’s argument that the State “waived its right to sue for harm from MTBE” when it opted in to the RFG Program and held that the trial court’s jury instruction regarding any State misconduct (i.e., the State’s knowledge of the dangers of MTBE) was sufficiently similar to an implied waiver jury instruction and was at worst harmless error. *Id.* at *5–6. The court also, consistent with several other federal courts, “rejected the issue of preemption and MTBE.” *Id.* at *11 (citations omitted). Notwithstanding EPA’s
The court also approved the application of market share liability (shifting the burden of identification of causation to defendants) reasoning that “based upon our willingness to construct judicial remedies for plaintiffs who would be left without recourse due to impossible burdens of proof, applying market share liability was justified.” Id. at *22. Further, “the State faced an impossible burden of proving which of several MTBE gasoline producers caused New Hampshire’s groundwater contamination.” Id. Ultimately, the trial court’s ruling that “the jury was entitled to determine that ExxonMobil could be held liable for its percentage of the supply market” was upheld. Additionally, the presentation of a statewide proof model comprised of “statistical evidence and extrapolation to prove injury-in-fact” also passed muster. Id. at *26. The court further found that ExxonMobil was not “denied ‘a meaningful opportunity’ to present affirmative defense evidence concerning the apportioning of liability to nonparties. Id. at *29. Nor did ExxonMobil preserve its argument challenging the parens patriae standing of the State. Id.

The court also held that damages for an expert’s approximation of future well impacts (stemming from a current injury) were based on sufficient evidence in the record and were therefore fit for judicial determination and thus ripe. Id. The court upheld the award of prejudgment interest for past and future damages reasoning that the legislature’s intent in the applicable statute was to provide for such legal interest in “all cases where the trial court awarded money to the party entitled to be compensated.” Id. at *33 (quoting In the Matter of Liquidation of Home Ins. Co., 89 A.3d 165, 170 (N.H. Sup. Ct. 2014)).

Finally, the court granted the State’s cross-appeal challenging the imposition of a trust on approximately $195 million of the damages. Id. at 33–34. Recognizing that the trial court has the discretion to afford equitable relief in particular cases, the trial court’s imposition of a trust premised on the State’s parens patriae standing was found to be unpersuasive in light of case law requiring lump-sum money judgments for tort law causes of action. Id.

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On September 29, 2015, the U.S. Court of Appeals for the District of Columbia Circuit upheld the dismissal of National Environmental Policy Act (NEPA) and Clean Water Act claims brought by the Sierra Club based on the federal government’s approval of the Flanagan South crude oil pipeline. Sierra Club v. United States Army Corps of Engineers, 803 F.3d 31 (D.C. Cir. Sept. 29, 2015).

Sierra Club claimed that Enbridge Pipelines (FSP), LCC (Enbridge) should have been required to obtain regulatory approval under NEPA for the entire 593 miles of its Flanagan South pipeline (stretching from Illinois to Oklahoma), rather than just the portions of the pipeline that crossed federal lands and waterways. Id. at 34. The appellate court held that the federal agencies’ regulatory actions, including granting easements for the pipeline, providing Clean Water Act verifications, and permitting the take of endangered species—all of which were limited to only 5 percent of the pipeline—did not obligate the agencies to undertake a NEPA review of the entire pipeline. Id.

NEPA requires the federal government to evaluate the environmental impacts of its proposed actions and to inform the public of those impacts. Id. at *36. While NEPA requires evaluation of environmental impacts and public notice, it does not impose any substantive requirement that the federal government avoid environmental impacts: “The statute does not dictate particular decisional outcomes, but merely prohibits uninformed—rather than unwise—agency action.” Id. at *37 (internal citations omitted). In reviewing the impacts of the Flanagan South pipeline, the Army Corps of Engineers (Corps) and the Bureau of Indian Affairs prepared geographically limited environmental assessments (EAs), and issued findings that the pipeline would have no significant impact on the environment. Because the agencies issued a finding of no significant impact (FONSI), they were not required to prepare an environmental impact statement (EIS) to assess the impacts of their actions or consider alternatives that might lessen the impacts. Id. at *37–38.

Sierra Club did not challenge the intensiveness of the agencies’ environmental review or their issuance of a FONSI, but argued that the agencies should have conducted a NEPA analysis of the entire crude oil pipeline. Id. at *38. Sierra Club argued that the federal agencies’ grant of easements on 1.3 miles on federal land near the Mississippi and Arkansas Rivers and 12.3 miles on Indian lands; the grant of verifications by the Army Corps of Engineers under a national permit for the pipeline’s 1950 water crossings (spanning 13.7 miles); and U.S. Fish & Wildlife’s preparation of an incidental take permit under section 7 of the Endangered Species Act for the entire pipeline (for take of the Indiana Bat and American Burying Beetle) were federal actions that should have triggered a NEPA review of the entire pipeline. Id. at *38–42.

After denying Enbridge’s challenge that the Sierra Club’s claims were moot (because the pipeline had already been completed), the court dismissed each of Sierra Club’s arguments. Id. at *38–44. First, the court dismissed Sierra Club’s argument that the Fish & Wildlife Service’s (FWS) pipeline-level consultation under section 7 of the Endangered Species Act triggered a coextensive NEPA review on the basis that FWS’s preparation of an incidental take statement was not a federal action because it was merely advice being provided by one federal agency to another. Id. at *44. Likewise, the Clean Water Act verifications provided by four regional offices of the Army Corps of Engineers also were limited in geographic scope. The verifications only applied to the water crossings, the Corps did not assert jurisdiction over the rest of the pipeline, and the incidental take statements only applied at the segments of the pipeline under the jurisdiction of the Corps. Id. at *46–48.
After holding that the Sierra Club had waived its argument that the federal actions should be considered together as a single federal action subject to NEPA review, the court dismissed the Sierra Club’s claims that a NEPA analysis of the entire pipeline was necessary because the federal government’s regulatory actions were “connected actions,” “cumulative actions,” or were otherwise required under Corps policy guidance. *Id.* at *49–50. The court also dismissed the Sierra Club’s Clean Water Act claim that the Corps’ assessment of the pipeline’s water crossings was “unlawfully narrow and conclusory,” and held that the Corps could assess the cumulative effects of the water crossings on a regional basis. *Id.* at *54–56.

Finally, the court upheld the district court’s denial of Sierra Club’s leave to amend its complaint because any such amendment would have been futile. *Id.* at *57–58.

Judge Janice Rogers Brown concurred in the court’s grant of summary judgment, but declined to join the majority opinion because less than 20 miles of the 600-mile pipeline was on federal land and, in Judge Rogers’s view, the majority’s decision “is needlessly circuitous, creating the impression that Sierra Club’s challenges fail by a hairsbreadth rather than a hectare.” *Id.* at *61.

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**COURT ALLOWS COAL ASH CITIZEN SUIT TO MOVE FORWARD DESPITE PENDING LAWSUIT IN STATE COURT**

Matthew Thurlow

_Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC_, No. 1:14-cv-753, 2015 U.S. Dist. LEXIS 14293 (M.D.N.C. Oct. 20, 2015). Although the North Carolina Department of Environment and Natural Resources (DENR) had already brought a complaint against Duke Energy for violations of state law following alleged releases of coal ash from lagoons at the Buck Plant, the court permitted the Riverkeepers’ Clean Water Act claims to move forward because the claims were not preempted by the Act’s “diligent prosecution” bar to citizen suits.

The Clean Water Act prohibits the discharge of pollutants into the waters of the United States except in compliance with certain provisions of the Act, including the Act’s National Pollutant Discharge Elimination System (NPDES) permit program. 33 U.S.C. § 1311(a). Primary enforcement authority under the Clean Water Act rests with the federal government and the states, but the Act also includes a citizen suit provision that authorizes private citizens “to bring suit against any NPDES permit holder who has allegedly violated its permit.” 33 U.S.C. § 1365; *Yadkin*, 2015 U.S. Dist. LEXIS at *3. Citizen suits are subject to two key limitations under the Act. First, citizens must provide 60 days’ prior notice of their intent to sue to EPA, the state, and the violator to allow the government an opportunity to initiate its own enforcement proceedings. Second, citizen suits are barred if EPA or the state already is “diligently prosecuting” the action in civil or criminal proceedings in state or federal court. *Id.* at *3–4.

The Riverkeepers alleged that Duke Energy violated the Clean Water Act by disposing of coal ash over a 90-year period into three unlined lagoons, spanning 170 acres at the Buck Plant. *Id.* at *5. In August 2013, DENR filed a civil enforcement action against Duke Energy for unpermitted discharges from the lagoons through engineered seeps and for exceedances of groundwater quality standards. *Id.* at *5–6. In September 2014, the Riverkeepers filed a separate suit in federal court against Duke Energy alleging (1) unpermitted discharges through engineered and non-engineered seeps and unpermitted pipes; (2)
pollution of groundwater hydrologically connected to the Yadkin River, High Rock Lake, and their tributaries; (3) failure to properly dispose of coal ash at the Buck Plant under Duke Energy’s NPDES permit, and to prevent ash from entering state waters and waters of the United States; and (4) failure to meet dam design and dam safety requirements in Duke Energy’s NPDES permit. *Id.* at *6–8.

Although several of the Riverkeepers’ allegations were similar to the claims brought in state court, the district court determined that they were not barred by DENR’s pending proceedings against Duke Energy. In evaluating whether the Riverkeepers’ claims were already being diligently prosecuted, the court first compared the pleadings in the two cases to determine if the lawsuits enforced the same environmental standards. *Id.* at *15–16. The court then evaluated whether DENR was “diligently prosecuting” the claims against Duke Energy at the time the citizen suit was filed. *Id.* at *19–20.

With regard to the Riverkeepers’ unpermitted discharges and hydrological connection claims against Duke Energy, the court held that the Riverkeepers were seeking to enforce the same standards or limitations as DENR. *Id.* at *17–18. But even though the federal case involved the same environmental standards, the court concluded that the Riverkeepers could still bring these claims because DENR had failed to prosecute the case for over a year: “In that time, based on a review of the state court docket sheet, DENR appears to have done little, if anything, to move the case forward.” *Id.* at *20–21. Because the court found no evidence “that DENR was trying diligently or that its state enforcement action was calculated, in good faith, to require compliance with the Act,” the Riverkeepers were permitted to move forward with their unpermitted discharges and hydrological connection claims. *Id.* at *21.

The court also dismissed Duke Energy’s jurisdictional challenges that the coal ash lagoons and the impacted groundwater at the Buck Plant were not point sources and, therefore, beyond the scope of the Clean Water Act. The court determined that the lagoons were “discrete and confined conveyances” constituting point sources, and that contamination of groundwater hydrologically connected to navigable waters falls within the ambit of the Clean Water Act: “This Court views the issue not as whether the CWA regulates the discharge of pollutants into groundwater itself but rather whether the CWA regulates the discharge of pollutants to navigable waters via groundwater.” *Id.* at *31. The court also dismissed challenges to the Riverkeepers’ removed substances claim on the basis that the claim could be differentiated from DENR’s claims and was not subject to the diligent prosecution bar. *Id.* at *33. Finally, the court held that the Riverkeepers had standing to bring their Dam Safety Claim as citizens groups because these claims included alleged violations of Duke Energy’s NPDES permit. *Id.* at *39–40 (“While the dam safety provision of the Buck Permit does not itself regulate the discharge of pollutants, dam safety is vital to Duke Energy’s efforts to prevent unlawful discharge and comply with the conditions of its permit”).

The court dismissed a request to stay the proceedings in light of new state and EPA regulations governing coal ash disposal. *Id.* at *41–43. Rather than defer to the state agency under the “primary jurisdiction doctrine,” the court held that, “Riverkeepers’ citizen suit does not present any issue requiring agency resolution,” and the claims were therefore appropriate for the court to decide. *Id.* at *43. The court also denied Duke Energy’s request for a discretionary stay because such a stay “would allow Duke Energy’s alleged violations to persist, resulting in the further alleged discharge of pollutants into the Yadkin River, High Rock Lake, and their tributaries.” *Id.* at *49.

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CASE LAW HIGHLIGHTS

MID-CONTINENT

PUTATIVE CLASS MEMBERS’ FEAR OF POTENTIAL ENVIRONMENTAL CONTAMINATION NOT SUFFICIENT TO ESTABLISH COMMONALITY GIVEN ABSENCE OF EVIDENCE OF COMMON CONTAMINATION

Lisa Cipriano

Smith v. ConocoPhillips Pipe Line Company, 801 F.3d 921 (8th Cir. 2015) Plaintiff homeowners brought a putative class action against defendant Phillips 66, the owner of a petroleum products pipeline running through the town of West Alton, Missouri. Plaintiffs alleged nuisance and negligence claims stemming from contamination at a former residence in West Alton caused by leaks from the pipeline. Id. at 922. Testing of the water well at the residence reflected benzene at levels three times higher than allowable levels. Id. at 922–23. After the contamination was discovered, defendant purchased the affected property, demolished the residence, and “set up monitoring wells to track any spread of pollutants.” Id. at 922. Wells were tested for BTEX and lead. Id. at 923. Subsequent testing of properties surrounding the contaminated site tested clean for the relevant contaminants. Id. at 922. Nevertheless, plaintiffs filed suit on behalf of two proposed classes—the first class seeking damages for diminution in property values and injunctive relief requiring further testing and remediation, and the second class seeking “compensation for ongoing expenses of medical monitoring due to potential exposure to pollutants from the pipeline leak.” Id. at 923. The classes consisted of owners of property within .25 miles of the contamination site. Id. at 924.

In support of its motion for class certification, plaintiffs relied in part on an expert witness who testified regarding the alleged spread of the plume of contamination, but “did not offer an opinion on which of the surrounding properties could have been affected by the historical plume nor on the number or identity of West Alton residents who are presently exposed to benzene, lead, or other [contaminants of concern].” Id. at 924. In addition, discovery conducted prior to class certification included testing of drinking water wells at properties nearby the contamination site. Testing reflected no detections of BTEX above detectable levels. Two properties did have detections of methyl tertiary butyl ether (MTBE), a gasoline additive, but at levels below reporting limits. Id. “The district court did not certify the medical monitoring class, noting that plaintiffs had offered no evidence of actual exposure to benzene or lead.” Id. at 925. The district court did, however, certify the class for damages and injunctive relief, relying “on evidence that contaminants had been shown in the monitoring wells, that the pollution was continually shifting, and that MTBE had been discovered at [a] residence which is located roughly 0.25 miles away from the epicenter of the contamination.” Id. at 924–25. Thus, the district court concluded that this was sufficient preliminary evidence of contamination to certify a class action with focus on the circular 0.25-mile area surrounding the contamination site. Id. at 925.

The court of appeals reversed, holding that “it was an abuse of discretion to certify a class in the absence of evidence showing class members were commonly affected by contamination on their property.” Id. at 927. While noting that “[t]he district court has broad discretion to decide whether certification is appropriate,” the appellate court stated that it would “nonetheless reverse a certification where there has been an abuse of discretion or an error of law.” Id. at 925 (internal quotations and citations omitted). In order to certify a class under Rule 23 of the Federal Rules of Civil Procedure, “the district court must determine that it meets the four threshold requirements of Rule 23(a), often referred to as numerosity, commonality, typicality, and adequacy of representation, and one of the three subsections of Rule 23(b).” Id. (internal quotations and citations omitted). In order to demonstrate “commonality,” “the plaintiff must demonstrate that the class members have suffered the same injury.” Id. (internal quotations and citations...
omitted). Defendant “Phillips argue[d] that the lack of proof of contamination spread throughout the class land shows there is no classwide injury,” and the Eighth Circuit agreed. Id. at 926. Although the court recognized that the district court had relied upon evidence that MTBE had been detected at a neighboring residence, the court noted that “MTBE was not a chemical found at the Phillips contamination site.” Id. Thus, “[t]he presence on only one property of a petroleum pollutant not found at the leak site cannot prove that actual contamination exists on the class land.” Id.

The plaintiffs argued, however, that their fears relating to the contamination and diminished property values were sufficient to demonstrate a common injury given that, under Missouri law, “their nuisance claim does not depend on a showing of actual physical invasion.” Id. The court disagreed, reasoning that “[w]hile these plaintiffs are concerned about the possibility of contamination reaching their properties and harming them, the discovery and testing which has been conducted in the class area has not shown those fears to be substantiated.” Id. at 927. Accordingly, “the putative class fear of contamination spreading from the West Alton leak site to harm their property is not a sufficient injury to support a claim for common law nuisance in the absence of proof.” Id.

ENVIRONMENTAL WASTE DISPOSAL BROKER SUBJECT TO “ARRANGER” LIABILITY UNDER CERCLA AND TEXAS SOLID WASTE DISPOSAL ACT
Lisa Cipriano

MEMC Pasadena, Inc. v. Goodgames Industrial Solutions, LLC, No. 4:13-CV-599, 2015 WL 6473385 (S.D. Tex. Oct. 27, 2015) Plaintiff, a silicon wafer manufacturer, brought an action against an environmental waste disposal broker, for, among other things, contribution under section 113 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and sections 361.343-44 of the Texas Solid Waste Disposal Act (TSWDA). 2015 WL 6473385 at *3. Plaintiff produced a material used to manufacture silicon wafers and related products, and during the manufacturing process generated waste materials. Id. at *1. Defendant was a consulting and waste management company that provided waste disposal services—specifically, defendant coordinated the disposal of plaintiff’s waste stream by facilitating the movement of the waste from the generator (plaintiff) to an approved waste disposal facility. Id. Among other things, defendant suggested the use of a specific disposal site, the U.S. Oil site; provided related pricing information; and scheduled transport of the waste to the site. Id. at *1–2. After incurring certain CERCLA cleanup costs for the cleanup of the U.S. Oil site, plaintiff filed the instant contribution action. In denying summary judgment to defendant, the court rejected the argument that the defendant was not a “responsible person” under CERCLA, and found that defendant was subject to “arranger” liability. Id. at *3, *6–9.

The court began with a review of CERCLA’s purpose, noting that the statute provides “a broad remedial measure aimed at assuring ‘that those responsible for any damage, environmental harm, or injury from chemical poisons bear the costs of their actions.’” Id. at *4 (internal citations and quotations omitted). CERCLA “provides two avenues for funding the cleanup of contaminated sites,” including “allow[ing] private parties ‘to bring a cost-recovery action against ‘responsible persons’ for costs associated with responding to an environmental threat.’” Id. Among other things, a plaintiff must prove that the defendant is a “responsible person under § 9607(a)” of CERCLA in order to establish liability in a cost recovery action. Id. Section 9607(a) “establishes four classes of responsible persons,” including:

(3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person,
by any other party or entity, at any facility
or incineration vessel owned or operated by
another party or entity and containing such
hazardous substances

Id. at *5 (citing 42 U.S.C. § 9607(a)(3)). The court
acknowledged that “CERCLA does not define
‘arranged for,’” but “the Supreme Court [has]
held that an entity may qualify as an arranger
under § 9607(a)(3) when it takes intentional steps
to dispose of a hazardous substance.” Id. (citing
Burlington N. & Santa Fe Ry. Co. v. United States,
556 U.S. 599, 611 (2009)).

Despite the Supreme Court’s guidance, the
court noted that a circuit split remains as to the
interpretation of section 9607(a)(3), and that the
Fifth Circuit had not yet taken a position. Id. at *6
(the debate concerns what the phrase “by any other
party or entity” modifies). The court ultimately
followed the Ninth Circuit’s interpretation of
the section—i.e., that “arranger liability attaches
regardless of the purported arranger’s ownership or
possession of the hazardous substances”—because
this interpretation best serves CERCLA’s purpose
of “shift[ing] the cost of cleaning up environmental
harm from the taxpayers to the parties who
benefited from the disposal of the wastes that
caus[ed] the harm.” Id. at *7 (internal quotations
and citations omitted). The court also found that
“an arranger, unlike a transporter, need not have
selected the site to be held liable.” Id. at *8.

Having decided this preliminary issue, the court
turned to application of “the current standard for
determining arranger liability”—the “intentional
steps test”—which the Supreme Court set forth in
Burlington N. & Santa Fe Ry. Co. v. United States,
556 U.S. 599 (2009). Id. at *9. Under this test, “the
plaintiff must establish that the purported arranger
took intentional steps to dispose of a hazardous
substance.” Id. (internal quotations and citations
omitted). In addition, the Burlington Northern
court “adopted the ordinary meaning of ‘arrange’
as ‘to make preparations for: plan; to bring about
an agreement or understanding concerning.’” Id.
(internal citations omitted). Thus, the court held

that defendant was liable as an arranger because
the substance going to the U.S. Oil site was a
waste product, defendant took steps to plan for
the disposal process, and “[w]aste disposal was
the entire object of the interactions between
plaintiff, defendant, and U.S. Oil. Id. “[B]
ecause the Court . . . found that [defendant was]
liable under CERCLA as an arranger, the Court
likewise [found] that [defendant was] liable under
the TSWDA” as “Texas courts have looked to
CERCLA when interpreting the TSWDA.” Id.

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**CASE LAW HIGHLIGHTS**

**MIDWEST**

**MESOTHELIOMA LATENCY PERIOD EXCEEDS STATUTE OF REPOSE FOR OCCUPATIONAL DISEASE CLAIM, WIDOW BARRED FROM CIVIL SUIT AGAINST EMPLOYER**

Chris Johnson


The Illinois Supreme Court ruled that the exclusive remedy provisions of the state’s occupational disease and workers’ compensation statutes governed a plaintiff’s ability to recover damages in connection with mesothelioma allegedly developed as a result of occupational exposure to asbestos, thus barring a civil suit despite the fact that the disease did not become manifest until plaintiff’s time to make a claim under the statutes had expired. James Folta alleged that he was exposed to asbestos-containing products while employed by Ferro Engineering (Ferro) from 1966 to 1970; he was diagnosed with mesothelioma 41 years later, in May 2011, and filed a civil suit one month later in Cook County Circuit Court, seeking damages from Ferro and 14 other defendants. 2015 WL 6742288, at *1. After James died and his widow Ellen Folta (Folta) was substituted, wrongful death was added to negligence and the other existing theories of liability. *Id.*

Ferro moved to dismiss, arguing that because the mesothelioma allegedly arose from a workplace exposure and was compensable under the Illinois Workers’ Compensation Act (WCA), 820 ILCS 305/5(a), and Workers’ Occupational Diseases Act (WODA), 820 ILCS 310/5(a) (collectively, the Acts), the Acts provided Folta’s exclusive remedy against the employer, barring a civil suit for damages. *Id.* Folta countered that the disease was not in fact compensable under the Acts, because it was not diagnosed until long after the Acts’ limitations periods (25 years) had expired. *Id.* at *1, *7. Although the trial court granted Ferro’s motion, agreeing that the exclusive remedy provisions governed, the appellate court reversed and remanded. *Id.* at *1–2. The appellate court found that the injury was “‘quite literally not compensable’” under the Acts because plaintiff had no possibility of recovery under them due to the long latency period of his illness. *Id.* at *2.

The Illinois Supreme Court reversed the appellate court’s decision, affirming the trial court ruling. *Id.* at *1. Parsing its own history and that of the Illinois appellate courts in interpreting the Acts, the court noted four circumstances under which an employee can escape the Acts’ exclusivity provisions: (1) the injury was not accidental, (2) it did not arise from employment, (3) it was not received during the course of employment, or (4) it was not compensable under the Acts. *Id.* at *3, *5. The court had no difficulty finding that Folta’s illness did not meet any of the first three criteria, and concluded upon analysis that lack of compensability due to expiration of the limitations period did not fall within the fourth exception to exclusivity. *Id.* at *5. It viewed the Acts’ language as creating a repose period rather than a limitations period, thus extinguishing the action after a defined period of time regardless of when the injury accrued or was discovered. *Id.* at *7. The court also noted the balancing process performed by the legislature with the Acts, providing benefits for both employees (a system of no-fault liability against employers) and employers (statutory limitations on recoveries), and found that although the result in this instance was “‘harsh,’” the balance struck by the legislature could be changed only by that same body. *Id.* at *3.

The court made short work of Folta’s constitutional arguments, which centered around the contention that because of mesothelioma’s long latency period—frequently 30 to 50 years, exceeding the 25-year limitations period in the Acts—its victims fell into a class that was treated unequally by being denied the opportunity ever to file a claim for compensation under the Acts. *Id.* at *10. The court disagreed, finding that all workers with occupational diseases were treated the same in the sense that they all were equally precluded from seeking common law damages, and pointing...
out that the Acts do not prevent employees from seeking civil remedies against non-employer third parties. *Id.* at *10–11.

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**COURT GRANTS DEFAULT JUDGMENT, DAMAGES, AND ATTORNEYS’ FEES AGAINST WASTE DUMP AND ITS PRESIDENT**  
Whitney Jones Roy and Alison N. Kleaver

An Indiana district court granted a default judgment and awarded damages in a class action brought by 140 people against the former operators of a waste dump and processing facility in Indiana. 2015 WL 7575848, at *1. The class was composed of neighbors of the waste dump who pursued claims for nuisance and liability under the Resource Conservation and Recovery Act’s (RCRA) citizen suit provision based on allegations that the defendants created an unpermitted and unsightly waste dump; improperly disposed of, processed, and handled harmful wastes; caused repeated and deadly fires that spewed acrid smoke in the neighborhood; and caused constant dust and extreme noxious odors to repeatedly invade the plaintiffs’ homes and properties. *Id.* at *3. The former operators and their president defaulted. *Id.* at *1. Plaintiffs settled separately with the current operators of the site. *Id.*

With respect to nuisance, the court observed that because nuisance law in Indiana does not require actual damage to property, “activities which create noxious odors and emissions that interfere with a neighboring landowner’s comfortable use of his property are exactly the sort of activities that Indiana’s nuisance statute is meant to address.” *Id.* at *2. The court found that nuisance liability was appropriate because ample evidence was submitted demonstrating that plaintiffs had to flee their homes for weeks at a time to avoid significant amounts of noxious smoke; defendants created massive, unsightly piles of waste; and defendants frequently operated at night emitting loud noises and toxic dusts. *Id.* at *3. Evidence also demonstrated that the plaintiffs suffered both physically and emotionally as a result of the operations of the waste dump. *Id.* at *4.

In order to determine the appropriate amount of damages, the court relied on a survey of jury verdicts and settlements. *Id.* at *5. The survey stated that for cases with similar scenarios, the median award was $14,330 per plaintiff per year and the arithmetic mean was $29,064 per plaintiff per year. *Id.* The court accepted plaintiffs’ proposal of $15,000 per year, per plaintiff who submitted to discovery, and $5,000 per year for those who did not respond to discovery or otherwise distinguish themselves from the class as whole. *Id.* at *6.

The court next addressed RCRA liability under 42 U.S.C. section 6972(a)(1)(B). The court found that the requirement that solid or hazardous waste “present an imminent and substantial endangerment to health or the environment” was met because there was wood waste emitting VOCs, particulates, and wood dust, and because the smoldering piles of waste were a fire risk. *Id.* at *6–7.

In addition to finding the former operator defendants liable, the court imposed individual RCRA liability on Kenneth Will, the president and principal member of the defaulting corporate defendants. Following *United States v. Northeastern Pharmaceutical & Chemical Co.*, 810 F.2d 726, 745 (8th Cir. 1986), the court found that it was appropriate to impose individual liability because Mr. Will was actively involved in creating the facility and in day-to-day operations. *Id.* at *7–8.

Finally, the court considered and granted plaintiffs’ request for attorneys’ fees and expenses, relying both on the attorneys’ fee provision under RCRA and the class action attorneys’ fee provision in Federal Rule of Civil Procedure 23(h). 2015
WL 7459997, at *1–2. Because the class was represented by pro bono counsel the court could not rely simply on the rate charged to the clients to reach a final number. Id. at *3. Rather, using the lodestar method and looking to civil rights case law for guidance, the court noted that “a reasonable fee is one that could induce a capable attorney to undertake a meritorious environmental citizen suit.” Id. at *2. The court also observed that the plaintiffs’ attorneys’ “non-profit status does not . . . prevent recovery of attorneys’ fees at market rates.” Id. at *3. The court accepted plaintiffs’ proposal of $150 per hour stating that “the proposed rate of $150 per hour is reasonable, indeed, given the complexity of this matter, a steal.” Id. The court used plaintiffs’ “conservative” estimate of 1755 hours to impose a lodestar amount of $263,250 in attorneys’ fees. Id. The court further noted that the amount was reasonable because it was less than 5 percent of the damages awarded in the default judgment. Id.

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CASE LAW HIGHLIGHTS
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COURT DENIES PRELIMINARY INJUNCTION
TO PREVENT IMPLEMENTATION OF MEASURES PROTECTING SAGE-GROUSE SPECIES
Whitney Jones Roy and Alison N. Kleaver

Western Exploration LLC, et al. v. U.S.
Department of the Interior, Case No. 3:14-cv-00491-MMD-VPC (D. Nev. Dec. 8, 2015) The U.S. District Court for the District of Nevada denied plaintiffs Elko County, Eureka County, Western Exploration LLC, and Quantum Minerals LLC’s (plaintiffs) motion for preliminary injunction to enjoin the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) from implementing certain restrictions in their resource management plans. The plans had been amended to afford greater protection to the greater sage-grouse species and its habitat after U.S. Fish & Wildlife listed three types of greater sage-grouse as threatened or endangered under the Endangered Species Act. Plaintiffs alleged that certain amendments threatened the state’s residents’ “way of life,” particularly the mining and ranching communities, and sought to enjoin three aspects of the plan amendments: travel restrictions, grazing restrictions, and land designations. The court denied plaintiffs’ motion in its entirety on the grounds that they failed to establish that they are likely to suffer irreparable harm absent injunctive relief.

The court first addressed implementation of travel restrictions. The BLM amended its plan to require that “off-highway” vehicle travel be limited to existing routes in the priority and general habitat management areas until subsequent implementation-level planning could be completed and a designated route system established. Travel within the National Forest System was similarly limited to designated roads and trails. Id. at *5. In denying plaintiffs’ request for an injunction of these amendments, the court noted that the amendments did not close any existing routes, but simply required a future planning process to determine whether routes should be closed. Moreover, the court noted that federal regulations exempt emergency vehicles from travel restrictions limiting off-road vehicle uses on USFS and BLM lands. Id. Thus, there was merely the possibility, but not a likelihood of irreparable harm.

Next, the court addressed the grazing restriction amendments. Plaintiffs claimed that restrictions on grazing would increase the risk of wildfire, as well as damage the property rights of grazing permit-holders whose permits might be modified. Id. at *6–7. The court again found that plaintiffs’ concerns did not rise to the level of a likelihood of irreparable harm because the amendments merely instructed the BLM to prioritize review of existing grazing permits and process new permits of leases in designated Sagebrush Focal Areas (SFA) before processing permits outside the SFA. While this review could potentially lead to restrictions or modifications on grazing, which would in turn increase the chances of wildfires, the court noted that such harm was merely speculative because the amendments did not themselves modify grazing permits and current permit-holders had not been affected. Id. at *7. The court found that plaintiffs’ assumption that grazing would necessarily decrease as a result of the plan amendments was unfounded and showed merely the potential for harm. Id. at *8.

Lastly, the court addressed the SFA designations, which plaintiffs alleged limited mining activities and land disposals for local development. With respect to the alleged limits on mining, the BLM amendments recommended withdrawing lands within the SFA from the Mining Act of 1872, which allows citizens to locate mining claims on public lands. Plaintiffs claimed the recommendation and subsequent notice by the Department of Interior approving the withdrawal would cause irreparable harm by creating a “cloud of uncertainty” over mining prospects and chilled plaintiffs’ abilities to raise necessary development funds. Id. at *9. The court began its analysis by noting that plaintiffs held unpatented mining claims, which are inherently subject to “substantial
With respect to limits on disposal of federal lands for local development, plaintiffs claimed that the sage-grouse habitat map encompassed federal land that is suitable for disposal and which plaintiffs had been in the process of acquiring from BLM for that purpose. *Id.* at *15. The court once again found plaintiffs’ claims too speculative because the acquisition of BLM land for disposal is a prolonged process, and there was no evidence that any interruption caused by the plan amendments would lead to immediate irreparable harm. *Id.* Thus, even assuming that the lands would be withdrawn from disposal, there was no risk of immediate harm justifying a preliminary injunction. *Id.* at *15–16. For these reasons, the court denied plaintiffs’ motion for preliminary injunction in its entirety.

In analyzing whether the United States was an owner of the facility under section 9607(a)(2), the court reviewed “the seminal case” on point, *United States v. Friedland*, 152 F. Supp. 2d 1234 (D. Colo. 2001). *Id.* at *19–24. In *Friedland*, the court held that the United States was not an owner for purposes of CERCLA where it held “bare legal title” to land on which a third party held unpatented mining claims. While *Friedland* acknowledged that bare legal title may, in some circumstances, be sufficient to find liability, in this context, it was not. The *Friedland* court noted unpatented mining rights are vested property rights that give the holder the right to sell, mortgage, or inherit, are subject to...
taxation, and cannot be divested except in limited circumstances. Further, the legal title holder to such land is deprived of the ability to exclude individuals from the land, receives no financial benefit from the mining, and lacks power to retain title if the claimant ultimately seeks title. Because of this distribution of the bundle of property rights generally associated with property ownership, the Friedland court found that it would be improper to hold the United States liable as an owner. The Chevron court agreed with Friedland’s holding, but noted that the relevant inquiry was ownership of the facility, rather than mere ownership of the land itself. Id. at *24–25. Focusing on ownership of the facility “is consistent with the broader intent of CERCLA, which is to ‘ensure that the costs of [environmental] cleanup efforts [are] borne by those responsible for the contamination.’” Id. at *27. In this case, the court noted that CMI “was freely able to enter onto federal lands, stake numerous claims, mine without interference from the United States or the public, and enjoy substantial economic benefits from its mining claims,” whereas “[t]he United States could not exclude CMI from the land, prevent it from staking its claims, or interfere with CMI’s reasonable mining activities, including dumping the waste rock and tailings. . . .” Id. at *33.

CMI’s other arguments in favor of owner liability also failed to persuade the court. The court rejected CMI’s argument that the United States’ receipt of royalties on the unpatented mining claims established liability, finding instead that royalties were solely to repay the United States for its loan for mining exploration. Id. at *38. “Once that finite amount was repaid, CMI had no further obligation to pay the United States royalties.” Id. at *39.

The court next turned to CMI’s argument that the United States should be held liable as an arranger under 42 U.S.C. section 9607(a)(3). The court began its analysis by noting that the intent of arranger liability is to deter parties from evading liability by contracting it away to others. Id. at *40. In accordance with that purpose, the court noted that cases finding arranger liability generally involve some type of active involvement in the arrangement of the disposal. Id. at *41. CMI argued that the United States was an arranger because it conveyed land to CMI upon which CMI disposed of waste rock and that the United States knew of and consented to CMI’s disposal on the property. Rejecting this argument, the court found that CMI conflated knowledge of disposal with “performance of affirmative ‘intentional steps’ to dispose of a hazardous substance.” Id. at *48. The court found no facts that established any such affirmative intentional steps by the United States. The court noted that CMI had been disposing waste rock on the lands long before the conveyance and without the input or directive from the United States. While the United States was aware of the disposal, the court affirmed that knowledge alone was insufficient to find liability. Id. at *49–50.

Finally, CMI unsuccessfully argued that the United States’ loan of funds for mine exploration created arranger liability. The court found that although mining operations inevitably create hazardous waste that will require disposal, the fact that the United States facilitated the exploration did not demonstrate any intent or knowledge on the part of the United States that hazardous waste would be disposed of on-site. Id. at *51–53. For these reasons, the court granted summary judgment in favor of the United States.

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ENVIRONMENTAL GROUPS’ CHALLENGE TO PROPOSED MASSIVE LAND DEVELOPMENT UPHELD BY CALIFORNIA SUPREME COURT

Chris Johnson

Center for Biological Diversity v. California Department of Fish and Wildlife, __ P.3d __, 2015 WL 7708312 (Cal. Nov. 30, 2015)

Reversing a court of appeals decision, the California Supreme Court upheld environmental groups’ challenges to an environmental impact report (EIR) and related plans and permits filed by the California Department of Fish and Wildlife (DFW) in connection with the proposed 12,000 acre Newhall Ranch residential and commercial land development project along the Santa Clara River (Newhall). 2015 WL 7708312, at *1. Two main conclusions of the joint environmental impact report filed by DFW and the U.S. Army Corps of Engineers were that greenhouse gas emissions at Newhall would have a less than significant impact on the global climate, and that mitigation measures regarding a protected freshwater fish species in the river, the unarmored threespine stickleback, would avoid or substantially lessen Newhall’s potentially significant impact on the fish. Id. at *2. The EIR was certified in December 2010 and was challenged by plaintiffs, an environmental group, on grounds that it violated the California Environmental Quality Act (CEQA), Pub. Res. Code § 21000 et seq., in several ways. Id. at *1–2. The superior court granted plaintiffs’ petition for writ of mandate, the court of appeals reversed, and the California Supreme Court reversed again, upholding plaintiffs’ challenge to the EIR. Id.

The supreme court analyzed, inter alia, (1) whether the EIR’s determination concerning greenhouse gases was valid, and (2) whether the proposed mitigation measures involving the stickleback constituted an improper “taking” of the fish. Id. at *1. In accordance with accepted standards of review, the court applied an abuse of discretion standard to DFW’s decisions, reviewing de novo the lower court’s findings about those decisions, and accorded particular deference to DFW’s factual conclusions. Id. at *2. With respect to the greenhouse gas determination, the court examined separately whether DFW’s procedure was proper and whether its conclusion of no significant environmental impact was based on sufficient evidence. Id. at *5. It found that the procedure, which used a “business as usual” model devised by the California Air Resources Board (Air Board) to determine the significance of greenhouse gas emissions (based on the mandate of the California Global Warming Solutions Act of 2006 to reduce such emissions statewide to 1990 levels by the year 2020 (the A.B. 32 goal)), was acceptable under CEQA guidelines, especially in the absence of any other widely accepted model. Id. at *3–8. However, the court could not agree with DFW’s conclusion, using that procedure, that the emissions would not have a significant impact. Id. at *12. The Air Board’s “business as usual” model calls for achieving 1990 emission levels by cutting approximately 30 percent from the levels that would be projected for 2020 assuming no conservation or regulatory efforts beyond the ones in effect at the time the projection was made; the model sets forth a wide array of approaches and tools for reducing emissions. Id. at *3. Using the forecasted emissions from Newhall at its full build-out as a baseline (rather than the much lower actual emissions from the property’s existing uses, primarily oil wells and agriculture), and setting forth planned energy efficiency and conservation methods based on the Air Board’s model, the EIR concluded that it would achieve a 31 percent reduction in Newhall’s projected 2020 emission levels, bringing the project in line with the A.B. 32 goals and rendering the emissions not significant for purposes of CEQA compliance. Id. at *4. The court found that conclusion fatally flawed, in large part because neither the Air Board’s plan nor DFW’s administrative record in connection with the EIR demonstrated that the required 30 percent reduction for any individual project was adequate to achieve the 30 percent reduction goal for the entire state. Id. at *10. The court noted, among other things, the use of unsupported assumptions in the EIR and the likelihood that projects involving new builds, such as Newhall, would require greater
than 30 percent reductions in order to compensate for the existence statewide of older, less efficient sources of emissions. *Id.* at *11.

With respect to the unarmored threespine stickleback—a species denoted as “fully protected” under the California Fish and Game Code (the Code) rather than the somewhat less protected “endangered” Code sections 2061, 5515—the EIR contained measures to mitigate the effects of construction on the fish, including capture and relocation. *Id.* at *15–16. However, while the Code authorizes trapping and transplantation as possible conservation measures for endangered species, the court found that the Code’s prohibition against any “taking” or possession of fully protected species rendered such actions unlawful. *Id.* at *16. The court examined the Code’s language and legislative history to conclude that the legislature had in fact intended not to allow “taking” of fully protected species even as a CEQA mitigation measure. *Id.* at *18.

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**GOLD KING MINE INCIDENT**

**Jim Martin and Malinda Morain**

**Background**

On August 5, 2015, the Gold King Mine, located approximately five miles north of Silverton, Colorado, near the town of Durango, suffered what is commonly referred to as a “mine blowout.” This blowout, which started as a small spout from a remediation site, eventually discharged approximately three million gallons of acid mine water into Cement Creek. The flow of mine water continued along the Animas and San Juan Rivers, winding south through New Mexico, north again through Utah, and eventually reached Lake Powell in Utah, bordering Arizona on August 14, 2015. The discharged waters contained heavy metals, including aluminum, lead, zinc, cadmium, copper, iron and manganese, which precipitated from the mine shafts due to the acidic nature of the mine water.

The Gold King Mine began operations in the 1800s and ceased operations in the mid-1900s. It is just one of an estimated 23,000 former mines in the state of Colorado that present a continuing remediation problem. These underground mines can form an extremely complex web of interconnected tunnels. Adding to this complexity is that many of the older mines are not well mapped, making characterization of the internal hydraulic conditions and potential flow paths for mine water extremely difficult to predict. Additionally, many of these mines are located in areas without active mining operations to hold responsible for cleanup.

Although the history of the Gold King Mine, and the list of potentially responsible parties, is lengthy, the immediate cause of the August 5, 2015, discharge is not in dispute. On that morning the U.S. Environmental Protection Agency (EPA) on-site project team was attempting to excavate and re-stabilize an inactive mine portal to restore and direct seepage from the mine into a detention pond for treatment. Due to a faulty assumption concerning the amount of water trapped in the mine tunnel...
behind the portal, and therefore the resultant water pressure pushing against the material EPA intended to excavate, EPA’s excavation triggered an internal erosion of the tunnel, and the resulting blowout of the trapped mine water. EPA’s internal review of the incident concluded that despite the EPA team’s extensive experience in investigating and closing mines and its performance of some investigation of the tunnel’s water levels, a blowout at the site was “likely inevitable.”

EPA, including Regions 6, 8, and 9, along with response teams from the states of Colorado, New Mexico, Utah, the Southern Ute and Ute Mountain tribes, and the Navajo Nation collaborated on an immediate plan for monitoring and response. This response included notification of potential stakeholders, water monitoring, sampling and treatment, and distribution of alternate water sources for humans, businesses, agriculture, and livestock.

Subsequent Reports

The Gold King Mine incident involved a highly unusual attempt by EPA to spread responsibility for the incident to a state agency. Meanwhile, the state agency claimed it only had a minor role in the remediation project leading to the blowout.

On August 24, 2015, EPA released its Internal Review Team’s report of the incident. That report claimed that the state of Colorado’s Division of Reclamation, Mining and Safety (DRMS) had (1) performed previous work on the site; (2) provided experts who supported the removal investigation; and (3) that those DRMS experts were present on-site at the time of the blowout.

On September 2, 2015, in response to EPA’s Internal Review Team Report, the Colorado Department of Natural Resources released a statement “clarifying” several of EPA’s assertions regarding DRMS’s involvement at the site, and specifically disclaiming that DRMS had any authority to manage, assess, or approve any of EPA’s work at the site. In addition, DRMS stated that Gold King remediation activities “were entirely under EPA management using EPA contractors on an EPA response action pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act.”

Debate over the state of Colorado’s involvement is ongoing, and several congressional committees have jumped into the fray. The U.S. House Science Committee held a two-hour hearing on September 9, 2015, and the House Natural Resources Committee invited Interior Secretary Sally Jewell to testify on December 14.

EPA issued an addendum to the Internal Report on December 8, 2015, and listed additional supporting documents on its website. The EPA Inspector General is conducting his own investigation, and his report may shed more light on this unusual disagreement between EPA and a state. Of some concern is the possibility that this finger-pointing will hinder future efforts to clean up some of the many mines that are discharging pollutants into the Animas River.

In addition, in October 2015, the U.S. Department of the Interior, Bureau of Reclamation, whose stated mission is “to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public,” released its “Technical Evaluation of the Gold King Mine Incident.” This document was a result of EPA’s request for an independent technical evaluation of the incident, and was performed by the Bureau of Reclamation, with peer review by the U.S. Geological Survey and the U.S. Army Corps of Engineers. Although this report provides a detailed review of the technical evaluations of the causes of the incident, it specifically disclaimed a “finding of fault” and did not perform an analysis of the downstream consequences or impacts of the spill, and sheds little additional light on the dispute regarding DRMS’s involvement.

Financial Claims

According to a Freedom of Information Act request submitted by the Durango Herald, as of
November 10, 2015, more than 30 individuals and business owners have already filed Form 95—the standard form used to present claims against the United States under the Federal Tort Claims Act for property damage allegedly caused by a federal employee’s negligence or wrongful act or omission occurring within the scope of the employee’s federal employment. Under the Federal Tort Claims Act, claimants have two years from the date their claim accrues to file Form 95, and their claim must include a “sum certain” at the time of filing. Therefore, many claimants will wait to file Form 95 until they have determined the full extent of their claimed damages, and the current $1.3 million claim total will increase substantially in the coming months.

Thus far, claimants are primarily rafting companies and property owners holding land adjacent to the affected waters. The listed losses include damage to crops, loss of income from rental properties, water treatment costs, and claims for lost wages from employees of recreational companies located downstream from the Gold King site.

In addition, the Navajo Nation has established a website, www.operationyellowwater.com, and has held informational sessions to advise members on whether and how to submit Form 95 claims for individual losses. The Navajo Nation also released a statement naming Hueston Hennigan LLP as the Nation’s counsel for an anticipated lawsuit against EPA. As of the press date, no lawsuit had been filed, as the Navajo Nation continues to evaluate its legal options.

Finally, on January 14, 2016, the state of New Mexico delivered a Notice of Endangerment and Intent to Sue EPA, the state of Colorado, and four corporate defendants under the Resource Conservation and Recovery Act for the endangerment of the health of New Mexico’s citizens and the environment of the Animas and San Juan Rivers in New Mexico.

**Superfund Designations**

In the past, many communities near mining sites, including Silverton, have opposed Superfund designations, fearing the “stigma” of a designation would affect local property values and tourism. However, on August 25, 2015, the Silverton Town Board and San Juan County Commissioners passed a Joint Resolution directing leaders to work with downstream communities to garner support for a request for congressional legislation to provide immediate and long-term funding for mining remediation projects within the Upper San Juan Basin and economic and environmental recovery funding for impacted downstream areas. Local officials continue to express concerns about the boundaries of any proposed Superfund designation as well as concerns about the feasibility of congressional appropriations.

**Takeaways**

Although the fallout from the Gold King Mine disaster will take decades to fully play out, stakeholders located downstream from active and closed mining operations should seek to protect themselves. Industrial operators, businesses, and residences located downstream from mining operations should proactively undertake regular testing of their water sources to establish baseline readings in the event of a similar event. These baseline samples could, in the future, absolve businesses of liability for contamination on their own properties absent proof of an intervening cause, and both businesses and residences alike can use the baseline values to assess their damages after a similar blow-out event.

The Gold King Mine incident is also stimulating congressional efforts to establish funds to pay for cleanup on orphan mine sites and renewing efforts on the part of western governors and other stakeholders to convince Congress to enact “Good Samaritan” legislation. The goal of such legislation would be to insulate Good Samaritans who offer to
undertake efforts to reduce discharges at orphan sites from liability under the Clean Water Act, and perhaps other statutes as well. While EPA has attempted to reduce these actors’ potential liability, many potential Good Samaritans remain deterred by the strict liability terms of the Clean Water Act, in particular.

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Endnotes

creating a “dead zone” of extremely low dissolved oxygen levels. Last summer, the zone stretched over 5000 square miles, roughly the size of Connecticut. Recent studies indicate that 90 percent of the nitrogen and 66 percent of the phosphorus that Iowa contributes to this problem come from what are currently classified as “nonpoint” sources, unregulated under the CWA.

Although some of the nitrogen is from surface runoff from farmland, recent studies indicate that subsurface tile drainage contributes significantly to nitrate pollution. Underground tile drainage has been around since Roman times, when the tiles were actually made from clay. Today, the practice consists of burying PVC pipes with holes in the top, so that water will seep in and be directed to nearby ditches or streams.

In some parts of Iowa, the land cannot be farmed without subsurface drainage. In northwest Iowa, particularly, the high water table and poor drainage make tiling almost universal. Recent monitoring of tile lines in northwest Iowa shows that these discharges often contain high concentrations of nitrates.

Although Iowa environmental officials have long recognized that the vast majority of the state’s water pollution emanates from agricultural sources, state law gives the state environmental agency, the Iowa Department of Natural Resources (IDNR) almost no authority over them. In contrast, some agricultural states have increased their regulation of agricultural operations. Minnesota, for example, requires 50-foot vegetative buffers near lakes and streams, and has strict limitations on fertilizer and manure applications within 300 feet of public waters and open tile intakes. That state has also appropriated about $33 million/year in water quality improvement funds from a 3/8-cent sales tax increase.

Iowa, on the other hand, embraced a Nutrient Reduction Strategy in 2013 that is entirely voluntary. The strategy identifies numerous practices that would reduce nutrient (nitrogen and phosphorus) pollution, but recommends achieving these goals largely through education of farmers, coordination of efforts, and greater assessment. The strategy estimates that an additional $1.2 to $4 billion would be needed to achieve its goal of a 45 percent reduction in nutrient pollution, yet the strategy does not suggest where those funds would come from, and the Iowa legislature has provided minimal additional funds.

Thus, the Water Works lawsuit arose from its frustration with the legislature’s repeated failure to take meaningful action toward water quality improvement.

**The Des Moines Water Works Lawsuit**

The Des Moines Water Works (DMWW) provides drinking water to about half a million people in Des Moines and surrounding communities. The DMWW draws its source water primarily from the Raccoon River, which flows through downtown Des Moines. However, the Raccoon River is impaired by nitrates, which frequently exceed the 10 mg/liter limit for drinking water sources. In order to deal with the nitrates, DMWW installed what it calls the world’s largest nitrate removal system, which it has had to operate more frequently in recent years, at a cost of $7000 per day. In addition, the equipment needs to be replaced soon, which DMWW estimates will cost between $76 and $183 million.

The IDNR completed a water quality improvement study (also known as the Total Maximum Daily Load or TMDL) for the Raccoon River nitrate impairment, which determined that 90 percent of the nitrate was contributed by what it classified as “nonpoint” sources. Moreover, 85 percent of the nonpoint total came from agricultural lands. IDNR studies also show that, in some upstream areas in the Raccoon River watershed, over 3/4 of the land mass is drained by tile lines.

Because IDNR classified agriculture’s contribution to the nitrate problem as “nonpoint,” the agency could not control those sources under the CWA’s National Pollution Discharge Elimination System.
(NPDES). NPDES permits are required only for discharges of pollution into the navigable waters from “point sources.” Point sources are defined as “any discernable, confined and discrete conveyance . . . including but not limited to any pipe, ditch [or] channel . . . .” 33 U.S.C. § 1362(14).

DMWW’s lawsuit is a citizen suit under the CWA, alleging that the tile line discharges from upstream counties are point source discharges, which require NPDES permits. Because drainage tile lines are pipes, which convey pollutants to the surface water, DMWW argues that they come within the point source definition. Privately owned tile lines drain into larger collector pipes and eventually into ditches or streams operated by drainage districts. In turn, the drainage districts, organized under state law, are managed by a county board of supervisors. In this lawsuit, DMWW sued the supervisors of three upstream counties, as the trustees of drainage districts from which DMWW has monitoring data showing significant nitrate discharges.

The biggest hurdle the lawsuit faces is the agricultural stormwater discharge exemption. The point source definition specifically excludes “agricultural stormwater discharges and return flows from irrigated agriculture.” The DMWW claims that the discharges in this case are not “stormwater,” which flows off the surface of land during rain events. Instead, these discharges consist of groundwater—the tile lines operate to prevent the water table from rising too high, into the root zone of the growing crops. Although some stormwater also infiltrates the tile lines, the DMWW alleges that discharges with high nitrate concentrations “are almost entirely groundwater.” DMWW Comp. ¶ 155.

The DMWW complaint also alleges that the discharges violate state pollution statutes. The lawsuit includes common law counts based on public and private nuisance, trespass, and negligence. Significantly, the common law counts request compensatory damages for nitrate removal costs, a remedy unavailable under the CWA citizen suit provision. Finally, the complaint alleges several constitutional violations. DMWW alleges that the drainage districts are “taking” its property without compensation, by the physical invasion of nitrate discharges. In addition, the complaint includes a count under 42 U.S.C. § 1983 for the violation of the DMWW’s due process and equal protection rights.

Trial is scheduled for August 2016. The defendant counties moved for partial summary judgment in September, and the court held oral arguments on the motion on December 21. The summary judgment motion, however, does not involve the Clean Water Act claim.

In the meantime, political maneuverings are expected during the state legislative session beginning in January. One idea being floated by some legislators would authorize a sales tax increase to fund water quality improvement projects. Other legislators have threatened to deprive the Water Works, a subdivision of the state, of the right to sue another subdivision, in this case the counties. Still others seek to impose setback or buffer strip requirements to reduce agricultural pollution.

If DMWW wins on its CWA count, the drainage districts would need to obtain NPDES permits. Significantly, the suit does not involve individual farmers, although certainly farm groups worry that a decision in DMWW’s favor could lead to that result down the road. A ruling for DMWW, however, would not necessarily mean that IDNR would require individual permits—it could decide to use “general” permits, as it has for certain types of construction site stormwater or private sewage system discharges. IDNR would also need to determine the best technology available for this type of discharge, or use water quality-based effluent limits. End-of-pipe treatment possibilities range from wetlands to more expensive wood-chip bioreactors.

In a larger sense, the DMWW lawsuit is the latest in a series of attempts to bring agricultural pollution sources under greater regulatory control.
In 1994, the *C.A.R.E. v. Southview Farm* case began this series, by holding that the runoff of manure spread by a dairy farm could constitute a CWA point source. *Concerned Area Residents for the Environment v. Southview Farm*, 34 F.3d 114 (2d Cir. 1994). More recently, in *Alt v. E.P.A.*, the Fourth Circuit rejected EPA’s attempt to bring polluted discharges from a poultry operation within CWA point source control, citing the agricultural stormwater discharge exemption. *Alt v. EPA*, 758 F.3d 588 (4th Cir. 2014). In January 2015, the Eastern District of Washington found that a large dairy operation’s manure, stored in lagoons and applied on fields, could be “solid waste” under the Resource Conservation and Recovery Act. *Cmty. Ass’n for Restoration of the Env’t., Inc. v. Cow Palace, LLC*, 80 F. Supp. 3d 1180 (E.D. Wash. 2015).

Is subsurface tile line discharge stormwater or not? A federal judge in Sioux City, Iowa, will soon be hearing experts debate that question in a case that could have far-reaching consequences.

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**GENOMICS IN TOXIC TORT LITIGATION—ARE WE THERE YET?**

Lisa A. Bailey, Ph.D., and Robyn L. Prueitt, Ph.D., DABT

Advances in genomics are coming at a rapid pace from the scientific community, and this information is making its way into toxic tort litigation. Genomics is a discipline of genetics involving the structure and function of genes in the human genome. Genes are subsections of DNA that tell the body which proteins to make. Sequencing of the entire human genome in 2001 has allowed for identification of differences in DNA sequences between individuals. Although 99.9 percent of human DNA is the same from one person to another, the small differences in DNA sequence between individuals is what makes each person unique. These differences can also lead to differences in disease rates. Variations in DNA sequence among individuals are called polymorphisms or mutations, with mutations being less common than polymorphisms. Single nucleotide polymorphisms (SNPs) are the most common type of polymorphism, involving a difference in just one base pair between individuals within a particular sequence of DNA. While most polymorphisms have no effect on an individual, others may cause illness or make an individual more susceptible than others to certain health effects. Polymorphisms are usually identified by genetic testing by a health-care professional. Personal genetic testing services have also been developed over the last decade to identify SNPs, although this is typically in the context of identifying ancestry and not risk of a particular disease.

Increased risk of a certain disease may involve a particular SNP or mutation, or a person’s overall genetic makeup. There are also many environmental factors that influence an individual’s health, such as diet, smoking, lifestyle, behavior, stress, and exposure to chemicals in water, air, and soil. The interaction between these factors and an individual’s genetic makeup is known as
Gene-environment interactions can explain why some people develop lung cancer from secondhand smoke, while others can smoke two packs a day for 50 years and remain cancer free.

The recent ability to understand variation in the human genome has led to an increase in studies that report associations between certain diseases and individual SNPs or mutations. For diseases that can also be associated with a particular environmental agent, the questions become: (1) Does the SNP or mutation result in increased susceptibility to a particular disease? (2) Is the increased susceptibility caused only by the SNP or mutation, regardless of exposure to environmental agents known to cause the disease? or (3) Does the increased susceptibility also require exposure to the particular environmental agent to cause increased risk of disease? These questions are becoming very important as genetic variation is finding its way into toxic tort litigation. As an example, here we discuss the recent discovery of an association between mutations in the \textit{BAP1} gene and an increased risk of malignant mesothelioma.

Mesothelioma is a highly aggressive tumor primarily caused by exposure to asbestos, yet the risk of developing mesothelioma in occupational cohorts highly exposed to asbestos is only about 5 percent (Testa et al., 2011). Researchers hypothesized that the very low percent of cases in highly exposed working populations could be related to a genetic predisposition, and a number of studies have been conducted to test this hypothesis. Recent studies have shown that certain mutations in the \textit{BAP1} gene (a tumor suppressor gene) that render its protein product inactive are associated with increased risk of mesothelioma and several other cancers (e.g., ocular melanoma, cutaneous melanoma, renal cell cancer) (Testa et al., 2011; Carbone et al., 2015; Alakus et al., 2015; Klebe et al., 2015; Maki-Nevala et al., 2015; Cheung et al., 2015a, b; Betti et al., 2015; Taylor et al., 2015; Wadt et al., 2015). This association was first identified by studying several Turkish families that resided in a town where a naturally occurring fibrous mineral (“erionite”) similar to asbestos is found (Dogan et al., 2006). Several studies have suggested that even minimal exposure to asbestos greatly increases the risk of mesothelioma in those with a \textit{BAP1} mutation (Testa et al., 2011; Napolitano et al., 2015; Xu et al., 2014). Although some studies suggest the possibility that \textit{BAP1} mutations alone can cause mesothelioma, most cannot rule out the possibility that very low levels of asbestos exposure occurred.

There are several hypothetical scenarios involving possible asbestos exposure, mesothelioma, and \textit{BAP1} mutations in toxic tort litigation that one can imagine. One scenario might involve a claim by a plaintiff that his known \textit{BAP1} mutation caused him to be more susceptible to an occupational exposure to asbestos than the general population, and that this exposure caused his mesothelioma. Another scenario might be to use a possible \textit{BAP1} mutation as an alternate cause of mesothelioma by the defense, with an argument that mesothelioma would have occurred even without the claimed occupational asbestos exposure. To make an argument for either scenario, good information about all asbestos exposures (occupational and non-occupational) is critical. However, the level of asbestos exposure that is necessary to cause mesothelioma in people with a \textit{BAP1} mutation is not known. The state of the science for either side of the argument is still relatively new, with many uncertainties that have yet to be resolved.

For the first scenario, the plaintiff would need to prove that his level of asbestos exposure, in combination with a \textit{BAP1} mutation, was sufficient to cause his increased susceptibility to mesothelioma. There is some threshold of asbestos exposure below which no increased mesothelioma risk will occur, even for those with increased susceptibility. That level is not currently known and is likely different for different individuals. Several recent studies suggest that even very low levels of exposure to asbestos (i.e., those not expected to result in increased risk of mesothelioma for the majority of individuals in
the population) increase the risk of mesothelioma in people with \textit{BAP1} mutations. If this is the case, then the plaintiff could argue that occupational levels of asbestos, even if very low, caused his mesothelioma. One must then consider how exposures might compare to background levels of asbestos, as well as the relevance of a potential susceptibility for an individual in comparison to the majority of the general population and the asbestos-exposed working population. If extremely low levels of asbestos are found to be associated with increased risk of mesothelioma in a small percentage of workers with a \textit{BAP1} mutation, should occupational levels of asbestos in air be set even lower than they are already? Are these levels potentially close to background asbestos levels (e.g., possibly close to levels observed in one’s home)? We are obligated to protect susceptible individuals. But even if health-protective guidelines are based on the most susceptible individual, and the level is very low, it will be very difficult to argue that any exceedance of that level from a particular source of asbestos caused an individual’s disease when there may be similarly low levels of asbestos exposure from other sources. It will be—and often already is—very hard to argue which exposure actually caused the disease. In addition, not all individuals with a \textit{BAP1} mutation who are exposed to asbestos will develop mesothelioma. Other genes (Cheung et al., 2015b; Betti et al., 2015) and other environmental factors, such as ionizing radiation (Goodman et al., 2009; Jasani & Gibbs, 2012), may also affect risk, but may be hard to identify.

For the second scenario, the defense would need to prove that the occupational asbestos exposure was low enough that it could not have caused the plaintiff’s mesothelioma, even with a predisposing \textit{BAP1} mutation. The difficulty with this argument for the defense is that several studies suggest that the \textit{BAP1} mutation alone does not cause mesothelioma and that some asbestos exposure is needed, even if it is very low. One could argue that an individual with a \textit{BAP1} mutation has such a strong susceptibility for mesothelioma that any asbestos exposure, even background levels, could have caused his or her disease, so it cannot be proven that it was caused by occupational asbestos exposure. It is not clear if \textit{BAP1} mutations also increase the risk of mesothelioma from other possible environmental causes, such as ionizing radiation. Therefore, the alternate causation argument will still be tied to asbestos, and an argument of exposure level and possible alternate sources of asbestos exposure will be critical.

For the defense, if occupational exposures can be shown to have been low and relatively safe for the majority of the general population, and possibly only likely to cause disease in those with a \textit{BAP1} mutation, another possible argument might be state of knowledge. Should the defense be responsible to protect a very small percent of the population from levels that would not typically trigger disease in most people? This becomes an ethical argument about whom we protect, and therefore a potentially difficult argument to put forth. Perhaps once we gain a clearer understanding, companies can consider protecting susceptible workers going forward (maybe by screening for the \textit{BAP1} mutation for certain occupations that might involve asbestos exposure). But, should companies be responsible for diseased individuals who were exposed years ago, well before the \textit{BAP1} mutation was known? To get to this point, there needs to be a better understanding of what specific \textit{BAP1} mutation is actually necessary to lead to susceptibility. Not all mutations in the \textit{BAP1} gene will increase risk, and the specific \textit{BAP1} mutations associated with increased mesothelioma risk have not been fully characterized. It will also be necessary to understand the difference in potential onset of disease for those with and without the mutation, and the exposure levels associated with potential disease for those with and without the mutation. Although the science is not there yet, it is moving quickly and we are gaining a better understanding of these issues.

Further, because \textit{BAP1} mutations have been observed as both somatic mutations in tumor tissue (i.e., they were acquired during the process of tumor development) and as inherited
germline mutations in all non-cancerous tissues of susceptible individuals, the BAP1 mutations must be identified in normal cells to prove inherent susceptibility of an individual. It is not always possible to gain access to non-cancerous tissue, particularly if the patient has passed away. Clearly, for both scenarios, an understanding of an individual's exposure, or lack of exposure, to asbestos in the occupational environment would be critical to the argument for causation or alternate causation. While asbestos exposure can be identified and quantified by measuring asbestos fiber burden in a non-cancerous lung tissue sample, this is an invasive technique that is not commonly performed. Researchers are aiming to identify biomarkers of asbestos exposure that can be measured in easily accessible biological fluids or tumor biopsy tissues that were already acquired for diagnosis. Many such biomarkers have been proposed, such as proteins, DNA adducts, genomic alterations, and gene expression changes, but to date none of these have been sufficiently validated for diagnostic use. One issue is that the proposed biomarkers are often not very specific. For example, if 80 percent of asbestos-exposed individuals display a particular biomarker of exposure and 20 percent of non-asbestos-exposed individuals also display that biomarker, this indicates a difference in the presence of the biomarker between the exposed vs. non-exposed population. However, if the defense is claiming a lack of asbestos exposure, there is a chance that a non-exposed plaintiff will display this biomarker of exposure, resulting in a false positive. Thus, for a plaintiff trying to prove exposure when there actually was none (above background), false positives would be problematic for the defense. It is likely that a combination of asbestos exposure biomarkers will be necessary to sufficiently prove asbestos exposure, or lack of exposure. However, research to identify the particular combination of markers and tests for those markers is still being developed, and is not yet robust enough for the courtroom. The science is moving quickly, however, and there may soon be methods to more accurately determine potential asbestos exposure.

In conclusion, it is clear that gene-environment interactions are important factors contributing to disease risks, and recent advances in this area are making their way into the courtroom. While one can envision different scenarios as to how this information may be used by both plaintiffs and defendants, the state of the science for either side of the argument has many uncertainties that need to be resolved, indicating that genomic information alone does not provide definitive evidence for or against causation. In addition, a good understanding of exposure will still be critical. Although more research is needed, genetic biomarkers of exposure for asbestos and other agents are currently being developed. Use of such biomarkers in the near future, in combination with biomarkers of disease, could be very promising in toxic tort litigation.

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