

24TH ANNUAL TEXAS ENVIRONMENTAL SUPERCONFERENCE

TO: Attendees

FROM: Planning Committee

DATE: August 2, 2012

On behalf of the Environmental and Natural Resources Law Section of the State Bar of Texas, the Air and Waste Management Association-Southwest Section, the Water Environment Association of Texas, the Texas Association of Environmental Professionals, the Auditing Roundtable, and the American Bar Association Section of Environment, Energy & Resources, welcome to the 24th Annual Texas Environmental Superconference, entitled --“The Good, The Bad, & The Ugly.”

As always, there are evaluation forms for the program. We appreciate your taking the time to complete them. The organizers of this program take these forms into account in planning next year’s conference. In addition, if you have an interest in having a particular topic presented or in speaking on a particular topic, the evaluation form is the appropriate place to provide that information. We also would appreciate suggestions for themes for next year’s conference, which is scheduled for August 1-2, 2013. Please mark your calendars.

This year, our Wednesday evening program entitled, “How The West Was Won!” focused on litigation. If you have suggestions for next year’s Wednesday evening program, please let us know.

Please provide any comments or suggestions to any member of the Planning Committee at the conference, or, thereafter, to Jeff Civins at (512) 867-8477 or jeff.civins@haynesboone.com.

Thanks!



24th ANNUAL TEXAS ENVIRONMENTAL SUPERCONFERENCE
“The Good, the Bad and the Ugly”

Thursday-Friday, August 2-3, 2012
Four Seasons Hotel

Thursday, August 2, 2012

8:00 - 8:30 REGISTRATION/CONTINENTAL BREAKFAST
“True Grit(s)”

8:35 - 9:00 OPENING REMARKS -- *“The Magnificent Seven”*

Jeff Civins, Texas Environmental Superconference
Cindy Smiley, Environmental and Natural Resources Law Section,
State Bar of Texas
Russ Baier, Air & Waste Management Association, Southwest Section
Carol Batterton, Water Environment Association of Texas
Ed Fiesinger, Texas Association of Environmental Professionals
Michael Byington, Auditing Roundtable
Danny Worrell, ABA Section of Environment, Energy & Resources

Moderator: **Danny Worrell**, Brown McCarroll, L.L.P.

Tab 1 9:00 - 9:30 CASE LAW UPDATE -- *“Once Upon A Time in the West”*
Jim Morriss, Thompson & Knight LLP

Tab 2 9:30 - 10:30 WATER QUALITY/WATER RIGHTS PANEL -- *“Rio Bravo”*
Jim Blackburn, Blackburn & Carter
Russ Johnson, McGinnis Lochridge & Kilgore, L.L.P.
Ellen McDonald, Alan Plummer Associates, Inc.

10:30 - 10:45 BREAK – *Sponsored by Terracon Consultants, Inc.*

[First Skit]

Moderator: **Patricia Braddock**, Fulbright & Jaworski, L.L.P.

Tab 3 10:45 – 11:30 AUDIT PRIVILEGE -- *“Support Your Local Sheriff”*
Stephanie Bergeron Perdue, Special Counsel to the Executive Director,
TCEQ
Paul Bork, The Dow Chemical Company

Tab 4 11:30 - 12:00 VIEWS FROM A TCEQ COMMISSIONER -- *“The Three Amigos”*
Toby Baker, Commissioner, TCEQ

[Second Skit]

12:00 -1:10 LUNCH -- *“High Noon” – Sponsored by Environmental Resource Management*

[Third Skit]

Moderator: **Pam Giblin**, Baker Botts L.L.P.

Tab 5 1:10 - 2:20 AIR QUALITY PANEL -- *“Riders in the Sky”*
Suzanne Smith, Chief of Multimedia Counseling Branch, US EPA Region 6
Steve Hagle, Director of Air Quality Permits, TCEQ
Charles Irvine, Blackburn & Carter
Joe Guida, Guida, Slavich & Flores, P.C.

Tab 6 2:20 – 2:45 RCRA/SOLID WASTE ISSUES -- *“Tombstone”*
Paul Gosselink, Lloyd Gosselink Rochelle & Townsend, P.C.

Tab 7 2:45 – 3:15 THE ELECTION – RAMIFICATIONS FOR ENVIRONMENTAL LAW
-- *“Duel in the Sun”*
John Cruden, President, Environmental Law Institute (ELI)

3:15 - 3:30 BREAK – *Sponsored by Geosyntec Consultants*

[Fourth Skit]

Moderator: **Constance Courtney Westfall**, Strasburger & Price, LLP

Tab 8 3:30 - 4:00 RAILROAD COMMISSION UPDATE -- *“3:10 to Yuma”*
Barry Smitherman, Chairman, Texas Railroad Commission

Tab 9 4:00 - 4:50 E&P PANEL – HYDRAULIC FRACTURING -- *“There Will Be Blood”*
•UT Energy Institute Study
Charles G. (“Chip”) Groat, Director, Energy and Mineral Resources Graduate Program; Associate Director, Energy Institute, The University of Texas at Austin
•Legal Issues
Eddie Lewis, Fulbright & Jaworski, L.L.P.

Tab 10 4:50 – 5:15 OFFSHORE OIL AND GAS ISSUES -- *“Hondo”*
Amber MacIver, Baker Botts L.L.P.

[Fifth Skit]

5:15 - 6:00 RECEPTION -- *“The Wild Bunch” – Sponsored by Weston Solutions, Inc.*

Friday, August 3, 2012

8:00 - 8:30 CONTINENTAL BREAKFAST -- *"Bite the Bullet"*

8:30 - 8:35 OPENING REMARKS -- *"Wild Wild West"*

[Sixth Skit]

Moderator: **Daniella Landers**, Sutherland Asbill & Brennan, LLP

Tab 11 8:35 -9:00 A PRIMER ON ENVIRONMENTAL RISK -- A TOXICOLOGIST'S PERSPECTIVE -- *"One-Eyed Jacks"*
Kirby Tyndall, Ph.D., DABT, Pastor, Behling & Wheeler, LLC

Tab 12 9:00 - 9:30 THE ROLE OF RISK IN REGULATORY DECISIONMAKING -- *"The Gambler"*
Tom McGarity, Professor, University of Texas School of Law

Tab 13 9:30 - 10:15 MANAGING ENVIRONMENTAL RISK IN TRANSACTIONS -- *"The Professionals"*
Mary Mendoza, Haynes and Boone, LLP
Tim Wilkins, Bracewell & Giuliani, LLP

10:15 – 10:30 BREAK – SPONSORED BY CH2MHILL

[Seventh Skit]

Moderator: **Suzanne Murray**, Regional Counsel, US EPA, Region 6

Tab 14 10:30 – 11:00 MANAGING YOUR GLOBAL SUPPLY CHAIN FOR PROFIT, REPUTATION AND COMPLIANCE -- *"For A Few Dollars More"*
Chris Bell, Sidley Austin LLP

Tab 15 11:00 – 11:30 VIEW FROM EPA REGION 6 -- *"Man of the West"*
Sam Coleman, Acting Regional Administrator, EPA Region 6

Tab 16 11:30 – 12:00 VIEW FROM DC – ENVIRONMENTAL ENFORCEMENT -- *"Legend of the Lone Ranger"*
Bruce Gelber, Deputy Assistant Attorney General, U.S. Department of Justice, Environment and Natural Resources Division

[Eighth Skit]

[Turn in Trivia Quiz]

[Turn in Skit Quiz]

12:00 – 1:15 LUNCH -- *“Lonesome Dove”*

1:00 – 1:15 TEXAS ENVIRONMENTAL & NATURAL RESOURCES LAW
SECTION MEETING -- *“The Cheyenne Social Club”*

[Announce Trivia Quiz Winners]

Moderator: **Peter Gregg**, Fritz, Byrne, Head & Harrison, PLLC

Tab 17 1:15 – 2:15 GREEN INFRASTRUCTURE -- MITIGATION STRATEGIES
-- *“Urban Cowboy”*
Brad Raffle, Pillsbury Winthrop Shaw Pittman LLP
David C. Schanbacher, P.E., Natural Resources Policy Director, Texas
Comptroller of Public Accounts

Tab 18 2:15 – 3:15 ETHICAL ISSUES FACING ENVIRONMENTAL PRACTITIONERS
-- *“Dances With Wolves”*

Booker Harrison, Senior Attorney, Environmental Law Division, TCEQ
Arnoldo Medina, Chevron, U.S.A. Inc.
Molly Cagle, Vinson & Elkins LLP

[Announce Skit Quiz Winners]

3:15 ADJOURN-Sundaes -- *“The Man from Snowy River”* – sponsored by
Cirrus Associates, LLC

[COMMENT CARD DRAWING – You must be present to win]

MCLE

To obtain CLE credit, you must do 2 things: (1) sign the sign-in sheet, with your printed name, signature, Bar Card Number, and number of hours of participatory, specialization, and ethics credits; and (2) enter your time on-line, in accordance with the instructions below.

Course Number: 901248221

“24th Annual Texas Environmental Superconference”

Participatory Hours: 11.75

Administrative Law: 11.75 hours

Civil Trial Law: 11.75 hours

Oil, Gas and Mineral Law: 11.75 hours

Real Estate: 11.75 hours

Ethics: 1 hour

Go to www.texasbar.com and click on the yellow **MyBarPage** tab at the top of the page. From there, you will need to log in using your bar card number and PIN.

If you have never logged in before, click the 'Proceed' button on the page and follow the instructions.

Once you are logged in, look for the link on the left-hand side of the page that reads “**View/Update My MCLE Records.**”

On the next page, click on “**Add Course or Self-Study Credit**” (should be in a yellow box in the middle of the page).

On the next page, click “**Approved Course Credits.**”

From here, you will enter the course number provided above, **date attended** [insert here], **Total Hours you attended**, **Ethics Hours you attended**.

Confirm that you have entered the correct number of hours. You will not be able to edit this once you submit it.

Click the **Submit** button at the bottom of the page.

On the next page, you may see a **check box** asking you to confirm (swear) your attendance. Check the box, and click **Submit (or OK)**.

Once you have done this, your attendance should be reflected in your records.



Danny Worrell

Partner

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Legal Experience

Mr. Worrell's practice is concentrated in the areas of environmental permitting and enforcement; Superfund litigation; litigation and transactions involving environmental matters; and on regulatory compliance involving hazardous and municipal solid waste, air quality, injection wells, water quality, *in situ* uranium mining, underground and above ground storage tanks, asbestos, PCBs, water and wastewater utilities, pesticides, and pipelines. Mr. Worrell is the leader of the Environmental practice group.

Recent Accomplishments

- Lead attorney in administrative contested case hearing on an application for a Texas Clean Air Act preconstruction permit for an 800 megawatt coal-fired electric generating facility with a CO₂ capture unit.
- Lead attorney in administrative contested case hearing on an application for a Texas Pollution Discharge Elimination System permit for a municipal wastewater discharge.
- Represented client in administrative contested case hearing involving amendment to production area authorization for in situ uranium mining permit before the Texas Commission on Environmental Quality ("TCEQ").
- Lead attorney in administrative contested case hearing and district court appeal, successfully obtaining renewal and new Class 1 hazardous waste injection well permits from the TCEQ.
- Represented and assisted client in administrative, district court and appeals court proceedings involving a contested case hearing, successfully obtaining major modifications to its Class 1 non-hazardous injection well permits from the TCEQ.
- Lead attorney in successful effort to obtain a Municipal Solid Waste Type I landfill permit for client in state administrative proceedings, including contested case hearing.
- Represented client in successfully negotiating settlement of administrative proceedings, involving a contested case hearing, on an application for renewal and major modification of Commercial Hazardous Waste Treatment, Storage and Disposal Facility permit.
- Assisted client in successfully obtaining first Regulatory Flexibility Order from the TCEQ for use of the EPA Comparable Fuels Rule allowing substitution of fuels at chemical manufacturing facility.
- Represented clients in successfully obtaining Single Property Designations from the TCEQ for air quality regulatory purposes.
- Represented four different clients in settling claims associated with federal Superfund litigation involving former tin smelter.
- Assisted client in successful settlement of product liability litigation relating to oil well cementing operations.

Education

- Doctor of Jurisprudence, University of Houston Law Center, 1990. Houston Journal of International Law
- Master of Science, Geology, Louisiana State University, 1984
- Bachelor of Science, Geology (Major), Petroleum Engineering (Minor), The University of Texas at Austin, 1980

Professional Licenses

- Attorney at Law, Texas, 1990

Court Admissions

- United States Court of Appeals for the Fifth Circuit
- Supreme Court of Texas

Prior Professional Experience

- ARCO Oil and Gas Company, Geologist, Specialized in oil and gas exploration, 1984-1986

Speeches and Publications

- *Water Quality Law in Texas*, Brown McCarroll, L.L.P.'s Water Law Seminar, 2011, Presentation/Article
- *BACT and MACT, "Hunches in Bunches,"* Texas Environmental Superconference, 2011, Presentation/Article
- Texas Chapter in *Brownfields Law & Practice*, Matthew Bender, 2008-2012, Book
- *The Impact of Changing Federal Energy and Environmental Laws and Policy*, Gulf Coast Power Association, 25th Annual Fall Conference and Exhibition, 2009, Presentation/Article
- *What Happens When a Rule is Vacated? MACT Hammer, Title V Impacts*, TCC/ACIT Environmental, Health & Safety Seminar, 2009, Presentation/Article
- *Compliance: Confidentiality and Ethics, Changing Times Require Changing Approaches*, Texas Bar Law Center, 2007, Webinar
- *Environmental Law 101: Solid Waste*, In conference materials associated with the Texas Environmental Superconference, 2005, Presentation/Article
- *RCRA: Resource Conservation and Recovery Act*, Co-Author with John W. Teets and Dennis P. Reis, American Bar Association, 2003, Book
- *Subsurface Trespass Claims Against Underground Injection Control Operations*, in conference materials for the Texas Natural Resource Conservation Commission 2002 Underground Injection Control Symposium, 2002, Presentation/Article
- *Legal and Strategic Considerations in Risk-Based Closures*, in proceedings of Energy Week Conference and Exhibition, 1996, Presentation/Article
- *Land Disposal Restrictions: Current Developments and The Corrective Action Management Unit (CAMU) Rule*, in conference materials for the Brown McCarroll & Oaks Hartline Annual Client Environmental Seminar, 1994, Presentation/Article
- *Exploration and Production Wastes and Class II Injection Wells: Current Regulatory Developments (SPE 27706)*, in Proceedings of the Permian Basin Oil & Gas Recovery Conference, sponsored by the Society of Petroleum Engineers, 1994, Presentation/Article
- *Understanding the New Corrective Action Management Unit (CAMU) Rule and its Impact on CERCLA Projects*, in Operating Under RCRA and CERCLA Requirements, sponsored by Executive Enterprises, Inc., 1993, Presentation/Article
- *Overview of Federal and Texas Class II Injection Well Regulatory Programs and New Developments in Efforts to Revise These Programs*, in proceedings of the Symposium on Class II Injection Well Management and Practices, sponsored by the Underground Injection Practices Search Foundation and the U.S. Department of Energy, 1992, Presentation/Article
- *Producing Property Conveyances and Environmental Liabilities: A Mine Field for the Unwary*, with R. Kinnan Golemon, 43rd Annual Institute on Oil and Gas Law and Taxation, Mathew Bender 1992, Article
- *Permitting Injection Wells in the New Texas*, with Albert R. Axe, Jr., in Proceedings of the Underground Injection Practices Council, Winter and Summer 1991, Article
- *Recent Regulatory Changes Affecting Class I Injection Wells*, with Albert R. Axe, Jr. and R. Steven Morton, in Proceedings of the Underground Injection Practices Council, Winter and Summer 1991, Article
- *An Overview of the Use of Injection Wells for Industrial Waste Disposal*, with R. Steven Morton and Susan Thompson, 1990, Article
- *Issues and Policy Considerations Regarding Hazardous Waste Exports*, 11 Houston Journal of International Law 373, 1989, Article

Professional Memberships and Activities

- State Bar of Texas
- American Bar Association, Section of Environment, Energy, and Resources (SEER)
- American Bar Association, Vice Chair for Programs for the ABA SEER Infrastructure and Siting Committee, 2008-2011
- Austin Bar Association

Honors

- AV® Preeminent™ Peer Review Rated
 - ◆ AV® Preeminent™ and BV® Distinguished™ are certification marks of Reed Elsevier Properties Inc., used in accordance with the Martindale-Hubbell certification procedures, standards and policies.
- Recognized in Best Lawyers in America, Environmental Law, 2007-2008, 2010-2012
- Recognized in The Texas Who's Who Legal, 2007-2008
- “Leaders in Their Field,” Environmental Law, Chambers USA 2005-2011 Guides

Community Involvement

- Austin United Capital Soccer Club, Team Manager, 2005-2008
- North Austin Soccer Alliance, Soccer Coach, 2003-2004
- West Austin Youth Association, Soccer Coach, 2000-2002
- Adult Services Council, President, Officer, and Board Member, 1991-1996

James C. Morriss III
Thompson & Knight LLP

James C. Morriss III is Thompson & Knight's Austin Office Leader and the Firm-wide Practice Leader of the Environmental Law Practice Group. Mr. Morriss focuses his practice on environmental permitting; compliance counseling; facility siting, including wetlands and endangered species work; and administrative and judicial litigation before local, state, and federal environmental agencies and state and federal courts. He has extensive experience in counseling clients in environmental risk management, including the design and implementation of environmental auditing programs and environmental management systems, and in the investigation and disclosure of environmental liabilities and contingencies. Mr. Morriss also has significant experience in litigation involving the investigation and remedy of complex sites, including the development and presentation of risk based solutions to contamination. His work with clients in establishing programs for the use, reuse, and recovery of solid and hazardous waste and energy conservation has evolved into broader issues of sustainable development. He represents clients in a variety of industry and commercial sectors, including steel, metals recycling, organic and inorganic chemicals, petroleum refining, plastics, cement, oil and gas exploration and production, transportation, and real estate development.

Mr. Morriss received his J.D., with honors, from The University of Texas School of Law and his B.S. in Mechanical Engineering, with high honors, from Southern Methodist University. He is actively involved in numerous professional organizations, including the Austin Bar Association, American Bar Association, State Bar of Texas, and the United States Business Council for Sustainable Development. Mr. Morriss has been honored by numerous prestigious legal directories, including *The Best Lawyers in America*® by Woodward/White Inc., *Chambers USA* by Chambers & Partners, *Texas Super Lawyers*® by Thomson Reuters, and *Who's Who Legal: Texas* by Law Business Research Limited.

Case Law Update
By
James C. Morriss III
Christopher D. Smith
Thompson & Knight, LLP

During the past year, both state and federal courts have handed down decisions that are both significant from the standpoint of precedent and instructive in their analysis and application of existing law. Several decisions provide new direction or a marked change in the law or what was thought to be the law. Others, while announcing no new principles, offer explanations of law and are excellent examples of what lower courts will do with the law when applied to particular facts. The following cases have been selected from decisions entered since August 2011 because they fall into one of these two categories.

TCEQ Contested Case Hearings

City of Waco v. Texas Commission on Environmental Quality, 346 S.W.3d 781 (Tex. App. – Austin June 17, 2011, pet. denied). The Texas Supreme Court denied the petition for review on June 29, 2012, and TCEQ filed a motion for extension of time to file a motion for rehearing, which was granted on July 6, 2012.

O-Kee Dairy sought a major amendment of its concentrated animal feeding operation (CAFO) water quality permit to increase the size of its herd and increase the number of acres in its waste application fields. The O-Kee Dairy is located in the North Bosque River watershed, approximately 80 miles upstream from Lake Waco. The North Bosque River provides over 60% of the water and over 70% of the phosphorous that enters Lake Waco. Lake Waco is the primary source of water for the City of Waco.

The TCEQ issued a draft permit that included conditions that staff viewed as strengthening the overall water quality protections, even considering the increase in manure due to more cows. The City submitted comments in opposition to the draft permit, requested a public meeting, and after the meeting, requested a contested case hearing.

The City asserted that it was an “affected person” both on its own behalf and as *parens patriae* for its citizens. The City presented affidavits of a water quality engineer and the City water utility director. In short, the City argued:

- The city owns all of the water rights to Lake Waco, and Lake Waco is the sole source of municipal water except for emergency sources.
- For many years it has received complaints about the offensive taste and odor in its drinking water caused by decaying algae that grows in Lake Waco. The City has been unable to remove the odor, despite increased treatment costs.

- There is a causal linkage between increasing algal growth in Lake Waco and phosphorous loading from CAFOs in the North Bosque watershed.
- The CAFOs in the North Bosque watershed are also a source of bacteria and other pathogens entering Lake Waco, increasing water treatment costs and endangering recreational users of the lake.
- If the TCEQ grants the draft permit, additional amounts of phosphorous and bacteria will flow into Lake Waco, exacerbating the problems.

The TCEQ Executive Director filed a response to the City's request for a contested case hearing and asserted that the City was not an "affected person" with respect to the permit because the distance between the O-Kee Dairy and Lake Waco made it unlikely that any discharge would impact the City water intake system. The Executive Director also argued if the Commission were to grant the City's request, then every city in Texas could challenge any permit located upstream of their drinking water supply. The Commission denied the City's hearing request, and the City sought judicial review of the Commission's Order. The trial court affirmed the agency's decision, and the City appealed to the Austin Court of Appeals. The sole issue before the Court of Appeals was whether the Commission erred in determining that the City was not an "affected person."

Under TCEQ rules, an "affected person" is one "who has a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest" in the matter at issue, and not merely an "interest common to members of the general public." TEX. WATER CODE § 5.115(a). The court first held that the Water Code's "affected person" standard incorporated the test for constitutional standing under the Texas Constitution. Specifically, to have standing the City was required to establish (1) an "injury in fact" from the issuance of the proposed permit, (2) that the injury was "fairly traceable" to the issuance of the permit as proposed, as opposed to independent actions of third parties, and (3) that it was likely, and not speculative, that the injury will be redressed by a favorable decision on the merits (i.e., denial of the permit or addition of new requirements).

The court concluded that the City had a sufficient property and economic interest in Lake Waco's water quality to give the City a personal justiciable interest in the O-Kee Dairy permit application. Next, the court considered whether the City had met the "injury in fact" requirement. TCEQ argued that the amended O-Kee Dairy permit would actually reduce the risk of phosphorous and pathogens, and that the City's evidence to the contrary was wrong. Further, TCEQ argued that it had authority to weigh the evidence in deciding whether the City was an "affected person." Essentially, the Commission analogized its position with that of a trial court deciding a plea to the jurisdiction. The court held that where the same questions of fact involve both the merits and whether a party is an "affected person," the facts in dispute must be resolved at a contested case hearing. Consequently, the court held that the Commission acted arbitrarily and abused its discretion in concluding that the City was not an affected person with respect to the O-Kee Dairy permit application and denying the City's contested case hearing request.

Bosque River Coalition v. Texas Commission on Environmental Quality, 347 S.W.3d 366 (Tex. App. – Austin Aug. 2, 2011, pet. denied).

A dairy operator filed an application with TCEQ to amend a CAFO permit to increase its herd size and to allow for waste to be applied to fields closer to a creek located in the North Bosque River watershed. Commission staff determined that the requested amendment was “major,” and thus subject to notice and comment. Following the issuance of a draft permit, the Bosque River Coalition filed a request for a contested case hearing. The request stated that certain individuals and entities that are members of the Coalition are “affected persons with personal justiciable interests not common to the general public” in that they owned property along the creek into which the dairy discharges. The request identified three property owners as members of the organization located within two miles downstream from the dairy.

The court first noted that the test for associational standing is found in 30 Tex. Admin. Code § 55.105(a), and includes the following elements: (1) one or more members of the group or association would otherwise have standing to request a hearing in their own right, (2) the interest the group or association seeks to protect are germane to the organization’s purpose; and (3) neither the claim asserted nor the relief requested requires the participation of individual members in the case. The TCEQ Executive Director did not challenge elements 2 or 3 above, but opposed the request on the basis of the first element. Specifically, the Executive Director argued that the proposed permit conditions should reduce discharges and that due to the distance between the dairy and the Coalition members’ properties, they would not be affected.

Applying the same reasoning as *City of Waco*, the court held that the Coalition was entitled to a contested case hearing because fact issues relevant to the “affected person” determination were also relevant to a decision on the merits.

Slay v. Texas Commission on Environmental Quality, 351 S.W.3d 532 (Tex. App. – Austin Aug. 31, 2011, pet. denied)

This case concerned a 17-acre tract on the shore of Sabine Lake in Port Arthur formerly operated by Palmer Barge Line, Inc. The TCEQ alleged that several defendants violated State and Federal hazardous waste regulations, and brought an enforcement action. TCEQ staff calculated the base penalty for the violations to be \$322,500, and the total penalty after application of escalators to be \$596,625. The matter was referred to SOAH, and after a hearing the ALJ issued a proposal for decision recommending a \$1,500 penalty. The TCEQ commissioners significantly modified the ALJ’s penalty recommendations, and imposed a total penalty of \$177,500.

The TCEQ’s order was appealed to district court. The Defendants challenged the application of the TCEQ penalty policy as an improperly promulgated administrative rule. The district court held that the penalty policy was not a rule under the Texas Administrative Procedure Act. The Austin Court of Appeals affirmed the district court’s

holding that the TCEQ penalty policy was not an APA rule. The Court based its decision on the fact that the policy does not bind the commission to assess a specific penalty. Furthermore, the court upheld TCEQ's determination that the materials found on an industrial site were "waste" was reasonable, and found that TCEQ's modifications of the ALJ's findings were not arbitrary and capricious.

Effect of Permit on Civil Liability

FPL Farming Ltd. v. Environmental Processing Systems, L.C., 351 S.W.3d 306 (Tex. Aug. 26, 2011). FPL owned the surface and subsurface rights, except for mineral rights, to two tracts of land in Liberty County. Environmental Processing Systems (EPS) operates a nonhazardous wastewater injection well on an adjoining tract. EPS sought to amend its permits to increase the allowed injection rate. FPL requested and was granted a contested case hearing. At the hearing, the ALJ found that the waste plume would extend over 3,000 feet from the well after 10 years, which meant that the plume would extend onto FPL's tracts. But the ALJ recommended that TCEQ grant the application, concluding that FPL had no right to exclude others from the deep subsurface, that FPL's rights would not be impaired by the amended permits, and that the granting of the permits would not be an unconstitutional taking. TCEQ granted the permits, and FPL appealed. Both the district court and the Austin Court of Appeals affirmed TCEQ's order granting the permit amendments.

FPL then sued EPS in Liberty County, alleging trespass, negligence, and unjust enrichment. After a jury trial, the court found for EPS. FPL appealed to the Beaumont Court of Appeals. Rather than address the evidentiary and procedural issues from the trial court, the Beaumont Court of Appeals considered as a threshold matter whether FPL may pursue a trespass claim when the TCEQ approved a permit amendment authorizing the discharge. The Beaumont Court of Appeals concluded that EPS was shielded from trespass liability.

The Texas Supreme Court held that the Beaumont Court of Appeals' reasoning was inconsistent with the legal effect of an agency's permitting process, statutory language, and case law. The Court first stated that as a general rule a permit granted by a state agency does not immunize the permit holder from civil tort liability to private parties for actions arising out of the use of the permit. This is because a permit is a "negative pronouncement" that only serves to remove a government-imposed barrier to conducting the activity. The Court also noted that nothing in Chapter 27 of the Water Code, which governs the use of deep subsurface injection wells, preempts civil actions. The Court further noted that 30 Tex. Admin. Code § 305.122(c) expressly provides that "[t]he issuance of a permit does not authorize any injury to persons or property or an invasion of other property rights." Thus, the Court held that the Beaumont Court of Appeals erred in determining that there was no trespass because TCEQ had permitted EPS' injection wells and remanded the case for consideration of the trespass claims.

Texas Groundwater

Edwards Aquifer Authority v. Day, 55 Tex. Sup. Ct. J. 343, 2012 WL 592729 (Feb. 24, 2012).

In 1994 Day bought 381 acres over the Edwards Aquifer. A well drilled in 1956 had been used for irrigation through the 1970s, but its pump was removed prior to 1983. The well had continued to flow under artesian pressure; most of it flowed down a ditch several hundred yards into a 50-acre lake on Day's property. Day's predecessors had pumped water from the lake for irrigation.

To continue to use the well or drill a planned replacement well, Day needed a permit from the Edwards Aquifer Authority. The Authority was created by the Edwards Aquifer Authority Act (EAAA) in 1993. The EAAA prohibits withdrawals of water from the aquifer without a permit from the Authority. The EAAA gives preference to "existing users," defined as persons who withdrew and beneficially used underground water from the aquifer on or before June 1, 1993, and their successors. A user's total annual withdrawal allowed under an initial regular permit (IRP) is calculated based on the beneficial use of water without waste during the period from June 1, 1972 to May 31, 1993. A user's total permitted annual withdrawal cannot exceed his maximum beneficial use during any single year of the historical period. In addition, the EAAA provides that every existing irrigation user shall receive a permit for not less than two acre-feet a year for each acre of land the user actually irrigated in any one calendar year during the historical period.

Day timely submitted an IRP application for authorization to pump 700 acre-feet of water annually for irrigation. The application was supported by a statement by Day's predecessors stating that they had irrigated approximately 300 acres of grass during 1983 and 1984. The 700 acre-feet requested was based on the two acre-feet for the total beneficial use of irrigating the 300 acres plus the recreational use of the 50-acre lake.

In 1997, the Authority wrote Day and stated that staff had preliminarily found that the application provided sufficient convincing evidence to substantiate irrigation of 300 acres in 1983-84, and thus an average beneficial use of 600 acre-feet during the beneficial period. In 1999, the Authority approved Day's request to amend his application to move the point of withdrawal to a replacement well to be drilled on the property. Day proceeded to drill the replacement well at a cost of \$95,000. In November 2000, the Authority notified Day that his application would be denied because "withdrawals [from the well during the historical period] were not placed to a beneficial use."

Day protested the Authority's decision, and the matter was referred to SOAH for a hearing. The ALJ concluded that water from the lake, including the well water that had flowed into it, was state surface water, the use of which could not support Day's application for groundwater. The ALJ also found that the recreational use of the lake was not a beneficial use under the EAAA. The ALJ found that the maximum beneficial use of groundwater shown by Day during the historical period was for irrigation of seven

acres of grass. The ALJ concluded that Day should be granted an IRP for 14 acre-feet, and the Authority agreed.

Day appealed the Authority's decision to the district court and sued the Authority for taking his property without compensation in violation of article I, section 17(a) of the Texas Constitution. The Authority impleaded the State as a third-party defendant, asserting indemnification and contribution from Day's takings claim. The court granted summary judgment for Day on his appeal, concluding that water from the well-fed lake was groundwater. The court also granted summary judgment for the Authority on all of Day's constitutional claims, including his takings claim. The court of appeals reached a different conclusion, agreeing with the Authority that the water in the lake was surface water, but also holding that the takings claim should not have been dismissed.

The Texas Supreme Court's inquiry addressed three issues. First, the court asked whether under the EAAA, the Authority erred in limiting Day's IRP to 14 acre-feet. The court concluded that it did not, because there was substantial evidence to support the Authority's finding that the groundwater became state water in the lake. Specifically, the court noted that Day's predecessors had not measured the amount of water flowing from the well into the lake or the amount pumped from the lake into the irrigation system. In addition, except for 1983 and 1984, there was no evidence in the record that water was pumped from the lake for irrigation. The court stated that these facts required the affirmation of the Authority's decision to issue an IRP for 14 acre-feet.

Second, the court addressed whether Day had a constitutionally protected interest in the groundwater beneath his property. In other words, whether groundwater can be owned in place. The court held that groundwater should be treated like oil and gas and is therefore owned in place. The court squarely rejected the argument that groundwater was so fundamentally different from oil and gas in nature, use, and value, that it should be subject to a different rule. Rather, citing prior case law on oil and gas ownership, the court stated that the only qualification of the rule of ownership is "that it must be considered in connection with the law of capture and is subject to police regulations."

Third, the court addressed whether the Authority's denial of an IRP in the amount Day requested constitutes a taking. The court discussed United States Supreme Court jurisprudence on constitutional takings, and in particular the factors set forth in *Penn Central Transportation Co. v. City of New York*, 438 U.S. 104 (1978) which addressed claims that are not based on a physical invasion of property or claims involving a complete deprivation of all economically beneficial uses of property. Among the *Penn Central* factors, the court emphasized the economic impact of the regulation on the claimant, the extent to which the regulation has interfered with distinct investment-backed expectations, and the character of the governmental action.

The court then noted that the record did not include information about how these factors, particularly the second factor concerning investment-backed expectations, apply to Day's specific circumstances. Therefore, the court held that this issue must be remanded for further evidentiary development.

CWA Mitigation Banking

Hearts Bluff Game Ranch, Inc. v. United States, 669 F.3d 1326 (Fed Cir. Jan. 19, 2012), cert. denied, 183 L. Ed. 2d 640 (2012).

Hearts Bluff purchased 4,000 acres in Titus County for use as a wetlands mitigation bank. Prior to buying the property, Hearts Bluff contacted the United States Army Corps of Engineers seeking assurances that the land would be suitable for mitigation banking under the federal Clean Water Act. At the time, the Marvin Nichols Reservoir had been proposed for the region where the 4,000 acres were located, but the Corps communicated that it then saw no impediments to creating the mitigation bank. In 2004, after Hearts Bluff submitted an application for a mitigation banking instrument, the Corps gave notice of the application. The Texas Water Development Board commented that the planned reservoir would become less viable if the mitigation banking instrument was approved. The Corps also learned that the Marvin Nichols Reservoir was to be adopted in the 2007 State Water Plan with a recommendation that it be constructed. The Corps denied Hearts Bluff's application because the mitigation bank overlapped with the proposed reservoir, and the Corps concluded that the land may not exist in perpetuity.

Hearts Bluff filed suit and asserted that the government took its property when the Corps denied the application. The trial court dismissed Hearts Bluff's action, and Hearts Bluff appealed. The Federal Circuit employed a two-part test to analyze Hearts Bluff's claim. Step one asked whether Hearts Bluff had a cognizable Fifth Amendment property interest. If the answer was yes, step two is a determination whether that property interest was taken. The court held that under step one, Hearts Bluff did not possess a compensable property interest in a mitigation banking instrument. The court reasoned that because the Corps has discretionary authority to deny access to the mitigation bank program, Hearts Bluff could not have a property interest based on participation in the program.

Endangered Species Act

Aransas Project v. Shaw, No. C-10-75, 2011 WL 6033036 (S.D. Tex. Dec. 5, 2011).

The Aransas Project brought this case against several TCEQ officials and the South Texas Watermaster. The Project alleged that the defendants failed to adequately manage the flow of fresh water into the San Antonio Bay ecosystem during the winter of 2008-2009, resulting in a "take" of endangered Whooping Cranes in violation of the Endangered Species Act (ESA). Specifically, the plaintiff argued that the reduced flow of fresh water into the ecosystem increased salinity, reducing the food and water supply for the Whooping Cranes, ultimately resulting in the death of twenty-three individual Whooping Cranes. The Aransas Project sought declaratory and injunctive relief restricting future water diversions.

The Guadalupe-Blanco River Authority (GBRA) intervened in the case, and the defendants and GBRA moved for summary judgment, arguing that (1) the Aransas Project lacked standing, (2) Eleventh Amendment immunity barred the claim, (3) the Aransas Project failed to establish a right to recovery under the ESA, and (4) the Complaint should be dismissed under the *Burford* abstention doctrine. The Aransas Project also moved for summary judgment regarding its standing.

With respect to the standing argument, the TCEQ Defendants and GBRA challenged whether the Aransas Project met the requirements for associational standing, and whether the elements of injury in fact, redressability, and causation were satisfied. The Aransas Project provided evidence that its members had a direct financial interest in ensuring the Crane's survival, including owners of various Crane-related tourist businesses. The court found that these allegations were sufficient to meet the standing requirements described by the Supreme Court in *Friends of the Earth, Inc. v. Laidlaw Environmental Services, Inc.*, 528 U.S. 167 (2000).

Concerning redressability, GBRA argued that the Plaintiff failed to explain how altering the issuance of new or existing water permits would affect the alleged injury. The court rejected this argument, noting the declaratory relief sought would "aid in Plaintiff's overall goal of developing a process for the protection of the Whooping Cranes." Further, the court concluded that the Aransas Project's request for injunctive relief would redress its concerns regarding adequate water supplies for the Cranes.

The court also held that there was sufficient evidence to link Defendants' conduct and the low flow conditions. With respect to the causal link between low flow conditions and Crane mortality, the court concluded that material facts remained. Thus, the court denied both Plaintiff's and Defendants' motions regarding standing.

The court rejected the Defendants' argument that the case was barred by Eleventh Amendment immunity because the relief sought by the Aransas Project was prospective, not retroactive. The court also rejected the argument that Section 9 of the ESA did not extend to suits brought against regulators whose actions indirectly result in a taking of an endangered species. Finally, the court rejected the Defendants' argument that *Burford* abstention applied. In *Burford v. Sun Oil Co.*, 319 U.S. 315, the Supreme Court held that federal courts should abstain from cases involving a complex issue of unsettled state law that is better resolved through a state's regulatory scheme. Applying the *Burford* factors, the court declined to abstain from adjudicating the case. This case has been tried, but the court has not yet rendered a verdict.

Migratory Bird Treaty Act Criminal Prosecutions

United States v. Vu, No. V-11-31, 2011 WL 2173690 (S.D.Tex. June 1, 2011).

Defendant Khanh Vu and Seaside Aquaculture, Inc. were indicted on one count each of knowingly killing 90 brown pelicans in violation of the Migratory Bird Treaty Act

(MBTA). Vu was the owner of Seaside Aquaculture, located in Palacios, Texas. After the indictment, the government filed a motion for the issuance of a summons requiring Seaside Aquaculture to appear and seeking a \$360,000 bond. The amount was based on the total estimated restitution required to replace the 90 pelicans. The restitution expert testified that replacing a single pelican may cost only \$500, but that the loss of 90 birds cannot be calculated by multiplying 90 by \$500. Instead, the expert testified that the loss increases at a higher rate with the loss of so many birds, because an entire community must be replaced.

The defendants argued that \$360,000 was excessive because (1) Seaside had not been profitable for two years, and could not afford to pay, and (2) restitution is not available under the Migratory Bird Treaty Act. The court held that restitution is a potential remedy under the Migratory Bird Treaty Act. The court did, however, reduce the amount of the bond to \$50,000 on the basis of Seaside Aquaculture's ability to pay.

United States v. Brigham Oil and Gas, L.P., 840 F. Supp. 2d 1202 (D. N.D. Jan. 17, 2012).

The government charged seven oil and gas companies operating in North Dakota's Williston Basin with violating the MBTA. The charges were based on the "taking" of migratory birds found dead near the defendants' reserve pits. The defendants moved to dismiss the charges.

Section 703 of the MBTA prohibits the unpermitted taking, killing, or possessing of migratory birds. Unlike the Endangered Species Act, the determination of "take" in the MBTA is narrower in that it does not include the term "harm." The court focused on the statutory language of section 703, and concluded that in "the context of the Act, 'take' refers to conduct directed at birds, such as hunting and poaching, and not acts or omissions having merely the incidental or unintended effect of causing bird deaths." After reviewing MBTA case law from around the country, the court held that the use of reserve pits in commercial oil development is legal, commercially useful activity that stands outside the reach of the MBTA. The court noted that to extend the MBTA to reach activities that indirectly result in the deaths of migratory birds would yield absurd results. For instance, building windows, communication towers and transmission line strikes kill millions of birds each year. Thus, the court concluded that it was highly unlikely that Congress intended to impose criminal liability for such activities.

EPA Administrative Orders

Sackett v. Environmental Protection Agency, 132 S.Ct. 1367 (March 21, 2012).

The Sacketts owned a lot in Idaho. In preparation for construction, they filled a portion of the lot with dirt and rock. The Sacketts then received a compliance order from the EPA, stating that they filled jurisdictional wetlands in violation of § 404 the Federal

Clean Water Act. The order directed the Sacketts to, among other things, immediately restore the site.

The Sacketts sought declarative and injunctive relief in federal district court, asserting that the compliance order was arbitrary and capricious under the federal Administrative Procedure Act (APA) and that it deprived them of due process in violation of the Fifth Amendment. The district court dismissed the claims for lack of subject matter jurisdiction, and the Ninth Circuit affirmed.

The Supreme Court reversed, unanimously holding that the Sacketts may bring a civil action under the APA to challenge the issuance of the EPA's order. The Court concluded that the order was a "final agency action" under the APA because EPA had determined the Sacketts' rights and obligations and because legal consequences, including penalties, flow from the order. In part, this determination was based on the fact that the CWA lacked specific language precluding APA review. The Court also concluded that the order marked the consummation of the EPA's decision-making process because the order was not subject to further agency review.

Texas SIP and Other Air Issues

Luminant Generation Co., L.L.C. v. U. S. Environmental Protection Agency, 675 F.3d 917 (5th Cir. Mar. 26, 2012).

This case involved the review of EPA's disapproval of three provisions of the SIP. The specific provisions at issue concerned the Texas standard permit for minor new source review pollution control projects (the "PCP Standard Permit"). EPA issued its final rule disapproving the Texas PCP Standard Permit in September 2010, more than three years after the applicable statutory deadline. EPA's stated reason for the disapproval was that the PCP Standard Permit did not meet the requirements of Texas' Minor NSR Standard Permits Program. EPA did not reference any provision of the CAA or its implementing regulations as a basis for the disapproval. Numerous petitioners sought review of the disapproval under the APA.

Before the Fifth Circuit, EPA conceded that it failed to provide any basis for disapproval of two of the three provisions. Thus, the court held that, with respect to those provisions, EPA acted arbitrarily and capriciously. With respect to the third provision, the court held that EPA overstepped the bounds of its role in the SIP review process by reviewing the provisions for compliance with state regulations rather than the CAA. The court also rejected EPA's argument that the PCP Standard Permit should be disapproved because its availability was not limited to "similar sources." The court noted that nowhere in the disapproval did EPA cite to a CAA provision or regulation containing such a requirement. The court also rejected EPA's argument that the PCP Standard Permit afforded the TCEQ Executive Director too much discretion, holding that replicability is not a legal standard under the CAA. The court vacated the disapproval, and remanded the matter to EPA.

BCCA Appeal Group v. U. S. Environmental Protection Agency, No. 10-60459, 2012 WL 2299504 (5th Cir. June 15, 2012).

This case involved SIP revisions to the Qualified Facilities Program (QFP) enacted by Texas in 1995 and submitted to EPA for approval in 1996. The plan was resubmitted to EPA for approval in 1998. After EPA issued enforcement letters stating that facilities should comply with rules existing prior to the proposed revisions, an industry group sued in 2008. EPA agreed to a settlement and a consent decree requiring the agency to approve or disapprove the revision within the time period established by the court. On April 14, 2010, EPA issued its final rule disapproving the program.

The BCCA Appeal Group, the Texas Oil and Gas Association, and the Texas Association of Manufacturers, and the State of Texas sought review of the EPA disapproval. EPA argued that the disapproval was proper because the proposed revisions would allow major sources to circumvent applicable requirements, failed to ensure that changes at facilities would not interfere with clean air standards, and that Texas failed to provide EPA with sufficient information to demonstrate that the program met certain statutory and regulatory requirements. The court concluded that EPA's findings are entitled to substantial deference and that the record established that EPA considered the relevant factors in disapproving the program.

Texas Campaign for the Environment v. Lower Colorado River Authority, No. H-11-791, 2012 WL 1067211 (S.D. Tex. March 28, 2012).

This case involves a citizen's suit filed against the Lower Colorado River Authority ("LCRA") pursuant to the federal Clean Air Act. Plaintiff complains of emissions from the Fayette Power Plant. The plaintiffs contend that the LCRA violated the CAA in the following respects:

1. Violating the heat input limits established in prior permits.
2. Violating federal law by making major modifications without complying with PSD permitting requirements.
3. Violating particulate emission rates established in the facility's flexible permit.
4. Violating the emission limits on particulate contained in a prior pre-construction permit.

The LCRA and the City of Austin moved to dismiss all four counts contending that the organization which initiated the suit lacked standing and moved to dismiss three of the four counts contending that they constituted an improper collateral attack on the facility's federal operating permit.

The court found that Plaintiff Texas Campaign for the Environment (TCE), had standing. The Court also found that TCEQ's contention that the federal operating permit (Title V Permit) should have contained certain additional requirements was an impermissible collateral attack on the permit.

An organization has standing to represent one of its members in a suit if: "(1) its members would have standing to sue in their own right; (2) the interests it seeks to protect are germane to its purpose as an association; and (3) neither the claims it asserts, nor the relief it requests, requires the participation of individual members." *Hunt v. Washington State Apple Adver. Comm'n*, 432 U.S. 333 (1977).

Three of the Plaintiff's four counts raise the question as to whether emission limits established by prior permitting are enforceable through the Title V Permit, notwithstanding the fact that the permit contained only emission requirements from the most recent state permit. The court noted that TCE had failed to raise this challenge to the terms and the effect of the flexible permit during the administrative review process for the Title V Permit. The court concludes that the three counts asserting the enforceability of the prior emission standards constituted an impermissible collateral attack on the Title V Operating Permit. TCEQ's allegations brought in an enforcement case were actually challenges to the appropriateness of the provisions in the Title V Permit and thus constituted a collateral attack.

American Petroleum Institute v. Environmental Protection Agency, No. 10-1079 (D.C. Cir. July 17, 2012).

In this case the D.C. Circuit Court of Appeals rejected industry challenges to EPA's most recent NO₂ air quality standards. The challenged rule set a new one-hour National Ambient Air Quality Standard of 100 ppb, and retained the existing annual standard of 53 ppb. The industry groups alleged that the new rule was arbitrary and capricious under the APA because EPA developed it without relying on published, peer-reviewed studies regarding the effects of NO_x on human health. The court rejected this argument, holding that whether peer-reviewed studies are required is within the discretion of the agency.

National Environmental Development Association's Clean Air Project v. Environmental Protection Agency, No. 10-1252 (D.C. Cir. July 20, 2012).

The plaintiffs in this case, including an industry groups, the State of Texas, and several other states challenged an EPA rule setting a new one-hour SO₂ standard of 75 ppb. The court upheld the rule, rejecting the plaintiffs' argument that EPA had "cherry-picked" epidemiological studies to support the rule. The court found that EPA offered a reasonable explanation for why it relied on certain studies and not others.

In addition to the cases above, there are a number of pending lawsuits involving aspects of the Texas SIP, including a petition for review of EPA's disapproval of the Texas Flexible Permits Program (*State of Texas v. U.S. Environmental Protection Agency*, No. 10-60614 (5th Cir. filed July 26, 2010)). Consequently, this area of the law should be closely monitored for future developments.

Superfund

Ashley II of Charleston, LLC v. PCS Nitrogen, Inc., 791 F. Supp. 2d 431 (D.S.C. May 27, 2011).

The case involved 43 acres contaminated with arsenic, lead, low pH and PAHs. Evidence indicated that conditions were attributable to a fertilizer plant which had operated on the site. Pyrite ore was burned to make sulfuric acid, and the slag from the ore contained arsenic and lead contamination had been spread around the site by development activities in intervening years. The court provided an extensive analysis of one defendant's argument that it was not jointly and severally liable based upon the Supreme Court's decision in *Burlington Northern and Santa Fe Railway Company v. U.S.*, 556 U.S. 599 (2009) ("BNSF"). The defendant put forward five theories. Each theory was aimed at demonstrating that a reasonable basis for apportionment existed and supported a several share. The approaches included:

- (1) Amount of material added during the period of ownership by each Potentially Responsible Party ("PRP");
- (2) Volume of contaminants, arsenic and lead contributed to the site;
- (3) Period of ownership or control;
- (4) Analysis of who first moved the material around the site; and
- (5) Statistical approach based upon location of soil samples and the results.

While acknowledging that the harm might be theoretically divisible, the court concludes that the record does not provide a reasonable basis for apportioning. The court took each argument in turn and found that each failed to offer a reasonable basis for apportionment. The court also analyzed the innocent landowner defense asserted by two parties and found that neither party met the required burden.

For those wondering what a court will ultimately do with the innocent landowner defense, the decision provides a sobering reminder of the tripwires that exist in the language of the statute. The court found that the defendant's conduct in moving materials at the site constituted a disposal. Thus, the defendant could not demonstrate that all disposals occurred prior to the acquisition. With regard to the "appropriate care" requirement, the court agreed with EPA that "doing nothing in the face of a known or suspected environmental hazard would likely be insufficient." The court found that the defendant failed to exercise appropriate care because it should have capped, filled, or removed sumps at the time certain structures were demolished.

South Carolina Electric & Gas Co. v. UGI Utilities, Inc., 2012 U. S. Dist. LEXIS 61487 (D. S.C. April 11, 2012).

This case provides a glimpse back in time to when coal gas was a principle source of fuel, describing the gas utility industry from 1850's to mid-20th century. This history sets the stage for a decision on owner/operator liability applying the Supreme Court's decision in *U.S. v. Bestfoods*, 524 U.S. 51 (1988). The case provides an excellent discussion of the behavior of parent corporations relative to factors outlined by the Supreme Court in *Bestfoods*.

Yankee Gas Services Co. v. UGI Utilities, Inc., 2012 U. S. Dist LEXIS 45270, (D. Conn. March 30, 2012).

After reviewing the history of coal gas in America, the court provides a helpful discussion of the distinction between reasonable basis for apportionment under *BNSF* and allocation under 113(f). The court characterizes apportionment as a way of avoiding the joint and several liability that would otherwise result from a successful § 107(a) claim. In contrast, allocation, under § 113(f) is the equitable division of costs among liable parties. The court then employs a helpful metaphor: "To apportion is to request separate checks, with each party paying only for its own meal. To allocate is to take an unitemized bill and ask everyone to pay what is fair."

This case also provides a detailed but interesting application of allocation factors in a case between two owner/operators. This analysis includes consideration of various factors influencing the cost of remediation and affecting the equitable determination of an "owner's share."

United States v. General Electric Co., 670 F.3d 377 (1st Cir. Feb. 29, 2012).

This is a "useful product" case. GE was appealing from a district court decision imposing liability for cleanup costs. The site was the former Fletcher's Paint Works and Storage Facility Superfund site. During the 1950s and 60's, GE used Pyranol, an insulating material containing PCBs, in the manufacture of transformers and capacitors and other electric devices. During this period GE produced Pyranol by refining Aroclors (virgin PCBs) from Monsanto. GE stored Pyranol that did not meet the purity required for its product and labeled the material "Scrap Pyranol."

GE was approached by Mr. Fletcher, a paint formulator. He proposed to buy the scrap Pyranol and use it as a plasticizer in manufacturing of paint. This was a recognized use of PCBs at that time. In fact, Mr. Fletcher bought materials directly from Monsanto as well.

In ten years (through '67), Mr. Fletcher received over 200,000 gallons of GE's scrap Pyranol. Much of the material was shipped in the last year. Evidence showed that GE

controlled shipments and flow of material to Fletcher during that last year. When the GE/Fletcher relationship came to an end, Mr. Fletcher was submitting complaints about the quality of the material and refusing to pay. GE ultimately dropped claims for payment and refused Fletcher's demand to retrieve the material.

On appeal, citing the *BNSF* case, GE asserted that it was entitled to rely on a "Shell" defense to CERCLA liability because the requisite intent to dispose of a hazardous substance was lacking in its dealings with Fletcher.

The Second Circuit disagreed, noting that there are cases in which arranger liability is still proper even though the parties' intent is not obvious. In finding that GE was liable as an arranger, the court focused on three facts:

- (1) The material was not a useful product. GE characterized the material as "scrap" or "waste" Pyranol and "scrap oil." The material was managed and stored in salvage areas. There was no quality control as to the material transferred. There had been no other attempts to market the scrap Pyranol and there was no showing of a viable market. Thus, the court concluded that GE didn't view it as a viable product.
- (2) Reviewing GE's dealings with Fletcher to evaluate element of intent, the court concluded that GE's actions and calculated inactions demonstrated an intent to dispose. The court noted the actions in later years. The increased shipments directed by GE had the appearance of disposal rather than sales. The court also relied upon GE's documented decision to walk away from the relationship and the material.
- (3) The lack of any efforts to reduce spillage. Instead, GE elected to leave material in a location where there was a likelihood of disposal.

Pakootas v. Teck Cominco Metals, Ltd., 2012 WL 1133656 (E.D. Wash. April 4, 2012)

The court considered arguments of Teck that liability for contamination of the Columbia River was divisible and that it was only severally liable for a portion of the costs of addressing the contamination. The court began by reviewing the principles laid down by the Supreme Court in *BNSF* and by lower appellate courts. The court noted that the apportionment inquiry was actually a two-step process: (1) Is the harm "theoretically capable" of apportionment? and (2) What is the actual apportionment? The first question is one of law and the second, one of fact.

The court rejected Teck's efforts to demonstrate that given the nature of slag and sediment that it produced at the site, the constituent metals could not have contributed to the metals issue in the Columbia River. The court concluded that Teck failed to address the entirety of the contamination, the relevant harm, and thus failed to demonstrate that it was a single harm capable of apportionment. The court observed that a single harm is

divisible and susceptible to apportionment when the degree of harm shows proportionality to a party's contribution. Teck did not support its theory of apportionment by considering the entire harm and establishing that its contribution, if any, bore a relationship to the volumes of material or the composition of material generated from other sources. Its theories also failed to account for all of its own sources, including air emissions, and the possible interactions between its materials and those of others.

Hydraulic Fracturing

Strudley v. Antero Resources Corp., No. 2011CV2218 (Dist. Ct., Denver, May 9, 2012).

The case is a toxic tort action involving claims for negligence, negligence per se, nuisance, strict liability, trespass, and medical monitoring trust funds. The Plaintiffs allege that Defendants failed to properly drill and complete three natural gas wells in Silt, Colorado. The Court required plaintiffs, before full discovery and other procedures were allowed, to make a prima facie showing of exposure and causation in accordance with *Lore v. Lone Pine Corp.*, No L-33606-85 1986 WL 637507 (N.J. Sup. Ct. Nov. 18, 1986) and following cases. Specifically, the court issued a Modified Case Management Order (MCMO) requiring Plaintiffs to provide expert opinions regarding causation, studies related to Plaintiffs' exposure, lists of health care providers, and identification and quantification of contamination. The Plaintiffs were given 105 days to comply with the MCMO. Although the Plaintiffs provided evidence of the existence of certain compounds in the air and water around their homes, their expert's opinion was limited to a conclusion that there was sufficient evidence to warrant further discovery. The court found that Plaintiffs failed to provide expert analysis stating the probability of causation between the presence of the compounds and the Plaintiffs' injuries. Because of this, the court dismissed Plaintiffs' claims with prejudice.

Greenhouse Gas Regulation

Angela Bonser-Lain, et al. v. Texas Commission on Environmental Quality, No. D-1-GN-11-002194 (Travis County Dist. Ct.).

This citizen suit sought to force TCEQ to regulate greenhouse emissions under the federal Clean Air Act and the Texas Clean Air Act. The Commission filed a plea to the jurisdiction arguing (1) that the public trust doctrine is limited to the conservation of water, and cannot be applied to air pollutants, and (2) that TCEQ is prohibited from enacting more stringent greenhouse gas regulations than those mandated by the federal CAA. The court rejected both of these arguments. The Commission also argued that it had no authority under the TCAA to regulate greenhouse gases. The court noted that due to ongoing appeals in other cases, including an appeal from another Travis County District Court case, *Public Citizen Inc. v. Texas Commission on Environmental Quality*, Cause No. D-1-GN-09-003426, on appeal before the Austin Court of Appeals, the legal landscape regarding such authority was "uncertain." On that basis, the court held that

TCEQ's refusal to exercise its authority under the TCAA was a reasonable exercise of its discretion. Notwithstanding the fact that TCEQ prevailed as to the outcome, there is a question regarding what the expansion of the public trust doctrine may mean.

Coalition for Responsible Regulation, Inc. v. Environmental Protection Agency, No. 09-1322, 2012 WL 2381955 (D.C. Cir. June 26, 2012).

States and industry groups filed petitions for review of an EPA rule regulating greenhouse gas emissions from motor vehicles, arguing that the rules were based on improper interpretations of the federal Clean Air Act. Specifically, the petitioners challenged the EPA's greenhouse gas endangerment finding, tailoring rule, and tailpipe rule.

The court first addressed EPA's endangerment finding, which EPA issued in a series of rules following the Supreme Court's ruling in *Massachusetts v. EPA*. The court held that the endangerment finding was a rational exercise of agency decision making and was consistent with the CAA. Specifically, the court rejected the argument that the endangerment finding was arbitrary and capricious because EPA did not quantify the concentration at which greenhouse gases endanger public health or welfare. Instead the court stated that EPA's failure to "distill the ocean of evidence" regarding climate change into a specific number was a function of the CAA's precautionary approach, and was not arbitrary or capricious.

The court also rejected petitioners' challenges to the tailpipe and tailoring rules. The court confirmed that, in light of the endangerment finding, EPA was required to apply the greenhouse gas permitting program to major emitters. The court also held that states and regulated industries lacked standing to challenge rules delaying and phasing in programs regulating greenhouse gas emissions.

Best Imagery in an Opinion

Karuk Tribe of California v. U.S. Forest Service, 681 F.3d 1006 (9th Cir. June 1, 2012).

Indian tribe sued the Forest Service under the Endangered Species Act, alleging that the Service failed to consult with federal wildlife agencies prior to authorizing mining activities on federal land. Judge Milan Smith dissented from an opinion ordering the Forest Service to consult with other agencies over whether gold prospecting in the Klamath National Forest would negatively affect fish species. Inserting an illustration from Gulliver's Travels in his dissent, Judge Smith wrote that several of the Ninth Circuit's recent rulings "make poor Gulliver's situation seem fortunate when compared to the plight of those entangled in the ligatures of new rules created out of thin air by such decisions."



Illustration from "Gulliver's Travels" courtesy of the 9th Circuit Court of Appeals.

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Water Rights and the Whooping Crane: *TAP v. Shaw*

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Water Rights and the Whooping Crane: *TAP v. Shaw*

Introduction¹

The Aransas Project v. Bryan Shaw et al., is an Endangered Species Act citizen's suit that is currently pending final decision.² Trial is complete as is extensive post-trial briefing. We expect a written opinion in the next few months.

The *TAP v. Shaw* case concerns a fundamental issue threatening the future of the Texas coast—the failure of the State of Texas to adequately manage Texas surface waters in order to support both economic development inland as well as ecologic and economic activity on the coast. In fact, Dr. Paul Montagna testified at trial that freshwater inflows into Nueces Bay were reduced by water diversion activities resulting in salinities so high that they essentially “killed” that Nueces Bay ecosystem. In short, effective management of Texas's rivers and the water diversions is critical to the future of the Texas coast.

However, in the case of the Guadalupe and San Antonio River systems, there is an extra ingredient in the mix, an iconic endangered species—the Whooping Crane—so rare it nearly went extinct in the early forties when the worldwide population fell to just 16 individuals. Over the following seven decades, the species clawed its way back to 270 birds at the start of the 2008 winter. For the past thirty years, Tom Stehn, the USFWS Refuge Biologist and Whooping Crane Coordinator closely monitored the Cranes on the Aransas National Wildlife Refuge.

Between December 2008 and April 2009, as he had done each year before, Stehn climbed into the Cessna plane every week to conduct his census. However, Stehn quickly realized that the winter of 2008–2009 was not going to be a normal one, as the cranes were leaving their territories too much, and seeking out food and freshwater in unusual places. Stehn began to count individual cranes disappearing from the census—cranes that he knew were there earlier in the winter and that he could recognize by virtue of their strong territoriality and tight family unit. His experience told him that the missing cranes had not simply wandered off, but he still searched long and

¹ *Disclaimer:* The authors are counsel for The Aransas Project, the Plaintiff organization in the case discussed. The views and opinions expressed here are the views of the authors. Co-counsel during briefing and trial were David Kahne, The Law Office of David Kahne; Jeff Mundy, The Mundy Firm; and Patrick Waites.

² All briefs, motions and other filings are available on PACER: *The Aransas Project v. Bryan Shaw*, No. 2:10-cv-00075 (S.D. TX); *Aransas Project v Bryan Shaw*, Nos. 10-40610 & 10-40633 (5th Cir.) (intervention); *In re: Bryan Shaw*, No. 12-40454 (5th Cir.) (Mandamus to recuse).

hard for them, to no avail. It's hard to miss the five foot tall, strikingly white cranes in the flat saltmarshes and grasslands. Stehn knows that once a known crane goes missing and does not reappear on its territory during his subsequent census flights, it is dead. By the end of the winter, he counted 23 mortalities, a total of 8.5% of the flock.

This was by far the highest winter mortality ever recorded, and was confirmed by the discovery of four carcasses. For comparison, between 1938 and 2011, less than twenty crane carcasses had been recovered at Aransas, so four in that one winter indicates very high mortality. Tom concluded that the cause of the high mortality was lack of adequate food and freshwater caused by the very high marsh and bay salinities measured that winter (over 35 ppt). These findings were published in the official USFWS annual report on the Whooping Cranes.

The Aransas Project ("TAP") issued a formal notice of intent to sue and then, after sixty days, filed a citizen suit in federal District Court in Corpus Christi alleging that the TCEQ defendants are liable for violations of Section 9 of the Endangered Species Act ("ESA") because their acts and omissions in management and oversight over the surface water in the Guadalupe and San Antonio Rivers—allowing third parties to divert water—resulted in high salinities in San Antonio Bay and the Aransas Refuge. This caused or contributed to the deaths of the Cranes and was a violation of federal law. TAP asked for comprehensive declaratory and injunctive relief to avoid future violations of the ESA.

The Endangered Species Act

Congress enacted the Endangered Species Act, 16 U.S.C. § 1531 *et seq.*, "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved... [and] to provide a program for the conservation of such endangered species and threatened species...."³ Nearly a half-century ago, Whooping Cranes first were listed under the Endangered Species Preservation Act of 1966 as threatened with extinction.⁴ Three years later they were listed as endangered.⁵ These listings were "grandfathered" into the ESA.⁶

³ 16 U.S.C. § 1531(b).

⁴ 32 Fed. Reg. 4001 (Mar. 11, 1967).

⁵ 35 Fed. Reg. 16047 (Oct. 13, 1970).

⁶ 16 U.S.C. § 1531, *et seq.*, 87 Stat. 884.

Section 9 of the Endangered Species Act broadly prohibits “takes” of all listed endangered species, including the Whooping Crane.⁷ The term “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”⁸ The term “harm” includes “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.”⁹ The term “harass” means “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.”¹⁰ Congress intended to define “take” in the “broadest possible manner to include every conceivable way” in which any person could harm or kill fish or wildlife.¹¹ Congress specifically intended that the Endangered Species Act prohibition against “takes” governs the actions, and failure to act, by all “persons,” including any “officer, employee, agent, department, or instrumentality of ... any State.”¹²

“The plain intent of Congress in enacting [the ESA] was to halt and reverse the trend towards species extinction, whatever the cost.”¹³ “Examination of the language, history, and structure of the legislation . . . indicates beyond doubt that Congress intended endangered species to be afforded the highest of priorities.”¹⁴ The Endangered Species Act (“ESA”) authorizes citizen suits.¹⁵

Procedural History

TAP sent its Notice of Intent to Sue letter in December 2009. TAP filed a lawsuit in March of the following year. The case was in the Corpus Christi division of the Southern District before Judge Janis Graham Jack. TAP named as defendants the three Commissioners of the Texas Commission on Environmental Quality (“TCEQ”), its Executive Director,

⁷ 16 U.S.C. § 1538(a)(1)(B); 50 C.F.R. § 17.31; 55 Fed. Reg. 26114 (June 26, 1990).

⁸ 16 U.S.C. § 1532(18).

⁹ 50 C.F.R. § 17.3. *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995) (upholding definition).

¹⁰ 50 C.F.R. § 17.3.

¹¹ S. Rep. No. 307, 93rd Cong., 1st Sess. 1, reprinted in 1973 U.S. Code Cong. & Admin. News 2989, 2995.

¹² 16 U.S.C. § 1532(13).

¹³ *TVA v. Hill*, 437 U.S. 153, 184 (1978).

¹⁴ *TVA v. Hill*, 437 U.S. 153, at 174.

¹⁵ 16 U.S.C. § 1540(g).

and the South Texas Watermaster, all in their official capacities. Before the TCEQ defendants answered, and before the initial scheduling conference in April, the Guadalupe Blanco River Authority (“GBRA”) moved to intervene, which was immediately granted. Subsequently, seven other entities moved to intervene. The Texas Chemical Council (“TCC”) was allowed to intervene, but the District Court denied the remaining six. The Court set a trial date as exactly one year after the complaint was filed.

The five TCEQ defendants, GBRA and the TCC all filed the inevitable motions to dismiss (12(b)(1) and 12(b)(6)) and to abstain. Defendants and Intervenor challenged every aspect of TAP’s allegations. The parties extensively briefed the issues in responses and replies. Dozens of entities filed amicus briefs urging dismissal. The Court scheduled a hearing on the pending motions in July. The Court heard arguments on Eleventh Amendment immunity, Tenth Amendment, standing, failure to state a valid ESA cause of action and abstention. After oral hearing arguments on each issue, the Court ruled from the bench each time. The Court denied all the motions, explaining that TAP had met all pleading standards, good case law supported the cause of action, and that abstention was now warranted.

Meanwhile, the six entities denied intervention filed an interlocutory appeal to the Fifth Circuit. They managed to obtain a stay of the District Court case pending their appeal, but only after the Court denied the motions to dismiss and abstain. The case remained stayed for seven months for briefing of that appeal. The Fifth Circuit granted intervention to the San Antonio River Authority (“SARA”), but upheld the District Court’s decision with respect to the other five.

After the stay was lifted in March 2011, the court set trial for December of that year. The parties would need to conduct all discovery, prepare their expert case, and witnesses in eight months, which meant a very busy schedule. A total of twenty one experts were designated. There was one *Daubert* challenge, and the Court did not conduct a pretrial hearing reasoning that it was a bench trial. The Court later denied this *Daubert* challenge during trial.

Just prior to the beginning of trial, the Court denied all pending summary judgment motions. The defenses’ summary judgment motions tracked many of the same issues in the motions to dismiss that had been denied in July 2010. TAP’s motion for partial summary judgment on standing was denied on narrow grounds, requiring TAP the present it’s six standing witnesses during trial. This decision was handed out on the first day of trial, which had the attorneys reading a fifty page written decision with one eye and watching the proceedings with the other.

Eight days of trial took place between December 5th and 15th 2011. TAP presented seven lay witnesses and ten experts. TCEQ presented one lay witness and one expert, and the Intervenor presented nine experts.

Post trial, the Defendants and Intervenor filed a motion to have the Judge recuse herself. After this motion was denied by the District Court, a mandamus action to force recusal was filed with the Fifth Circuit. A panel of the Fifth Circuit rapidly denied mandamus one day after TAP submitted its briefing on the issue. The parties filed post-trial closing briefs, responses, findings of fact and conclusions of law in spring 2012. As of the time of writing, the decision is still pending.

Below we discuss several aspects of the litigation: one topic is just a general observation about ESA litigation; the other three topics are specifically related to water rights—namely, why should a regulatory agency be held vicariously liable for an ESA take; why the Senate Bill 3 process is not a ground for a federal court to abstain; and finally, how to attempt to prove that water diversions impact the health of the bays and specifically harm Whooping Cranes.

Did a ‘take’ occur at all?

One strongly contested issue in this case was whether or not Whooping Cranes actually died during the 2008–2009 winter. One can argue that it is good legal strategy in Section 9 ESA cases to deny that a take of the listed species even occurred. That threshold issue was clearly a key part of the defense, and some parties continue to vigorously assert even today that there is no proof that any cranes died, and if any did, it was not due to water diversions.

Most Section 9 cases are based upon prospective takes—that is, if the defendant should undertake the activity they propose, it is likely that a take of a listed species will occur. So for example, if a company cuts down part of a forest, those endangered spotted owls living there will lose important habitat they require to survive, and a take may occur. Individuals of the species will be harmed, injured or die, and the population will decline. Plaintiffs usually ask the federal court to enjoin the proposed activity before it takes place. In such cases, expert opinion is sufficient to establish that a take is more likely than not to occur if defendants proceed with their activities. Courts have issued injunctions under these circumstances even though no individual endangered species has actually died or been injured.

TAP was in the unusual position of alleging a past take—the 23 mortalities in 2008–2009. The staff of the U.S. Fish and Wildlife Service (“USFWS”) had meticulously documented those mortalities in the weekly

census flight reports and in the two longer reports published that year. The methodology and even the documentarian, Tom Stehn, had remained the same for the past thirty years. Similar census flights started back in 1949. Every year the USFWS Crane population numbers are published, and relied upon by every scientist studying this species. Indeed, until this lawsuit was filed, and defense litigation experts hired, no one had ever questioned the accuracy of the USFWS population or mortality numbers.

However, throughout the litigation, and even today, the defense still continue to deny that those deaths occurred. They asserted that a census from the air is too unreliable and cannot be used to determine mortality. They also argued that just because a crane goes missing, it cannot be presumed to be dead. The defense's unsuccessful *Daubert* challenge was in part to strike all testimony that relied on the USFWS census counts because, they argued, the numbers are unreliable. The Court did admit the USFWS publications containing the census results and mortality data, and the Court did allow TAP's experts to rely on that data.

Mr. Stehn was not at first going to testify during trial. But, after hearing repeated references to "Tom Stehn" throughout the first day of trial—with TAP relying on his data, and defense attacking his data—the Court inquired why Mr. Stehn would not be testifying. Both sides had requested that USFWS allow Mr. Stehn to be deposed, but the requests were denied. It is very difficult to get a federal employee to testify in private litigation. Hearing this, the Court ordered a subpoena be issued, and within a few hours Mr. Stehn was in Court and USFWS relented and allowed his testimony.¹⁶

Once on the stand, the Court qualified Mr. Stehn as an expert and ordered that he be paid as an expert witness. Over several hours of testimony, Mr. Stehn described his rigorous census methodology, his meticulous attempts to repeatedly find missing cranes, and his certitude about the data he reported. Stehn was asked by counsel whether the number of dead birds was twenty three:

BLACKBURN: Now, there's been a lot of, I'm sure
you've heard some of the discussion,
there's been a lot of talk about 23 birds

¹⁶ Mr. Stehn had very recently retired, but the Department of Interior regulations apply to current and former federal employees. See 43 C.F.R. §§ 2.80–2.90 (Dept. of Interior regulations implementing *Touhy* request procedures).

dying in 2008–2009. Is 23 your number?

STEHN: If I had to pick a number, it would be higher than 23.

Stehn explained that it would likely be higher than 23 because, when he counts mortalities, he does not generally attempt to detect the mortality losses of the subadult birds, unless he finds a carcass. Subadults are not found in easily identifiable territories or family units. Mr. Stehn went on to testify in great depth about every single crane that went missing that winter, including dates, locations, circumstances, and why he knew each time it was a mortality. To us, it sounded more like a eulogy to those cranes, than expert testimony in federal court. And later again:

THE COURT: Are you satisfied with your mortality figures of '08-'09 year as 23?

STEHN: Yes, as a conservative, as a conservative number, yes, Your Honor.

Consequently, even though members of the defense team still question the mortality data from 2008–2009, the key USFWS employee who actually flew the census flights testified at trial that twenty three or more whooping cranes died in the winter of 2008–2009. He was admitted by the court as an expert witness at the district court's own request, and no *Daubert* challenges against his data were successful.

Why sue TCEQ and not the water rights holders themselves?

TAP sued five officials of the TCEQ—the three Commissioners, the Executive Director, and the Watermaster, each in their official capacities. None of these defendants, or their agency hold any water right permits, nor did they divert water in 2008–2009. TAP could have in theory, but did not, sue the water rights holders themselves. Below, are both benefits and risks as to why TAP used this strategy, and the supporting law.

Water rights are difficult. The owners of water rights treat them as their own property, and strongly defend them as if they were private land. However, all surface water “is the property of the state.”¹⁷ “The waters of the state are held in trust for the public.”¹⁸ Surface water rights are usufructuary,

¹⁷ Tex. Water Code § 11.021(a).

¹⁸ Tex. Water Code § 11.0235(a).

giving an owner only a right of use, not complete ownership.¹⁹ The State vests extensive statutory authority to regulate the use of state-owned surface water with the TCEQ.²⁰

The TCEQ regulates more than 800 active water rights on the Guadalupe and San Antonio Rivers, both certificates of adjudication and water rights permits. The prospect of suing over 800 defendants was unwieldy, so that option was eliminated pretty quickly. It is relatively easy to identify the largest potential water users on paper by looking at the maximum authorized annual use (the number of acre feet per year authorized). But in practice, this use can vary from year to year, and month to month. Municipal use tends to increase dramatically during a drought. Industrial users are generally more consistent. Water that is diverted for spot sales can vary widely depending on demand. So, at this point the two options were, first, to sue anyone who has the potential to divert more than a certain amount of water; or, alternatively, to sue those who only actually used water during 2008–2009 time period.

In the first instance, out of the 800 users in the two river basins, one could choose a threshold, say potential to divert more than 2,000 acft a year. This results in roughly sixteen potential defendants. Then one might eliminate from that list permits for non-consumptive users (e.g. hydropower). This leaves approximately thirteen potential defendants who have potential to divert more than 2,000 acft for consumptive use. That is still a lot of defendants to name in any lawsuit. But is it really fair to sue the two permit holders who have not reported diverting a single drop of water in the past twenty years. Probably not.

So after this analysis, one could identify who the major users were in 2008–2009, and sue them for the take that year, alleging that their actual diversions caused high salinity and harmed the cranes. If successful, one

¹⁹ *Texas Water Rights Commission v. Wright*, 464 S.W.2d 642, 649 (Tex. 1971); *Lower Colorado River Authority v. Texas Dept. of Water Resources*, 638 S.W.2d 557, 562 (Tex. App. 1982), *rev'd on other grounds*, 689 S.W.2d 873 (Tex. 1984) (“The first characteristic of the appropriative right, whether evidenced by a certified filing or by a permit, is that the holder possesses merely a usufructuary right, that is, a right to use a particular part of State water.”); *Edwards Aquifer Auth. v. Day*, 08-0964, 2012 WL 592729 *18, 55 Tex. Sup. Ct. J. 343 (Tex. Feb. 24, 2012). The usufructuary right to appropriate water is only perfected when the water is in fact beneficially used. Tex. Water Code § 11.026; see also *Lower Colorado River Authority*, 638 S.W.2d at 563. Water permits can be cancelled for nonuse. Tex. Water Code § 11.172.

²⁰ See Tex. Water Code §§ 5.013(a)(1); 5.102; 5.120; 11.021; 11.022; 11.081; 11.121–.124, 11.142; 11.143; 11.171–.186.

could obtain an injunction altering the behavior of these parties such as to eliminate the risk of future harm by their activities. But the injunction would not prevent a different existing water right holder—one not a party because they did not divert enough during 2008–2009—from diverting water and causing a take of cranes in subsequent years. Then a plaintiff would have to file a new suit, re-litigate the same issues, and obtain another ruling. The injunction would also not prevent a person from applying for a new water right permit, which TCEQ would not be prevented from issuing, and the problem of water diversions violating the ESA is not solved. Finally, one court held that suing one particular water user, and not distinguishing them from other water users, could be fatal to the claim.²¹

Accordingly, under these circumstances, TAP sued the TCEQ defendants because they own, manage and regulate surface water use. They are the regulators. This is the logic of suing the regulator, as opposed to 800 or more defendant-water rights holders.

TAP’s legal theory—holding a regulator liable for an ESA “taking”—is established law approved in many circuits.

The source of TAP’s legal theory is grounded in the ESA itself. The ESA makes it unlawful for a person not only to “take” an endangered species, but also to “cause” a take to be committed.²² The ESA defines “person” to include “any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State,...any State, municipality, or political subdivision of a State; or any other entity subject to the jurisdiction of the United States.”²³ Relying on this plain language in the ESA, courts in five Circuits have found that a governmental authority may be liable for a take authorized by their regulatory scheme.

²¹ *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep’t of Navy*, 898 F.2d 1410, 1419–20 (9th Cir. 1990)). In that case, the Tribe argued that water diversions by the Navy harmed an endangered fish by reducing the water level in Pyramid Lake. *Id.* at 1419. The Ninth Circuit denied the claim, reasoning that because the Tribe failed “to distinguish the Navy from other users of Truckee River water,” one of whom was the Tribe itself, the Tribe had not proved that the Navy was the cause of the harm to the fish. *Id.*

²² 16 U.S.C. §§ 1538(a)(1)(B), (C); 1538(g).

²³ 16 U.S.C. § 1532(13).

The Fifth Circuit was among the first to approve the legal theory that a governmental regulator may be liable under the ESA, which four other Circuits have affirmed.

Applying concepts of proximate cause and foreseeability, courts have held that government entities violate the ESA when they affirmatively authorize private activities that harm protected wildlife. For example, *Strahan v. Coxe* held that a ‘person,’ broadly defined to include state and local governments, may violate the ESA by permitting or otherwise authorizing the acts of third parties that exact a taking.²⁴

Many cite the *Strahan* case as the origin for the legal theory of regulator liability. However, it is a Fifth Circuit case, *Sierra Club v. Yeutter*,²⁵ that was cited approvingly by the First Circuit as precedent for its holding in *Strahan*.²⁶ *Yeutter* involved a challenge to federal action that allowed tree-cutting in a sensitive habitat, where private third parties did the cutting. Because the case was brought against a federal agency, it involved both Section 7 and Section 9 violations of the ESA. The district court found liability on both Section 7 and Section 9 claims, and issued injunctions, specifically finding that the federal agency’s management practices were harming, and thus “taking” a protected species in violation of the ESA.²⁷ *Yeutter* relied on the ESA provisions that allow suits against any “person” including a governmental entity: “Congress has authorized the use of citizen suits ‘to enjoin any person, including the United States and any other governmental instrumentality or agency (to the extent permitted by the eleventh amendment to the Constitution), who is alleged to be in violation of any provision of ESA or the regulations thereunder.’”²⁸

Importantly, after analyzing the merits of the Section 9 claim, the Fifth Circuit concluded that “the district court did not err in finding that the government violated ESA section 9.”²⁹ The *Yeutter* case has a complex subsequent history, returning several times to the Fifth Circuit on other issues, but at no time did the court reverse its holding on Section 9 liability for the governmental actor.³⁰

²⁴ 127 F.3d 155 (1st Cir. 1997), *cert. denied*, 525 U.S. 978 (1998),

²⁵ 926 F.2d 429 (5th Cir. 1991),

²⁶ 127 F.3d at 163.

²⁷ 926 F.2d at 433.

²⁸ *Id.* at 434 (quoting 16 U.S.C. § 1540(g)(1)(A)).

²⁹ *Id.* at 439.

³⁰ The subsequent *Yeutter* history includes *Sierra Club v. Espy*, 18 F.3d 1202 (5th Cir. 1994) (intervention); *Sierra Club v. Espy*, 38 F.3d 792 (5th Cir. 1994) (other statutes); *Sierra Club v. Glickman*, 67 F.3d 90 (5th Cir. 1995) (scope of injunctive

Courts in four other circuits addressing the issue all have approved that regulators may be liable for ESA violations. In addition to the Fifth Circuit, three other Circuit Courts of Appeal—First, Second, and Eighth—have adopted the *Strahan* interpretation of the ESA.³¹ District courts in these circuits, and in the Ninth Circuit, have also adopted the same reasoning.³² Indeed, although cases seeking to hold regulators liable have failed for other reasons, no court has ever rejected the *Yeutter/Strahan* reasoning.

The TCEQ Defendants' authority is no different from other regulators who have been held liable under the ESA.

Throughout the case, arguments were repeatedly presented that TCEQ defendants have less authority than those regulators who have been held liable in the ESA context. This argument does not square with the reasoning of the courts in other ESA cases. Courts have looked to whether the agency owns the natural resource; whether the agency has a permitting scheme over a natural resource; or whether the agency has regulations governing the resource. The TCEQ Defendants actions fit squarely within the various lines of cases.

For example, in the Fifth Circuit case, the *Yeutter* court held the governmental entities liable when they acted in a proprietary capacity as the landowner.³³ The Forest Service was responsible for the land it owned. Other governmental entities owning land have been held liable for ESA takes.³⁴ Similarly, it is undisputed that surface water is the “property of the state,” which the State authorizes others to use.³⁵

relief and standard of review); *Sierra Club v Glickman*, 185 F.3d 349 (5th Cir. 1999) (other statute); *Sierra Club v. Peterson*, 228 F.3d 559, 561 (5th Cir. 2000) (other statute).

³¹ *Strahan*, 127 F.3d 155; *Animal Welfare Inst. v. Martin*, 623 F.3d 19 (1st Cir. 2010); *Defenders of Wildlife v. EPA*, 882 F.2d 1294 (8th Cir. 1988); *Loggerhead Turtle v. County Council of Volusia County*, 148 F.3d 1231 (11th Cir. 1998).

³² E.g. *Seattle Audubon Soc'y v. Sutherland*, 2007 WL 1300964 (W.D. Wash. May 2, 2007); *Animal Welfare Inst. v. Martin*, 588 F. Supp. 2d 70 (D. Me. 2008).

³³ *Yeutter*, 926 F.2d at 431, 438-39 (U.S. Forest Service's manner of permitting clear-cutting in certain areas of federal timberland impaired endangered species' essential behavioral patterns resulting in take in violation of ESA § 9, which district court was authorized to enjoin pending formulation of a proper timber management plan).

³⁴ See, e.g., *United States v. Town of Plymouth*, 6 F. Supp.2d 81, 84 (D. Mass. 1998) (holding town liable for take of piping plovers caused by private off-road vehicle use on town beach when town “owned approximately 70%” of the beach).

³⁵ Tex. Water Code §§ 11.021, 11.121.

Other courts have reasoned that state officials can be liable for “takes” based on issuance of permits or registrations to a non-governmental actor that engages in an approved activity that causes the “take.”³⁶ The reasoning in *Strahan v. Coxe* is instructive. That case involved a citizen suit claim that Massachusetts officials violated the take prohibition by authorizing use of gillnetting and lobster pot gear that entangled and killed endangered Northern Right whales.³⁷ The First Circuit reasoned that “a governmental third party pursuant to whose authority an actor directly exacts a taking of an endangered species may be deemed to have violated the provisions of the ESA.”³⁸ Like the Massachusetts officials in *Strahan*, the TCEQ Defendants are a governmental third party pursuant to whose authority and pursuant to whose permitting scheme the water permittees are acting.

Still other courts have focused more on the agency’s regulations than on the agency’s authority over permittees who act in accordance with those regulations.³⁹ For example, in *Ramsey v. Kantor*, the Ninth Circuit held that Oregon and Washington fishing regulations may be insulated from ESA take liability if they conform to a fishing plan that has received an Incidental Take Statement under Section 7 of the ESA.⁴⁰ While fishing licenses might be the end product of both the overall plan and the state fishing regulations, the case focused on the adequacy of the underlying state regulations. Likewise, the plaintiffs in *National Wildlife Fed. v. Hodel* challenged regulations adopted by the USFWS that authorized the use of lead shot ammunition by third party hunters.⁴¹ The district court held that the regulations, which resulted in secondary poisoning of bald eagles, caused a prohibited take based on the regulatory authorization itself.⁴² In these cases, the regulations authorized activities such as fishing and hunting without sufficient safeguards to ensure the protection of listed endangered species. The courts held that the state agency could be liable for take based on those regulations.

³⁶ E.g., *Strahan* 127 F.3d 155; *Defenders of Wildlife*, 882 F.2d at 1301 (EPA liable for take based on its authorization of pesticide use through a registration process).

³⁷ 127 F.3d at 164-65.

³⁸ 127 F.3d at 163.

³⁹ E.g., *Ramsey v. Kantor*, 96 F.3d 434, 442 (9th Cir. 1996) (Oregon and Washington fishing regulations); *National Wildlife Fed. v. Hodel*, 1985 U.S. Dist. Lexis 16490, *12-13 (E.D. Cal. 1985) (USFWS regulations on migratory bird hunts).

⁴⁰ 96 F.3d at 442 (citing 16 U.S.C. § 1536(b)(4)(C)).

⁴¹ 1985 U.S. Dist. Lexis 16490, *2-3.

⁴² 1985 U.S. Dist. Lexis 16490, *12-13

The important point is that ESA case law imposes liability on governmental regulators when they own, manage, or regulate the natural resource and when they allow the natural resource to be used in a manner that causes a take. Here, the State of Texas owns, manages, and regulates the surface water in the Guadalupe and San Antonio River basins, and through the TCEQ Defendants, has both a regulatory scheme and a permitting system that, TAP argued, caused a take.

To the extent that state law authorizes activities that cause a violation of the ESA, such law is preempted.

The Supremacy Clause assures the force of the ESA, notwithstanding contrary state law.⁴³ More than a century ago, the Supreme Court expressly held that “a state enactment, even if passed in the exercise of its acknowledged powers, must yield, in case of conflict, to the supremacy of the Constitution of the United States and the acts of Congress enacted in pursuance of its provisions.”⁴⁴

When Congress enacted the ESA, it intended the Act to be as far-reaching as possible and to prevent any taking of an endangered species, “whatever the cost.”⁴⁵ “Examination of the language, history, and structure of the legislation . . . indicates beyond doubt that Congress intended endangered species to be afforded the highest of priorities.”⁴⁶ The law on ESA preemption is clear that Texas’s water permitting scheme cannot trump a federal statute and authorize activities that conflict and violate the ESA.⁴⁷

The bottom line is that the Court found, in a pretrial ruling, that the TCEQ Defendants could be found liable for violation of Section 9 of the ESA. If the Court finds a take, then, at least in theory, the court would be able to issue an injunction to direct the State of Texas to address the needs of the Whooping Cranes with respect to the regulation of water rights in the Guadalupe and San Antonio River systems.

⁴³ U.S. Const. art. VI, cl. 2; see, e.g., *Lorillard Tobacco Co. v. Reilly*, 533 U.S. 525, 540-41 (2001) (Supremacy Clause is the “relatively clear and simple mandate” that allows Congress to “pre-empt[] state action in a particular area”); *Morris v. Jones*, 329 U.S. 545, 553 (1947) (proclaiming that when state law “collides with the federal Constitution or an Act of Congress . . . the action of a State under its police power must give way by virtue of the Supremacy Clause”).

⁴⁴ *Northern Sec. Co. v. United States*, 193 U.S. 197, 347-48 (1904).

⁴⁵ *TVA v. Hill*, 437 U.S. 153, 184, (1978).

⁴⁶ *Id.* at 174.

⁴⁷ See *Strahan*, 127 F.3d at 168 (observing that Massachusetts wisely did not contend that its “commercial fishing regulations, to the extent that they may conflict with the ESA, survive Supremacy Clause analysis”).

Why the Senate Bill 3 process is no basis for *Burford* abstention

A major challenge to this litigation was the request that the federal district court abstain from hearing the case. The four federal abstention doctrines have spawned a large body of case law, but the key one here was the doctrine known as *Burford* abstention. In *TAP v Shaw*, many arguments were presented to the Court in support of abstention, but most often, the defense cited the Senate Bill 3 (“S.B. 3”) process as the most compelling grounds.

The Senate Bill 3 process was created by state law in 2007.⁴⁸ Under this process, a system is established whereby an amount of freshwater inflow is determined for each major bay system. However, as written, the S.B. 3 process exempts existing water rights from being affected by the inflow requirement.⁴⁹ Therefore, while S.B. 3 might have some impact on water inflows relative to permits to be issued in the future, it, by statute, can have no impact on existing water rights. In fact, all of the impacts at issue in this litigation were related to existing, rather than proposed or future, water rights.

As a general matter, the “federal courts’ obligation to adjudicate claims within their jurisdiction [is] virtually unflagging.”⁵⁰ Abstention remains the exception, not the rule.⁵¹ While a district court has the discretion to abstain, the allowable discretion is narrow and must be exercised within the specific limits prescribed by the abstention doctrine.⁵² In particular, *Burford* abstention represents “an extraordinary and narrow exception to the duty of the District Court to adjudicate a controversy properly before it.”⁵³

⁴⁸ Act of May 28, 2007, 80th Leg., R.S., ch. 1430, 2007 Tex. Gen. Laws 5848.

⁴⁹ Section 1.27 of Acts 2007, 80th Leg., ch 1430 2007 Tex. Gen. Laws 5848 (not codified in the Water Code):

“(1) water appropriated under a permit for a new appropriation of water the application for which is pending with the Texas Commission on Environmental Quality on the effective date of this Act or is filed with the commission on or after that date; or (2) the increase in the amount of water authorized to be stored, taken, or diverted under an amendment to an existing water right that increases the amount of water authorized to be stored, taken, or diverted and the application for which is pending with the Texas Commission on Environmental Quality on the effective date of this Act or is filed with the commission on or after that date.” (emphasis added)

⁵⁰ *New Orleans Public Serv., Inc. v. Council of City of New Orleans*, 491 U.S. 350, 359 (1989).

⁵¹ *Wilson v. Valley Elec. Membership Corp.*, 8 F.3d 311, 313 (5th Cir. 1993) (citing *Colorado River Water Conservation Dist. v. United States*, 424 U.S. 800, 817 (1976)).

⁵² *Id.*

⁵³ *Quackenbush v. Allstate Ins. Co.*, 507 U.S. 706, 727-28 (1996).

Burford abstention requires a timely and adequate state forum

In *Burford v. Sun Oil Co.* a regulated party challenged the validity of a Texas Railroad Commission order in federal court, relying on state law as well as Constitutional due process grounds.⁵⁴ The Supreme Court expressed several concerns about federal court review, including the existence of unclear state law and the presence of comprehensive, centralized state administrative procedures that were, in fact, regularly used to review Commission orders. The Court recognized that judicial review of Commission orders was already concentrated in Travis County district courts, giving those judges specialized knowledge.⁵⁵ The Court also recognized that, given the lack of state law clarity, conflicts resulting from different interpretations of state law could be increased if federal courts also reviewed Commission orders.⁵⁶ *Burford* turned on the fact that existing state court review of the Commission's decisions was "expeditious and adequate".⁵⁷

In *New Orleans Public Service, Inc. v. Council of City of New Orleans* ("NOPSI"), in a unanimous opinion, the Supreme Court set an outer limit on *Burford* abstention.⁵⁸ The Court considered an electricity provider's federal claim that federal law preempted a rate-making order by the New Orleans City Council. The district court abstained (and the Fifth Circuit affirmed), but the Supreme Court reversed, stating: "While *Burford* is concerned with protecting complex state administrative processes from undue federal interference, it does not require abstention whenever there exists such a process, or even in all cases where there is 'potential for conflict' with state regulatory law or policy."⁵⁹ The Supreme Court has also stated that "there is, of course, no doctrine requiring abstention merely because resolution of a federal question may result in the overturning of a state

⁵⁴ 319 U.S. 315, 317 (1943).

⁵⁵ *Id.* at 327.

⁵⁶ *Id.* at 333-34.

⁵⁷ *Id.* at 334. The Court reached a similar result, for similar reasons, in *Alabama Public Service Commission v. Southern Railway Co.*, when a regulated company sought to enjoin enforcement of an order by the Alabama Public Service Commission in federal court. 341 U.S. 341 (1951). The Court discussed the right of the railway company to seek judicial review of the order, even to the Alabama Supreme Court. *Id.* at 348. The Court noted the company had not invoked the protective power of the Alabama courts nor shown that the Alabama procedures for review were inadequate. *Id.* at 349. The Court held that, because "adequate state court review of [the] administrative order" was available, abstention was warranted. *Id.*

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⁵⁹ NOPSI, 491 U.S. at 362 (quoting *Colorado River Water Conservation District*, 424 U.S. at 815-16); see also *Baran v. Port of Beaumont*, 57 F.3d 436, 442 (5th Cir. 1995).

policy.”⁶⁰ *NOPSI* recognized a vital premise for *Burford* abstention: “timely and adequate state-court review is available.”⁶¹

The Supreme Court again rejected *Burford* abstention in *Quackenbush v. Allstate Ins. Co.*, where a regulator sought monetary damages for breach of contract by a regulated entity.⁶² The Court stressed that, in only rare circumstances, federal courts can relinquish their jurisdiction in favor of another forum.⁶³ As the Second Circuit stated, “As do all abstention doctrines, *Burford* reflects a ‘complex of considerations designed to soften the tensions inherent in a system that contemplates parallel judicial processes.’”⁶⁴

**Fifth Circuit jurisprudence requires the consideration of several factors,
including a state forum to which the federal court can defer**

In *Wilson v. Valley Electric Membership Corp.*, the Fifth Circuit articulated several factors relevant to assess *Burford* abstention: (1) whether the cause of action arises under federal or state law; (2) whether the case requires inquiry into unsettled issues of state law; (3) the importance of the state interest involved; (4) the state’s need for a coherent policy in that area; and (5) the presence of a special state forum for judicial review.⁶⁵ The more succinct description of this doctrine is that “*Burford* abstention applies when a case involves a complex issue of unsettled state law that is better resolved through a state’s regulatory scheme.”⁶⁶

In *Wilson*, customers of rural electric cooperatives sued to obtain refunds of rate increases that allegedly violated the Louisiana Constitution.⁶⁷ When the Louisiana Public Service Commission initiated a review of the rates, the district court abstained.⁶⁸ The Fifth Circuit affirmed, determining that the case involved only state law issues and local issues of fact and that Louisiana had established a special forum for rate cases.⁶⁹

⁶⁰ *Zablocki v. Redhail*, 434 U.S. 374, 380 n.5 (1978).

⁶¹ 491 U.S. at 360.

⁶² 507 U.S. 706, 709 (1996).

⁶³ *Id.* at 722.

⁶⁴ *County of Suffolk v. Long Island Lighting Co.*, 907 F.2d 1295, 1308 (2d Cir. 1990) (quoting *Pennzoil Co. v. Texaco Inc.*, 481 U.S. 1, 11 n.9 (1987)) (denying *Burford* abstention).

⁶⁵ 8 F.3d at 314; see also *Moore v. State Farm Fire & Cas. Co.*, 556 F.3d 264, 272 (5th Cir. 2009) (listing factors).

⁶⁶ *Moore v. State Farm Fire & Cas. Co.*, 556 F.3d 264, 272 (5th Cir. 2009) (citing *Burford*, 319 U.S. at 332).

⁶⁷ *Wilson*, 8 F.3d at 312.

⁶⁸ *Id.* at 313.

⁶⁹ *Id.* at 314-16.

In a later case, *Lipscomb v. Columbus Municipal Separate School District*, the Fifth Circuit stressed that “*Burford* abstention requires the existence of a state administrative proceeding to which the federal court [can] defer.”⁷⁰ In *Lipscomb*, the plaintiff sought declaratory relief to validate certain leases of land by the state.⁷¹ The federal district court abstained on the grounds that the case required an in-depth examination of Mississippi statutes and constitutional provisions, a task the court believed was best left to the Mississippi courts.⁷² The Fifth Circuit disagreed and reversed, finding that the “federal lawsuit interferes with no state administrative scheme” and that “the Secretary of State has not identified any process by which the validity of the [relevant] leases is adjudicated.”⁷³ Concluding that the lawsuit would not “interfere with Mississippi’s system of regulating [the] lands,” the Fifth Circuit rejected the application of *Burford* abstention.⁷⁴

These Fifth Circuit cases underscore the fact that *Burford* abstention is inappropriate where the state regulatory system does not provide a forum for adjudicating a plaintiff’s federal claim.⁷⁵

One of the more interesting cases is *Sierra Club v. City of San Antonio*—an ESA case where the Fifth Circuit did order abstention on an appeal from the issuance of a preliminary injunction.⁷⁶ In *Sierra Club v. City of San Antonio*, the Sierra Club brought suit against San Antonio and other individual water pumpers of the Edwards Aquifer for “takes” of certain endangered species that depended upon the Aquifer’s water. Specifically, the Sierra Club sought an injunction to prevent the individual pumpers from withdrawing water to the extent necessary to maintain minimum springflows in the Comal and San Marcos Springs.⁷⁷ The district court granted a preliminary injunction to order to regulate the withdrawal of water from the Aquifer (including direct limitations on the municipal withdrawals), and the defendants appealed the preliminary injunction to the Fifth Circuit.⁷⁸

⁷⁰ *Lipscomb v. Columbus Municipal Separate Sch. Dist.*, 145 F.3d 238, 242 (5th Cir. 1998).

⁷¹ *Id.* at 240-41.

⁷² *Id.* at 242.

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*; cf. *Wilson*, 8 F.3d at 316 (holding that, because Louisiana had established a special forum, abstention was not abuse of discretion).

⁷⁶ *Sierra Club v. City of San Antonio*, 112 F.3d 789 (5th Cir. 1997), cert. denied, 522 U.S. 1089 (1998).

⁷⁷ *Id.* at 792.

⁷⁸ *Id.* at 791.

In *City of San Antonio*, the Fifth Circuit recognized “[t]he Supreme Court has described *Burford* abstention as applicable ‘[w]here timely and adequate state-court review is available.’”⁷⁹ The Fifth Circuit ultimately vacated the preliminary injunction on the grounds that Sierra Club was unlikely to be successful on the merits, determining that abstention appeared warranted.⁸⁰ In finding state court review to be available, the Fifth Circuit stressed certain facts that differ markedly from the present case.

First, the Fifth Circuit discussed the 1993 enactment of Texas’s Edwards Aquifer Act and the fact that the Act “specifically address[ed] the preservation of endangered species.”⁸¹ The Texas Legislature expressly gave the Edwards Aquifer Authority the duty to “protect species that are designated as threatened or endangered under applicable federal or state law.”⁸² By contrast, no such express provision exists in S.B. 3—nor any other Texas law—protecting freshwater inflows needed by the Whooping Cranes. This fact was noted by the District Court, which conducted a search of the entire text of S.B. 3, and found no reference to “endangered species” nor “Whooping Cranes.”⁸³ In short, nothing the bill guaranteed that the process would protect cranes nor ensure water would reach their habitat.

As to timeliness, by December 1996, when *City of San Antonio* was in the Court of Appeals, the Edwards Aquifer Authority already had “issued final rules for filing and processing of permit applications, and for critical period management.”⁸⁴ That development represented prompt action, because the *City of San Antonio* lawsuit was filed in June 1996.⁸⁵ By contrast, the S.B. 3 process for river flows and bay habitats the cranes depend upon only just started when the lawsuit was filed, and is yet to be completed.

It is worth noting that the original problem arose in the Edwards Aquifer because of the rule of capture; ground water users could withdraw limitless amounts of water, leaving too little for spring flows (on which the endangered species, and others, relied). The enabling legislation empowered the Edwards Aquifer Authority to limit pumping by all ground water users.⁸⁶ That is, before the Authority existed, users such as the City of San Antonio could pump as much as they wanted, but after state regulation, the City of

⁷⁹ *Id.* at 797 (quoting *NOPSI*, 491 U.S. at 361).

⁸⁰ *City of San Antonio*, 112 F.3d at 793.

⁸¹ *Id.* at 794.

⁸² *Id.*

⁸³ Transcript of Hearing on Motions to Dismiss, Abstain (Jul. 28, 2010).

⁸⁴ *Id.* at 796.

⁸⁵ *Id.* at 792.

⁸⁶ *Id.* at 794; *Barshop*, 925 S.W.2d at 623-624.

San Antonio faced limits on its pumping. The limits were set (in part) to protect the spring flows needed by endangered species.⁸⁷

In those important ways, the Edwards Aquifer Authority legislation created a comprehensive scheme to regulate ground water: (1) the agency expressly had to take into account needs of endangered and threatened species; and (2) all ground water users faced limits on their use—limits that had not previously existed. By contrast, S.B. 3 does not purport to regulate any users with permits dated before September 1, 2007; does not purport to regulate users (such as exempt riparian users) currently exempt from permit requirements; and portends only very limited regulation with respect to permits that may be issued after a future date of TCEQ regulation. Under S.B. 3, no state regulation allows challenges to permits already issued or provides a state agency forum to set limits on any or all users of surface water. Additionally, S.B. 3 does not direct any particular consideration to endangered species.

Sierra Club v. City of San Antonio obviously presented a close case. But if the Edwards Aquifer Authority had been as toothless as, for example, Senate Bill 3, the question would not have been close. In fact, TAP argued that the *City of San Antonio* decision was so distinguishable on the facts, that the case actually supported denial of abstention.

Burford abstention in TAP v Shaw would insulate state actors from violations of federal law

It was an easy argument for the defense to make that a state's interest in water policy is important; it is. Indeed, a state's interest in any policy area—whether water regulation, commercial fishing regulation, or feral animal regulation (those are other ESA cases)—is arguably important. But this consideration alone cannot be the linchpin for a *Burford* judgment; otherwise, state actors engaged in policy-making would forever be insulated from federal court review even when violations of federal law occur. Courts have adjudicated ESA claims without such over-deference to a state's policy

⁸⁷ *City of San Antonio*, 112 F.3d at 794.

programs.⁸⁸ Similarly, courts have adjudicated other types of federal claims that implicate important state policies without over-deference.⁸⁹

The characterization of *Burford* advanced by the defense in this case essentially amounted to federal court abdication to any state administrative policy or procedure, despite federal question jurisdiction and despite violations of federal law; and, it would undercut a federal court's obligation to adjudicate federal claims within its jurisdiction.⁹⁰ Importantly, simply because a state controls its water policy, it cannot follow that endangered species impacted by a state's water policy are forever more exempted from protection. In the pretrial ruling in TAP's case, the District Court refused to abstain.

How to prove that water diversions authorized by TCEQ harm Whooping Cranes

Section 9 prohibits indirect as well as deliberate "takes" of endangered species.⁹¹ Ordinary requirements of proximate causation apply to ESA cases.⁹² Proximate causation exists where a defendant government agency authorized the activity that caused the take.⁹³

⁸⁸ E.g., *Strahan v. Coxe*, 127 F.3d 155, 158 (1st Cir. 1997) (upholding the district court's order to Massachusetts officials to obtain an Incidental Take Permit and to develop a proposal to restrict certain fishing practices in Massachusetts coastal waters); *Palila v. Hawaii Dep't of Land & Nat. Resources*, 639 F.2d 495, 497-98 (9th Cir. 1981) (holding that Hawaii's policy on feral sheep and goats resulted in "takes" of the endangered Palila bird).

⁸⁹ E.g., *Zablocki*, 434 U.S. at 380 n.5 (marriage); *Martin v. Stewart*, 499 F.3d 360, 367 (4th Cir. 2007) (gambling); *Carico Invs., Inc. v. Tex. Alcoholic Bev. Comm'n*, 439 F. Supp. 2d 733, 740-41 (S.D. Tex. 2006) (adult magazines).

⁹⁰ See *Sierra Club v. City of San Antonio*, 112 F.3d 789, 797 (5th Cir. 1997) ("agree[ing] with the Sierra Club" that "a State should not be able to create a regulatory scheme and then claim that federal regulation of the same subject matter does not apply"); cf. *id.* at 801 (Benavides, J., dissenting) ("The appellants' abstention argument amounts to nothing more than a plea for this court to abrogate its duty to enforce a federal right granted to private citizens by Congress because doing so would potentially conflict with important local interests."); *Martin v. Stewart*, 499 F.3d at 364 ("[T]he Supreme Court has never allowed abstention to be a license for free-form ad hoc judicial balancing of the totality of state and federal interests in a case."); *Alabama Public Serv. Comm'n v. S. Ry. Co.*, 341 U.S. 341, 361 (1951) ("But it was never a doctrine of equity that a federal court should exercise its judicial discretion to dismiss a suit merely because a State court could entertain it.").

⁹¹ *Sweet Home*, 515 U.S. at 700, see also *Strahan*, 127 F.3d at 163.

⁹² *Sweet Home*, 515 U.S. at 700, n.13 (O'Connor J., conc.); see also, e.g., *Loggerhead Turtle v. County Council of Volusia County*, 148 F.3d 1231, at 1251 n.23 (11th Cir.

One of the key aspects of TAP's case was expert testimony regarding whooping cranes and the relationship of freshwater inflows to crane mortality. Included among them were three members of the Whooping Crane Recovery Team (out of five from the U.S.), a McArthur Prize winner, a Nobel Prize winner, two winners of the Chuck Yaeger award from the National Fish and Wildlife Foundation, one member of the Science Advisory Committee for S.B. 3, the chair of the Statistics Department at Rice University, and a former Commissioner of the Texas Commission on Environmental Quality.

General Causation: Lower inflows are strongly correlated with higher Whooping Crane winter mortality.

Two of TAP's experts—Dr. Ron Sass and Dr. Kathy Ensor—found a strong statistically significant correlation between winter Whooping Crane mortality and freshwater inflows. These statistical associations support and affirm the causal link and biological explanations that were described by TAP's other experts. None of Defendant's experts provided any other potential explanation of the statistically significant correlations between winter crane mortality and freshwater inflows.

Dr. Sass studied the relationship between freshwater inflow and Whooping Crane mortality. Using Mr. Stehn's mortality data and inflow data from the state, he evaluated the strength of potential correlations. Dr. Sass used the Fisher Exact Probability Test to evaluate whether high mortality is associated with low freshwater inflow. He concluded that low inflows and high mortality are "causally correlated" and "in all cases of high mortality you have low river flow, no exceptions really." Dr. Sass explained that his result was scientifically supported and explained by the biological reasons in the extensive literature that he reviewed.

Dr. Ensor was asked to review Dr. Sass's statistical results, and she confirmed that Dr. Sass correctly and appropriately used the Fisher Test. Dr. Ensor agreed that the result of the Fisher Test (p-value = 0.02) shows that there is a strong association between the level of freshwater inflow into San Antonio Bay and Whooping Crane mortality. Dr. Ensor also performed additional statistical tests on the same set of data used by Dr. Sass, and independently confirmed the statistically significant correlation. These other

1998) (citing *Cox v. Administrator United States Steel & Carnegie*, 17 F.3d 1386, 1399 (11th Cir. 1994)) ("proximate cause is not the same thing as a sole cause").

⁹³ See, e.g., *Strahan v. Coxe*, 939 F. Supp. at 979; *Loggerhead Turtle v. County Council of Volusia County*, 148 F.3d 1231, 1247-53 (11th Cir. 1998).

tests included a Poisson Count Regression, which again found a strong relationship (p-value <0.0001) between low inflows and high mortality.

Notably, Dr. Ensor testified about the use of statistics to prove causation. She explained that statistically significant correlations, such as exist here, can support finding causation when paired with a scientific (in this case biological, or ecological) explanation for that causation.

Specific Causation: From permitting to reduced inflows to increased salinity to bay ecological impacts to harm to Whooping Cranes.

In order to establish specific causation, plaintiff TAP had to track the impact of the river water withdrawals, leading to reduced inflows, to increased salinities, to alterations in bay productivity, to changes in food for the cranes, to the death of the cranes due to impacts of food deprivation.

The deaths of the Whooping Cranes in 2008–2009 were proximately caused by TCEQ Defendants.

The State of Texas owns the surface water, and the TCEQ Defendants manage the permitting scheme, which allows other parties to divert and impound the water. This reduces freshwater inflows into the bay. Plaintiff's experts meticulously explained how current research establishes the biological link between low seasonal inflows and high winter mortality of the Cranes at the Refuge: lowered freshwater inflows cause increased salinity in the Crane habitat, causing decreased bioavailability of blue crabs, wolfberries, and drinking water for Cranes, in turn causing food stress that increases the probability of disease, predation, and other mortal dangers to Cranes.

The TCEQ Defendants are in charge of water diversions on the Guadalupe and San Antonio River systems.

Indisputably, as both a legal and a factual matter, the TCEQ Defendants are in charge of the water diversions of the Guadalupe and San Antonio Rivers, which feed the inflows into San Antonio Bay. In denying the Motions for Summary Judgment, the Court discussed the unambiguous responsibility of the TCEQ Defendants to regulate the use of water. The legal authority is explicit in the Texas Water Code.⁹⁴ This legal authority was further explored and explained by numerous fact and expert witnesses,

⁹⁴ See generally Tex. Water Code §§ 5.013(a)(1); 5.102; 5.120; 11.021; 11.022; 11.081; 11.121-.124, 11.142; 11.143; 11.171-.186.

including Larry Soward, Mark Vickery, Al Segovia, Todd Chenoweth and Margaret Hoffman.

Although former TCEQ Commissioner Larry Soward was the primary witness for the plaintiffs regarding TCEQ's authority, the several TCEQ witnesses called by the plaintiffs as well as those called by the defendants all generally acknowledged certain facts and legal authority. The surface waters of the State of Texas are owned by the State of Texas. No water may be taken from these surface waters except by permit issued by the TCEQ (or its predecessor agencies) or by exemption allowed by the State. Mr. Mark Vickery, the recently retired TCEQ executive director, testified that TCEQ's Division of Water oversees the water permits, including those for the Guadalupe and San Antonio Rivers. He further explained that TCEQ has authority to issue or deny a permit, and the authority to issue a permit with conditions. He affirmed that TCEQ has continuing monitoring responsibilities and also enforcement authority over the water permits. He affirmed that the water permits (including certificates of adjudication) contain language indicating that the TCEQ has the "continuing right of supervision" over permitted water diversions.

Mr. Vickery's testimony was buttressed by that of Mr. Segovia, the recently retired South Texas Watermaster, and Mr. Soward, a former TCEQ Commissioner. Both Segovia and Soward testified that the TCEQ issues water permits for beneficial uses and that the water master's office oversaw those permits for the Guadalupe and San Antonio Rivers. Soward explained that one of the criteria for permit issuance is "not detrimental to the public welfare" and that this gives the TCEQ Commissioners significant discretion. Segovia explained that the amount of the withdrawals during various years was determined by users' self-reporting to the Watermaster.

Water withdrawals continued unabated during 2008–2009. TCEQ did not evaluate the Cranes' need for water, and so certainly took no action to restrict such withdrawals during 2008–2009 in order to reduce or mitigate the impacts of these withdrawals on the Whooping Cranes. Without the authorization and acquiescence of the TCEQ, the withdrawals of the 2008–2009 would not have occurred, and the causation leading to 23 deaths would not have been initiated.

The primary difference between Commissioner Soward's testimony and the staff and TCEQ experts had to do with the extent of existing authority of TCEQ. According to Soward, TCEQ has additional authority, which it did not exercise in 2008–2009, that could help protect the Whooping Cranes. For example, the TCEQ may exercise authority under its emergency powers and the usufructory right of the permit holder can be

modified by the TCEQ operating under its emergency powers. As another example, the TCEQ does not measure (or otherwise know) how much water the exempt users—the domestic and livestock users—divert or withdraw. Indeed, the amount of water is potentially high, given their ability to withdraw unlimited amounts for the authorized uses, which include “vanity” lakes (lakes for aesthetic purposes). As further example, the TCEQ does not cancel unused water rights, despite having the authority. Finally, the TCEQ and Watermaster have broad authority to act during times of water shortage.

Defendants’ witnesses admitted that, generally, TCEQ has exercised regulatory authority to implement a first-in-time, first-in right priority system without considering how diversions adversely affect endangered Whooping Cranes. However, Plaintiff did prove examples where TCEQ has chosen to exercise its authority to depart from this priority system for other purposes not expressly specified in other statutes. For example, during the 2008–2009 time period, the TCEQ allowed the City of Kerrville to ignore the priority system. As another example, the TCEQ has allowed certain oil and gas interests to obtain water in disregard of the priority system (although TCEQ later stopped these temporary permits following complaints from senior users). Consequently, it is clear that the TCEQ has broad authority and continuing supervision over the surface waters to regulate as it sees appropriate; but this authority has simply not been used to protect the Cranes.

There was ample testimony that the State of Texas had substantial authority that could be used to restrict withdrawals to increase bay and estuarine inflows to assist the Whooping Cranes, but that this was not done in 2008–2009. The TCEQ has broad authority and continuing supervision over the surface waters to regulate as it sees appropriate.

Water diversions significantly modify the Whooping Crane habitat by changing its salinity.

Joe Trungale, a registered professional engineering and computer modeler of inflows and bay and estuarine salinities was the primary witness for the plaintiffs on the physical changes (*e.g.*, increased salinity) due to the lowered freshwater inflows due to water diversions under TCEQ-issued permits. Low freshwater flows from the Guadalupe and San Antonio Rivers create higher salinity levels in the estuarine ecosystem of the San Antonio Bay, significantly altering the habitat of the Whooping Crane. Texas has the most complete coastal monitoring system in the world and has developed extensive computer modeling to assess impacts of inflows on salinity. Actual data from a continuous salinity monitor in the bay shows that when inflows

are low, salinities are higher, and when inflows are high, salinities are lower, with a high degree of correlation ($R^2 = 0.695$).

Mr. Trungale performed simulation modeling of the San Antonio Bay system to predict salinity gradients that would occur in response to different freshwater inflow regimes. His simulation modeling relied upon state and federal data sources: First, he used the computer-based model called TXBLEND, developed by the Texas Water Development Board ("TWDB") and used by the TCEQ Bay and Basin Expert Science Teams ("BBEST") groups in the major estuary systems along the Texas coast. The TWDB staff have both calibrated and validated the model for use in the San Antonio Bay system. Second, the TXBLEND model uses inputs from the USGS gauged river flow data for the three most downstream gauges, which is adjusted by TWDB staff to account for changes below the gauges. These gauges already reflect the upstream water diversions. Third, Trungale used the actual water diversion data reported to the South Texas Watermaster and TCEQ, as well as TCEQ's database of water rights, and TCEQ's Water Availability Model. Importantly, GBRA's expert, Dr. Ward, testified that he was confident that Trungale "ran the model correctly" and Dr. Ward took no issue with the numerical results output by the model. In other words, no experts disputed Mr. Trungale's simulation modeling.

Using these sources of information, Trungale was able to use TXBLEND to model three scenarios—three different levels of freshwater inflows to the bay and estuary. The first scenario modeled actual salinities: it used actual gauged inflow data to model the actual salinities in the bay within the 21-year time period Trungale studied. The second scenario modeled no permitted diversions: it used TCEQ's own data to add every reported permitted diversion back into the river inflows for the time period. This scenario reflected what the salinity would have been if there were no permitted diversions anywhere in the basin and all the river water flowed into the bay. The third scenario modeled the full use of certain existing permits: it took actual gauged flows and then assumed that six actual lower basin permits diverted water to the maximum amount permitted. This scenario reflected a realistic, but very conservative, picture of increased water use in the near future.

Trungale modeled each of these scenarios for the period 1991 to 2010 to generate geographical salinity zone maps for the entire bay system. (greener = lower salinities, redder = higher salinities). To analyze the model output, Trungale selected the area of the bay most important for the Whooping Crane, which included the entire designated critical habitat.

Trungale testified that he had no doubt that less inflow means higher salinities, and if permitted diversions reduced inflows, that will further increase salinities. The maps of the three modeled scenarios show dramatic changes in the areas of the bay with high (>25ppt) salinity. Trungale presented a table showing the percentage area of the bay with salinities less than 25 ppt.

Trungale studied how the different scenarios affected bay salinity by comparison to a 25 ppt threshold, one that has particular biological significance. In the months leading up to and during the 2008–2009 winter, the percentage of the bay below 25 ppt declined dramatically from the no-diversion scenario (first column) and the actual inflow scenario (second column). For example, in January 2009, the portion of the bay below 25 ppt dropped from 60% to 26%. And under the increased water use scenario (full use of lower basin permits), for the same month, the area declined further to only 9% of the bay with less than 25 ppt. This same data was also presented graphically. Unsurprisingly, inflows matter to salinity.

Mr. Trungale's modeling reflected years of low flows and consequently high salinities. He explained the pattern of high salinities from actual inflows over the entire 21-year period and demonstrated that the extended periods of low flows corresponded to very high salinities in 1988–1990, and again in 2008–2009. Of note, in addition to the winter of 2008–2009 (8.5% mortality), the three winters of 1988–1989, 1989–1990 and 1990–1991 were all years of high winter whooping crane mortality (4.3%, 3.4% and 7.8% respectively).

In sum, Trungale's modeling confirms how actually permitted water diversions alter the salinity in Whooping Crane habitat. But for the challenged water management practices that allowed diversions in 2008–2009, the salinity in the bay would have been lower. Trungale also confirmed that under the scenario of increased use of existing permits, the bay and habitat will experience longer and more frequent periods of high salinity. Thus, if TCEQ takes no action, salinity likely will increase in the Cranes' habitat at the Aransas NWR.

Increased salinity reduces vital food and water resources for Cranes.

All witnesses testifying on this point agreed that higher salinity levels in the estuary can affect the ecosystem and food sources of the Cranes. Plaintiff's experts additionally confirmed the importance of areas with salinities below 25 ppt. Dr. Paul Montagna, an expert in Texas estuaries from the Harte Institute in Corpus Christi and a top scientific advisor to the TCEQ on the science of estuarine inflows, explained that an estuary is a

place where salt water and fresh water mix, and this characteristic “makes estuaries the most productive environments on earth” with a gradient in habitats from river to ocean. GBRA witness Dr. Slack agreed salinity significantly affects an estuary habitat. Habitats are the environment that supports a species or a community of species.

Dr. Montagna testified that freshwater inflow “creates the estuary conditions in the context of salinity, sediments, dissolved materials, the nutrients, organic matter, and also particulate matters. And the biology, the estuarine resources actually responds to the estuary conditions.” He presented a conceptual model to explain the impacts on an estuary when freshwater inflows are reduced by human activities. Importantly, he agreed that freshwater inflows into Nueces Bay were so reduced by human activities that resulting high salinities essentially “killed” that ecosystem. He elaborated how, even without killing the estuary, reduced inflows and increased salinity can imperil food and water vital for cranes.

San Antonio Bay typically has a “brackish” (salinity between 15–25 ppt) gradient that extends across the entire area, which “means that the entire bay winds up being an especially productive habitat.” It is the extensive geographic range of these salinity mixing zones, mixed by tides, rain, and river flows, which makes the San Antonio Bay a particularly productive system, when it receives sufficient inflows.

Dr. Montagna testified about the lifecycle of the blue crab and its dependence on certain preferred salinity ranges. Blue crabs actually prefer different salinities at different stages in the cycle, so having a healthy salinity gradient enables crabs to flourish during all their life stages, and the salinity gradient across the bay also is important because the young crab depends on it to lead them to the less saline nursery and marsh habitats. Research confirms the preferred salinity zone for blue crabs is a range between 10–25 ppt. Two experts—both Dr. Montagna and also GBRA witness Dr. Miller—testified that this preferred salinity range is related to a number of factors, such as a defense against predation, for better feeding opportunities, and for reduced parasites and diseases. Dr. Montagna testified that, in order to manage San Antonio Bay for blue crabs, he would keep salinities below 25 ppt over as much of the bay as possible.

Dr. Montagna’s expert opinion was reinforced by statistical modeling known as the Boosted Regression Tree (“BRT”) analysis, which enables evaluation of existing Texas Parks & Wildlife Department data from San Antonio Bay. BRT analyzes multiple variables that might impact crab catches (*e.g.*, salinity, temperature, depth, time, dissolved oxygen) to create a regression equation. The results confirmed that the blue crabs have a

preferred salinity range (measured by the probability of finding a crab) of 5–20 ppt, with a “sweet spot” of 18 ppt, with reductions at 22 ppt, and a “sharp drop” above 25 ppt. That regression equation can then be combined with the geographical data to predict the distribution of blue crabs and how distribution changes with salinity.

Dr. Montagna testified that increased salinity, particularly above the 25 ppt threshold, “would reduce the likelihood of Whooping Cranes being able to find blue crab.” According to Dr. Montagna, a salinity-driven shift in “the population distribution of the blue crab could have an effect on the whooping crane.” Of the six variables explored in the BRT model, salinity is of course driven by inflows, and two other variables—dissolved oxygen (in the context of nutrient loading) and temperature—are also related to inflows. No witness denied that the Cranes would benefit from increased freshwater inflows and lower salinities.

Dr. Montagna stated that the maintenance of suitable salinities and habitats in the estuary is critical to the recovery goals for the blue crab promulgated by Texas Parks and Wildlife. These goals are particularly important because blue crab abundances are at historic lows, with declining catch rates documented nationwide, and because the crab populations are highly threatened.

In addition to blue crabs, wolfberries are another critical source food source for the Whooping Cranes that are affected by high salinities. SARA witness Dr. Davis explained how salinity is an important factor for wolfberry production. He also discussed how summer salinity conditions within the marsh are important in fruit production. In general, years with lower summertime salinity lead to increased fall fruit production. Laboratory experiments also confirm that lower salinities are better for wolfberry fruit production.

GBRA witness Dr. Slack agreed that salinity is an important factor for wolfberries. He concluded that “having more freshwater inflows is beneficial to wolfberry production”—particularly “in late summer”—which is part of the period that Plaintiff’s statisticians found significant. Further, Mr. Stehn and Dr. Chavez-Ramirez offered testimony on the negative impacts of high salinities on wolfberries. In short, there was universal agreement that high salinities negatively affect the ecosystem of the wolfberry fruit.

Finally, increased salinities reduce the availability of drinking water within Whooping Crane territories. Dr. Chavez-Ramirez described the simple methodology of using a refractometer to measure salinities out in the field. Over his years of field measurements, he has observed that the cranes would begin to leave the territories and fly to the freshwater ponds when

marsh salinity reached 15 ppt, between 15 and 18 ppt more cranes fly to freshwater ponds, and above 20 ppt all cranes flew to the ponds to drink. Stehn agreed with Dr. Chavez-Ramirez assessments, based on his observations of Cranes at freshwater ponds and his testing of the salinity of the bay and marsh water areas contemporaneous with his flights.

Reduced food and water resources leads to actual injury and death to the Whooping Cranes.

In 2008–2009, a decrease in food sources including the wolfberries and blue crabs, as well as drinking water, resulted in food stress for the Cranes, which in turn led to emaciation, changed behavior, and increased susceptibility to disease and predation. In short, the habitat modification “actually kill[ed] or injure[d]” the Whooping Cranes and also significantly disrupted the Cranes’ “normal behavioral patterns.”⁹⁵

The most important two foods for the Whooping Cranes during the winter are blue crabs and wolfberries. Numerous studies confirm the importance of these two foods. These studies include fecal analyses. Dr. Chavez-Ramirez testified that the results of his thesis showed that, in terms of energetic contribution for the cranes, blue crab was “by far the most important.” Other research also indicates that the blue crab is the Crane’s preferred food source.

Whooping Cranes have been observed to eat other food items; this does not mean, however, that those items are available for the Cranes or will continue to be available in the future. Additionally, it does not mean that food, such as insects, are sufficiently abundant to meet the crane’s energetic requirements. Other food items, such as clams, snails and insects, occasionally show higher utilization, but only over a short period of time and only in certain years. Similarly, based on his years of experience observing the Cranes, Mr. Stehn testified that other foods are inadequate and “it’s my opinion that whooping cranes really struggle when they don’t have their primary abundant food sources of wolfberry and blue crab.” Dr. Chavez-Ramirez opined that without the blue crabs, he doubts that there would be enough food for the Cranes to survive, and that the flock “would either have to move or perish.”

Dr. Chavez-Ramirez testified that crane territorial behavior, including site tenacity, during the non-breeding winter season is only

⁹⁵ 50 C.F.R. § 17.3 (defining harm and harass).

explained as a way for the family unit to procure and defend food sources. This is confirmed by testimony of Dr. Archibald.

Mr. Stehn testified about the habitat conditions at the Refuge in 2008–2009. Wolfberry production in the fall was “notably less than average.” By December 2008, Stehn observed “blue crabs were extremely scarce. And we noticed the whooping cranes were not feeding on blue crabs. What happens is the blue crab level gets so low that it's not energetically, it makes no sense energetically for a whooping crane to keep searching for crabs. And they have to go to other areas to look for food.”

Refuge Biologist Mr. Stehn invited Dr. Chavez-Ramirez to visit the Refuge in the winter of 2009 due to his concerns about the cranes, their behavior, and the mortality he had detected. Stehn described the situation he faced: “I was very, very concerned. I mean, I was seeing a horrible picture of habitat for the whooping cranes that winter, and I was extremely alarmed by it.” Dr. Chavez-Ramirez spent five days making observations of cranes and habitat and collecting data for later analysis.

Dr. Chavez-Ramirez based his expert opinions in part upon his comparison of the 2008–2009 winter with the two winters he had studied for his thesis, one of which he characterized as a “good year” (1992–1993) and one as a “bad year” (1993–1994). The good year had abundant food and no crane mortality, whereas the bad year had lower food abundance and significant mortality (seven deaths). *Id.* During the 2009 visit, he observed very low crab capture rates by the cranes, even lower than his previous “bad year.” He also observed a never-before seen behavior, whereby a parent consuming a crab reacted aggressively when its juvenile approached, and refused to feed the crab to the juvenile, indicating to Dr. Chavez-Ramirez that the parent was suffering from food stress, because normally the parent will feed the juvenile first.

Dr. Chavez-Ramirez also testified as to observations of juveniles during the winter of 2008–2009. When the juveniles first arrive at Aransas, they have conspicuous rusty-brown feathers, which over the course of the winter, they lose through molting until they are almost completely white at the spring migration. While looking at USFWS game camera photographs from the 2008–2009 winter, Dr. Chavez-Ramirez observed that the brown juveniles seemed to be showing slower or delayed molting. Dr. Chavez-Ramirez compared photographs from the same months in 2009 with photographs from 2007. He explained his methodology, and testified as to the differences between the coloration of the two years and the photographic evidence of delayed molting (*i.e.* slower feather replacement). He explained that feather growth in birds is “a very energy expensive activity” and that

“feathers grow more and quicker under good food conditions, and they grow less and at slower rates when there’s decreased food availability.”

Early in the winter, juveniles are “extremely reliant” on the parents to provide food. Parental denial of food to a juvenile could be “could be lethal in some cases.” Parental denial of food and/or aggression toward juveniles could lead to the juvenile’s leaving the family unit and the territory, and would explain the unusual recorded observations of isolated solitary juveniles in years with low food abundance, including 2008–2009, as well as 1993–1994.

In 2008–2009, out of the 23 reported mortalities, 16 were juveniles. Dr. Chavez-Ramirez opined that this indicated food stress because juveniles are less able to procure their own food, and if the parents refuse to feed them enough, then the juveniles are likely to suffer higher mortality. In 2008–2009, Stehn noticed the “very unusual” occurrence that chicks were separating from their parents. He explained that healthy juveniles typically stay near their parents, and when a juvenile separates from its parents, it invariably disappears. Dr. Chavez-Ramirez testified that, of the few occurrences that he has seen solitary juveniles, those were only during “bad” winters. Also, a lack of adequate food and drinkable water in the territories causes the cranes to leave and fly to the uplands and freshwater ponds. Forced movement away from the safety of the territories increases the risk of predation.

Necropsies were performed on two carcasses recovered during the 2008–2009 winter. In the necropsy reports, emaciation is listed as one of the causes of death in each case. These resulting reports are the best evidence of the cause of death of these two cranes, not the speculations of GBRA witness Dr. Stroud. Even so, when looking at the report describing the weight of one of the birds, Dr. Stroud responded, “There is no question it’s emaciated.” Dr. Stroud also agreed that the lack of food or starvation can lead to emaciation and that when a crane does not get adequate food and water, this can lead to infections and death. He agreed that a bird can acquire immune system problems and infection problems secondary to an already compromised body from emaciation or thirst. He further affirmed that nutrition can be a factor in a compromised immune system. In short, GBRA’s expert concurred with the most important point of these necropsy reports, which is that, when these birds died, they were emaciated, indicative of food stress.

Higher salinity levels also force the Whooping Cranes to fly to other sources of freshwater to drink, adversely affecting the Cranes’ energetics. Dr. Chavez-Ramirez described the simple methodology of using a refractometer to measure salinities out in the field. Over his years of field measurements, he has observed that the cranes would begin to leave the territories and fly to the

freshwater ponds when marsh salinity reached 15 ppt, between 15 and 18 ppt, more cranes fly to freshwater ponds, and above 20 ppt all cranes flew to the ponds to drink. Stehn's data confirmed that "when the salinities reached 18 [ppt], cranes were absolutely going to water holes in substantial numbers."

Official USFWS documents supported TAP's proof of causation.

Two official USFWS documents support finding causation in this case: the International Whooping Crane Recovery Plan (2007), and the Spotlight Species Action Plan (2009). These documents demonstrate that crane deaths are reasonably foreseeable when freshwater flows become too low.

The Recovery Plan specifically discusses the need for freshwater inflows into the San Antonio Bay in order to support the habitat of the Cranes:

Freshwater inflows starting hundreds of kilometers inland, primarily from the Guadalupe and San Antonio rivers, flow into whooping crane critical habitat at Aransas; these inflows are needed to maintain proper salinity gradients, nutrient loadings, and sediments that produce an ecologically healthy estuary ... Inflows are essential to maintain the productivity of coastal waters and produce foods used by the whooping cranes. Coastal waters with low saline levels are maintained by these instream flows, providing drinking water for cranes that would otherwise fly inland for freshwater.⁹⁶

The Recovery Plan discusses the cause of reduced inflows. "Upstream reservoir construction and water diversions for agriculture and human use reduce freshwater inflows. Many existing water rights are currently only partially utilized, but greater utilization is expected over time. Water rights continue to be granted on the Guadalupe, and some sections of the river are already over-appropriated."⁹⁷

On March 30, 2007, the Executive Director of the Texas Parks and Wildlife Department signed in concurrence with the findings and opinions of

⁹⁶ U.S. Fish & Wildlife Service, International Recovery Plan Whooping Crane, at 20–21 (3d. Revision, March, 2007), available at http://www.fws.gov/ecos/ajax/docs/recovery_plan/070604_v4.pdf.

⁹⁷ *Id.* at 21.

the Recovery Plan. Indeed, the State of Texas previously recognized the significance of freshwater inflows, with one published study specifically calling for a guaranteed minimum annual inflow of 1.1 million acre feet, and with a similar recommendation from a more recent state study BBEST.

The federal Spotlight Species Action Plan dated August 7, 2009 identifies present or threatened destruction, modification, or curtailment of Crane habitat.⁹⁸ Significant destruction or degradation of the habitat of a listed species meets the definition of “harm” if it results in actual death or injury to any individuals of the species, and would be a Section 9 “take.”⁹⁹ In this USFWS document, threat A.2, states:

At Aransas National Wildlife Refuge (NWR) and throughout the central Texas coast, decreases in freshwater inflows from water diversions and reservoir construction add to the following threats: reduction in available main food items at Aransas NWR, the blue crab (*Calinectes sapidus*) and wolfberry (*Lycium carolinianum*) [and] Increased intervals when winter marsh salinities exceed the threshold of 23 parts per thousand (ppt) thereby decreasing the availability of fresh drinking water for the cranes.¹⁰⁰

Conclusion

The Whooping Cranes have come back from the edge of extinction but are now threatened by the policies and actions of the State of Texas. One of the most interesting aspects of the litigation was the broad membership in The Aransas Project. TAP included Aransas County and the City of Rockport, the Aransas County Republican and Democratic Parties, fishermen and environmentalists and local businesses. TAP found support because the whooping cranes are an indicator of both the economic and ecologic health of the Texas coast. If Texas loses the Whooping Cranes, we Texans will lose our fishery and coastal ecosystem as well. And if the fishery and the cranes are lost, so are the real estate sales and rentals.

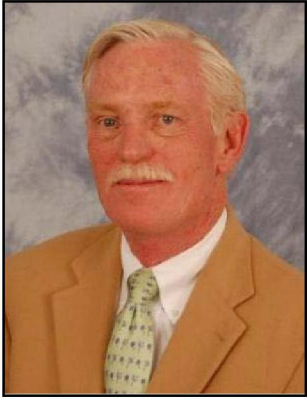
As a society and as a State, we should be able to find our way to allow these unique and endangered creatures to continue to exist with us. TAP presented testimony from two other key witnesses, David Frederick

⁹⁸ USFWS Spotlight Species Action Plan, at 1 (Aug. 7, 2009), available at http://ecos.fws.gov/docs/action_plans/doc3055.pdf

⁹⁹ 50 C.F.R. § 17.3; 16 U.S.C. § 1532(18).

¹⁰⁰ Spotlight Species Action Plan, at 1.

and Andrew Sansom. Both testified about how a Habitat Conservation Plan (or a similar planning process for stakeholders) could be developed to protect the Cranes. But we as Texans are going to have to change the way we look at water and bay and estuarine ecology.



Russell S. Johnson

Partner

Russell Johnson's current practice involves advocacy before the courts, Legislature and administrative agencies on behalf of landowners, businesses, mineral owners and developers seeking to safeguard and benefit from their ownership of land and water resources. His practice emphasizes land use, water rights and the Endangered Species Act.

Mr. Johnson's academic background includes a B.A. from Austin College in biology and chemistry which affords him understanding of the technical and scientific complexities clients face when navigating the rules and regulations imposed on land owners by governmental agencies.

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Practice Areas

- Environmental & Water
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Water Law

Russ was extensively involved in legislative efforts to create the Edwards Aquifer Authority, modernize Texas water with Senate Bill 1 (1997) and Senate Bill 2 (2001) and subsequent legislation related to groundwater management. He continues these efforts at each legislative session. He represents clients in all manner of water rights issues, including conveyance and regulatory compliance. He strives to keep property rights and ownership preserved and protected.

Prior to joining the firm, he represented the City of San Antonio's water system in litigation under the Endangered Species Act challenging San Antonio's use of Edward's groundwater and in litigation successfully defending the City's river boat franchise on the San Antonio River. He has also represented land owners before groundwater districts and in court, including the Texas Supreme Court defending their property rights in groundwater. He is a Board Member of the Texas Tech School of Law Center for Water Law and Policy and an adjunct professor at Texas State University teaching water policy.

Endangered Species Act

While representing the City of San Antonio in the Edwards Aquifer Endangered Species Act litigation, he played a major role in drafting the Edwards Aquifer Authority legislation which prevented the Sierra Club from obtaining injunctive relief limiting the City's water use under the Endangered Species Act.

Russ advises clients on emerging issues relating to the potential listing of the Dune Sagebrush Lizard by the EPA as an endangered species and analysis of a pre-listing plan to diminish threats in connection with oil and gas operations, and the potential impact of the proposed listing of numerous terrestrial and aquatic species in Texas.

Oil and Gas

Russ' experience in water law has proven to be invaluable in advising clients concerning the use and disposal of water in connection with oil and gas hydraulic fracturing operations. He has extensive knowledge and expertise in providing advice to oil and gas service providers concerning exemptions from and compliance with various Groundwater districts' regulation of groundwater usage in the Eagle Ford Shale area. Russ has also represented an oil and gas operator in disputes in the Barnett Shale related to water use and issues with drilling ordinances adopted by various Municipalities.

Representative Experience

- Served as counsel for the City of San Antonio in Sierra Club vs. Lujan and Sierra Club vs. City of San Antonio Endangered Species Act litigation.
- Participated in developing state legislation for management of the Edward's Aquifer and represented the City in the development of SB-1 and SB-2, the Legislature's efforts to update the Texas water law.
- Represented the City of San Antonio in Texas River Barges vs. City of San Antonio successfully defending the City's right to franchise Riverwalk boat rides.
- Represented the Guitar Family in Guitar Holding Co. v. Hudspeth County Underground Water District; decided by the Texas Supreme Court in favor of the family in 2008.
- Represented clients in all manner of water rights issues, including conveyance and regulatory compliance.

Activities

- Board Member, Texas Tech University School of Law Center for Water Law and Policy
- Adjunct Professor, Texas State University, Geography Department (Water Policy)

Presentations & Publications

- *Acquisition of Water for Fracking*, Institute For Energy Law – 3rd Law of Shale Plays Conference, Fort Worth, Texas, June 2012
- *Groundwater for Texans; A discussion of the recent ruling of the highly publicized Day case, how it affects all stakeholders and our complex water policy framework in Texas*, Texas Water Symposium, Trinity University, San Antonio, Texas, May 18, 2012
- *Texas Water Law 101*, Estate Planning Council of Central Texas, Austin, Texas, April 2012
- *Endangered Species Act Versus Texas Water Law*, State Bar of Texas Water Law Conference, San Antonio, Texas, February 2012
- *Balancing Water Demand at the Interface of Agriculture and Urban Growth*, American Agricultural Law Conference, Austin, Texas, October 2011
- *Welcome and Introduction*, Water Law Institute - CLE International, 21st Annual Conference -Texas Water Law, Austin, Texas, September 2011
- *Acquisition and Disposal of Water and Wastewater*, Institute for Energy Law, The Center for American and International Law – 2nd Conference on the Law of Shale Plays, Fort Worth, Texas, September 2011
- *Ethical Issues in Water Law and Regulation*, HalfMoon Seminars - Texas Water Laws and Regulations, San Antonio, Texas, May 2011
- *Industry Discussion: Eagle Ford and Other Shale Plays, Drilling, & Water Issues*, South Texas Money Management, Ltd., 2011 Energy Symposium, San Antonio, Texas, April 2011
- *Water Rights*, 2010 Texas Land Title Institute, San Antonio, Texas, December 2010
- *EAA v. Day Impact on Groundwater Management*, The University of Texas School of Law – 2010 Texas Water Law Institute, Austin, Texas, December 2010
- *Water Law and Regulation - Why it Matters to Clients*, Texas Advanced Paralegal Seminar (TAPS), Austin, Texas, September 2010
- *Groundwater Issues Affecting Property Owners in Texas*, TexasBar CLE – 4th Annual Agricultural Law Course, Lubbock, Texas, May 2010
- *Protecting Landowner Groundwater Rights*, Texas Bankers Association – 2010 Real Estate, Oil and Gas Conference, San Antonio, Texas, April 2010
- *Protecting Landowner Groundwater Rights*, TexasBar CLE – The Changing Face of Water Rights Course, Austin, Texas, April 2010
- *Litigation Update*, CLE International – Texas Water Law Conference, San Antonio, Texas, March 2010

Presentations & Publications

- *Ethic Issues Related to Water*, Texas Water Laws and Regulations (HalfMoon Seminars), Austin, Texas, April 2009
- *Current Issues in Water Marketing - Groundwater Conservation Districts after Guitart*, 19th Annual Outlook for Texas Land Markets, San Antonio, Texas, April 2009
- *Impact of the GMA Process on Landowners and Opportunities to Influence and Challenge Decisions*, TexasBar CLE - The Changing Face of Water Rights in Texas, Austin, Texas, April 2009
- *Exempt Uses of Groundwater and Surface Waters*, State Bar of Texas, Oil Gas and Energy Resources Law Section Report, Vol. 33, Number 3, March 2009
- *Groundwater Property Rights*, Texas & Southwest Cattle Raisers Association Annual Meeting, Fort Worth, Texas, March 2009
- *Panel Discussion: Groundwater Ownership and the Consequences*, 2009 TWCA 65th Annual Convention, Austin, Texas, February 2009
- *Water Marketing*, Texas Water Laws and Regulations, Arlington, Texas, February 2009
- *Groundwater Law and Groundwater Districts*, South Texas Irrigation Conference and Trade Show, Hondo, Texas, January 2009
- *Chapter 4, Groundwater Law and Regulation - Essentials of Texas Water Resources*, State Bar of Texas, Environmental and Natural Resources Law Section, 2008-2009
- *Hot Water Issues Around the State*, The University of Texas School of Law 2008 Texas Water Law Institute, Austin, Texas, December 2008
- *CLE International*, 18th Annual Conference - Texas Water Law Conference, Austin, Texas, September 2008
- *Water 101 - What Everyone Needs to Know About Rights, Ownership and Projects Involving Water*, Texas Advanced Paralegal Seminar (TAPS), San Antonio, Texas, September 2008
- *Groundwater Law, Groundwater Planning and Groundwater Management*, Gillespie Board of Realtors, Fredericksburg, Texas, June 2008
- *Groundwater Law, Groundwater Planning and Groundwater Management*, TexasBar CLE, The Changing Face of Water Rights in Texas, Bastrop, TX, May 2008
- *What the Seller Needs to Know/Water Prices*, CLE International, Water Marketing Conference, San Antonio, TX, April 2008
- *Panel Discussion: The Status of Groundwater Law in Texas*, 2008 TWCA 64th Annual Convention, The Woodlands, Texas, March 2008
- *Short Course on Water*, Texas Association of Realtors, 2008 Water Law Course, Austin, Texas, February 2008
- *Desired Future Condition versus Landowner Groundwater Rights*, 2008 TWCA/TRWA Water Law Seminar, Austin, Texas, January 2008
- *Case Law Update: Groundwater and Surface Water*, TexasBar CLE: The Changing Face of Water Rights in Texas, June 2007
- *"Attorneys of Record" Discuss Major Texas Water Cases*, CLE International - Texas Water Law, April 2007
- *Which Way Did They Go? Texas Groundwater Conservation Districts -- Rules, developments, and cases involving groundwater conservation districts. What kind of rules are being made and what challenges lie ahead?*, Seventeenth Annual Outlook for Texas Land Markets, April 2007
- *The Law of Groundwater and Groundwater Districts*, Texas Realtors 2007 Winter Meeting, February 2007
- *Groundwater Use and Groundwater Districts; Water Rights Sales and Transfers*, Lorman - Water Rights Sales and Transfers in Texas, December 2006
- *Buying and Selling Water: Understanding the Market and Competitive Pressures in Your Area and Documenting the Transaction*, The University of Texas School of Law 2006 Texas Water Law Institute, December 2006

Presentations & Publications

- *Groundwater Law and Groundwater Districts; The Water Market in Texas*, Water Rights Sales and Transfers in Texas, November 2006
- *Groundwater Law and Groundwater Districts*, Lorman - Water Rights Sales and Transfers in Texas, August 2006
- *Precious, Worthless or Immeasurable: The Value and Ethic of Water*, Texas Tech University School of Law and the Center for Water Law and Policy, November 2005
- *The Edwards Water Market*, 2005 Conference on the Edwards Aquifer, Presented by the Witte Museum, March 2005
- *Groundwater Districts: Evolution or Revolution?*, CLE International, Co-Program Director, Texas Water Law, 2005

Professional Background

- St. Mary's University School of Law, J.D. 1977 (with honors)
- Austin College, B.A. 1974
- Admitted to Practice: Texas; United States Supreme Court; United States Court of Appeals for the Fifth Circuit; United States District Court for the Southern and Western Districts of Texas

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Regina M. Buono focuses her practice in the areas of water law, government relations, legislative drafting, administrative law, and corporate and business transactions. She has extensive legislative drafting experience, having worked with the Texas Legislative Council and for Governor Rick Perry. Regina has provided legislative advice for clients on a wide variety of issues, including groundwater rights, motor fuels tax, sales tax exemptions, motor vehicle sales tax, financial regulation, occupational regulation, and the regulation of electric cooperatives and other utilities. She drafted the initial versions of Senate Bill 332, which addressed the ownership of groundwater in the 82nd Legislative Session.

Regina represents clients in all manner of water rights issues, including water permitting matters, water rights disputes, water lease and sale transactions, inverse condemnation proceedings, and regulatory compliance. She also works on matters regarding the regulation and governance of utilities in Texas.

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Activities

- State Bar of Texas
- Austin Bar Association
- Austin Young Lawyers Association
- Austin Public Library Friends Foundation, Board Member
- Women's Chamber of Commerce of Texas

Presentations & Publications

- Co-author, *Endangered Species Act Versus Texas Water Law*, State Bar of Texas Water Law Conference, San Antonio, Texas, February 2012
- Author, *Don't Let Your Manufacturers' Incentives Dry Up: Well Water Alternatives in the Austin Region*, Austin Automobile Dealers Association, Austin, Texas, February 2012
- Speaker, *How to Draft that Bill and Get It Filed*, (with J. Gullahorn, S. Carter and H. Brady), Austin Bar Association, Austin, Texas, January 2011
- Speaker, *The Art of Legislative Drafting*, (with J. Gullahorn, S. Carter and H. Brady), Professional Advocacy Association Texas, Austin, Texas, September 2010
- Author, *Send Your Lobbyist to the Capitol with a Well-Equipped Arsenal*, May 2010
- Author, *Delimiting Culture: Implications for Individual Rights in the Basque Country Today*, 39 TEX. INT'L L.J. 143, 2003

Professional Background

- The University of Texas School of Law, J.D. 2004 (with honors; Article & Notes Editor, *Texas International Law Journal*)
- University of Arkansas, B.A. May 2000; B.A. August 2000 (*summa cum laude*; Phi Beta Kappa)
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Texas Water Law: 2012 Update

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2012 TEXAS WATER LAW UPDATE

I. Introduction

This paper presents a broad overview of Texas water law, with a special focus on issues and developments that have arisen over the last year or so. The first part of the paper describes the basic tenets of the law regarding surface water, and then new or newly prominent issues regarding surface water are addressed. The second half of the paper addresses the same types of questions as related to groundwater. The paper concludes with a review of legislative changes enacted in the 82nd Regular Session of the Texas Legislature in 2011.

II. Surface Water

1. State Owned Surface Water

Except for a few rare grants of water rights from pre-Texas sovereigns (e.g., Spain, Mexico, and the Republic of Texas), surface water is owned by the State and permitted for use pursuant to a statutory appropriation process. The Texas Water Code provides that “[t]he water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed” is state property.¹ Identifying state-owned water is easier after understanding the definition of a watercourse in which state surface water may flow. A “watercourse” is a channel, with well-defined bed and banks, in which water flows as a stream and has a permanent source of supply.² Water need not always be present in the watercourse, and can have only intermittent flows.³ A good rule of thumb is if the river, creek, or stream has a name on a map, the watercourse is likely one in which state-owned water flows.

2. Exceptions from State-Owned Surface Water and the Exemption from Permitting

The exceptions from state-owned surface water include developed water, water reuse, and diffused surface water. “Developed water” is water that is legally reduced to possession and under the control of the owner of an artificial conveyance system. So long as the owner maintains physical control of the developed water, he may sell or further use the water.⁴ “Water reuse” refers to the withdrawal and use of water that is placed into a watercourse for delivery to another place of use, which is allowed by the Texas Water Code in certain situations subject to proper permitting, protection of existing water rights, and in-stream environmental flow requirements.⁵

¹ TEX. WATER CODE § 11.021(a) (West 2008).

² *Hoefs v. Short*, 273 S.W. 785 (Tex. 1925).

³ *See id.*

⁴ *See Guelker v. Hidalgo County Water Control and Improvement Dist. No. 6*, 269 S.W.2d 551 (Tex. Civ. App.—San Antonio 1954, writ ref’d n.r.e.); *S. Tex. Water Co. v. Bieri*, 247 S.W.2d 268 (Tex. Civ. App.—Galveston 1952, writ ref’d n.r.e.).

⁵ TEX. WATER CODE § 11.042.

The domestic and livestock exemption allows a person, without obtaining a permit or going through the water rights adjudication process, to construct on her property a dam or reservoir up to 200 acre-feet in capacity for domestic and livestock purposes.⁶ “Diffused surface water” is discussed below.

3. The Appropriation System

Texas regulates its surface water through the appropriation doctrine of water rights.⁷ The appropriation system authorizes a person to use a specific amount of water, by diversion from a watercourse at a definite location, for a particular beneficial purpose, on a particular tract of land.⁸ An appropriation of surface water does not grant that person ownership of the corpus of the water. A person may not willfully take, divert, or appropriate any state water for any purpose without first complying with chapter 11 of the Texas Water Code.⁹ Violations of chapter 11 can result in civil and administrative penalties.¹⁰

a. Seniority

Chapter 11 uses a seniority system to allocate water during times of shortage. Section 11.027 states “the first in time is the first in right.”¹¹ Thus, each water right is assigned a specific priority date, and more senior water rights holders (those who obtained their right at an earlier date) are entitled to fully exercise their water rights before junior rights holders.

b. Beneficial Use

Chapter 11 lists the purposes for which water may be appropriated, and ranks these purposes in the following order of preference: domestic and municipal, agricultural and industrial, mining, hydroelectric power, navigation, recreation, and “other beneficial uses.”¹² A person authorized to use surface water may only use that water for the beneficial purpose specified in the appropriation.¹³ The water right is not perfected unless the person actually puts the water to that beneficial use, at which point it becomes a vested property right.¹⁴

c. Cancellation

A vested water right can be lost through nonuse over an extended period of time.¹⁵ After notice and hearing, the Texas Commission on Environmental Quality (“TCEQ”) may cancel in

⁶ *Id.* §§ 11.142, .303(a)(2), .307(a); 30 TEX. ADMIN. CODE § 297.21.

⁷ *See* TEX. WATER CODE § 11.022.

⁸ *See id.* §§ 11.023, .025.

⁹ *Id.* § 11.081.

¹⁰ *Id.* §§ 11.082, 11.0842-.0843.

¹¹ *Id.* § 11.027.

¹² *Id.* §§ 11.023, .024.

¹³ TEX. WATER CODE § 11.025. The beneficial use will be set out in the permit, certified filing, declaration of intent to appropriate water, or certificate of adjudication.

¹⁴ *Id.* §§ 11.025-.026, .029.

¹⁵ *See id.* § 11.030 (abandonment of appropriation after successive three year period); *id.* §§ 11.171-.177 (cancellation of permit after 10 years of nonuse).

whole or in part a water right that its holder has not put to beneficial use at any time for a ten-year period immediately prior to the cancellation proceeding.¹⁶ The Texas Supreme Court has upheld the constitutionality of the State's authority to cancel the vested property right on the theory that the property right contains an implied condition subsequent of continued beneficial use; failure to use the water is a violation of the condition subsequent allowing for divestiture of the right.¹⁷ There are some exemptions from cancellation for water rights dedicated to certain conservation programs or plans.¹⁸

4. Water Rights Adjudication

The Water Rights Adjudication Act, codified as subchapter G of chapter 11 of the Water Code,¹⁹ provides the process for quantifying and reconciling the various types of water rights that were granted by the sovereigns existing before Texas became a state (e.g., civil law water rights, riparian water rights, certified filings and other permits). These water rights must be "adjudicated" to determine which of the various claimants to water in a given river segment has the right to use that water based on their previous use. The process allows for an evidentiary hearing and an opportunity to be heard before the TCEQ. The TCEQ makes findings and enters an administrative order defining all the water rights in a given segment of river or stream. The order states the nature of the authorized use, quantity of water, priority of use, authorized diversion point and diversion rate, and other conditions. The administrative order is then filed with a district court for final confirmation by the judiciary. In April 2006, the TCEQ entered an order in the final remaining adjudication, which related to the Upper Rio Grande River. Thus, almost all general stream adjudications for Texas have been completed.

To administer adjudicated water rights, the TCEQ divides the state into water divisions and appoints and supervises a watermaster and watermaster advisory committee for each division.²⁰ The watermaster regulates various aspects of the stream segments in the watermaster's division, protecting existing water rights in times of shortage, preventing waste, and preventing diversion, storage, or use in excess of adjudicated rights.²¹

5. Obtaining a Surface Water Right Permit

Although one might think all state water has already been appropriated, unappropriated water may be available during times of abundance or flood and when a particular water right has been abandoned or cancelled. The following summarizes the process of obtaining or amending a permit.

¹⁶ *Id.* § 11.173(a).

¹⁷ *Tex. Water Rights Comm'n v. Wright*, 464 S.W.2d 642 (Tex. 1971).

¹⁸ TEX. WATER CODE § 11.173(b).

¹⁹ *Id.* §§ 11.301-.341; *In re Adjudication of the Water Rights of the Upper Guadalupe Segment of the Guadalupe River Basin*, 642 S.W.2d 438 (Tex. 1982) (upholding constitutionality of Water Rights Adjudication Act); *In re Adjudication of Water Rights of the Brazos III Segment*, 746 S.W.2d 207 (Tex. 1988) (establishing Water Rights Adjudication Act as the exclusive means for recognizing water rights).

²⁰ TEX. WATER CODE §§ 11.325-.3261.

²¹ *Id.* § 11.327.

To appropriate surface water a person must obtain a permit from the TCEQ.²² The TCEQ must give public notice of the water rights application,²³ and in most cases must conduct a public hearing on the application.²⁴ The permit can be granted only after the person files a proper application and pays the required fees, and only if the applicant shows: (1) unappropriated water is available in the source of supply; (2) the proposed appropriation is intended for a beneficial use, does not impair existing water rights or vested riparian rights, is not detrimental to the public welfare, considers various environmental and water quality assessments, and addresses a water supply need in a manner consistent with the state water plan and the relevant approved regional plan(s); and (3) reasonable diligence will be used to avoid waste and achieve water conservation.²⁵ All applicants for new or amended water rights must develop and submit a water conservation plan and adopt reasonable conservation measures.²⁶

In addition to regular appropriation permits issued under section 11.121, the TCEQ is authorized to issue other more restrictive permits, such as seasonal permits;²⁷ temporary permits;²⁸ contractual permits or amendments under a base permit;²⁹ permits converting an exempt reservoir to other beneficial uses;³⁰ storage permits for reservoir development;³¹ term permits;³² and emergency permits.³³

6. Interbasin Transfers

An interbasin transfer is when water is taken or diverted from one watershed or river basin to another. Section 11.085 of the Texas Water Code requires special TCEQ permits to make interbasin transfers.³⁴ Public notice and special notice to specific stakeholders is required.³⁵ A hearing is required on any application that is contested.³⁶ If your project is going to involve an interbasin transfer, you must consider section 11.085 and the TCEQ rules.

Obviously projects involving surface water incorporate different rules and state agencies than projects involving groundwater. If your project involves surface water, look first to chapter 11 of the Texas Water Code and the TCEQ website and rules.

²² *Id.* § 11.121.

²³ *Id.* § 11.132; 30 TEX. ADMIN. CODE §§ 295.151-.153, 295.158.

²⁴ TEX. WATER CODE §§ 11.132(a), 11.133.

²⁵ *Id.* § 11.134(b); 30 TEX. ADMIN. CODE §§ 297.41-.50.

²⁶ TEX. WATER CODE § 11.1271; 30 TEX. ADMIN. CODE § 295.9.

²⁷ TEX. WATER CODE § 11.137; 30 TEX. ADMIN. CODE § 297.12.

²⁸ TEX. WATER CODE § 11.138; 30 TEX. ADMIN. CODE § 297.13.

²⁹ 30 TEX. ADMIN. CODE §§ 297.14, 297.101 *et seq.*

³⁰ TEX. WATER CODE § 11.143; 30 TEX. ADMIN. CODE § 297.15.

³¹ TEX. WATER CODE § 11.140.

³² TEX. WATER CODE § 11.381; 30 TEX. ADMIN. CODE § 297.19.

³³ TEX. WATER CODE § 11.139; 30 TEX. ADMIN. CODE § 297.17.

³⁴ TEX. WATER CODE § 11.085(a); 30 TEX. ADMIN. CODE §§ 297.18, 295.13.

³⁵ TEX. WATER CODE §§ 11.085(f)-(h).

³⁶ *Id.* §§ 11.085(d)-(e).

III. Recent Issues Related to Surface Water

1. Emergency Orders During Drought

During the 2011 drought, TCEQ, in response to senior calls on various river systems, issued orders suspending diversions by junior water rights permit holders (based on a stated date) but exempted diversions for municipal and power generation purposes.

H.B. 2649, enacted by the Legislature in 2011, added section 11.053 to the Texas Water Code; the new section authorizes the executive director of the TCEQ, during a period of drought or other emergency shortage of water, as defined by commission rule, to temporarily suspend water use rights and adjust diversions of water by water rights holders, in accordance with the priority of water rights established by section 11.027. In ordering a suspension or adjustment, the executive director is required to ensure that any action taken (1) maximizes the beneficial use of water; (2) minimizes the impact on water rights holders; (3) prevents the waste of water; (4) takes into consideration the efforts of the affected water rights holders to develop and implement the water conservation plans and drought contingency plans required by this chapter; (5) to the greatest extent practicable, conforms to the order of preferences established by section 11.024; and (6) does not require the release of water that, at the time the order is issued, is lawfully stored in a reservoir under water rights associated with that reservoir.

Section 11.053 required the TCEQ to adopt rules to implement the section. The rules were adopted on April 11, 2012, and took effect May 3, 2012. They do not apply to any water rights in a watermaster area created in or under chapter 11 of the Texas Water Code. The rules offer additional detail regarding the conditions under which the executive director may temporarily adjust the diversion of water by water rights holders or suspend water rights holders' right to use the water, as well as the required contents of a suspension or adjustment order. They also permit the executive director to issue an order without notice and an opportunity for hearing. Given that the suspension orders in the spring and summer of 2011 had exempted diversions for municipal and power generation purposes, many people expected these exceptions to again be mentioned in the rules. Instead, however, the rules include some analysis related to preference of use and public health, safety, and welfare impacts of suspensions, which may provide greater-than-expected discretion to the TCEQ executive director. Given this discretion and previous actions exempting municipal and power generation water use from priority suspensions, water rights holders should assume that suspensions in times of drought may not follow the strict first-in-time, first-in-right mandate of the prior appropriations doctrine.

2. The Impact of the Endangered Species Act in Texas

a. The Aransas Project v. Brian Shaw

In March 2010, The Aransas Project ("TAP"), an alliance of citizens, organizations, businesses, and municipalities seeking "responsible" water management of the Guadalupe River System filed suit against the TCEQ alleging violations of the federal Endangered Species Act ("ESA").³⁷ Specifically, the TAP lawsuit alleges that the TCEQ violated section 9 of the ESA,

³⁷ See Original Complaint for Declaratory and Injunctive Relief, THE ARANSAS PROJECT, Plaintiff, v. Bryan SHAW in his official capacity as Chairman of the TCEQ, and Buddy Garcia and Carlos Rubinstein, each in their

and that the State of Texas was to blame for alleged deaths of whooping cranes in 2009 by failing to ensure sufficient freshwater inflows into the marshes where the cranes live.³⁸ TAP argues that the State is causing harm by changing the habitat, affecting the availability of food and, ultimately, causing the death of whooping cranes in the way that it “manages” the water inflows on the Guadalupe and San Antonio River Systems, which supply fresh water to the winter habitat of the whooping crane.³⁹

TAP alleges that the TCEQ defendants have “a duty to ensure the water diversion activities authorized are consistent with applicable laws and regulations, including the ESA, and that authorization of such activities does not cause a “take” of species protected by the ESA.”⁴⁰ The lawsuit specifically points to existing permit rights and withdrawals from the San Antonio and Guadalupe River Systems as the cause of the ESA violations. TAP alleges that the TCEQ defendants, and their oversight of “permitted and unpermitted diversions” from the San Antonio and Guadalupe rivers, continue to “ignore the issue of environmental flows” and have “over-allocated and mismanaged” the water resource.⁴¹ While TAP characterizes its claims as merely seeking to establish a “planning process” to prevent “takes” of whooping cranes, its direct attack on existing water right holders is captured by the following two statements in their federal court pleading:

204. It is reasonably foreseeable that future use of existing water permits and exemptions authorized by Defendants will result in additional prohibited takes of Whooping Cranes unless and until such activities are enjoined.

205. Water use activities authorized by Defendants are so likely to result in prohibited takes of Whooping Cranes that they must be enjoined under the ESA.⁴²

Despite its benign characterization of the planning process it seeks, TAP acknowledges that the plan “may include reduction of existing water uses or addition of special conditions to existing permits.”⁴³

Trial in the case began in Corpus Christi on December 5, 2011, and concluded on December 15, 2011. The State of Texas defended the litigation primarily based on its lack of legal authority to change, condition, or modify permits previously issued to appropriate state water. TAP did not bring its lawsuit against appropriators. The lawsuit is directly against the state regulatory agency responsible for managing the permit system and, despite assurances by the plaintiffs to the contrary, seeks fundamental changes in those permits to address the alleged impacts of low flows from the rivers to the habitat of the whooping cranes.

official capacity as Commissioners of the TCEQ, and Mark Vickery in his official capacity as Executive Director of the TCEQ, and Al Segovia in his official capacity as South Texas Watermaster, Defendants. 2010 WL 2003720 (S.D. Tex.) (hereinafter, “Original Complaint, *Aransas Project v. Shaw*”).

³⁸ *Id.* at Parts V (D), VI.

³⁹ *Id.*

⁴⁰ *Id.* at Part III, para. 15.

⁴¹ *Id.* at Part V(D), para. 81-84.

⁴² Original Complaint, *Aransas Project v. Shaw* at Part VI, para. 204, 205.

⁴³ *Id.* at Part VIII, para. G.

In essence, the litigation seeks to implement a process to modify the existing state prior appropriation system and over 100 years of precedent on how water rights are managed in Texas. It would also impose a federal mandate on diversions by recognizing a superior obligation to allow water to flow to the bays and estuaries relied upon by the whooping crane. Professor David L. Sunding of the University of California at Berkeley testified on behalf of the defendants that the total economic loss that could result from calculated fresh water in flow requirements could exceed \$6.7 billion over the next 50 years.⁴⁴

Most importantly, a decision favorable to the plaintiffs would stand as a leading case where the ESA has been applied to overturn previously authorized activities undertaken and relied upon historically. Other cases involving interruption of water service or limits on the exercise of rights have typically involved contracts for delivery that are due to be renewed, re-permitting, or other triggering events resulting in application of ESA review to the decision-making process. The TAP litigation, in contrast, represents a claim seeking relief which would undo previously authorized diversions, many which predate the adoption of the ESA. Assuming such a decision stands, the first priority for all water and all river systems in Texas may end up being for the benefit of endangered species.

Post-trial briefs and post-trial response briefs have been filed. A decision is expected later this year.

b. Potential Impact of the ESA: What's Coming For Texas?

i. The Listing Process

In order to fully understand the many ways the ESA could affect water law and rights in Texas, it is helpful to take a closer look at the listing process pursuant to which a species becomes—along with its designated critical habitat—protected under the Act.

Section 4 of the Act requires that the decision to list a species as endangered be based solely on the basis of their biological status and threats to its existence. When evaluating a species for listing, the U.S. Fish and Wildlife Service (“FWS”) considers only these five factors: (1) damage to, or destruction of, a species’ habitat; (2) overuse of the species for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing protection; and (5) other natural or human-related threats that affect the continued existence of the species.⁴⁵

The Act authorizes an interested person to petition the FWS to add a species to the list of endangered species or to designate critical habitat.⁴⁶ To the maximum extent practicable, the FWS, within 90 days of receiving a petition, is required to make an initial finding as to whether the petition presents substantial scientific or commercial information indicating that the

⁴⁴ Expert Report of David L. Sunding, Ph.D., 6 (Aug. 1, 2011) (on file with the authors).

⁴⁵ 16 U.S.C.A. § 1533(a)(1); U.S. Fish and Wildlife Service, “ESA Basics: More Than 30 Years of Protecting Endangered Species,” Arlington, Virginia, June 2011, available at <http://www.fws.gov/endangered/esa-library/index.html> (last visited July 5, 2012).

⁴⁶ 16 U.S.C.A. § 1533(b)(3)(A), (D).

petitioned action may be warranted.⁴⁷ Within 12 months after receiving such a petition, FWS must make a finding as to whether the petitioned action is warranted, not warranted, or warranted but precluded by higher priority actions.⁴⁸ If action is warranted, it publishes a rule proposing listing.⁴⁹ Within one year of the publication of such a rule, FWS must publish a final regulation on whether to place the species on the list, or invoke an automatic six month extension for making its determination.⁵⁰ FWS may also act on its own initiative, something that rarely, if ever, happens.

If FWS determines that a species warrants listing but is precluded by other listing activities, it designates the species as a candidate for listing. For years the FWS avoided making final determinations on listings by designating species as candidates for listing. By November 2010, the list of species designated as candidates for listing contained 251 species.⁵¹ In addition, hundreds of petitions had yet to be reviewed for initial findings.

WildEarth Guardians filed multiple complaints for declaratory and injunctive relief alleging that the Secretary of the Interior had failed to comply with his statutory duty to make findings and decisions. In May 2011, the FWS and WildEarth agreed to a settlement plan that will require FWS to make a final determination on ESA status for 251 candidate species by September 2016.⁵² The district court approved the settlement agreement on September 9, 2011.⁵³ Under the agreement, FWS cannot continue to conclude that listing is warranted but precluded for species already on the candidate list. The settlement establishes a specific deadline by which a decision to list or not must be made for every species designated a candidate. The result will be a sudden increase in the number of listed species and designated critical habitat and new limitations on previously lawful activity.

ii. Texas Mussels

In December 2009, the FWS, acting on petitions to list submitted by WildEarth Guardians, made a 90-day finding that listing nine species of freshwater mussel found only in Texas may be warranted.⁵⁴ This finding triggered the requirement that the FWS review each species' status and make a listing determination within 12 months.⁵⁵ In October 2011, the FWS issued its 12-month finding on five of the nine species petitioned, finding that listing was warranted.⁵⁶ However, listing was precluded by higher priority actions—presumably the 250-

⁴⁷ *Id.*

⁴⁸ 16 U.S.C.A. § 1533(b)(3)(B).

⁴⁹ 16 U.S.C.A. § 1533(b)(5).

⁵⁰ 16 U.S.C.A. § 1533(b)(6).

⁵¹ Annual Description of Progress on Listing Actions, 75 Fed. Reg. 69,222 (Nov. 10, 2010).

⁵² *In re Endangered Species Act Section 4 Deadline Litigation*, Stipulated Settlement Agreement (May 10, 2011) available at http://www.wildearthguardians.org/site/DocServer/FWS_ESA_Settlement_Agreement_As_Filed_5.10.11.pdf?docID=2493&AddInterest=1262 (last accessed July 5, 2012).

⁵³ Order Granting Joint Motion for Approval of Settlement Agreement and Order of Dismissal of WildEarth Guardians' Claims (Sept. 9, 2011).

⁵⁴ 90-Day Finding on Petitions To List Nine Species of Mussels From Texas as Threatened or Endangered With Critical Habitat 74 Fed. Reg. 66260 (Dec. 15, 2009).

⁵⁵ *See id.*

⁵⁶ 12-Month Finding on a Petition to List Texas Fatmucket, Golden Orb, Smooth Pimpleback, Texas Pimpleback, and Texas Fawnsfoot as Threatened or Endangered, 76 Fed. Reg. 62,166 (Oct. 6, 2011).

plus candidate species that are subject to the above-referenced settlement plan. The five species of mussel are: (1) Texas Fatmucket (*Lampsilis Bracteata*); (2) Golden Orb (*Quadrula Aurea*); (3) Smooth Pimpleback (*Q. Houstonensis*); (4) Texas Pimpleback (*Q. Petrina*); and (5) Texas Fawnsfoot (*Truncilla Macrodon*). The chief threats to the mussels are habitat loss and degradation caused by impoundments, sedimentation, dewatering, sand and gravel mining, chemical contaminants, and off-road vehicle use. As of July 11, 2012, the other four mussels remain under review by the FWS.⁵⁷

If all of these mussels are ultimately listed as endangered, virtually every river basin in Texas—except for the Red, Canadian, and Sulphur basins—will likely have been determined to have historically provided habitat for the species, subjecting these areas to potential FWS oversight with regard to all aspects of river and water management. The impacts could be dramatic and profound—not only in the context of new or proposed activities or development—but, if the Aransas project lawsuit is successful, for all existing water rights and activities authorized or operating pursuant to authorizations obtained long before the mussels became protected species.

iii. Texas Salamanders

The FWS has proposed as candidates for listing as endangered four species of salamander that occur in Bell, Williamson, and Travis counties. The Georgetown salamander, Salado salamander, Austin blind salamander, and Jollyville Plateau salamander are on the candidate list, and a proposal for listing is considered likely in the near future. By letter dated September 19, 2011, the FWS notified Susan Combs, Texas State Comptroller, that the agency was “providing early notification to interested parties that we are preparing proposals to add these species to the endangered and threatened species list and to designate critical habitat for them in accordance with the Act.”⁵⁸ FWS lists threats including habitat loss, modification, degradation, and fragmentation within their occupied and historical ranges as justification for the listing. It adds that “threats to water quality and quantity are of particular concern as all four species require clean water from the Edwards Aquifer for survival.”⁵⁹

The potential impact on water resource use and development should be readily apparent. The City of Austin, in particular, has already experienced issues related to the Jollyville Plateau salamander in connection with its proposed construction of a 40-foot wide, 100-foot deep shaft to use as a staging point to excavate an eight-mile underground tunnel to serve a planned water treatment plant near Lake Travis. The City of Austin has been working on a CCAA with FWS but has been subjected to at least two lawsuits challenging the City’s right to build the pipeline without endangering the environmentally fragile area of western Travis County, which is home to the Jollyville Plateau salamander. The goal of the litigation is to prevent the construction of the tunnel, which is necessary to move water to the water treatment plant. Similar battles can be expected in connection with any other large infrastructure project in or around areas deemed to be habitat for the species, if it is ultimately listed.

⁵⁷ Status updates for individual species under review may be found on the FWS’s endangered species database, which is available at <http://www.fws.gov/endangered/>.

⁵⁸ Letter from Adam Zerrenner, Field Supervisor, U.S. Fish and Wildlife Service, to Susan Combs, Texas State Comptroller (Sept. 19, 2011)(on file with author).

⁵⁹ *Id.*

iv. Pending Petitions to List Species

By the Comptroller's count, there are 51 species found in Texas petitioned to be listed as endangered and awaiting a 12-month finding by the FWS as to whether listing is warranted.⁶⁰ Of these, 11 are fish species, five are amphibian species, six are mussels, two are crustaceans and at least one of the insects petitioned lives in an aquatic environment.⁶¹ Thus, 25 of the petitioned species have a direct water connection. The importance should be clear: protection of endangered species will have a profound effect on water issues, water law, water rights, water use, water resource development, protection of water quality, and the location and density of urban growth.

IV. Groundwater

1. Definition of Groundwater

Groundwater is water percolating below the surface of the earth.⁶² The term includes artesian water, or water confined under pressure by an impermeable geological layer, although artesian water is subject to a few additional requirements in the Texas Water Code.⁶³ Groundwater does not include “underflow,” which is water that flows through the soil, sand, and gravel in the bed of a surface watercourse and is hydrologically connected to that surface watercourse.⁶⁴ Groundwater also does not include water in confined subterranean channels and streams that have all the characteristics of a surface watercourse.⁶⁵

2. The “Rule of Capture”

Projects involving groundwater typically involve landowners with property rights to that groundwater. “Historically, landowners have had property rights in the water beneath their land.”⁶⁶ This history begins with the Texas Supreme Court’s annunciation of the “rule of capture” in *Houston & Texas Central Railway Co. v. East*:

An owner of soil may divert percolating water, consume or cut it off, with impunity. It is the same as land, and cannot be distinguished in law from land. So the owner of land is the absolute owner of the soil and of percolating water, which is a part of, and not different from, the soil.⁶⁷

The rule of capture essentially provides that “landowners have the right to take all the water they can capture under their land and do with it what they please, and they will not be

⁶⁰ Species Under Review for Twelve-month Finding <http://texasahead.org/texasfirst/species/watch/#twelve> (last visited July 11, 2012).

⁶¹ *See id.*

⁶² TEX. WATER CODE ANN. § 36.001(5).

⁶³ *Id.* § 11.202 (prohibiting waste of artesian water and requiring approval from TCEQ for withdrawal in certain circumstances).

⁶⁴ *Id.* § 11.021(a); 30 TEX. ADMIN. CODE § 297.1(55); *Tex. Co. v. Burkett*, 117 Tex. 16, 296 S.W. 273, 276 (1927); *Pecos County Water Control and Improvement Dist. No. 1 v. Williams*, 271 S.W.2d 503 (Tex. Civ. App.—El Paso 1954, writ ref’d n.r.e.).

⁶⁵ *Denis v. Kickapoo Land Co.*, 771 S.W.2d 235 (Tex. App.—Austin 1989, writ denied).

⁶⁶ *Barshop v. Medina County Underground Water Conserv. Dist.*, 925 S.W.2d 618, 623 (Tex. 1996).

⁶⁷ 81 S.W. 279, 281 (Tex. 1904).

liable to neighbors even if in doing so they deprive their neighbors of the water's use.”⁶⁸ The rule of capture is essentially a right of no liability for capturing all the water you can from beneath your property. The rule of capture has consistently been interpreted to provide landowners “absolute ownership” of the groundwater below their land.⁶⁹ Once groundwater is withdrawn from its underground source it becomes “personal property subject to sale and commerce.”⁷⁰

3. Limitations on the Rule of Capture

There are limitations on the rule of capture. First, a landowner cannot capture and use groundwater to maliciously injure a neighbor or in a manner that constitutes wanton and willful waste.⁷¹ Second, an action for damages lies against a landowner whose negligent pumping of groundwater causes subsidence of neighboring land.⁷² Third, restrictive covenants or municipal ordinances may prohibit drilling of water wells and may limit a landowner's use of groundwater.⁷³ Finally, the rule of capture is subject to the State's duty to protect the public health and welfare and to preserve natural resources under the Conservation Amendment, section 59, article XVI of the Texas Constitution,⁷⁴ which duty the State satisfies through groundwater conservation districts.

4. The Major Limitation: Groundwater Conservation Districts

Nine major aquifers supply about 97 percent of the groundwater used in Texas, with 21 minor aquifers supplying the other three percent.⁷⁵ These aquifers vary in volume of water stored and ability to recharge. Because each aquifer formation is unique, and because rainfall varies widely across the State from east to west, the State's preferred method of groundwater

⁶⁸ *Sipriano v. Great Spring Waters of Am., Inc.*, 1 S.W.3d 75, 83 (Tex. 1999).

⁶⁹ See *City of Sherman v. Pub. Util. Comm'n*, 643 S.W.2d 681, 686 (Tex. 1983) (“The absolute ownership theory regarding groundwater was adopted by this Court in [*East*]. A corollary to absolute ownership of groundwater is the right of the landowner to capture such water.”); *Friendswood Dev. Co. v. Smith-Sw. Indus., Inc.*, 576 S.W.2d 21, 25 (Tex. 1978) (“[In *East*,] this Court adopted the absolute ownership doctrine of underground percolating waters.”); *id.* at 30 (“ownership of underground water comes with ownership of the surface; it is part of the soil”); *City of Corpus v. City of Pleasanton*, 276 S.W.2d 798, 800 (Tex. 1955) (“percolating waters are regarded as the property of the owner of the surface”); *Corzeli v. Harrell*, 186 S.W.2d 961, 964 (Tex. 1945) (“the law of capture . . . is recognized as a property right”); *Evans v. Ropte*, 96 S.W.2d 973, 974 (Tex. 1936) (“It seems almost universally recognized that a right created by a grant to enter upon land and take and appropriate the waters of a spring or well thereon amounts to an interest in real estate In all events, it is an interest in land.”); *Tex. Co. v. Burkett*, 296 S.W. 273, 278 (Tex. 1927) (“In other words, in so far as this record discloses, they were neither surface water nor subsurface streams with defined channels, nor riparian water in any form, and therefore were the exclusive property of Burkett, who had all the rights incident to them one might have as to any other species of property.”); *Op. Tex. Att’y Gen. No. JM-827* (1987) (“[U]nder Texas law, landowners have ‘absolute ownership’ of percolating groundwater beneath their lands.”); see generally Dylan O. Drummand, et. al., *The Rule of Capture in Texas—Still so Misunderstood After All These Years*, 37 TEX. TECH. L.R. 1 (2004) (tracing the history of the rule of capture and explaining that it confers a vested property right in the overlying landowner).

⁷⁰ *City of Altus, Okla. v. Carr*, 255 F. Supp. 828, 840 (W.D. Tex. 1966), *aff’d* 385 U.S. 35 (1966).

⁷¹ *City of Pleasanton*, 276 S.W.2d at 801.

⁷² *Friendswood Dev. Co.*, 576 S.W.2d at 30.

⁷³ See *Dyegard Land P’Ship v. Hoover*, 39 S.W.3d 300 (Tex. App.—Fort Worth 2001, no pet.).

⁷⁴ See *Sipriano*, 1 S.W.2d at 77-79.

⁷⁵ See Texas Water Development Board, *Water for Texas—2007* (Nov. 14, 2006) available at <http://www.twdb.state.tx.us/wrpi/swp/swp.htm>.

management is through local groundwater conservation districts and the rules promulgated by those districts in accordance with the provisions of chapter 36 of the Texas Water Code.⁷⁶ To date there are 98 groundwater conservation districts in Texas. Most of these are created through chapter 36, although there are a few special law districts created by special legislation.⁷⁷ If your project involves groundwater, the odds are your project will also involve a groundwater conservation district.

a. Creation of Groundwater Conservation District

Groundwater conservation districts (“GCDs”) can be created by (1) a special act of the Legislature or (2) the TCEQ upon petition by a majority of the landowners within the proposed district or through designation of a Priority Groundwater Management Area.⁷⁸ Chapter 36 GCDs are funded through *ad valorem* taxes at a maximum rate of 50 cents per \$100 assessed valuation.⁷⁹ If voters reject an *ad valorem* tax, a GCD may set permit fees to pay for the regulation of groundwater in the district, including fees based on the amount of water to be withdrawn from a well.⁸⁰ Voters may also authorize a GCD to issue tax supported bonds and revenue bonds.⁸¹

b. Comprehensive Management Plan Required

A GCD must develop and adopt a comprehensive management plan in coordination with regional planning groups, state agencies (the TCEQ and Texas Water Development Board (“TWDB”)), and other GCDs.⁸² The management plan must address various management goals, including promoting the most efficient use of groundwater; controlling and preventing waste and subsidence; addressing conjunctive surface water management issues, natural resource issues, and drought conditions; addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, and brush control; and addressing quantitatively the “desired future conditions” of the groundwater resources.⁸³ After a GCD or groundwater management area establishes desired future conditions (that is, an amount of groundwater left available in an aquifer at a certain future date or dates), the GCD must adopt a regulatory framework that will achieve the established desired future conditions. This process of establishing desired future conditions is currently underway throughout the groundwater management areas in Texas and the consequences could, and most probably will, substantially affect landowner’s rights to produce groundwater.

⁷⁶ TEX. WATER CODE § 36.0015.

⁷⁷ The Edwards Aquifer Authority is one special law district, which has its own enabling legislation with provisions different from chapter 36. See Edwards Aquifer Authority Act, Act of May 30, 1993, 73d Leg., R.S., ch. 626, 1993 Tex. Gen. Laws 2350 amended by Act of May 16, 1995, 74th Leg., R.S., ch. 524, 1995 Tex. Gen. Laws 3280; Act of May 29, 1995, 74th Leg., R.S., ch. 261, 1995 Tex. Gen. Laws 2505; Act of May 6, 1999, 76th Leg., R.S., ch. 163, 1999 Tex. Gen. Laws 634; Act of May 28, 2001, 77th Leg., R.S., ch. 966, §§ 2.60–2.62 and 6.01–6.05, 2001 Tex. Gen. Laws 1991, 2021–22 and 2075–76; and Act of June 1, 2003, 78th Leg., R.S., ch. 1112, § 6.014(4), 2003 Tex. Gen. Laws 3188, 3193.

⁷⁸ TEX. WATER CODE § 36.011-.0151.

⁷⁹ *Id.* § 36.0171.

⁸⁰ *Id.* § 36.0171(h).

⁸¹ *Id.* § 36.020.

⁸² *Id.* § 36.1071.

⁸³ *Id.* § 36.1071(a).

c. Rulemaking Authority

The GCD must adopt rules to implement its comprehensive management plan.⁸⁴ Specifically, the GCD may adopt rules “limiting groundwater production based on tract size or the spacing of wells, to provide for conserving, preserving, protecting, and recharging of the groundwater or of a groundwater reservoir or its subdivisions in order to control subsidence, prevent degradation of water quality, or prevent waste of groundwater and to carry out the powers and duties provided by [chapter 36].”⁸⁵

To achieve these goals, a GCD may regulate the spacing of wells by: (A) requiring all water wells to be spaced a certain distance from property lines or adjoining wells; (B) requiring wells with a certain production capacity, pump size, or other characteristic related to the construction or operation of and production from a well to be spaced a certain distance from property lines or adjoining wells; or (C) imposing spacing requirements adopted by the board.⁸⁶

A GCD may regulate production of groundwater by: (A) setting production limits on wells; (B) limiting the amount of water produced based on acreage or tract size; (C) limiting the amount of water that may be produced from a defined number of acres assigned to an authorized well site; (D) limiting the maximum amount of water that may be produced on the basis of acre-feet per acre or gallons per minute per well site per acre; (E) managed depletion; or (F) any combination of the methods listed above in paragraphs (A) through (E).⁸⁷ A GCD may establish production limits that preserve “historic or existing use” to the maximum extent practicable consistent with the district's comprehensive management plan and as provided by the well permitting provisions of section 36.113 of the Texas Water Code. This means that a district can establish an historic period and adopt rules that favor the types of water use that occurred during that historic period.

d. Permitting Authority

A GCD must require a permit for the drilling, equipping, operating, or completing of wells or for substantially altering the size of wells or well pumps, and it may require permit amendments for changes in the withdrawal or use of groundwater during a permit term.⁸⁸ Typically, wells in existence prior to creation of a district are able to avoid certain well permit requirements. Permits are not required for exempt wells, which include wells used solely for domestic or livestock use on a small tract of land that is not capable of producing more than 25,000 gallons of groundwater a day and include certain water wells related to oil and gas exploration and production.⁸⁹ While a GCD may impose additional fees for exporting water outside the GCD's boundaries, it may not impose more restrictive permit conditions on

⁸⁴ TEX. WATER CODE § 36.1071(f).

⁸⁵ *Id.* § 36.101(a).

⁸⁶ *Id.* § 36.116(a)(1).

⁸⁷ *Id.* § 36.116(a)(2).

⁸⁸ *Id.* § 36.113.

⁸⁹ *Id.* § 36.117.

transporters than it imposes on existing in-district users.⁹⁰ The permitting process generally requires an application, and public notice and hearing regarding the application.

e. Miscellaneous Authority

A GCD may also build, acquire, or obtain by any lawful means any property necessary for its purposes;⁹¹ buy, sell, transport, and distribute surface water and groundwater;⁹² acquire land by purchase or eminent domain;⁹³ perform surveys and research projects;⁹⁴ provide public education materials and programs;⁹⁵ and require that records be kept and reports be made of the drilling, equipping, and completing of water wells and of the production and use of groundwater.⁹⁶

f. Enforcement Authority

A GCD may enforce its rules by injunction or through reasonable civil penalties not to exceed \$10,000 per day per violation.⁹⁷ If a GCD prevails in any suit to enforce its rules, “the district may seek and the court shall grant, in the same action, recovery for attorney’s fees, costs for expert witnesses, and other costs incurred” before the court.⁹⁸

Given these broad powers, a person embarking on a project involving groundwater should first determine if a GCD has jurisdiction over the project. It is important to analyze the GCD’s rules and chapter 36 of the Texas Water Code. Whether the goal is to produce water, sell water, change the use of water, or drill a well, the project will typically require an application to and hearing in front of a GCD.

5. H.B. 1763/Landowner Rights

With the adoption of H.B. 1763 in 2005, the Legislature made major changes in the way GCDs develop their management plans and the process to be undertaken to ensure some uniformity in the management plans of GCDs that share geographic portions of aquifers with other GCDs. In addition to these changes, regional water planning groups are now required to use groundwater availability numbers developed from the process of coordination within groundwater management areas. Prior to H.B. 1763, GCDs’ management plans were required to determine the total useable amount of groundwater within their jurisdiction and to project future demand. With the passage of H.B. 1763, all requirements to include the total usable amount of groundwater in the management plan were eliminated, and GCDs are now required to work together with other GCDs within groundwater management areas to develop “desired future

⁹⁰ *Id.* § 36.122

⁹¹ TEX. WATER CODE § 36.103.

⁹² *Id.* § 36.104.

⁹³ *Id.* § 36.105.

⁹⁴ *Id.* §§ 36.106-.107.

⁹⁵ *Id.* § 36.110.

⁹⁶ *Id.* §§ 36.111-.112.

⁹⁷ TEX. WATER CODE § 36.102.

⁹⁸ *Id.* § 36.102(d).

conditions” for their groundwater resources. This process is described in section 36.1072 of the Texas Water Code.

Once the groundwater management areas, through the GCDs, have adopted “desired future conditions,” they are submitted to the TWDB, which then uses existing and future groundwater availability models to estimate “modeled available groundwater.”⁹⁹ Districts are then required to include in their groundwater management plan the modeled available groundwater available within their district and the district’s plan for managing the groundwater resources to protect the resource. These “modeled available groundwater” numbers are then required to be included in the regional water planning groups’ regional water plans in assessing available groundwater supply to meet future demand.¹⁰⁰

a. Groundwater Districts In Charge: Implications of Production Limits and Balancing of Interests

With the passage of H.B. 1763, the Legislature determined that groundwater district’s determinations concerning groundwater availability would trump regional water planning groups. Regional water planning groups were now obligated to use groundwater district decisions with regard to available groundwater. As amended by H.B. 1763, chapter 36 provided limited guidance to GCDs on how to address the inherent allocation questions that must be answered, a failing that would cause conflict and require a legislative solution down the road.

Inherent in the decision to set or establish a limit on total production from an aquifer is the decision of how to allocate that overall production among landowners throughout the district. Even more problematic is the ability of a groundwater district under section 36.116(b) to “preserve historic or existing use before the effective date of the rules of the district.”¹⁰¹ GCDs could argue that they can create a special, priority permit system for historic users, and then determine how to divide the remaining “modeled available groundwater.” Districts could point to the statutory requirements as obligating GCDs to ensure that their groundwater plans contained goals and objectives consistent with achieving a desired future condition. In addition, regional water planning groups would be required to use the modeled available groundwater numbers in their regional water plans, placing off-limits production of groundwater over and above that amount determined to be the “modeled available groundwater.”

The Legislature’s experience with the Edwards Aquifer Authority is instructive. In the legislation originally adopted in 1993, the Legislature struck a balance between preserving spring flows at San Marcos and Comal Springs and protecting landowner rights to produce groundwater. The Legislature chose to allow up to 450,000 acre-feet of groundwater to be permitted. Had it chosen to manage the aquifer to preserve minimum spring flows of some amount at the two springs, this total amount would have shrunk to perhaps 150,000 acre-feet. The Legislature carefully considered all interests dependant on Edwards Aquifer groundwater and set limits that it felt were necessary to protect all of those interests. But the Legislature also had to consider the overall interests of the state and every category of interest in the region. Local GCDs do not represent interests outside each district’s political boundaries.

⁹⁹ See TEX. WATER CODE § 36.1072.

¹⁰⁰ See generally 31 TEX. ADMIN. CODE Ch. 356.

¹⁰¹ *Id.* § 36.116(b).

b. A Perfect Storm

The potential for conflict between landowners and GCDs should be readily apparent. GCDs will inherently be inclined to be ultra conservative in their determination of “desired future conditions” and have not been given any scientific or legislative direction in setting these conditions. The amount of “modeled available groundwater” is then determined, based on models, and a *de facto* limit is potentially set by the district. By being conservative, they will hasten litigation by landowner’s denied permits when no more “modeled available groundwater” can be permitted. The conflict will be further hastened by decisions to exempt historic use from groundwater production limitations.

Under these conditions, the actions of GCDs will have every indicia of adjudication of groundwater rights. This will place GCDs in the position of courts determining which landowners will have the right to use groundwater and which landowners will not. Unlike the surface water adjudication act, which required court review, chapter 36 does not authorize and, in fact, makes very difficult an appeal of the decisions of the GCD. Plaintiffs are subject to a claim by the GCDs that they are entitled to their attorneys’ fees in the event of an unsuccessful appeal. The appeal is subject to the substantial evidence rule and there is no authorization for the court to review the basis upon which the decisions were made (e.g., desired future conditions, modeled available groundwater, and protection of historic use).

The practitioner should be aware of these activities in their geographic area of practice given the important outcome of these efforts by the state’s GCDs. Protecting existing use and the future right to produce groundwater may be an important issue in all non-urban real estate transactions.

c. Post-1763 Developments

The planning process outlined by H.B. 1763 adopted by the Texas Legislature in 2005 required completion of the process and establishment of desired future conditions by groundwater conservation districts and groundwater management areas by September 1, 2011. The process has been completed by all groundwater management areas, desired future conditions have been established and provided to the Texas Water Development Board for calculation of “modeled available groundwater.” Although several petitions challenging the reasonableness of adopted desired future conditions have been filed and heard by the Texas Water Development Board, in general, these appeals have been denied and the desired future conditions found to be reasonable. Groundwater conservation districts are required then to outline in their management plan their process for achieving the selected desired future condition and are obligated to adopt rules designed to achieve the desired future condition.

As the consequences of the H.B. 1763 changes and the decisions made by groundwater conservation districts begin to become apparent, landowners and entities regulated by the districts began to express concern to the Legislature about (1) the view of a majority of GCDs that landowners did not have a vested property right in groundwater subject to protection under the Constitution, and (2) the lack of criteria or guidance in the legislative process for adopting desired future conditions. The result of these concerns was the passage of S.B. 332, addressing groundwater ownership rights, and S.B. 660, restructuring the process outlined for adoption for

desired future conditions and criteria to be considered. Those bills are described in detail in Section VI of this paper.

V. Judicial Confirmation of the Nature of the Groundwater Ownership Right

1. History

Although the rule of capture has been the law of the state of Texas since 1904 and has been consistently described as a property right incident to ownership, the courts have never been required to define the exact nature of the right until recently. Beginning with the *East* case, the courts have described it as a real property right but have never clearly defined when or if the right is vested. This is particularly important in the context of regulation of the exercise of that right discussed later. In *East*, the Texas Supreme Court, citing New York authority, said:

An owner of soil may divert percolating water, consume or cut it off, with impunity. It is the same as land, and cannot be distinguished in law from land. So the owner of land is the absolute owner of the soil and of percolating water, which is a part of, and not different from, the soil.¹⁰²

Similarly, in *Pecos County*, the court stated:

It seems clear to us that percolating or diffused and percolating waters belong to the landowner, and may be used by him at his will These cases seem to hold that the landowner owns the percolating water under his land and that he can make a non-wasteful use thereof, and such is based on a concept of property ownership.¹⁰³

The Texas Supreme Court in *Friendswood Development Co.* refused to abandon the rule, noting that it had become “an established rule of property law in this State, under which many citizens own land and water rights.”¹⁰⁴

In spite of these statements that seem to conclude that groundwater is owned by the landowner, the courts have been reluctant to provide a description of the nature of the ownership right embraced by the absolute ownership rule. In *Sipriano v. Great Spring Waters of America, Inc.*, the Texas Supreme Court deftly avoided a discussion of the nature of the ownership right and instead held that it was inappropriate for the court, given the legislature’s efforts to expand the powers of groundwater conservation districts, to insert itself into the regulatory mix by substituting the rule of reasonable use for the rule of capture.¹⁰⁵

¹⁰² *Houston & T.C. Ry. Co. v. East*, 81 S.W. 279, 281 (Tex. 1904) (quoting *Pixley v. Clark*, 35 N.Y. 520 (1866)).

¹⁰³ *Pecos County Water Control & Improvement District No. 1 v. Williams*, 271 S.W.2d 503, 505 (Tex. Civ. App.—El Paso 1954, writ ref’d n.r.e.).

¹⁰⁴ *Friendswood Dev. Co.*, 576 S.W.2d at 29.

¹⁰⁵ *Sipriano*, 1 S.W.3d at 80.

In *Barshop v. Medina County Underground Water Conservation District*,¹⁰⁶ the one case where the issue was argued to be directly relevant, the supreme court avoided making a definitive decision on the issue. There, landowner plaintiffs claimed that the Edwards Aquifer Authority Act (“EAAA”) violated the Texas Constitution by taking their rights to use Edwards Aquifer groundwater governed by the rule of capture. The plaintiffs claimed that the act deprived the landowner of a vested property right in violation of the constitution. Plaintiffs conceded that the state has the right to regulate the use of groundwater, but maintained that they had a vested property right in the water, which the legislation took away. The district countered that the rule of capture, while an ownership right, was not vested until the water was actually reduced to possession and no taking occurs by virtue of regulation of use.¹⁰⁷ The court held that the act was not unconstitutional on its face, ruling that the plaintiffs had failed to establish that, under all circumstances, the act would deprive landowners of their property rights. Therefore the court did not have to definitively resolve the clash between property rights in water and regulation of water—that is, whether the act, as it might be applied, resulted in an unconstitutional taking.

The issue of the nature of the groundwater right was recently addressed by the Fourth Court of Appeals of Texas in two decisions. In both decisions, the court was confronted with questions of law requiring analysis of the ownership interest in groundwater and in both decisions concluded that the right was a part of the real property ownership.

In *City of Del Rio v. Clayton Sam Colt Hamilton Trust*, the issue before the court was whether a seller’s reservation in the conveyance of “all water rights associated with said tract” prevented the buyer from drilling a well and producing groundwater.¹⁰⁸

Litigation was initiated after the buyer, the City of Del Rio, drilled a water well on the purchased tract. The city argued that the trust’s reservation of water rights could not be effective, that under the rule of capture, the corpus of groundwater cannot be owned until it is reduced to possession.¹⁰⁹ The court reviewed supreme court authority holding that percolating water is part of and not different from the soil, that the landowner is the absolute owner of it, and that it is subject to barter and sales like any other species of property.¹¹⁰ The court distinguished the absolute ownership rule from the rule of capture, holding that the rule of capture is a tort rule denying a landowner any judicial remedy and that it was developed as a doctrine of nonliability for damage, not a rule of property.¹¹¹ The court concluded that “under the absolute ownership theory, the Trust was entitled to sever the groundwater from the surface estate by reservation when it conveyed the surface estate to the City of Del Rio.”¹¹²

The court rejected the city’s argument that a specific relinquishment of all right to surface access by the seller did not render the reservation ineffective, since the seller owned adjacent property.

¹⁰⁶ *Barshop v. Medina County Underground Water Conservation Dist.*, 925 S.W.2d 618 (Tex. 1996).

¹⁰⁷ *Id.* at 625.

¹⁰⁸ 269 S.W.3d 613, 614 (Tex. App.—San Antonio 2008, pet. denied).

¹⁰⁹ *Id.* at 616.

¹¹⁰ *Id.* at 617.

¹¹¹ *Id.* at 617-18.

¹¹² *Id.* at 617.

In *Edwards Aquifer Authority v. Day*, the Fourth Court of Appeals reviewed, among other issues, a summary judgment in favor of the Authority on Day and McDaniel's claim that the operation of the Edwards Aquifer Authority legislation and the Authority's decision to deny Day and McDaniel a permit to produce groundwater constituted a taking under section 17, article 1 of the Texas Constitution.¹¹³ Under the EAAA, landowners who had historically used Edwards Aquifer groundwater for irrigation purposes were assured by the legislation of a minimum permit amount of two acre-feet of production per year per acre irrigated. Mr. Day and Mr. McDaniel ("Day") jointly owned a tract of land located within the Edwards Aquifer Authority jurisdiction that had a well that flowed under artesian pressure. Day's predecessor in title irrigated a portion of the property directly from the well, and a much larger portion of the property from an impoundment on a creek to which the artesian flow had been directed by a ditch constructed by the landowners. The Authority granted Day a permit for 14 acre-feet of groundwater based upon irrigation of land directly from the well, but denied the request for a permit for land irrigated from the impoundment. The Authority determined that the water pumped from the impoundment on the property was surface water and therefore owned by the State and did not constitute historical use of groundwater from the aquifer.

Day appealed the decision to state district court, claiming error by the Authority and, in the alternative, that the actions of the Authority constituted a constitutional taking and an inverse condemnation of their groundwater rights, and sought damages. The Authority interpleaded the State as a third-party defendant seeking contribution and indemnity from the State on the takings claims made by Day.

The district court held that Day was entitled to a permit. The court granted the Edwards Aquifer Authority and State's motions for summary judgment on the constitutional takings claims finding that the plaintiffs had no vested right to groundwater under their property, and granted a take-nothing summary judgment on all of Day's constitutional claims.

Both parties appealed to the Fourth Court of Appeals in San Antonio. The court agreed with the Authority's conclusion that the water used from lake was state water and not groundwater, and reversed the trial court's judgment granting a permit for acres irrigated with water from the impoundment. The court of appeals affirmed the Authority's decision granting plaintiffs' permit only for the seven-acre tract which was irrigated with groundwater directly from the well. The court reversed the take-nothing judgment granted on summary pleadings on the takings claim and remanded to the trial court for further proceedings on the constitutional claims. It concluded that landowners have ownership rights in groundwater, that those rights are vested and are therefore constitutionally protected, and reversed the trial court's grant of summary judgment on these issues. The court held that the landowner's "vested right in the groundwater beneath their property is entitled to constitutional protection."¹¹⁴

Both the State and the Authority filed petitions for review of the court of appeal's finding that plaintiffs have a vested and constitutionally protected interest in groundwater beneath their

¹¹³ 274 S.W.3d 742 (Tex. App.—San Antonio 2008) *aff'd*, 08-0964, 2012 WL 592729 (Tex. Feb. 24, 2012).

¹¹⁴ *Day*, 274 S.W.3d at 756.

property. Day and McDaniel filed a petition for review claiming error by the court of appeals in denying a permit for acres irrigated with water from the impoundment.

While the case was still pending, the 82nd Legislature passed legislation addressing the ownership issue. S.B. 332 substantially amended section 36.002 of the Water Code to clarify the Legislature's view of the nature of the ownership interest and rights of landowners while recognizing that regulation and management of groundwater resources under the Conservation Amendment is a matter of public interest. Section 36.002 now provides that a landowner owns the groundwater below the surface as real property which entitles the landowner to drill for and produce the groundwater below the surface, subject to the common law limitations against waste, malice, or negligent subsidence and the regulatory authority outlined by the Legislature in chapter 36, particularly the new section 36.002(d). The statute also clarifies that ownership does not entitle a landowner to a specific amount of groundwater.

Subsection (c) provides that nothing in chapter 36 should be construed as granting the authority to deprive or divest a landowner of the ownership and rights described by section 36.002. Subsection (d) follows by stating that the section does not prohibit a district from limiting or prohibiting the drilling of a well not in compliance with district rules for spacing or tract size or affect the ability of a district to regulate groundwater production authorized by chapter 36. Subsection (d)(3) clarifies that districts are not required to allocate to a landowner a proportionate share of available groundwater based on acreage owned, in effect stating that the ownership right is not a correlative right.

Subsection (e) provides that the section does not affect the ability to regulate groundwater as authorized by Chapter 626, Acts of the 73rd Legislature, Regular Session 1993 (The Edwards Aquifer Authority Act), Chapter 8801, Special District Local Laws Code, (The Harris-Galveston Subsidence District) or Chapter 8834 Special District Local Laws Code (The Fort Bend Subsidence District).

2. The Texas Supreme Court Answers the Question

On February 24, 2012, the Texas Supreme Court issued a 50-page unanimous opinion affirming the Fourth Court of Appeals in *Edwards Aquifer Authority v. Day*. The opinion confronted and answered for the first time the question of whether a landowner's groundwater rights are a vested real property right protected by the prohibitions against uncompensated taking in the Texas and U.S. Constitutions. The opinion, written by Justice Hecht, begins with a succinct summary of the issue presented in the decision: "We decide in this case whether landownership includes an interest in groundwater in place that cannot be taken for public use without adequate compensation guaranteed by Article 1, § 17(a) of the Texas Constitution. We hold that it does."¹¹⁵

The court's opinion carefully outlines the history of the Edwards Aquifer Authority legislation and its key provisions and summarizes the facts leading up to the Edwards Aquifer Authority's decision to deny Day and McDaniel a permit for groundwater use from an impoundment on a water course. The Edwards Aquifer Authority found that the water used from

¹¹⁵ *Edwards Aquifer Auth. v. Day*, 08-0964, 2012 WL 592729, *1 (Tex. Feb. 24, 2012), reh'g denied (June 8, 2012).

the impoundment had become surface waters of the state and that Day and McDaniel were therefore not entitled to a groundwater production permit for water withdrawn from the impoundment and used for irrigation.

The supreme court affirmed the Authority's decision, finding that Day and McDaniel had failed to prove that their use of water was groundwater and not state water. This statement of the law has profound implications for any landowner using groundwater to supplement water in an impoundment on a water course. As stated by the court: "We do not suggest that a lake can never be used to store or transport groundwater for use by its owner. We conclude only that the Authority could find from the evidence before it that that was not what had occurred on Day's property."¹¹⁶

The court then gave a detailed summary of the history of the rule of capture from its adoption in *East* to the decision in *Sipriano*, concluding that ownership of groundwater in place had never been decided by court. The court observed that while it had never addressed the issue with regard to groundwater, it had, long ago done so with respect to oil and gas to which the rule of capture also applies. The court noted that while ownership of gas in place did not entitle the owner to specific molecules of gas which could be diminished through drainage, with proper diligence they could be replenished or obtained. The court stated that while the minerals are in the ground, they constitute a property interest. Quoting its previous decisions, the court noted that the right to the oil and gas beneath a landowner's property is an exclusive and private property right inherent in land ownership, which may not be deprived without a taking of private property.

The Texas Supreme Court found that there was no basis in the differences cited between groundwater and oil and gas to conclude that the common law allows ownership of oil and gas in place but not groundwater. Specifically, the court quoted itself in *Elliff* and then held that this correctly states the common law regarding the ownership of groundwater in place:

In our state the landowner is regarded as having absolute title and severalty to the oil and gas in place beneath his land. The only qualification of that rule of ownership is that it must be considered in connection with the law of capture and is subject to police regulations. The oil and gas beneath the soil are considered a part of the realty. Each owner of land owns separately, distinctly and exclusively all the oil and gas under his land and is accorded the usual remedies against trespassers who appropriate the minerals or destroy their market value.¹¹⁷

The court cited the legislative revisions made by the 82nd Texas Legislature to section 36.002, Texas Water Code, as demonstrating the Legislature's understanding of the interplay between groundwater ownership and groundwater regulation.¹¹⁸ The statutory changes are described in detail in Section VI of this paper.

¹¹⁶ *Id.* at *4.

¹¹⁷ *Day*, 08-0964, 2012 WL 592729 at *11 (quoting *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 561 (Tex. 1948)).

¹¹⁸ *See id.* at *12, *19.

The court then analyzed whether Day had stated a viable takings claim. In so doing, in summary, the court rejected the argument that the EAA's regulatory action could be considered a *per se* taking for Fifth Amendment purposes and instead applied the regulatory takings analyses originally adopted by the U.S. Supreme Court in *Penn Central Transportation Co. v. New York City*.¹¹⁹ In *Penn Central*,¹²⁰ the Court identified several factors that have particular significance in determining whether the regulation rises to the level of a taking under the Constitution. Primary among those factors are the economic impact of the regulation on the claimant and the extent to which the regulation has interfered with distinct investment-backed expectations. In addition, the character of the governmental action, in essence an analysis of the reasonableness of the regulation in light of the goals to be achieved and the impacts reasonably expected. Because this factual inquiry was not developed in the summary judgment proceeding, the Texas Supreme Court agreed with the Fourth Court of Appeals that summary judgment against Day's taking claim should be reversed and the issue remanded to the trial court.¹²¹

As a side note, the court rejected Day's complaint that section 36.066(g) of the Water Code, which authorizes an award of attorneys' fees and expenses to a groundwater conservation district that prevails in a suit like the underlying action, violated equal protection.¹²² The court found the state has a legitimate interest in discouraging suits against groundwater districts to protect them from costs and burdens associated with such suits and that a cost-shifting statute is rationally related to advancing that interest.¹²³ Landowners filing takings claims should be well aware of this provision.

The important questions of how far regulation can go before it is found to be a taking will remain unanswered for some number of years. Undoubtedly, there will cases filed and challenges to regulations limiting or, in some cases excluding groundwater use. Given the myriad factual inquiries required for a *Penn Central* regulatory takings analysis, no simple answer exists and no bright line can be created in determining how far groundwater conservation districts can go in limiting groundwater production. However, given the geographic extent of groundwater conservation districts, their legislative mandate to adopt rules designed to achieve their desired future conditions and the overall conservation ethic of groundwater conservation district boards, conflict can be anticipated.

VI. Legislative Changes from the 82nd Texas Legislature (2011)

The Texas Legislature in 2011 passed two bills that will have important and far-reaching impacts on Texas water law.

1. S.B. 332

As noted above, constituent concerns over the consequences of the H.B. 1763 changes and the decisions made by groundwater conservation districts eventually led to the passage, in

¹¹⁹ *Id.* at *12-*20. 438 U.S. 104 (1978).

¹²⁰ *Penn Cent. Transp. Co. v. City of New York*, 438 U.S. 104 (1978).

¹²¹ *Day*, 08-0964, 2012 WL 592729 at *3, *20.

¹²² *Id.* at *21.

¹²³ *Id.*

2011, of S.B. 332, which addressed the question of the ownership of groundwater. Prior to S.B. 332, section 36.002 of the Texas Water Code provided, in pertinent part:

The ownership and rights of the owners of the land and their lessees and assigns in groundwater are hereby recognized and nothing in this Code shall be construed as depriving or divesting the owners or their lessees and assigns of the ownership or rights, except as those rights may be limited or altered by rules promulgated by a district.¹²⁴

The statute did not describe the nature of the groundwater interests, and the provisions were argued by either side of the property rights debate in supporting their argument with regard to the protection of the groundwater right from constitutional taking. S.B. 332, sponsored by Senator Troy Frasier, rewrote section 36.002 completely. The section now specifically provides that the Legislature recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property. The entirety of Section 36.002 reads as follows:

Sec. 36.002. OWNERSHIP OF GROUNDWATER. (a) The legislature recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property.

(b) The groundwater ownership and rights described by this section:

(1) entitle the landowner, including a landowner's lessees, heirs, or assigns, to drill for and produce the groundwater below the surface of real property, subject to Subsection (d), without causing waste or malicious drainage of other property or negligently causing subsidence, but does not entitle a landowner, including a landowner's lessees, heirs, or assigns, to the right to capture a specific amount of groundwater below the surface of that landowner's land; and

(2) do not affect the existence of common law defenses or other defenses to liability under the rule of capture.

(c) Nothing in this code shall be construed as granting the authority to deprive or divest a landowner, including a landowner's lessees, heirs, or assigns, of the groundwater ownership and rights described by this section.

(d) This section does not:

¹²⁴ Act of May 29, 2005, 79th Leg. R.S., ch. 1116, 2005 Tex. Gen. Laws 3700 (amended 2011)(current version at Tex. Water Code § 36.002 (West Supp. 2011)).

(1) prohibit a district from limiting or prohibiting the drilling of a well by a landowner for failure or inability to comply with minimum well spacing or tract size requirements adopted by the district;

(2) affect the ability of a district to regulate groundwater production as authorized under Section 36.113, 36.116, or 36.122 or otherwise under this chapter or a special law governing a district; or

(3) require that a rule adopted by a district allocate to each landowner a proportionate share of available groundwater for production from the aquifer based on the number of acres owned by the landowner.

(e) This section does not affect the ability to regulate groundwater in any manner authorized under:

(1) Chapter 626, Acts of the 73rd Legislature, Regular Session, 1993, for the Edwards Aquifer Authority;

(2) Chapter 8801, Special District Local Laws Code, for the Harris-Galveston Subsidence District; and

(3) Chapter 8834, Special District Local Laws Code, for the Fort Bend Subsidence District.

In revising section 36.002, the Legislature attempted to describe a right that was equivalent to a real property right and vested in the landowner a right to drill and produce groundwater while simultaneously recognizing the power of groundwater conservation districts to regulate the exercise of this property right. Subsection (d) specifically points out that the legislative definition is not intended to prohibit a district from regulating groundwater production nor does it require the adoption of a correlative rights system allocating to each landowner a proportionate share of available groundwater. As described above, the ownership language in the amended section 36.002 was cited by the Texas Supreme Court in *Edwards Aquifer Authority v. Day*, and the court's opinion contained language that mirrored language and concepts concerning the ownership of oil, gas and other minerals that have been long established under Texas law.

ii. S.B. 660

As a further reflection of concern about the implementation of the DFC process, the Legislature adopted amendments to these sections with the intent to improve both the process of adoption of desired future conditions and the criteria to be considered by groundwater management areas ("GMAs") in the adoption process.

S.B. 660 removed the process to petition the reasonableness of a DFC and instead requires GCDs to adopt relevant DFCs by rule (with the proper adoption of the rule subject to challenge in district court) under the same procedures currently used to challenge other district

rules. Under S.B. 660, GMAs are now required to document factors or criteria considered in adopting DFCs and to submit that documentation in an explanatory report to TWDB. A representative of a district in each GMA that overlaps with a regional water planning group must serve as a voting member of that regional water planning group. The bill requires that regional water planning groups use the DFCs in place at the time of adoption of the TWDB's State Water Plan in the next water planning cycle.

More specifically, the bill amended section 36.1071(a)(8) by removing the requirement that desired future conditions be addressed in a quantitative manner.¹²⁵ The bill also changed the term "managed available groundwater" to "modeled available groundwater," throughout the statute. It amended section 36.108 to specify the criteria that GDCs are required to consider before voting on a proposed desired future condition.¹²⁶ Among other things, districts must consider the total estimated recoverable storage of the aquifer; the impact on the interests and rights in private property, including ownership and the rights of management area landowners and their lessees and assigns in groundwater; and the socioeconomic impacts reasonably expected to occur upon adoption of the desired future condition.¹²⁷ Perhaps more importantly, the Legislature added subsection (d-2), which provides that the desired future conditions proposed must "provide a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area."¹²⁸

The process for adoption was also amended to require that, after a proposed desired future condition has been published and public comments are received, the district compile a summary of relevant comments received, suggested revisions to the proposed desired future conditions, and the basis for the revision.¹²⁹ District representatives within a groundwater management area must produce a desired future conditions explanatory report which details the policy and technical justifications for each desired future condition and reflects documentation that the factors under subsection (d) were considered by the district.¹³⁰ The report must also include a discussion of how the adopted desired future conditions impact each factor.¹³¹

The changes made by S.B. 660 will not affect previously adopted desired future conditions, management plans based on those desired future conditions, or rules implementing these management plans. However, for the next round of planning—requiring the reestablishment of desired future conditions by September 1, 2015¹³²—groundwater districts must engage in this more thorough and complete process in order to adopt desired future conditions. It remains to be seen if the Legislature's effort to balance ownership rights, production authority, and conservation of the resource will be successful.

¹²⁵ Act of May 29, 2011, 82nd Leg., R.S., ch. 1233, 2011 Tex. Gen. Laws 3287, 3295.

¹²⁶ See TEX. WATER CODE § 36.108(d) (West Supp. 2011).

¹²⁷ *Id.*

¹²⁸ *Id.* § 36.108(d-2).

¹²⁹ *Id.*

¹³⁰ *Id.* § 36.108(d-3).

¹³¹ *Id.*

¹³² *Id.* § 36.108(d).

S.B. 660 also strengthened the public notice requirements for joint planning meetings in GMAs. Proof of notice is now required to be included in the submission of conditions to the TWDB. The bill also imposed additional evaluation and reporting requirements on the TWDB and other state water agencies and modified statutory provisions related to the TWDB's development fund general obligation bonds and its ability to secure performance by borrowers or recipients under TWDB's financial assistance programs.

Ellen T. McDonald
Bio

Ellen McDonald is a principal at Alan Plummer Associates where she leads the water resources group. She holds a Bachelor of Science degree in Civil Engineering from Bucknell University and a Master of Science and Ph.D. in Water Resources Engineering from Stanford University. Ellen has more than 25 years of experience in the areas of water resources planning, water reuse, water quality modeling and water and wastewater system modeling and planning. Through her work at Alan Plummer Associates, Ellen has assisted a number of Texas cities and water districts in the planning, development and implementation of water reuse projects, relating to both direct and indirect reuse. Ellen is a frequent presenter on Texas water reuse issues and currently serves as vice president of the Texas section of the WaterReuse Association.

POTABLE REUSE IN TEXAS: WHAT DOES THE FUTURE HOLD?

Ellen T. McDonald, Ph.D., P.E., Alan Plummer Associates, Inc.

Introduction

As a result of the 2011 drought and the increasing challenges associated with acquiring new surface and groundwater supplies, interest in potable use of reclaimed water has grown significantly in Texas, particularly in the more arid regions of the state. Texas has been a national leader in the implementation of potable reuse projects. Until recently, these projects involved indirect reuse, i.e. use of reclaimed water that is discharged to a stream or reservoir and diverted downstream for subsequent treatment and use. These indirect reuse projects have incorporated significant environmental buffers into their systems, with limits on percent blend of reclaimed water and established minimum detention times within the natural water bodies prior to diversion. The Texas Commission on Environmental Quality (TCEQ) has recently approved a project for Colorado River Municipal Water District (CRMWD) to provide advanced treatment (including microfiltration, reverse osmosis and advanced oxidation) to effluent from the City of Big Spring wastewater treatment plant (WWTP). This advanced-treated water will then be blended with other CRMWD raw water supplies and delivered directly to customer water treatment facilities. Approval of this project by the TCEQ and drought conditions have peaked the interest in the water supply community about the viability of and risks associated with implementing more “direct” potable reuse projects.

Substantial progress has been made in the national and international research community on addressing a number of technical and scientific questions related to potable reuse in the last several years. In general, the consensus among experts is that potable reuse is a viable and safe water management strategy, if implemented with sufficient barriers, monitoring protocols and operational controls. Texas has been a leader in the development of potable reuse projects. However, it is critical that future projects be implemented in a way that gains public confidence and provides appropriate barriers and controls that protect public health and safety. A sound technical approach will be important for further development of water reuse as a water management strategy and will avoid jeopardizing the progress and success of water reuse in the state.

This paper provides an overview of the state of technology and experience related to potable reuse nationally, internationally and in Texas. Examples of regulatory frameworks used or being proposed in other states and Australia for potable reuse will be presented. The paper concludes with a discussion of ongoing state-wide efforts to define a process for helping to ensure successful implementation of future potable reuse projects in Texas.

Potable Reuse in the United States

This section presents an overview of potable reuse projects throughout the United States. Potable reuse projects in Texas are summarized separately in a later section. The intent of this overview is to provide examples of potable reuse applications currently implemented; this review is not comprehensive and does not include discussion of all known potable reuse projects.

Groundwater Recharge

To date, applications of indirect potable reuse in states such as California and Arizona have been focused on groundwater recharge. There are a number of utilities that use reclaimed water, either via spreading basins or direct injection, to augment potable groundwater supplies. Both states have been

leaders in research and technology development related to potable reuse for groundwater systems. The example project described below is one of the most well-known of the California potable reuse projects.

Orange County Water District, California¹

The Orange County Water District (OCWD) in Fountain Valley, California, was formed in 1933 to manage northern Orange County's groundwater supply. More than 250 production wells in OCWD's service area supply about 70 percent of the water demand for a population of 2.3 million residents. The remaining demand is met by imported water from the Colorado River and northern California.

OCWD began using reclaimed water in 1976 to recharge the underlying aquifer, primarily to control seawater intrusion, through a project known as the Water Factory 21. A recharge project called the Groundwater Replenishment System was conceived in the 1990s to replace the Water Factory 21 and provide additional water to recharge the Orange County Groundwater Basin.

The source water for the 70 million gallons per day (mgd) advanced treatment facility is either activated sludge secondary effluent or a blend of activated sludge and trickling filter secondary effluent from the adjacent Orange County Sanitation District Plant No. 1. The Groundwater Replenishment System Advanced Water Purification Facility provides further treatment by microfiltration, reverse osmosis, and advanced oxidation. Plans are underway to increase the capacity of the Groundwater Replenishment System in phases, with an ultimate build out capacity of 130 mgd.

Extensive monitoring of the Advanced Water Purification Facility has indicated that the product water contains no pathogenic bacteria, viruses, or parasites, and continually meets all drinking water standards. The Advanced Water Purification Facility effectively reduces the concentration of chemical constituents of concern (such as pharmaceuticals, endocrine disrupting compounds, and trihalomethanes) to very low or immeasurable levels. In addition, total dissolved solids are reduced from 1,000 mg/L to 30 mg/L, and total organic carbon is reduced from 11 to 12 mg/L to less than 0.15 mg/L.

Surface Water Augmentation

Planned surface water augmentation projects have been implemented in a number of states (in addition to Texas), including Virginia, Georgia, Nevada and Colorado. A range of treatment schemes have been provided, depending on the particular system. Several projects utilize natural treatment systems (soil aquifer treatment or constructed wetlands) as part of the treatment schemes. Some surface water augmentation projects may not rely on any advanced treatment other than what is required for compliance with Clean Water Act requirements; the indirect reuse occurs through acquisition of a water right (or return flow credit) from surface water bodies receiving treated wastewater from upstream sources. Three example projects are described below.

Upper Occoquan Service Authority, Virginia²

In 1978, the UOSA Regional Water Reclamation Plant, located in western Fairfax County, Virginia began operations and replaced eleven small secondary treatment plants in the region. Studies in 1969-1970 concluded that inadequately treated sewage discharged by the eleven secondary treatment plants in the Occoquan Watershed was largely responsible for serious water quality problems in the Occoquan Reservoir. To remedy the problems, the Virginia State Water Control Board (SWCB) (now the Department of Environmental Quality) in 1971 adopted a comprehensive policy for the Occoquan

¹ Summary adapted from case study information provided in *State of Technology of Water Reuse*, Texas Water Development Board, August 2010

² Summary adapted from <http://uosa.org/displayuosacontent.asp?ID=353>, accessed 6/5/12.

Watershed. A principal requirement of the Occoquan Policy was the construction of the regional water reclamation facility. Since that time, water quality in the Occoquan Reservoir has steadily improved and the reliable, high-quality effluent produced by UOSA has increased the safe yield of the Occoquan Reservoir.

Through several expansions, the initial 10 mgd capacity of UOSA was increased to 32 mgd, and a major expansion to 54 mgd has been completed. After 30 years of highly successful operations, UOSA reclaimed water is an increasingly important component of the drinking water supply strategy for the Washington metropolitan area.

Treatment at the UOSA facility includes conventional primary/secondary treatment, chemical clarification and two-stage recarbonation, multimedia filtration, activated carbon adsorption, ion exchange and breakpoint chlorination.

Clayton County Water Authority, Georgia³

Established in 1955, the Clayton County Water Authority (CCWA) initially served approximately 450 customers, but presently provides water, sewer, and stormwater services to more than a quarter of a million people. Located south of Atlanta, Georgia, Clayton County has limited surface and groundwater supplies available and has experienced severe drought conditions at times. The agency's 2000 Master Plan identified constructed wetlands for water reclamation and indirect potable reuse as the preferred method of managing Clayton County's limited water resources.

The CCWA wetland systems consist of a series of interconnected, shallow ponds filled with native vegetation. Wastewater is processed in a secondary treatment facility and then discharged into the constructed wetlands, which remove pollutants such as excess nutrients. The combined treatment capacity at full build-out of the Huie wetlands is 24 million gallons per day (27,000 acre-feet per year) through the constructed wetland treatment systems and 9 million gallons per day (10,000 acre-feet per year) to the remaining forested land application spray fields. Reclaimed water from the Huie wetlands and drainage from the remaining spray fields flow to the Clayton County Water Authority's Blalock Reservoir for indirect potable reuse. Currently, about 10 million gallons per day (11,000 acre-feet per year) of water are put back into the water supply through the wetland system each day. In 2007, during one of the worst droughts in 50 years, the CCWA's reservoirs augmented with reclaimed water maintained 78 percent of their storage capacity.

Aurora Prairie Waters Project, Aurora, Colorado⁴

The Prairie Waters Project was developed to allow the City of Aurora to access water rights in the South Platte River associated with upstream treated wastewater discharges. The water is extracted via riverbank wells prior to being piped 34 miles to a purification facility near the Aurora Reservoir where it is purified and then used by Aurora citizens. The purification facility features softening, advanced ultraviolet light oxidation, granular media filtration, and granular activated carbon. The facility is designed to work in conjunction with the project's natural purification area, where water percolates through the natural sand and gravel found along the river. The purified water is discharged to the Aurora

³Summary adapted from case study information provided in *State of Technology of Water Reuse*, Texas Water Development Board, August 2010

⁴Summary adapted from information at <http://www.asce.org/Sustainability/Sustainability-Case-Studies/Aurora.-CO.-Prairie-Waters-Project/>; <http://coveyogulch.wordpress.com/2011/10/15/aurora-prairie-waters-adds-10000-acre-feet-of-supply-to-treated-water-supply-system-over-the-last-year-or-so/>, accessed 6/2/12.

Reservoir, the City's raw water storage reservoir. The Prairie Waters project has increased the City's water supply by 10,000 acre-feet per year, which amounts to approximately 20% of the total supply.

International Potable Reuse Applications

Internationally, planned potable reuse projects have been implemented in a number of countries. Several examples are provided below.

Singapore⁵

The Republic of Singapore has a population of about 5 million people. Although rainfall averages 98 inches per year, Singapore has limited natural water resources due to its small size of approximately 270 square miles. Singapore obtains approximately 50 percent of its water supply from Malaysia under two bilateral agreements that are due to expire in 2011 and 2061. To have a diversified, robust and sustainable water supply, Singapore initiated the Four National Taps strategy in the late 1990s, which identified the following four sources of water supply: local catchment water; imported water from Johor, Malaysia; reclaimed water; and desalinated water.

One of the sources, reclaimed water (called NEWater), is the product of a comprehensive and extensive study that was started in 1998. The initial objective of the NEWater Study was to construct and operate a demonstration scale advanced dual membrane water treatment plant to determine the reliability of membrane technology to purify secondary treated wastewater effluent to a quality that consistently surpasses the World Health Organization drinking water guidelines and the U.S. Environmental Protection Agency's drinking water standards. By achieving that high quality, NEWater could then be supplied to industries, commercial buildings for non-potable use, and for planned indirect potable reuse via discharge to raw water supply reservoirs.

Singapore's advanced water treatment facilities are called NEWater factories. Currently, there are four NEWater factories in operation, all of which include micro-screening, microfiltration, reverse osmosis and ultraviolet radiation. Most of the reclaimed water from the NEWater factories is supplied to industries for non-potable reuse. Less than 10 million gallons per day of NEWater currently is used for planned indirect potable reuse via discharge to raw water reservoirs, accounting for slightly more than 2 percent of the total raw water supply in the reservoirs. The blended water is subsequently treated in a conventional water treatment plant using coagulation, flocculation, sand filters, ozonation, and disinfection prior to distribution as potable water.

Windhoek, Namibia (Africa)⁶

Windhoek is the home of the only known operational public direct potable reuse project in the world. In 1968, Namibia's capital of Windhoek began developing a system for reclaiming potable water from domestic wastewater to supplement the potable water supply via direct recycling. Since this time, the system has been producing acceptable potable water for the City as part of a larger program to manage and conserve water. The reclamation plant operates on an intermittent basis during periods of drought to supplement the supply during peak demand periods or during emergencies. On average, the treated effluent contributes about 25% to the water supply, although this fraction can be as high as 50% during drought periods.

⁵ Summary adapted from case study information provided in *State of Technology of Water Reuse*, Texas Water Development Board, August 2010

⁶ http://www.wvreclamation.com/pdf/Treatment_of_wastewater_for_Drinking_Water_in_Windhoek_J_Menge.pdf, accessed 6/5/12.

The most recent facility was opened in 2002 and accepts secondary effluent from the Gammans wastewater treatment plant. The new Goreangab water reclamation plant has a capacity of 5.5 MGD and uses a multi-barrier treatment process. The treatment train includes oxidation and pre-ozonation, coagulation/flocculation, dissolved air flotation, dual media filtration, and ozonation. The water is then further treated with biological activated carbon filters, granular activated carbon filters prior to passing through ultrafiltration. Chlorine is added for final disinfection and stabilization prior to blending with other waters and pumping to the distribution system.

Essex and Suffolk Water Langford Recycling Scheme (United Kingdom)⁷

Background

Britain's Essex and Suffolk Water serves an area where population has increased by more than 18 percent since 1960 to a current population of about 1.75 million. Water supplies in the area are limited, and 50 percent of the drinking water supply is imported from other areas. The National Rivers Authority (predecessor to the Environment Agency) first proposed that Essex and Suffolk Water consider utilizing effluent from the Chelmsford Sewage Treatment Works for potable reuse in the early 1990s which ultimately culminated in the Landford Recycling Scheme. Proposed schemes included treatment of the Chelmsford effluent prior to discharge into the River Chelmer and diversion of the effluent at the end of the pipeline and treating it at Langford prior to discharge into the Hanningfield reservoir.

Temporary Recycling Project

The 1995-1997 drought exacerbated water shortages in the region, and the Environment Agency consented to an indirect potable reuse project as an emergency measure. The project involved diversion of up to 6.6 mgd of treated wastewater from the effluent pipeline at Langford, treating the water by ultraviolet radiation, and discharging the water to a pipeline that carried river water to the Hanningfield reservoir. The Environment Agency "Consent to Discharge" was for a specified time period: from July 27, 1997 to December 31, 1998.

Water quality studies were successful in providing scientific information indicating that the indirect potable reuse project did not needlessly subject the public to any demonstrable adverse health outcomes; however, Essex and Suffolk Water did not develop a public information program to keep the public informed about the project, which initially led to some local opposition to the scheme by local citizens and unfavorable coverage in the media. Opposition to the scheme eventually diminished after a concerted effort by Essex and Suffolk Water to inform the public and others about the project and the study findings. The project operated for the full length of its license and terminated at the end of 1998.

Current Project

The current project involves intercepting treated wastewater from the Chelmsford Sewage Treatment Works at Brookend that is discharged via an 8.7-mile pipeline into the Blackwater estuary below diversions of river water for treatment at the water treatment works. The extracted water is treated at Langford to improve its quality and then pumped 1.9 miles for discharge into the River Chelmer.

The reclaimed water mixes with the river water and travels approximately 2.5 miles prior to diversion and pumping to the Hanningfield reservoir. The reclaimed water is diluted 3:1 with river water, on

⁷ Summary adapted from case study information provided in *State of Technology of Water Reuse*, Texas Water Development Board, August 2010

average. The Chelmsford Sewage Treatment Works produces a dry weather flow of about 7.9 mgd of secondary effluent. The capacity of the Langford plant, which went into operation in 2003, is 10.6 mgd.

The reclaimed water treatment plant at Langford provides the following treatment processes: fine screening; chemical precipitation with ferric sulfate and polyelectrolyte followed by sedimentation; powdered activated carbon; nitrification/denitrification; and ultraviolet radiation disinfection.

The Hanningfield reservoir has a capacity of approximately 6.9 billion gallons and serves as the source water for the Hanningfield Water Treatment Works. The mixture of reclaimed water and river water receives additional treatment by ozonation and granular activated carbon at the Hanningfield Water Treatment Works prior to distribution as potable water. In 2007, reclaimed water made up 12 percent of the water in the reservoir. Retention time of reclaimed water in the reservoir is about 214 days.

Sample National and International Regulatory Frameworks

United States- Indirect Potable Reuse

Specific regulations related to indirect potable reuse have been adopted in very few states within the U.S. There are no national regulations, although the Environmental Protection Agency (EPA) has produced guidelines related to water reuse⁸. The 2004 EPA guidelines identify 5 states with specific regulations for indirect potable reuse: California, Florida, Hawaii, Massachusetts and Washington. Of the states listed above, California's regulations (although officially in draft form) provide the most detailed and prescriptive rules. While space does not allow a detailed summary of state rules, highlights of the California and Florida regulations with respect to potable reuse for groundwater recharge are summarized below to provide exemplary evidence of the range of approaches taken by two states with a long history of water reuse projects.

Category	California⁹	Florida¹⁰
Treatment- Groundwater Recharge, Direct Injection	Reverse Osmosis and Advanced Oxidation	Advanced treatment, filtration and high-level disinfection
Distance/Detention Time Requirements	Case specific- minimum of 2 months	No potable water supply wells within 1 mile of injection well.
Blending Requirements	Case specific- maximum up to 100% with documentation of appropriate treatment and performance	Not Specified
Primary Drinking Water Stds	Compliance Required	Compliance Required
BOD ₅	Not Specified	20 mg/L
TSS	Not Specified	5.0 mg/L
Turbidity	Not Specified	Not Specified
Coliform	Not Specified	All samples less than detection
Pathogens	12-log enteric virus reduction; 10-log Giardia cyst and Cryptosporidium oocyst reduction	No specific log removal requirements
Total Nitrogen	10 mg/L	10 mg/L
TOC	0.5 mg/L	3 mg/L (avg); 5 mg/L (max)
NDMA	10 ng/L	Not Specified
1,4 Dioxane	1 ug/L	Not Specified
Indicator Compounds	Project-specific compounds selected based on initial monitoring	Not Specified

⁸ The latest guidelines were published in 2004. A revised set of EPA guidelines is currently being prepared and is expected to be finalized by November 2012.

⁹ Based on draft regulations for groundwater replenishment, date November 21, 2011.

¹⁰ Florida Department of Environmental Protection, Chapter 62-610.

United States- Direct Potable Reuse

Beginning in 2009, a number of activities were initiated related to the potential for direct reuse in the United States based on the premise that technology has advanced to the point that direct reuse may be a safe and cost effective option to pursue. The WaterReuse Association and WaterReuse California are investigating the feasibility of direct potable reuse. The California Urban Water Agencies, National Water Research Institute, and WaterReuse California held a two-day workshop in 2010. Discussion by workshop participants was informed by two white papers that were presented at the workshop. The first, sponsored by the National Water Research Institute, focused on regulatory issues and public health (Crook, 2010). The other white paper was sponsored by WaterReuse California and focused on public and political acceptance of direct reuse in California¹¹. Discussions at the workshop addressed the following topic areas: treatment, water quality management, monitoring, regulations, risk assessment, and public acceptance. The participants developed a set of highest priority issues and action items that were incorporated into a work plan that addresses each issue, possible funding sources, and timing for implementation.

The National Research Council prepared a report summarizing their evaluation of the potential for increasing water supply using water reuse schemes¹². This report concludes that “the potable reuse of highly treated reclaimed water without an environmental buffer is worthy of consideration, if adequate protection is engineered within the system”. It goes on to identify a number of issues that need to be addressed if direct potable reuse is pursued, including water quality, treatment strategies, quality assurance, risk assessment, cost, and social, legal and regulatory factors.

Potable Reuse in Texas

As is true all over the U.S, unplanned, or “de facto” indirect potable reuse has been occurring in Texas for as long as water supply diversions have been located downstream of wastewater treatment plant discharges. The Trinity River basin provides one example, where discharges from Dallas/Fort Worth area wastewater treatment facilities blend with “natural” river flows and make their way down the Trinity River ultimately to Lake Livingston, a raw water source for the Houston area.

Although it is important to recognize that this de facto indirect reuse has been occurring for many years, the remainder of this section will focus on a summary of planned indirect potable reuse projects currently in operation in Texas, as well as two proposed projects that many in the industry would describe as direct potable reuse schemes. The current Texas regulatory framework will also be summarized. The section will conclude with a discussion of ongoing statewide initiatives to further advance potable reuse in the state.

Current Projects

Texas has been a leader in the implementation of potable reuse projects. A summary of major existing indirect potable reuse projects is provided in this section.

Groundwater Recharge

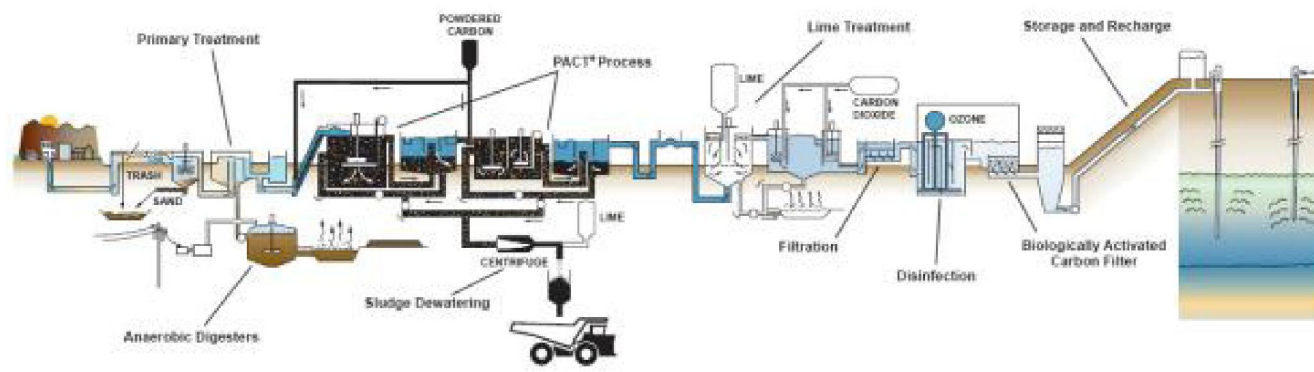
El Paso Water Utilities operates the only indirect potable reuse project involving groundwater recharge in the state. This project, known as the Hueco Bolson Recharge Project, uses advanced treated

¹¹ Nellor, M.H. and Millan, M., 2010, “Public and political acceptance of direct potable reuse,” White paper prepared for WaterReuse California, Sacramento, CA.

¹² National Research Council, 2010, *Water reuse: potential for expanding the nation’s water supply through reuse of municipal wastewater*, National Academies Press, pre-publication copy.

wastewater to augment the Hueco Bolson aquifer, one of El Paso's water supply sources. El Paso shares groundwater from the Hueco Bolson and the Mesilla Bolson aquifers and surface water from the Rio Grande with communities in New Mexico and Ciudad Juarez, Mexico. Water for the project is treated at the Fred Hervey Water Reclamation Plant, which began service in 1985. The plant has a design capacity of 10 mgd and produces water for multiple uses, including the groundwater recharge. The reclamation plant includes the following treatment processes:

- Primary treatment: screening, degritting, and primary clarification.
- Flow equalization.
- Secondary treatment: combines conventional biological treatment with the use of powdered activated carbon with a patented two-stage PACT™ system process. This phase of the treatment process provides organics removal, nitrification, and de-nitrification; methanol is added to the second stage as a carbon source for the denitrifiers.
- High lime treatment (coagulation and clarification) to remove phosphorus and some heavy metals. A pH of at least 11 is achieved to destroy viruses.
- Recarbonation to pH 7.5 by addition of carbon dioxide.
- Sand filtration with traveling-bridge, automatic backwash filters for turbidity and parasite removal.
- Disinfection using ozone.
- Granular activated carbon filtration with traveling-bridge, automatic backwash filters as a polishing process for removal of residual organic compounds and improvement of taste, odor and color.
- Chlorination to produce a residual of 0.25 mg/L to prevent biological growths during storage and recharge.



Schematic of Fred Hervey Water Reclamation Plant (Source: El Paso Water Utilities)

On average, approximately 3 mgd is used to recharge the aquifer- the remainder of the water is used for nonpotable purposes. The plant is currently being upgraded to meet new permit requirements and to improve reliability. During the upgrade, the plant's capacity will be uprated to 12.2 million gallons per day.

Surface Water Augmentation

A number of entities in Texas have acquired water rights allowing them to divert and use return flows discharged to surface waters. Many of these water rights merely provide official documentation of

increased supply yields associated with discharges upstream of water supply intakes from which diversion of return flows had already been occurring for a number of years. However, two major projects in the Trinity River basin have been implemented specifically to capture return flows at a downstream diversion location, provide additional treatment using constructed wetland systems and convey these flows via pipeline to water supply reservoirs upstream in the basin. A summary of these projects is provided below.

Tarrant Regional Water District, Richland-Chambers and Cedar Creek Reservoir Water Reuse Projects: In order to increase the yield of the Richland-Chambers and Cedar Creek Reservoirs, Tarrant Regional Water District (TRWD) has undertaken a long term planning and implementation project to divert water from the main stem of the Trinity River, provide polishing treatment with constructed wetlands and transport the treated water to Richland-Chambers and Cedar Creek reservoirs. TRWD currently has infrastructure to deliver water from each of these reservoirs to its service area in Tarrant and surrounding counties. The TRWD was granted water right permits from the TCEQ in 2005 which authorize the use of historic and future return flows of up to 195,818 acre-feet/year for both the Richland-Chambers and Cedar Creek projects. The water serving these projects is obtained from return flows originating with TRWD customers discharged from the TRA Central Regional WWTP and the City of Fort Worth's Village Creek WWTP. The TRWD projects are being developed using a phased approach which considers the associated financial aspects, operation and maintenance issues, treatment performance, and design criteria for the full scale wetland systems. The Richland-Chambers project is currently under development and will be completed first. The components of the phased approach include a pilot project, a field scale wetland, and Phase I and Phase II buildout of the full scale wetland. Several of these components are described below.

The pilot project commenced with the design and construction of a 2.5-acre wetland demonstration system. This system operated from 1992 to 2000. The data obtained from the pilot project was utilized to facilitate design and construction of a field scale project. In 2002, a 243-acre field scale wetland, now known as the George W. Shannon Wetlands Water Recycling Facility at Richland-Chambers Reservoir, was constructed along with a pump station facility on the Trinity River to divert flows to the wetland system.

Following the successful operation and analysis of the pilot project and 243-acre field scale wetland, the TRWD authorized the expansion of the project. Expansion is taking place in two phases. Phase I included the construction of 190 acres of wetland cells and a re-lift pump station to convey the wetland polished water into Richland Chambers Reservoir and is currently in operation. Phase II will consist of buildout to approximately 1800 acres. The design of Phase II is complete and construction is scheduled to be completed in 2013. The Richland Chambers project was developed through a partnership with Texas Parks and Wildlife Department.

Similar to the facilities at Richland-Chambers, a wetland polishing system is also planned for augmentation of supply in the Cedar Creek Reservoir. Conceptual design for the Cedar Creek Reservoir wetland system is being conducted concurrently with the design of the Phase II Expansion for the Richland-Chambers wetlands. Construction of the Cedar Creek system is anticipated to be complete by 2018.

North Texas Municipal Water District (NTMWD) East Fork Raw Water Supply Project: The NTMWD utilizes surface water supplies from Lavon Lake, Lake Texoma, Jim Chapman Lake, Lake Tawakoni, and Lake Bonham. With the exception of Lake Bonham, all of the water from the other reservoirs is

currently imported to Lavon Lake and diverted for treatment at a water treatment facility located at the southern end of the reservoir.

As a result of unprecedented growth in its service area and a strong commitment to the efficient use of water resources, NTMWD developed *an* indirect reuse project, known as the East Fork Raw Water Supply Project (EFRWSP) in order to further augment water supply in Lavon Lake. The EFRWSP diverts return flows from the East Fork of the Trinity River, contributed by NTMWD-owned or customer-owned wastewater treatment facilities, and conveys the return flows through a constructed wetland prior to delivery to Lavon Lake. The project, when developed at full capacity, will add 102,000 acre-feet per year (91 MGD) of raw water supply to Lavon Lake for subsequent treatment and use by NTMWD customers. The EFRWSP wetland covers 1,840 acres. The wetland is designed to remove sediments and nutrients from the water, which is detained for 7-10 days prior to being transported through a 42-mile pipeline to the northern end of Lavon Lake.



NTMWD East Fork Wetland

The EFRWSP has been operating since early 2009. The wetland was developed through a partnership with the Carolyn Hunt Trust Estate, which owns and operates a ranch and a smaller wetland on the property. This partnership has resulted not only in the construction of the largest water supply project of its kind in the United States, but also the development of the John Bunker Sands Wetland Center, which provides opportunities for research, education, wildlife observation, and community gatherings within a modern, environmentally-conscious facility and grounds. The facility includes an educational and research center with exhibit and laboratory space and an observation deck to view the wetland.

Proposed Projects- Direct Potable Reuse

Two projects have been proposed in Texas that would use potable reuse schemes without an environmental buffer and are generally considered to be direct potable reuse projects. Each of these is discussed briefly below.

*Colorado River Municipal Water District (CRMWD) Big Spring Water Reclamation Project*¹³: Due to projected long-term shortages of surface water and groundwater supplies, CRMWD is pursuing a project to provide advanced treatment to filtered secondary effluent from the Big Spring wastewater treatment plant and deliver this water directly to a raw water pipeline. In the pipeline it will be blended with surface water and conveyed to a terminal storage reservoir, prior to delivery to customer water treatment facilities. Advanced treatment processes include microfiltration, reverse osmosis and advanced oxidation using ultraviolet radiation and hydrogen peroxide. The facility is planned to start up in Fall 2012 and is designed for an initial capacity of 2.5 mgd.

City of Brownwood Proposed Potable Reuse Project: The City of Brownwood has proposed a potential project that would involve providing advanced treatment to effluent from its wastewater treatment plant and delivering this water directly to the treated water distribution system. Approval to submit an application for financial from the Texas Water Development Board (TWDB) to support engineering and construction was approved by the Brownwood City Council in April 2012¹⁴. At the time this paper was prepared, this project was still under review by the TCEQ.

Current Regulatory Framework

Currently, Texas does not have any regulations specifically addressing indirect or direct potable reuse.

Water quality for indirect reuse applications in surface water bodies is regulated through Texas procedures implementing requirements of the federal Clean Water Act through the Texas Pollutant Discharge Elimination System permitting procedures and the compliance with the Texas Surface Water Quality Standards.

For direct injection of reclaimed water into a drinking water aquifer, Texas Administrative Code Chapter 331 requires that the reclaimed water quality meet or exceed the requirements of the Safe Drinking Water Act and Texas drinking water standards. There are no specific Texas regulations addressing the use of spreading (percolation) basins for aquifer recharge.

For direct potable reuse, the Safe Drinking Water Act and Texas drinking water standards are the only regulations that currently apply. However, the TCEQ is addressing applications for direct potable reuse projects on a case-by-case basis.

Summary of Statewide Water Reuse Initiatives Related to Potable Reuse

Over the past several years, there has been increased statewide attention on water reuse, and in particular potable reuse applications. The following provides a summary of recent and ongoing statewide initiatives related to water reuse and in particular potable reuse applications.

In February 2011, the TWDB completed a set of 3 reports documenting the history of reuse in Texas, the state of technology of water reuse, and defining a research agenda for advancing water reuse in the state. A primary focus of the research agenda was on further development of indirect potable reuse science and technology. Since completion of this report, Texas entered into one of the most severe droughts on record. The drought, together with the approval of the CRMWD Big Spring project referenced above, created a significant interest among a number of communities in the viability of direct potable reuse. As

¹³ Sloan, D. A., 2011, "Permian Basin Turns to Potable Reuse," *Texas WET*, Water Environment Association of Texas, Nov. 2011.

¹⁴ http://www.brownwoodnews.com/index.php?option=com_content&view=article&id=8253:tceq-addresses-city-council-on-water-reuse-plan-video&catid=35:news&Itemid=58, accessed 6/5/12.

a result, focus within the professional community has shifted to discussion of the potential need for guidance and/or regulations associated with these types of projects and identification of additional research needs related to implementing potable reuse projects. Current statewide efforts specifically related to potable reuse include:

- The Texas Water Conservation Association (TWCA) has convened a reuse committee to evaluate impediments to implementing both potable and nonpotable reuse projects in Texas relating to four areas: technology; rules and regulations; public awareness and education; and funding. A primary focus of this committee is on the identifying technology gaps, research needs, and funding sources related to potable reuse.
- As part of its 2012 water research priority program, the TWDB is funding a project to develop a guidance document that summarizes water quality goals and recommended treatment approaches for potable reuse in Texas. The focus of this effort is on direct potable reuse applications or indirect potable reuse applications that involve high percentages of wastewater effluent in relation to “natural” water sources and/or limited detention times within an environmental buffer.
- WaterReuse Texas has convened a potable reuse committee to evaluate technical, policy and related issues associated with implementation of potable reuse projects in Texas.

Summary

To date, Texas has a successful history of implementing potable reuse projects in a manner that protects the health and safety of the public and demonstrates good stewardship of resources. Implementation of additional potable reuse projects is a key component of the State Water Plan. However, it is critical that an emphasis on the protection of public health and safety be maintained as a top priority moving forward. It would be a tremendous setback for the advancement of water reuse and the water industry if there were to be an actual (or even a perceived) association with negative impacts on human health and the application of potable reuse. As we move into the arena of direct potable reuse, it becomes increasingly critical that safeguards are in place for every project that provide multiple barriers, ensure the use of robust and proven treatment technologies, and provide adequate operational and monitoring protocols.



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Patricia Finn Braddock
Partner

AREAS OF CONCENTRATION

- Environmental
- Toxic Tort
- Climate Change

EXPERIENCE

Patricia Finn Braddock has been a partner in Fulbright & Jaworski L.L.P.'s Austin office since 1992. As a member of the firm's Environmental Department, her practice focuses on permitting and enforcement matters before federal and state regulatory agencies, and associated litigation, in all aspects of environmental law, but primarily in the area of air pollution control. She is co-chair of the firm's Climate Change Practice.

From 1974 through 1987, Ms. Braddock worked in senior positions at Texas' environmental regulatory agencies on air, water quality and solid waste disposal permitting and enforcement matters. Through her thirty five years of government service and private practice, Ms. Braddock has developed a comprehensive working knowledge of both the legal and technical aspects of federal and state permitting, enforcement and remediation programs.

Ms. Braddock has extensive experience in handling matters before federal, state and local environmental agencies, including the United States Environmental Protection Agency, the Texas Commission on Environmental Quality, the Texas Railroad Commission, and local programs in Harris County and the City of Houston. She has also represented clients in federal district courts in citizen suits and government enforcement actions. She regularly counsels clients on environmental regulatory requirements and environmental aspects associated with business transactions.

She has represented clients in complex Superfund contribution and cost recovery actions and assisted clients in obtaining approvals under state remediation programs, such as the Texas Voluntary Clean-up Program. She also conducts and supervise environmental compliance audits.

In addition, Ms. Braddock has represented clients in litigation brought by EPA and the DOJ in various states as well as in toxic tort litigation.

REPRESENTATIVE EXPERIENCE

- Operating and managing contractors of the Pantex Plant in federal and state agency proceedings involving environmental aspects associated with plant operations for over nineteen years
- Refineries in citizen suits under the Clean Air Act and the Clean Water Act

BIOGRAPHY: Patricia Finn Braddock

- A Trustee in Bankruptcy regarding environmental conditions at a state superfund site
- Four major mid-stream oil and gas companies in air permitting and compliance issues at sites in Texas
- Three oil and gas companies in lawsuits alleging violations of the federal Clean Air Act brought by EPA and the DOJ in different states
- Companies in obtaining air permitting authorizations for a number of innovative technology pilot plants, including a demonstration of highly-engineered photosynthetic organisms to convert CO₂ into liquid energy and pollution control equipment for capturing CO₂ from coal-fired power plants
- Energy companies in the permitting of coal-fired power plants and natural gas-fired power plants

PROFESSIONAL ACTIVITIES AND MEMBERSHIPS

- American Bar Foundation Fellow
- Texas Bar Foundation Fellow
- American Bar Association, Natural Resources Section
- Texas Bar Association, Environmental and Administrative Law Sections
- Central Texas Chapter of the Air and Waste Management Association, former chair
- Adjunct Professor in Air Pollution Law at the University of Texas School of Law in Austin (1991)
- Texas Environmental Law Super Conference, Planning Committee and speaker (2000 - 2011)
- University of Texas CLE Carbon and Climate Change seminars, Planning Committee and Speaker (2007 - 2011)

PROFESSIONAL HONORS

- Texas Board of Legal Specialization, certified in Administrative Law
- American College of Environmental Lawyers
- *PLC Which Lawyer* (2009 - 2011)
- *Chambers and Partners USA*, Top Tier (2005 - 2011)
- *The Best Lawyers in America* (1999 - 2011)
- *Who's Who in American Law* (2006 - 2011)
- "Texas Super Lawyers," *Law & Politics* (2003 - 2011)
- "Top-Notch Environmental lawyer," *Texas Lawyer* (2007)
- "Best of Business Attorneys," *Environmental, Austin Business Journal* (2005)

PUBLICATIONS

Ms. Braddock has contributed to the *Texas Environmental Law Handbook* (Government Institutes) as an author (1989, 1991, 1993, 1996 and 2000) and as an editor (1996, 2000). She is also the author of numerous papers for the State Bar of Texas, the University of Texas CLE, firm seminars and the following:

- Co-Author, "EPA Proposes More Stringent NAAQS for Fine Particulate Matter and Visibility Impairment," *Fulbright Alert*, June 18, 2012.
- Co-Author, "EPA Proposes Carbon Standard and Carbon Capture for Power Plants," *Fulbright Alert*, March 28, 2012.
- Co-Author, "Unanimous Supreme Court Decision: EPA Administrative Compliance Orders Are Subject to Pre-Enforcement Review," *Fulbright Alert*, March 21, 2012.
- Co-Author, "EPA Stay Vacated—Boiler MACT and CISWI Rules Now Effective," *Fulbright Alert*, January 12, 2012.
- Co-Author, "President Obama Withdraws Proposal to Lower the Ozone NAAQS," *Fulbright Alert - Environmental and Energy*, September 2, 2011.
- Co-Author, "U.S. Supreme Court Rejects Federal Common Law Causes of Action for Climate Change Litigation," *Fulbright Briefing*, June 23, 2011.
- Co-Author, "Strategies in PSD Permitting of Greenhouse Gases," *Law 360*, March 2010.
- Co-Author, "EPA Finalizes Tailoring Rule for Stationary Sources of Greenhouse Gas Emissions," *Fulbright Alert*, May 14, 2010.
- Co-Author, "EPA Proposes Expanded Greenhouse Gas Reporting Requirements," *Fulbright Alert*, April 13, 2010.
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BIOGRAPHY: Patricia Finn Braddock

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- Co-Author, "EPA Interpretative Memorandum Excludes CO₂ From PSD Review," *Fulbright Briefing*, December 23, 2008.
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- Co-Author, "The Climate Change Decision's Bases And Implications," *Energy Law 360*, April 20, 2007.
- Co-Author, "Supreme Court Issues Decision on Climate Change: Its Legal Bases and Implications," *Fulbright ALERT*, April 9, 2007.
- Co-Author, "EPA Announces Final Storm Water Rule for Oil and Gas Construction Activities," *Fulbright ALERT*, June 2006.
- Co-Author, "'Global Warming' Litigation," *Litigation Update*, October 2005.

SPEECHES

- Frequent lecturer at state and national conferences on federal and state air quality issues

EDUCATIONAL BACKGROUND

1974 - J.D., St. Mary's School of Law

1971 - B.A., American University

Pat was admitted to practice law in Texas in 1974.

CIVIC INVOLVEMENT

- Travis County Volunteer Legal Services, Board of Directors (2006 - 2008)
- Has represented bono clients in divorces, Social Security appeals and before the US Army Discharge Review Board

Stephanie Bergeron Perdue
Office of Executive Director
Texas Commission on Environmental Quality

Stephanie Bergeron Perdue was announced as Special Counsel to the Executive Director in April 2012. Prior to this position, Stephanie was the Deputy Director of the Texas Commission on Environmental Quality's (TCEQ) Office of Legal Services since May 2006. She joined the Environmental Law Division as Director in September 2001. She previously served as Executive Assistant to former Chairman Robert J. Huston from August 1999 thru September 2001 which afforded her the opportunity to participate in the Sunset Review Process of what was then the Texas Natural Resource Conservation Commission. As a result, she also worked on a variety of Sunset-related legislative implementation rulemakings such as participation by the Executive Director in contested case hearings. And as a result of legislation in the 2009 session which re-scheduled TCEQ's Sunset review from 2013 to 2011, Stephanie had a second opportunity to participate in the Sunset Review Process of the TCEQ!

She was introduced to National Ambient Air Quality Standards (NAAQS)/State Implementation Plan issues upon her arrival at the agency in 1999 and continues to be involved with these issues as a result of EPA's adoption of more stringent NAAQS, including ozone, NO₂ and lead. Additionally, Stephanie has been actively involved in discussions with the Environmental Protection Agency regarding the TCEQ's Flexible Permit Program.

Her introduction to water issues, including TMDLs, Section 401 Certification, and State/Regional Water Plans, occurred in 1997 when she joined the staff of Senator Jon Lindsay's Office. She worked for Senator Lindsay for two sessions prior to joining the agency. The ongoing drought has highlighted the importance of the state's continued long-term planning efforts as part of the Senate Bill 1 process.

Stephanie received her Bachelor of Science in Communications from University of Texas at Austin in 1990 and Doctor of Jurisprudence from South Texas College of Law in 1995.

Paul Bork, The Dow Chemical Company

Education -BS Chemical Engineering – Michigan Tech
-JD - University of Michigan Law School
-MBA – Louisiana State University

Licensed -Texas
-Louisiana
-Michigan
-Patent and Trademark Office
-Various Federal Courts

Employment -Clerked Michigan general trial court – Isabella County
-The Dow Chemical Company – 28 years

Over the years, Paul has been the Dow site attorney for various sites, the Dow corporate attorney (expertise for site attorneys, among other things) for Air, Water, RCRA and M&A (globally). He served on various boards, traded currency, audited facilities, managed litigation, provided advice and training, reviewed correspondence, negotiated contracts, drafted policies, negotiated violations, assisted state and federal statutory and regulatory advocacy, obtained patents, etc.. One accomplishment (minor statute change) received appreciation from both the Dow President and the US President.

Paul has supported Dow's Freeport Operations over most of his career and been the environmental counsel for the site for the past ten years. A flag that flew over the Texas Capital flies in Paul's office in Michigan, thanks to State Representative Dennis Bonnen recognizing Paul's supporting Dow's Texas operations (he is a frequent flyer on the Dow shuttle between Michigan and Texas). He currently is the environmental counsel for all Dow sites in Texas, Illinois, Arkansas and Canada (including Rohm and Haas and Union Carbide sites). He also has responsibilities with respect to certain sites in California, West Virginia and Louisiana, as well as supporting several company-wide functions and periodically serving as an expert negotiator on critical projects.

Paul is married, five kids (one at home) and earned black belts in six sigma and Tae Kwon Do.

Support Your Local Sheriff

Through the

Texas Environmental, Health, and Safety Audit Privilege Act

by

Paul Bork

(August 2012)

Disclaimer

This paper represents the personal views of Paul Bork and not those of The Dow Chemical Company and/or any of its subsidiaries (**Dow**) or any organization to which Dow is a member, any similarities between these views may not be entirely coincidental, but they are independent.

Scope

This paper deals with what the act allow to be cited as Texas Environmental, Health, and Safety Audit Privilege Act (§1). This paper will cite it as the **Texas Audit Privilege**. The section references are all to the Texas Audit Privilege, unless otherwise specified. Except as expressly noted, this paper does not address in detail the TCEQ Guidance, as the Texas Audit Privilege is broader than any Texas Agency and the Texas Audit Privilege expressly prohibits any agency from adopting a rule or imposing a condition that “circumvents the purposes of this Act.” (§11) One needs to understand the TCEQ Guidance, when working with TCEQ. None of the TCEQ Guidance seems to circumvent the purposes of the Texas Audit Privilege.

The Texas Audit Privilege is an independent Texas Statute. It provides protection to certain behavior across Texas in a manner similar to that of the Attorney Client Privilege or the Attorney Work Product Doctrine. In some ways, the Texas Audit Privilege is broader than these other protections, in other ways it is more limited.

First, the scope of the Texas Audit Privilege is limited to Environmental Health and Safety Laws (**EHS Laws**) which include Texas and Federal laws and their related regulations. (§3(a)(2)) Of course, the protection against fines and civil penalties is relevant is for Federal laws and their related regulations that are part of delegated programs. However, the privilege applies for all Federal laws and their related regulations, even those which are not part of a delegated program. The scope of EHS Laws is required to be “construed broadly.” (§3(e)) Second, the scope is limited to an Audit (**EHS Audit**) under EHS Laws, which are defined as, “a systematic voluntary evaluation, review or assessment of compliance with [EHS Laws] or any permit issued under those laws.” (§3(a)(3))

The scope of the Texas Audit Privilege is broader than any Texas Agency. It covers EHS Laws and permits issued by Texas Commission on Environmental Quality, Texas Railroad Commission, Texas Department of Licensing and Regulation, Texas Department of Public Safety, Texas Department of Health and many other Texas and Federal agencies.

The EHS Audit can be conducted by the owner or operator, their employee or independent contractor. It includes operations at a site owned or operated by the one conducting the EHS Audit and any activity at any regulated site. (§3(a)(3))

The Texas Audit Privilege is self-enforcing, not requiring any implementing regulations. In fact, § 11 says, “A regulatory agency may not adopt a rule or impose a condition that circumvents the purpose of this Act.”

The Texas Audit Privilege grants a new privilege and “does not limit, waive, or abrogate the scope or nature of any statutory or common law privilege, including the work product doctrine and the attorney-client privilege.” (§13)

References

Texas Statutes and Constitution – Vernon’s Civil Statute, Article 4447cc.

- <http://www.statutes.legis.state.tx.us/Docs/CV/htm/CV.71.1.htm#4447cc>

Texas Penal Code – Section 7.02

- <http://www.statutes.legis.state.tx.us/Docs/PE/htm/PE.7.htm>

TCEQ Guidance (RG-173-Code on TCEQ’s Guidance on Texas Audit Privilege – Aug 2009)

- www.tceq.texas.gov/publications/rg/rg-173.html

Key search term to find the current version on TCEQ web pages is “RG-173”

The Texas Audit Privilege was last amended by the passage of HB 3459 by the 75th Texas legislature in 1997.

TCEQ 2011 Annual Enforcement Report

- http://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/FY11/enfrptfy11.pdf

EPA Audit Overview

- http://www.epa.gov/region5/enforcement/audit/article_auditlaws/intro.html#31

This paper is copyrighted and has the following, normal exclusions that these are not EPA positions. However, this comprehensive 2004 update does appear on the EPA Region 5 web site. See Table IV for a summary of Texas Audit Privilege.

At the time of writing, John A. Lee was an associate at the law firm of Fedota Childers & May in Chicago, and a research fellow and attorney at the Center for International Human Rights at Northwestern University. Bertram C. Frey was acting regional counsel for Region 5 of the U.S. EPA. The views expressed in this article are the views of the authors and are not necessarily those of the U.S. EPA. Research and editorial assistance for this article was given by Nicole Wood, a Region 5 intern at the time of writing.

Background

For years, many governmental agencies who are charged with enforcing requirements have adopted rules or processes to encourage those regulated to conduct self audits and/or disclosures and fixes of violations to the enforcing governmental agency. Some of these rules or processes are adopted on a standing basis, others on a temporary or limited basis.

In 1995, the 74th Texas legislature adopted a very broad, standing statute to encourage both self-assessments and disclosures and fixing of violations of environmental, health and safety requirements through adopting HB 4273.

The Texas Audit Privilege consists of two major benefits: 1) privilege of the Audit Report not to be disclosed in civil or administrative proceedings (§5(a)) and 2) immunity from administrative or civil penalty for disclosed violations (§10(a)).

For the use of the Texas Audit Privilege to address minor issues in ongoing operations, immunity is more significant. It allows an operator, under the procedural requirements of the Texas Audit Privilege to find and promptly fix violations without having concerns related to enforcement.

Best Practice: There is no requirement that the reported violation actually be a violation. In some cases, such as where the facility desires to upgrade a practice or equipment from a “gray” compliance situation to a clearly compliant situation, one can claim a violation to invoke the Texas Audit Privilege jurisdiction, promptly upgrade the practice or equipment and eliminate any concern for future enforcement on the “gray” compliance situation. This is particularly appropriate for newly acquired facilities where the new owner’s practices and types of equipment will be installed in the acquired facility to be consistent with the new owner’s other facilities. (As in other areas, a person doesn’t have fewer rights simply because they were not violating the law.)

In other uses of the Texas Audit Privilege, the privilege against disclosure may be significant. For example, if one were responding to an event that itself was not subject to the Texas Audit Privilege, such as the BP Texas City event, one might conduct a Texas EHS Audit about the edges of the event to determine the scope of the event. The privilege would only operate inside Texas, so one might have to negotiate or be very careful in dealing with federal agencies. However, a limited privilege would be better than none, particularly if one were reasonably comfortable that the lead investigating agency were a Texas agency. An example of this would be if maintenance were a potential issue and the Texas EHS Audit could determine that there was no systematic maintenance issue at the site and the issue of concern was a singular incident.

Similarly, from a TCEQ perspective the privilege prevents important enforcement resources from being spent on issues that have been resolved. An example of this would be an enforcement action on equipment that was subject to an historical Texas EHS Audit. Since the historical compliance issues have been agreed as resolved, there is no need to consider if the

current concern was part of an historical issue. There may well be much more effort needed to determine the historical issue than would be consumed with an enforcement effort focusing only on the current facts.

Conducting an Audit

Conducting a Texas EHS Audit involves five steps: 1) notification, 2) auditing, 3) disclosure, 4) restoring compliance and 5) confirming compliance. All steps must be completed to trigger the Texas Audit Privilege benefits.

The first step - notification, occurs when a facility planning to conduct an EHS Audit under the Texas Audit Privilege notifies an appropriate regulatory agency that the facility is planning to conduct an EHS Audit under the Texas Audit Privilege. Such notice must specify the anticipated time the audit will begin and the “general scope of the audit.” (§10(g)) Any non-compliance uncovered by auditing before the date specified in the notice is not covered by the Texas Audit Privilege.

Best Practice: Specify both the date and the time that a shift starts that will include the commencement of the EHS Audit to ensure that there is no auditing before the commencement of the audit. Preparation for the EHS audit can occur before the commencement of the EHS Audit. Preparation is separated from auditing, by one simple test – can the activity determine the existence of a non-compliance? If the answer is yes, the activity is auditing and not preparation. Collection of documents, building of scaffolding, calibrating testing equipment and reading of permits/ regulations are typical audit preparation activities.

Best Practice: Submit the notification by certified mail. This is not required, but will confirm when the notification was received and is a good practice that all documents sent to an agency under the Texas Audit Privilege are sent by certified mail.

Best Practice: Specify the scope of the EHS Audit to include the entire scope of potential non-compliance findings. Any out-of-scope, non-compliance findings are not covered by the Texas Audit Privilege. Some have found the following format useful:

This audit shall evaluate compliance with all Texas and federal environmental, health and safety laws, regulations and permits applying to Unit 47; with a focus on those pertaining to NOx emissions, reporting and related records from the associated boiler.

Best Practice: Specify the scope of the EHS Audit to ensure there is no question of overlap of audit scope when conducting another audit for the same legal area but for different equipment. Using the useful format from the prior Best Practice, an identical scope statement but replacing Unit 47 with Unit 405 makes clear to the receiving agency that the two audits do not have overlapping scopes.

The second step - conducting the audit, occurs when operations, including documents, are compared against EHS Laws and permits. A Texas EHS Audit is, “a systematic voluntary evaluation, review, or assessment of compliance.” (§3(a)(3))

The Texas EHS Audit may be conducted by, “an owner or operator, an employee of the owner or operator, or an independent contractor of: (A) a regulated facility or operation; or (B) an activity at a regulated facility or operation.” (§3(a)(3)) This means an owner of a facility or operation can conduct the Texas EHS Audit by the owner himself, an employee or an “independent contractor.”

While there are no policy reasons to exclude a contractor in whom the owner or operator had a partial ownership interest, the Texas Audit Privilege only allows, “independent contractors.” There is no further definition or explanation for this qualification, but the courts will provide a meaning to every word in a statute, if possible. So, dependent contractors appear not able to conduct Texas EHS Audits.

The duration of the audit is limited to a reasonable time, not to exceed six months, but can be extended by the governmental entity with regulatory authority, “based on reasonable grounds.” (§4(e))

Best Practice: Request six months for each Texas EHS Audit and ensure that the entire Texas EHS Audit can be completed within the requested six months. Only seek extension of this time for unexpected events that significantly delayed progress on the audit, such as abnormal operations, significantly slower auditing due to unexpected conditions, significant and abnormal weather, significant and unexpected loss of audit manpower (perhaps due to illness, or other need for critical audit resources). This need for critical audit resources can be due to other requirements on site or in the company or even due to unexpected regulatory agency inspections. Requested extensions of time should specify a requested additional duration, while not limited in the Texas Audit Privilege, is typically less than six months.

Texas EHS Audits that are not complete due to other purposes are best just terminated when the requested duration of the Texas EHS Audit expires.

Best Practice: Suspend auditing activities during any gap between an initial audit period and the grant of any extension. Additional audit preparation may be conducted, but any audit findings that occurred during any gap period might not be covered by the Texas Audit Privilege.

A key part of the Texas EHS Audit is the scheduling of the auditing. There is no limit between determining that one has a desire to conduct an audit and actually conducting the audit. The major key to obtaining the benefits of the Texas Audit Privilege is to meet the various

requirements so that the disclosure is voluntary. For example, §10(b)(1) limits voluntary disclosures to those that, among other things, “is made promptly after knowledge of the information disclosed is obtained.” It may not be appropriate to wait until the end of the Texas EHS Audit once knowledge of an urgent non-compliance is obtained. However, disclosure within six months after completing the Texas EHS Audit will normally be appropriately prompt.

Best Practice: Schedule the Texas EHS Audit so that the audit is complete before any disclosure or auditing is required, such as under Title V, TPDES or NESHAP. Sometimes these audits have to occur when a piece of equipment is down for maintenance or when certain operations are occurring. There is no requirement that a Texas EHS Audit occur within a reasonable time of when one first suspects there may be a concern in a given area.

Best Practice: Clearly document when, during a Texas EHS Audit, a suspected non-compliance is identified, then when the suspected non-compliance is confirmed or refuted. This is particularly important if a Texas EHS Audit is being conducted so that a disclosure, such as a Title V deviation report will need to be filed before the Texas EHS Audit disclosure is completed to document compliance with the Title V deviation report requirements and the voluntary disclosure requirements of the Texas Audit Privilege.

Best Practice: Delay confirming a suspected non-compliance until the audit phase of the Texas EHS Audit.

The third step – disclosure, occurs when the Texas EHS Audit non-compliance findings are communicated to the appropriate Texas governmental agency.

Best Practice: Submit a disclosure before an information request is expected from the relevant regulatory agency, perhaps as a preparation for a scheduled agency inspection or based on informal information. To be voluntary, the disclosure must be submitted, by certified mail, before the agency request is received that would also discover the violation.

Best Practice: If an information request is received from an agency that may discover a violation already discovered under a Texas EHS Audit, wait and see if the agency also finds the violation. Once the scope of the agency violation discovery is determined, the Texas EHS Audit may proceed and get coverage for any violations that are not determined by the agency.

Best Practice: Make the disclosure no more than six months after the end of the Texas EHS Audit. If the Texas EHS Audit is precipitated by a suspected non-compliance, clearly document the area of continued ambiguity or question, so the disclosure is not at risk for being viewed as non-voluntary for failure to promptly disclose after confirmation of the non-compliance.

Note: that §10(b)(2) limits voluntary disclosures to those that are made by certified mail to the agency that has regulatory authority with regard to the violation disclosed. It is critical and jurisdictional that the disclosure be by certified mail. E-mail, texting, talking in person, showing an inspector are all ways to communicate that, even if they are effective communications, are inconsistent with obtaining the protections of the Texas Audit Privilege. Once a matter is known by the agency, even if known from a person disclosing after properly initiating a Texas EHS Audit, the disclosure cannot be voluntarily made and the benefits of the Texas Audit Privilege are not obtainable. See §10(b)(3) which excludes instances where the “violation was independently detected by an agency . . . before the disclosure was made using certified mail.” It seems clear that “independently detected” means independent of the certified mail disclosure, and not independent of the person who later makes a certified mail disclosure.

Also, none of the benefits of the Texas Audit Privilege will occur until the Texas EHS Audit is started, so waiting to start a Texas EHS Audit does have risks of independent discovery or internal confirmation that a suspected issue is a real non-compliance. Once one knows that a non-compliance has occurred, it is too late to initiate a Texas EHS Audit.

Best Practice: A person conducting a Texas EHS Audit can and sometimes should talk to the agency, perhaps TCEQ about Texas Audit Privilege and even ongoing Texas EHS Audits; however, never, never, never disclose or discuss in detail a violation that has not first been voluntarily disclosed, which means by certified mail alone.

Best Practice: Disclosure of a non-compliance is a jurisdictional issue to obtain coverage under the Texas Audit Privilege. There may be situations when the question of non-compliance may be gray or undetermined. If an organization were planning to replace such a gray or undetermined process with one that clearly provided compliance, the organization should claim a non-compliance and implement the new process. This approach may be very useful following an acquisition where the acquiring organization’s processes are being implemented and there is any concern with the acquired organization’s processes.

The fourth step – restoring compliance, occurs when the non-compliance is eliminated. Non-compliance is an undesirable situation, compliance should be restored promptly. Sometimes restoring compliance may be delayed until a particular activity occurs, so the restoration can be done safely or with less impact on the environment. These delays need to be agreeable to the appropriate agency.

For example, if an additional analyzer were needed to restore compliance and that installation would require a hot tap unless the installation were delayed until the plant was not running, the appropriate state agency might agree that the delay is appropriate.

Best Practice: Compliance is restored as soon as the organization is no longer in non-compliance. Often organizations may decide to have “levels of protection” where there is more than one process to confirm compliance continues. If the non-compliance was a failure to do something, compliance is restored as soon as the first claimed corrective measure is completed. The organization should select the most appropriate one, normally also the fastest to implement improvement to restore compliance. It is not needed to specify every level of protection an organization may decide to implement, as failure to maintain all levels of protection can create additional liability if the non-compliance were to reoccur.

Section 10(b)(5) requires that the person making the disclosure initiates the restoration efforts.

While the notification, the inspection and the disclosure could be made by a contractor or an employee, that person would have to restore compliance and provide the cooperation with any agency investigation.

Best Practice: Have the disclosure made in the name of the actual owner or operator – typically a corporate owner or operator of the facility or activity.

However, if a contractor is hired to audit and fix whatever is found, that contractor should make initial audit notification, the disclosure in the contractor’s name, but they will need the ability to both fix violation(s) found and cooperate with the agency on any inspections related to the disclosure.

The restoration of compliance needs to follow the statutory requirements, “initiat[ing] an appropriate effort . . . pursu[ing] that effort with due diligence, and correct[ing] the noncompliance within a reasonable time.” §10(a)(5).

The fifth step – confirming compliance, occurs when the restoration of compliance is communicated to the appropriate Texas governmental agency.

There is no requirement to propose a compliance restoration schedule, no calendar limit on the time to complete restoring compliance and no requirement to disclose the completion of compliance restoration to the agency. However, there is an express requirement to cooperate with the appropriate agency in connection with an investigation of the issues identified in the disclosure of violation(s). §10(b)(6) This cooperation would have to include letting the agency know when compliance was restored. Otherwise, the agency can’t determine that the restoration of compliance met the statutory requirements. There is also no requirement that the agency certify that the restoration of compliance met the statutory requirements, but there may be great

value in receiving such a determination. There is also a requirement that the completion of the compliance restoration occur within a reasonable time. (§10(b)(5))

It is important to note that the Texas Audit Privilege does not constrain exiting from a Texas EHS Audit at any point. There is no need to document the extent or details of what was done during the Texas EHS Audit. Some audits may have initial findings that cause the audit to be modified in either scope or process. Further, many Texas EHS Audits don't have any violations disclosed. While the percentage varies over time and type of inspection, both TCEQ long term average and Dow's average are about 1/3 Texas EHS Audits don't have any violations disclosed. While most Texas EHS Audits are directed at areas of concern or suspected violations, the audit itself may develop facts different from those suspected or during the audit the details of the requirement may become clearer and the initial procedure or documents may be confirmed as appropriate.

Exclusions from Texas Audit Privilege

There are certain areas of EHS compliance that are excluded from the reach of the Texas Audit Privilege. Some of these were in the initial Texas Audit Privilege and some were "recommended" by EPA in their review of the initial Texas Audit Privilege. Following the structure of the Texas Audit Privilege, there are ten excluded areas of EHS compliance. These are not areas where a significant amount of EHS activity should be occurring.

The first excluded area is criminal activity. (§10(a)) The immunity is only from administrative or civil penalties for disclosed violation(s).

Best Practice: Avoid criminal activity.

While many of the EHS Laws have associated criminal penalties without a very bright line dividing activity which draws a criminal response from activity drawing a civil or administrative response, the vast majority of activity drawing a criminal response is activity that an ordinary person would understand is "volunteering" for a special disciplinary response.

The second excluded area is administrative or civil orders or injunctions. (§10(a)) The immunity is only from administrative or civil penalties for disclosed violation(s). The order or injunction could be positive (requiring some activity or some activity only when something occurs, such as another release from the same equipment). An example would be to close a valve or gate when performing a maintenance activity that had a history of causing a violation through contaminating Texas waters. The order or injunction could be a negative (prohibiting some activity or some activity only when something occurs, such as another release from the same equipment). An example would be to prohibit opening a particular reactor that has a history of causing a violation through contaminating Texas waters during a significant rain event. Both of these could be addressed and the order or injunction avoided if the TCEQ agreed that an

implemented change in operating discipline was sufficient to preclude a reoccurrence of the violation(s).

Best Practice: Voluntarily take any obvious activity or change needed to protect people, the environment or to prevent a reoccurrence of the reported violation, so there will be no need for the agency to inter an administrative or civil order or an injunction.

The third excluded area is where an agency either initiates “an investigation of the violation” or “independently” detects the violation before “the disclosure was made using certified mail.” (§10(b)(3))

Best Practice: Conduct Texas EHS Audits promptly and disclose violations before scheduled agency inspections, so Texas auditing resources can be directed to other areas and the Texas Audit Privilege applies to violations that were being addressed under this Texas Audit Privilege.

The fourth excluded area is if the violation(s) resulted in an injury or imminent and substantial risk of serious injury to anyone onsite. (§10(b)(7))

The fifth excluded area is if the violation(s) resulted in substantial actual harm or imminent and substantial risk of harm to anyone off-site. (§10(b)(7))

The sixth excluded area is if the violation(s) resulted in imminent and substantial risk of harm to property of the environment off-site. (§10(b)(7))

Best Practice: To the extent possible make the processes inherently safer, by selecting safer chemicals, having the minimum amount of reactive chemicals in place, adding redundant containment/decontamination that will provide protection if the primary containment is breached and ensuring that employees use appropriate personal protective equipment when they are potentially in harm’s way.

The fourth through sixth excluded areas seem to be set up to avoid a facility responding to a significant event, such as the BP explosion, by starting a Texas EHS Audit that will interfere with the Texas and Federal investigation that the incident precipitated. It is almost like the incident itself was notice that there will be a Texas investigation into the incident. This should be a very rare occurrence.

The seventh excluded area is if the disclosure is a report to a regulatory agency required solely by a specific condition of an enforcement order or decree. (§10(c))

Best Practice: Don’t use the Texas Audit Privilege in areas where an enforcement order applies. There are plenty of other areas applicable to a facility.

The eighth excluded area (§10(d)(1 and 2), excludes immunity only) is if the disclosure is made by a person who:

- 1) Intentionally or knowingly committed the violation(s)
- 2) Is responsible under Section 7.02, Penal Code for the violation(s)
 - This section, contained in Appendix B, deals with criminal responsibility when: a) a person induces an innocent or nonresponsible person to commit an act, or b) in attempting to commit one felony, a person commits another felony or a member of a criminal conspiracy commits another felony in furtherance of the conspiracy.

Best Practice: *Not to be involved with intentionally, knowingly or criminal activity.*

However, if that bridge has been crossed, have another legal entity conduct the Texas EHS Audit, with the full ability to comply with the statutory requirements of response, cooperation with the investigation and correcting the disclosed violations.

The ninth excluded area (§10(d)(3-5), excludes immunity only) if the offense or violation:

- 1) was both: a) committed intentionally or knowingly by a member of the regulated entity's management or an agent of the regulated entity and b) the regulated entity's policies or lack of offense prevention systems contributed materially to the occurrence of the violation.

Best Practice: Both have ongoing discussions to ensure that intentional and knowing violations do not occur and have policies and offense prevention systems to prevent potential violations.

- 2) was: a) committed recklessly by a member of the regulated entity's management or an agent of the regulated entity, b) the regulated entity's policies or lack of offense prevention systems contributed materially to the occurrence of the violation and c) the violation resulted in substantial injury to one or more persons at the site or off-site harm to people, property or the environment.

Best Practice: Have ongoing discussions to ensure that only appropriate risks are taken.

Have policies and offense prevention systems to prevent potential violations.

To the extent possible make the processes inherently safer, by selecting safer chemicals, having the minimum amount of reactive chemicals in place, adding redundant containment/decontamination that will provide protection if the primary containment is breached and ensuring that employees use appropriate personal protective equipment when they are potentially in harm's way.

- 3) resulted in both a substantial economic benefit which gives the violator a clear advantage over its business competitors.

Best Practice: Help the agency understand how an apparent substantial economic benefit did not, in fact, occur. Discuss with the regulatory agency if voluntarily providing the amount of the economic benefit to a SEP or otherwise disgorging the benefit, perhaps even spending for environmental protection at your facility that does not generate competitive advantage would resolve concerns in this area.

It is only reasonable not to have a benefit with respect to business competition by the occurrence of a violation. This excluded area is added to avoid having Texas regulatory agencies prohibited from moving to eliminate any competitive advantage of violating legal requirements.

The tenth excluded area (§10(h)) is where a court or alj finds that, subsequent to the effective date of the Texas Audit Privilege, the one claiming immunity has both: 1) repeatedly or continuously committed significant violations and 2) not attempted to bring the facility or operation into compliance in a way that constitutes a pattern of disregard of EHS Laws. Such a pattern must be a series of violations due to separate and distinct events within a three year period, at the same facility or in the same operation.

Best Practice: Clearly attempt to restore compliance when there is a series of significant violations or a long continuous period of such serious violations and clearly communicate such efforts to the applicable regulatory agency.

Combine Texas EHS Audits and Attorney Client Privilege Audits

The concepts of the Texas Audit Privilege of disclosing the audit, violation and compliance with the appropriate Texas regulatory agency and Attorney Client Privilege of restricting the distribution and discussion of information seem inconsistent, if not incompatible. However, there are several sections of the Texas Audit Privilege that will assist combining these two types of audits into a single effort.

First, §13 says, “This Act does not limit, waive, or abrogate the scope or nature of any statutory or common law privilege, including the work product doctrine and the attorney-client privilege.”

Second, §11 says, “A regulatory agency may not adopt a rule or impose a condition that circumvents the purpose of this Act.”

From these two sections, it is apparent that a Texas EHS Audit can be conducted under attorney-client privilege, where the first step of the Texas EHS Audit is conducted as if there were no

attorney-client privilege. The same audit will also need to be initiated under the attorney-client privilege as if there were no Texas EHS Audit.

The second step, conducting the audit can be conducted in the same manner as if there were no attorney-client privilege, however careful control of the process is needed to ensure that there is no inadvertent disclosure destroying the attorney-client privilege.

The combined audit should proceed under the timing of the Texas EHS Audit. Individual violations will need to be allocated to either proceeding under the third step of the Texas EHS Audit, promptly disclosing, by certified mail, the violation to the agency; or proceeding under the requirements of the attorney-client privilege for the rest of the audit violations. I'll stay away from the attorney-client privilege issues, such as how to make a partial disclosure without waiving the entire attorney-client privilege, but suggest dual documentation that clearly collects the Texas EHS Audit findings in one set of documents and attorney-client findings in another set of documents will be useful.

This combined investigation may be a useful tool to help the government and the regulated entity reach agreement, early in the investigation, as to the scope of activities that the government includes in its investigation, saving time and effort, while having a complete investigation into the appropriate activity.

Audit Report

The Texas Audit Privilege defines an Audit Report broadly, see §4. The Texas Audit Privilege recommends, but does not make it of legal significance to mark each document in an audit report with the label, "COMPLIANCE REPORT: PRIVILEGED DOCUMENT," or words of similar import. (§4(d)) If one can ensure that all documents in an audit report are labeled, it is good to label the documents. However, if there is a reasonable opportunity for some document(s) failing to be so labeled, it may be best to avoid labeling so as not to create a presumption that the document so not labeled was not intended to be part of the audit report.

Certain information is prohibited from being included in an Audit Report under the Texas Audit Privilege. Any document or information required to be collected by a regulatory agency under EHS Laws is excluded. (§8(a)(1)) Also excluded is information collected by a regulatory agency's observation, sampling or monitoring. (§8(a)(2)) This exclusion is broadened by excluding information collected by anyone not involved in the preparation of an audit report. (§8(a)(3)) These exclusions should be drawn narrowly, as they are addressing the precise document or information required or collected. For example, if an agency requires an inventory of air emissions at the end of a year, that requirement will not prevent a measurement of some air emissions from being included in an audit report. Similarly, simply because a discovered violation will be required to be submitted in a Title V deviation report when the six months come up, as it is known will not prevent an audit report from containing information about an air violation.

Privilege of the Audit Report

An audit report under the Texas Audit Privilege is privileged from disclosure (§5(a) and (b)). The scope of the privilege is broad, but not unlimited. Note that person who made the observation may be compelled to testify about what they observed, but others may not be compelled to testify about what they learned during the Texas EHS Audit and which is contained in a privileged audit report. (§5(c) and (d)) Finally, an employee of a regulatory agency may not request, review or otherwise use an audit report during an agency inspection. (§5(e))

Section 6 discusses the manner in which an audit report or the information contained in an audit report may be disclosed without waiving the privilege. These terms should be carefully reviewed before disclosing an audit report that is desired to be privileged.

Section 7 outlines the process for a court or alj to determine that an audit report or part of it is not privileged. Of particular note is where the lack of appropriate efforts to achieve compliance and pursuing with reasonable diligence after discovery of the noncompliance is a grounds for non-privilege (§7(a)(1)), where the court or alj make the determination, not the administrative agency. One also should be aware of the sanctions and fine (\$10,000) for intentionally or knowingly claiming privilege for unprotected information. (§7(d))

Section 9 contains the rules pertaining to the review of privileged documents by a governmental authority. Some information included in an audit report may be required to be disclosed without waiving the privilege and this may trigger suppression of that information in subsequent litigation (§9(d)). One may consider whether it make sense to create another document, containing just the information required to be disclosed and avoid the partial disclosure of the audit report that is contemplated. (§9(a)- (c))

How Auditing Supports Our Local Sheriff

- Why Encourage Texas EHS Audits? – Texas Perspective

TCEQ's 2011 annual enforcement report, page 1-10 shows that the number of Texas EHS Audits requests received by TCEQ has varied over the last six years from 350 to 750, with the last three years showing an annual average increase of 216 audits (correlation coefficient of 0.9+). The number of audit disclosures ranged between 25% and 84% of the number of Texas EHS Audit requests. Removing 2009, which had the 85%, results in a five out of six year average of about 1.3. Dow has about the same 1/3 of our Texas EHS Audits not resulting in the disclosure of any violations.

If we briefly compare these audits to the results from the FY2011 Annual TCEQ Enforcement Report, we can see that TCEQ finds that in the air area approximately 97% of their investigations find the facility inspected in compliance, using TCEQ's definition, 99% in the water area and

93% in the solid waste area. While there is no direct comparison between disclosures and audit requests, the 2/3 average disclosures shows, as expected, targeted audits under the Texas Audit Privilege are more effective in discovering violations than an average, non-targeted TCEQ inspection. This means that although TCEQ has on average 100,000 investigations per year, the 350 to 750 Texas EHS Audits are adding more than 1% to the enforcement of the TCEQ. Perhaps a better comparison is to the complaint investigations, which are also directed. TCEQ reports an average of about 5,000 complaint driven investigations. With this comparison, the Texas Audit Privilege adds self-reporting at about 450 or 9% of the complaint investigations. However, if one looks at the trend lines, in the last three years, Texas Audit Privileges have increased a bit over 200 per year, while the number of complaint driven investigations has decreased about 2.5% per year, over the six years reported, or an average of about 120 per year. In summary, although the amount of investigation effort is small compared to all of TCEQ's investigations, it is a significant addition to EHS investigations in Texas. Further, these efforts are totally off the state's budget and find things that perhaps might never be found in a state investigation. Even those disclosed violations that are in the gray area are improving environmental protection, so the Texas Audit Privilege is an effective, important part of the plate of compliance related efforts.

- Why Conduct Texas EHS Audits? – Company Perspective

For ongoing audits under EHS Laws, the Texas Audit Privilege provides benefits of avoiding fines for violations found (many might have to be reported later to the state under NESHAP or Title V air reporting provisions). In addition, the Texas Audit Privilege offers opportunities to:

- seek and resolve non-compliances
- resolve gray areas
- limit scope of agency concerns with significant events by documenting to the agency, either: 1) that one or more conditions that are related to the significant event are limited in time, equipment, location or otherwise and/or 2) that one or more potential conditions that seem to be related to the significant event did not actually occur or are not really related to the significant event
- discuss compliance concerns with TCEQ in a cooperative environment

Companies are sensitive to the same issues TCEQ has with the high level of existing compliance, inspection efforts may continue to keep compliance at its current state, but it becomes increasingly difficult to find the areas of non-compliance of concern. It is good to have a tool that allows efforts to be directed towards finding and fixing non-compliances, rather than preparing for an adversary interaction. This allows investigations to proceed that otherwise might not have been started and allows investigations to continue or drill down in areas where there are concerns, where otherwise the investigation might easily have been terminated as a non-productive use of effort.

Conclusion

The Texas Audit Privilege is a good statute, allowing issues of potential concern with the government about operations to be resolved in a prompt, efficient manner that encourages compliance and auditing by those operating facilities in Texas, while providing the state with appropriate notice of and opportunities to interact with the audits, findings and actions taken to resolve the violation.

Appendix A – The Texas Audit Privilege

VERNON'S CIVIL STATUTES

Art. 4447cc. ENVIRONMENTAL, HEALTH, AND SAFETY AUDIT PRIVILEGE ACT.

Short Title

Sec. 1. This Act may be cited as the Texas Environmental, Health, and Safety Audit Privilege Act.

Purpose

Sec. 2. The purpose of this Act is to encourage voluntary compliance with environmental and occupational health and safety laws.

Definitions

Sec. 3. (a) In this Act:

(1) "Audit report" means an audit report described by Section 4 of this Act.

(2) "Environmental or health and safety law" means:

(A) a federal or state environmental or occupational health and safety law; or

(B) a rule, regulation, or regional or local law adopted in conjunction with a law described by Paragraph (A) of this subdivision.

(3) "Environmental or health and safety audit" means a systematic voluntary evaluation, review, or assessment of compliance with environmental or health and safety laws or any permit issued under those laws conducted by an owner or operator, an employee of the owner or operator, or an independent contractor of:

(A) a regulated facility or operation; or

(B) an activity at a regulated facility or operation.

(4) "Owner or operator" means a person who owns or operates a regulated facility or operation.

(5) "Penalty" means an administrative, civil, or criminal sanction imposed by the state to punish a person for a violation of a statute or rule. The term does not include a technical or remedial provision ordered by a regulatory authority.

(6) "Person" means an individual, corporation, business trust, partnership, association, and any other legal entity.

(7) "Regulated facility or operation" means a facility or operation that is regulated under an environmental or health and safety law.

(b) A person acts intentionally for purposes of this Act if the person acts intentionally within the meaning of Section 6.03, Penal Code.

(c) For purposes of this Act, a person acts knowingly, or with knowledge, with respect to the nature of the person's conduct when the person is aware of the person's physical acts. A person acts knowingly, or with knowledge, with respect to the result of the person's conduct when the person is aware that the conduct will cause the result.

(d) A person acts recklessly or is reckless for purposes of this Act if the person acts recklessly or is reckless within the meaning of Section 6.03, Penal Code.

(e) To fully implement the privilege established by this Act, the term "environmental or health and safety law" shall be construed broadly.

Audit Report

Sec. 4. (a) An audit report is a report that includes each document and communication, other than those set forth in Section 8 of this Act, produced from an environmental or health and safety audit.

(b) General components that may be contained in a completed audit report include:

(1) a report prepared by an auditor, monitor, or similar person, which may include:

(A) a description of the scope of the audit;

(B) the information gained in the audit and findings, conclusions, and recommendations; and

(C) exhibits and appendices;

(2) memoranda and documents analyzing all or a portion of the materials described by Subdivision (1) of this subsection or discussing implementation issues; and

(3) an implementation plan or tracking system to correct past noncompliance, improve current compliance, or prevent future noncompliance.

(c) The types of exhibits and appendices that may be contained in an audit report include supporting information that is collected or developed for the primary purpose of and in the course of an environmental or health and safety audit, including:

(1) interviews with current or former employees;

(2) field notes and records of observations;

(3) findings, opinions, suggestions, conclusions, guidance, notes, drafts, and memoranda;

(4) legal analyses;

(5) drawings;

(6) photographs;

(7) laboratory analyses and other analytical data;

(8) computer-generated or electronically recorded information;
(9) maps, charts, graphs, and surveys; and
(10) other communications associated with an environmental or health and safety audit.

(d) To facilitate identification, each document in an audit report should be labeled "COMPLIANCE REPORT: PRIVILEGED DOCUMENT," or labeled with words of similar import. Failure to label a document under this section does not constitute a waiver of the audit privilege or create a presumption that the privilege does or does not apply.

(e) Once initiated, an audit shall be completed within a reasonable time not to exceed six months unless an extension is approved by the governmental entity with regulatory authority over the regulated facility or operation based on reasonable grounds.

Privilege

Sec. 5. (a) An audit report is privileged as provided in this section.

(b) Except as provided in Sections 6, 7, and 8 of this Act, any part of an audit report is privileged and is not admissible as evidence or subject to discovery in:

- (1) a civil action, whether legal or equitable; or
- (2) an administrative proceeding.

(c) A person, when called or subpoenaed as a witness, cannot be compelled to testify or produce a document related to an environmental or health and safety audit if:

(1) the testimony or document discloses any item listed in Section 4 of this Act that was made as part of the preparation of an environmental or health and safety audit report and that is addressed in a privileged part of an audit report; and

(2) for purposes of this subsection only, the person is:

- (A) a person who conducted any portion of the audit but did not personally observe the physical events;
- (B) a person to whom the audit results are disclosed under Section 6(b) of this Act; or
- (C) a custodian of the audit results.

(d) A person who conducts or participates in the preparation of an environmental or health and safety audit and who has actually observed physical events of violation, may testify about those events but may not be compelled to testify about or produce documents related to the preparation of or any privileged part of an environmental or health and safety audit or any item listed in Section 4 of this Act.

(e) An employee of a state agency may not request, review, or otherwise use an audit report during an agency inspection of a regulated facility or operation, or an activity of a regulated facility or operation.

(f) A party asserting the privilege described in this section has the burden of establishing the applicability of the privilege.

Exception: Waiver

Sec. 6. (a) The privilege described by Section 5 of this Act does not apply to the extent the privilege is expressly waived by the owner or operator who prepared the audit report or caused the report to be prepared.

(b) Disclosure of an audit report or any information generated by an environmental or health and safety audit does not waive the privilege established by Section 5 of this Act if the disclosure:

(1) is made to address or correct a matter raised by the environmental or health and safety audit and is made only to:

(A) a person employed by the owner or operator, including temporary and contract employees;

(B) a legal representative of the owner or operator;

(C) an officer or director of the regulated facility or operation or a partner of the owner or operator; or

(D) an independent contractor retained by the owner or operator;

(2) is made under the terms of a confidentiality agreement between the person for whom the audit report was prepared or the owner or operator of the audited facility or operation and:

(A) a partner or potential partner of the owner or operator of the facility or operation;

(B) a transferee or potential transferee of the facility or operation;

(C) a lender or potential lender for the facility or operation;

(D) a governmental official of a state; or

(E) a person or entity engaged in the business of insuring, underwriting, or indemnifying the facility or operation; or

(3) is made under a claim of confidentiality to a governmental official or agency by the person for whom the audit report was prepared or by the owner or operator.

(c) A party to a confidentiality agreement described in Subsection (b)(2) of this section who violates that agreement is liable for damages caused by the disclosure and for any other penalties stipulated in the confidentiality agreement.

(d) Information that is disclosed under Subsection (b)(3) of this section is confidential and is not subject to disclosure under Chapter 552, Government Code. A public entity, public employee, or public official who discloses information in violation of this subsection is subject to any penalty provided in Chapter 552, Government Code. It is an affirmative defense to the clerical dissemination of a privileged audit report that the report was not clearly labeled "COMPLIANCE REPORT: PRIVILEGED DOCUMENT" or words of similar import. The lack of labeling may not be raised as a defense if the entity, employee, or official knew or had reason to know that the document was a privileged audit report.

(e) Nothing in this section shall be construed to circumvent the protections provided by federal or state law for individuals that disclose information to law enforcement authorities.

Exception: Disclosure Required by Court or Administrative Hearings Official

Sec. 7. (a) A court or administrative hearings official with competent jurisdiction may require disclosure of a portion of an audit report in a civil or administrative proceeding if the court or administrative hearings official determines, after an in camera review consistent with the appropriate rules of procedure, that:

(1) the privilege is asserted for a fraudulent purpose;

(2) the portion of the audit report is not subject to the privilege under Section 8 of this Act; or

(3) the portion of the audit report shows evidence of noncompliance with an environmental or health and safety law and appropriate efforts to achieve compliance with the law were not promptly initiated and pursued with reasonable diligence after discovery of noncompliance.

(b) A party seeking disclosure under this section has the burden of proving that Subsection (a)(1), (2), or (3) of this section applies.

(c) Notwithstanding Chapter 2001, Government Code, a decision of an administrative hearings official under Subsection (a)(1), (2), or (3) of this section is directly appealable to a court of competent jurisdiction without disclosure of the audit report to any person unless so ordered by the court.

(d) A person claiming the privilege is subject to sanctions as provided by Rule 215 of the Texas Rules of Civil Procedure or to a fine not to exceed \$10,000 if the court finds, consistent with fundamental due process, that the person intentionally or knowingly claimed the privilege for unprotected information as provided in Section 8 of this Act.

(e) A determination of a court under this section is subject to interlocutory appeal to an appropriate appellate court.

Nonprivileged Materials

Sec. 8. (a) The privilege described in this Act does not apply to:

(1) a document, communication, datum, or report or other information required by a regulatory agency to be collected, developed, maintained, or reported under a federal or state environmental or health and safety law;

(2) information obtained by observation, sampling, or monitoring by a regulatory agency; or

(3) information obtained from a source not involved in the preparation of the environmental or health and safety audit report.

(b) This section does not limit the right of a person to agree to conduct and disclose an audit report.

Review of Privileged Documents by Governmental Authority

Sec. 9. (a) Where an audit report is obtained, reviewed, or used in a criminal proceeding, the administrative or civil evidentiary privilege created by this Act is not waived or eliminated for any other purpose.

(b) Notwithstanding the privilege established under this Act, a regulatory agency may review information that is required to be available under a specific state or federal law, but such review does not waive or eliminate the administrative or civil evidentiary privilege where applicable.

(c) If information is required to be available to the public by operation of a specific state or federal law, the governmental authority shall notify the person claiming the privilege of the potential for public disclosure prior to obtaining such information under Subsection (a) or (b).

(d) If privileged information is disclosed under Subsection (b) or (c), on the motion of a party, a court or the appropriate administrative official shall suppress evidence offered in any civil or administrative proceeding that arises or is derived from review, disclosure, or use of information obtained under this section if the review, disclosure, or use is not authorized under Section 8. A party having received information under Subsection (b) or (c) has the burden of proving that the evidence offered did not arise and was not derived from the review of privileged information.

Voluntary Disclosure; Immunity

Sec. 10. (a) Except as provided by this section, a person who makes a voluntary disclosure of a violation of an environmental or health and safety law is immune from an administrative or civil penalty for the violation disclosed.

(b) A disclosure is voluntary only if:

(1) the disclosure was made promptly after knowledge of the information disclosed is obtained by the person;

- (2) the disclosure was made in writing by certified mail to an agency that has regulatory authority with regard to the violation disclosed;
- (3) an investigation of the violation was not initiated or the violation was not independently detected by an agency with enforcement jurisdiction before the disclosure was made using certified mail;
- (4) the disclosure arises out of a voluntary environmental or health and safety audit;
- (5) the person who makes the disclosure initiates an appropriate effort to achieve compliance, pursues that effort with due diligence, and corrects the noncompliance within a reasonable time;
- (6) the person making the disclosure cooperates with the appropriate agency in connection with an investigation of the issues identified in the disclosure; and
- (7) the violation did not result in injury or imminent and substantial risk of serious injury to one or more persons at the site or off-site substantial actual harm or imminent and substantial risk of harm to persons, property, or the environment.

(c) A disclosure is not voluntary for purposes of this section if it is a report to a regulatory agency required solely by a specific condition of an enforcement order or decree.

(d) The immunity established by Subsection (a) of this section does not apply and an administrative or civil penalty may be imposed under applicable law if:

- (1) the person who made the disclosure intentionally or knowingly committed or was responsible within the meaning of Section 7.02, Penal Code, for the commission of the disclosed violation;
- (2) the person who made the disclosure recklessly committed or was responsible within the meaning of Section 7.02, Penal Code, for the commission of the disclosed violation and the violation resulted in substantial injury to one or more persons at the site or off-site harm to persons, property, or the environment;
- (3) the offense was committed intentionally or knowingly by a member of the person's management or an agent of the person and the person's policies or lack of prevention systems contributed materially to the occurrence of the violation;
- (4) the offense was committed recklessly by a member of the person's management or an agent of the person, the person's policies or lack of prevention systems contributed materially to the occurrence of the

violation, and the violation resulted in substantial injury to one or more persons at the site or off-site harm to persons, property, or the environment; or

(5) the violation has resulted in a substantial economic benefit which gives the violator a clear advantage over its business competitors.

(e) A penalty that is imposed under Subsection (d) of this section should, to the extent appropriate, be mitigated by factors such as:

- (1) the voluntariness of the disclosure;
- (2) efforts by the disclosing party to conduct environmental or health and safety audits;
- (3) remediation;
- (4) cooperation with government officials investigating the disclosed violation; or
- (5) other relevant considerations.

(f) In a civil or administrative enforcement action brought against a person for a violation for which the person claims to have made a voluntary disclosure, the person claiming the immunity has the burden of establishing a prima facie case that the disclosure was voluntary. After the person claiming the immunity establishes a prima facie case of voluntary disclosure, other than a case in which under Subsection (d) of this section immunity does not apply, the enforcement authority has the burden of rebutting the presumption by a preponderance of the evidence or, in a criminal case, by proof beyond a reasonable doubt.

(g) In order to receive immunity under this section, a facility conducting an environmental or health and safety audit under this Act must give notice to an appropriate regulatory agency of the fact that it is planning to commence the audit. The notice shall specify the facility or portion of the facility to be audited, the anticipated time the audit will begin, and the general scope of the audit. The notice may provide notification of more than one scheduled environmental or health and safety audit at a time.

(h) The immunity under this section does not apply if a court or administrative law judge finds that the person claiming the immunity has, after the effective date of this Act, (1) repeatedly or continuously committed significant violations, and (2) not attempted to bring the facility or operation into compliance, so as to constitute a pattern of disregard of environmental or health and safety laws. In order to be considered a "pattern," the person must have committed a series of violations that were due to separate and distinct events within a three-year period at the same facility or operation.

(i) A violation that has been voluntarily disclosed and to which immunity applies must be identified in a compliance history report as being voluntarily disclosed.

Circumvention by Rule Prohibited

Sec. 11. A regulatory agency may not adopt a rule or impose a condition that circumvents the purpose of this Act.

Applicability

Sec. 12. The privilege created by this Act applies to environmental or health and safety audits that are conducted on or after the effective date of this Act.

Relationship to Other Recognized Privileges

Sec. 13. This Act does not limit, waive, or abrogate the scope or nature of any statutory or common law privilege, including the work product doctrine and the attorney-client privilege.

Acts 1995, 74th Leg., ch. 219, Sec. 1 to 13, eff. May 23, 1995. Sec. 5(b) amended by Acts 1997, 75th Leg., ch. 206, Sec. 1, eff. Sept. 1, 1997; Sec. 6(b) amended by Acts 1997, 75th Leg., ch. 206, Sec. 2, eff. Sept. 1, 1997; Sec. 6(d) amended by Acts 1997, 75th Leg., ch. 206, Sec. 3, eff. Sept. 1, 1997; Sec. 6(e) added by Acts 1997, 75th Leg., ch. 206, Sec. 2, eff. Sept. 1, 1997; Sec. 7(a) amended by Acts 1997, 75th Leg., ch. 206, Sec. 5, eff. Sept. 1, 1997; Sec. 7(d) amended by Acts 1997, 75th Leg., ch. 206, Sec. 4, eff. Sept. 1, 1997; Sec. 9 amended by Acts 1997, 75th Leg., ch. 206, Sec. 6, eff. Sept. 1, 1997; Sec. 10(a), (b), (d), (f), (h) amended by Acts 1997, 75th Leg., ch. 206, Sec. 7, eff. Sept. 1, 1997.

Appendix B

Sec. 7.02. CRIMINAL RESPONSIBILITY FOR CONDUCT OF ANOTHER. (a) A person is criminally responsible for an offense committed by the conduct of another if:

(1) acting with the kind of culpability required for the offense, he causes or aids an innocent or nonresponsible person to engage in conduct prohibited by the definition of the offense;

(2) acting with intent to promote or assist the commission of the offense, he solicits, encourages, directs, aids, or attempts to aid the other person to commit the offense; or

(3) having a legal duty to prevent commission of the offense and acting with intent to promote or assist its commission, he fails to make a reasonable effort to prevent commission of the offense.

(b) If, in the attempt to carry out a conspiracy to commit one felony, another felony is committed by one of the conspirators, all conspirators are guilty of the felony actually committed, though having no intent to commit it, if the offense was committed in furtherance of the unlawful purpose and was one that should have been anticipated as a result of the carrying out of the conspiracy.

Acts 1973, 63rd Leg., p. 883, ch. 399, Sec. 1, eff. Jan. 1, 1974. Amended by Acts 1993, 73rd Leg., ch. 900, Sec. 1.01, eff. Sept. 1, 1994.

Toby Baker

Toby Baker of Austin was appointed to the Texas Commission on Environmental Quality by Gov. Rick Perry effective April 16, 2012. His term will expire on Aug. 31, 2017.



Along with his two fellow full-time commissioners, Baker establishes overall agency direction and policy, and makes final determinations on contested permitting and enforcement matters.

Baker was most recently a policy and budget advisor on energy, natural resources and agriculture issues for the Governor's Office, where he was also the liaison between the office and members of the Legislature, constituents, the Railroad Commission of Texas, the TCEQ, the Texas Parks and Wildlife Department, the Texas Department of Agriculture, and the Texas Animal Health Commission. He is a past natural resource policy advisor to Sen. Craig Estes, the former director and clerk of the Texas Senate Subcommittee on Agriculture, Rural Affairs and Coastal Resources.

Baker received a bachelor's degree from Texas A&M University, where he was a member of the Corps of Cadets, and a Master of Public Service and Administration from the Texas A&M George Bush School of Government and Public Service. He is also a graduate of the National Outdoor Leadership School and the Governor's Executive Development Program at the University of Texas LBJ School of Public Affairs.



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Court Admissions and Affiliations

State Bar of Texas, Environmental
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United States Supreme Court

United States Court of Appeals for
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United States District Court for the
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Summary

Pam Giblin is a senior partner in the Austin office of Baker Botts. She has
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the area of air quality.

Ms. Giblin serves as a member of the EPA's Clean Air Act Advisory
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Lawyers. Ms. Giblin is listed in the environmental law section of *The Best
Lawyers in America*.

She is the first woman to receive the Distinguished Lawyer Award from
the Travis County Bar Association. Ms. Giblin serves on the Seton Family
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Publications, Speeches and Presentations

Publications

- "Something in the Air," *Texas Lawyer*, December 1999

Speeches and Presentations

- "Administrative Trends in Environmental Litigation," 17th Annual
Advanced Administrative Law Course, State Bar of Texas, Austin,
September 22 and 23, 2005 (live) and December 8 and 9, 2005
(video)
- "Delegation of Authority," 13th Annual Advanced Administrative
Law Course, State Bar of Texas, Austin, October 2001

Specialization

Austin Commission on Electric
Rates, former Chair

- “Rule Making: Creative Challenges to Agency Rules,” Professional Development Advanced Administrative Law Course, State Bar of Texas, Austin, October 2000
- “Environmental Litigation,” Advanced Business Litigation, University of Houston Law Foundation, Dallas and Houston, August 2000
- “Standing,” Advanced Administrative Law Course, State Bar of Texas Professional Development, Austin, September 1999

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Suzanne began her career at EPA Region 6 as an enforcement attorney, primarily focusing on RCRA and pesticide issues. Later, she turned her attention to permitting and planning matters arising from the Clean Air Act. Suzanne received an A.B. in Political Science from the University of California, Berkeley and received her J.D. from Tulane Law School.

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Steve Hagle is the Deputy Director for the Office of Air at the Texas Commission on Environmental Quality. Steve has also worked as the Director and Assistant Division Director of the Air Permits Division, a Technical Specialist in the Technical Program Support Section of the Air Permits Division, in the Office of Air Quality Deputy's office, and the New Source Review Permits Division as a permit engineer and manager of the Chemical and Technical Specialist Sections. He joined the Texas Air Control Board in 1987. Prior to 1987 he worked for NL Industries conducting laboratory evaluation of enhanced oil recovery prospects and field work with Measurement-While-Drilling well logging tools. He graduated from Oklahoma State University with a B.S. Degree in Chemical Engineering.

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Charles represents clients in state and federal court, and in matters before the Texas Commission on Environmental Quality, U.S. Army Corps of Engineers, Nuclear Regulatory Commission, and the State Office of Administrative Hearings. Previous cases include challenges to air permits, nuclear licenses, Clean Air Act citizen suits, Endangered Species Act litigation, and NEPA litigation. He is an Adjunct Professor at the University of Houston Law Center, where he teaches classes in Texas Coastal and Ocean Law, Endangered Species and Biodiversity Law, Environmental Law, and Practice of Environmental Law.

Before entering the legal field, Charles worked in Greece as a program leader on environmental projects that protected sea turtles and marine mammals in coastal areas. During this time, he participated in extensive efforts to design and establish protected areas, eventually resulting in a new National Park. As an independent consultant, he researched and wrote comprehensive management plans for seven Mediterranean protected coastal areas under contracts with the World Wildlife Fund and European Union funded initiatives.

Education

- J.D., University of Houston Law Center
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Bar and Court Admissions

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- Fifth Circuit Court of Appeals
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**A Perspective on Achieving Clean Air
Through Litigation**

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A Perspective on Achieving Clean Air Through Litigation

*Charles Irvine*¹

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Introduction

I present this paper as an enthusiastic and unabashed celebration of citizen action through Clean Air Act related litigation. After several decades of what might be described as floundering around, citizens living close to facilities that emit air pollutants have begun to exercise a more diverse range of legal options made available to them. In this paper I describe some of the litigation options that are available and currently being employed by counsel representing these citizens. It is clear that despite some dramatic, if belated, improvements in air quality, especially when it comes to meeting NAAQS in Texas non-attainment areas, citizens do not yet feel comfortable only relying upon government regulation to achieve clean air. Therefore citizens now employ legal strategies from the entire toolbox available to them and to the organizations that represent their interests.

Citizens realize that litigation is a critical component to achieving clean air and protecting public health. This should come as no surprise to the regulators nor to the regulated community. For it is precisely what the Clean Air Acts (both federal and Texas) allow. Without the ability for citizens to seek independent judicial review, they could feel they are at the mercy of

¹ *Disclaimer:* The author is counsel for several clients involved in the cases discussed. The views and opinions expressed here are those of the author.

regulatory agencies, some of which describe the regulated community as their “customers.” The citizens sometimes feel overwhelmed by an all-powerful regulated community that has the access and influence over decision-makers that the citizens lack. Whether perceived or real, the citizens sometimes feel that, on the state level at least, the regulatory agencies cannot be trusted to protect their interests. With each new air permit issued, or permit alteration and amendment granted, this distrust could grow deeper. Every time the refinery siren blasts, the confidence of the fenceline citizens could be further eroded. How will they ever know that many months later the refinery might be issued a Notice of Violation, and perhaps eventually be fined by the agency if nobody communicates these facts to them? If the agency does bring an enforcement action how might the citizens feel if the injunctive relief ordered by the agency is simply for the violator to amend their permit to increase allowable emissions so the next upset will not exceed the new limits? In short, how could the citizens feel that their health is being protected? Citizen suits can empower and other litigation these communities

Once a facility obtains its air permit, it does not mean the permittee is out of the woods yet. Increased citizen litigation seeking cleaner air is, at least in part, a response to the perception that the agencies will no longer protect them, but also in response to the perception that the permittee no longer cares about them. To the extent that the permittee might seek to avoid litigation or opposition, they must endeavor to be good neighbors to those citizens and communities along their fencelines and to engage with them.

Some Options for Citizen Litigation

The federal Clean Air Act (“CAA”), the Texas Clean Air Act (“TCAA”), and governing administrative laws provide affected citizens with a wide variety of tools to pursue litigation. Provisions allow legal challenges to rules and regulations, allow challenges to permits, and allow citizens to bring their own enforcement actions. Below is a brief outline of four of the options that have been regularly used by Texas citizens and environmental groups.

First, is the citizen suit. The CAA imposes a strict liability standard on defendants for civil violations of CAA provisions, as well as for civil violations of regulations promulgated by EPA pursuant to the CAA.²

² 42 U.S.C. § 7413(b); H.R. Rep. No. 95-294, at 70 (1977) (“[W]here protection of the public health is the root purpose of a regulatory scheme (such as the Clean Air Act), persons who own or operate pollution sources in violation of

Section 304 of the CAA provides for citizen suits.³ Subject to certain procedural requirements, citizens may sue in federal district court for violations of “an emission standard or limitation” established under the CAA,⁴ or file suit “against any person... who is alleged to have violated or to be in violation of any condition of [New Source Review] permit.”⁵ In Texas, air permits usually contain enforceable emissions limits for each pollutant, numerous special conditions, and monitoring, recordkeeping and reporting requirements. All these are enforceable through citizen suits, as are representations made in permit applications.⁶

Congress intended the citizen suit provision “specifically to encourage citizen participation in the enforcement of standards and regulations established under this Act.”⁷ The citizen suit provision “reflects a deliberate choice by Congress to widen citizen access to the courts, as a supplemental and effective assurance that the Act would be implemented and enforced.”⁸ “Congress made clear that citizen groups are not to be treated as nuisances or troublemakers but rather as welcomed participants in the vindication of environmental interests.”⁹

Second is the petition challenging EPA’s action on the Texas State Implementation Plan (“SIP”). The federal Clean Air Act sets forth a national framework for air pollution control. Pursuant to the CAA, Texas has an approved State Implementation Plan (“SIP”).¹⁰ All SIP revisions by Texas must be approved by the Environmental Protection Agency (“EPA”) before

such health regulations must be held strictly accountable.”); e.g. *United States v JBA Motorcars*, 839 F. Supp. 1572, 1577 (S.D. Fla. 1993).

³ 42 U.S.C. § 7604.

⁴ 42 U.S.C. § 7604(a)(1).

⁵ 42 U.S.C. § 7604(a)(3).

⁶ 30 Tex. Admin. Code § 116.116(a), states: “(a) Representations and conditions. The following are the conditions upon which a permit, or special exemption is issued: (1) representations with regard to construction plans and operation procedures in an application for a permit, special permit, or special exemption; and (2) any general and special conditions attached to the permit, special permit, or exemption itself.”

⁷ *Pennsylvania v. Delaware Valley Citizens’ Council for Clean Air*, 478 U.S. 546, 560 (1986) (citation omitted).

⁸ *Friends of the Earth v. Carey*, 535 F.2d 165, 172 (2d Cir. 1976).

⁹ *Id.*

¹⁰ The Texas SIP was originally approved in 1972. 37 Fed. Reg. 10,895. Texas has amended its SIP numerous times since then. See TCEQ, Texas SIP Revisions, at <http://www.tceq.texas.gov/airquality/sip/siplans.html/>.

they become effective.¹¹ EPA's approval or disapproval of state SIP revisions may be challenged by filing a petition in the appropriate federal Court of Appeals.¹² These petitions are relatively economical for citizen groups—and others—to litigate because they involve a simple petition followed by briefing based upon the administrative record. Because the petitions are filed directly in the federal Court of Appeals, they result in a relatively authoritative decision after just one round of briefing and usually within one year.

Third, is the Title V objection. Pursuant to Title V of the CAA,¹³ EPA may object to a state's proposed issuance of a Title V Operating Permit,¹⁴ or it can issue an order objecting to a permit in response to a petition from a member of the public that is timely filed after the end of the EPA's review period.¹⁵ If EPA objects to the proposed permit on its own, the Operating Permit is not "issued" and the state must re-submit it.¹⁶ EPA objections in response to a public petition render the permit subject to modification, termination or revocation.¹⁷ An EPA objection may be made if the Operating Permit is not in compliance with "applicable requirements" which are very broadly defined.¹⁸ Thus, even though the TCEQ may approve an operating permit, it may be subject to long, even interminable delays leaving the applicant without a valid permit.

The fourth option is a protest and challenge of the TCEQ issued air permit. Texas law allows an "affected person" to request a contested case hearing to protest the issuance of an air permit.¹⁹ The contested case hearing is an evidentiary proceeding requiring the permit applicant to meet its burden, and which, depending on the complexity of the issues, may delay permit issuance by one or two years, and may even result in denial. A party to an air permit contested case who is aggrieved by the final decision may pursue an administrative appeal in district court.²⁰ The long delays and pending litigation create considerable uncertainty for air permit applicants. Although the outright defeat of an air permit is an unusual outcome,

¹¹ 42 U.S.C. § 7410(l).

¹² 42 U.S.C. § 7607(b); 40 C.F.R. § 23.12.

¹³ 42 U.S.C. §§ 7661-7661f.

¹⁴ 40 C.F.R. § 70.8(c).

¹⁵ *Id.* at § 70.8(d).

¹⁶ *Id.* at § 70.8(c)(1) & (4).

¹⁷ *Id.* at § 70.8(d).

¹⁸ *Id.* at §§ 70.8(c)(1) (basis for objection); 70.2 (defining "applicable requirement").

¹⁹ Tex. Water Code § 5.556; Tex. Admin. Code §§ 55.201; 55.203.

²⁰ Tex. Gov't Code § 2001.171; 30 Tex. Admin. Code § 80.275(a).

protestants have had most success when they argue that the permit fails to meet some federal CAA requirement, such as MACT determinations or the failure to consider a new NAAQS.

What is the Objective of Citizen Litigation?

When citizens or groups representing the interests of citizens engage in litigation, it is reasonable to speculate as to their motivation and to attempt to divine their objectives. Litigation is neither cheap nor easy and not embarked upon without good reason. Without attempting to cover all possible explanations, I suggest two alternates.

The first is very simple. Citizens adversely impacted by air pollution just want to protect their lives, their health, and their community. Given the opportunity, they strive to improve their lot. At the very least, they may hope to prevent things getting worse. Imagine a person living in a fenceline community next to a refinery or chemical plant. Every so often, they hear a siren blast, and, if they are lucky, they hear a warning to “shelter-in-place.” Each time the siren sounds, they know that something has gone awry at the plant. It could be hours, days or months before they are informed or find out what caused the siren to go off. Some plants don’t have sirens or alert systems. Some plants might leak air pollutants for hours, days or even weeks without informing the neighboring communities. Given these facts, it is little wonder then that when the neighbors next drive by the plant gates and they see a large white sign announcing that the company is seeking a new air permit, all they think is “more sirens” or “more pollution.”

I have seen that time and time again, companies refuse to engage the fenceline community, or curtail engagement with community representatives because they fear the company will become a litigation target. This is, in my view, a bad decision. Without engagement, the citizens in these fenceline communities become upset, active and seek help from the regulatory agencies, environmental groups and lawyers. They press for investigations, government enforcement and failing that, choose to file a citizen suit or oppose a permit.

The other perspective is that of the environmental groups, who may have broader objectives. However, in Texas, groups such as Air Alliance Houston (Houston–Galveston region), Lone Star Chapter of Sierra Club (statewide), Texas Environmental Justice Advocacy Services (Houston ship channel), Citizens for Environmental Justice (Corpus Christi), Environmental Integrity Project (statewide), and Community In-power and Development Association (Port Arthur/Beaumont) all work in the fenceline communities. These groups and the citizens they assist track upset/emission

reports, air pollution episodes, permitting, enforcement and other regulatory developments that might affect those communities. In order to protest a permit, an environmental group must have at least one member who meets the TCEQ criteria of an “affected person.” In order to maintain a citizen suit in federal court, the group must satisfy Article III standards,²¹ and the test for associational standing.²² Similar standards apply in Texas courts. Challenges to standing are now so common, that counsel representing these groups have become quite adept at preparing pleadings that adequately demonstrate standing. What is important to recognize is that to have standing, the objectives of the environmental group must align or coincide with those of a local member—regardless of any perceived ulterior motives on behalf of group.

Targets for Citizen Litigation

One question I believe is on many minds is this: How do citizens and environmental groups choose their litigation targets? Without disclosing privileged client information, I offer the following list of possible targets for litigation with some reasons why each may be targeted.

First, the regulatory agencies are *always* potential targets for litigation. Sometimes states, industry, and environmental groups all sue EPA for the same agency action, or one aggrieved party sues the agency and then others will likely intervene to protect a decision they favor.

With respect to regulated facilities whose activities are authorized by air permits, citizen litigation will generally focus on two categories of permit holders. First, there are those who are, what I will refer to, as “bad neighbors,” and second, there are those who violate their permits. A facility that ignores or dismisses the complaints of the neighboring community—be it air emissions, odors, noise, lights, traffic—is a facility that just increased the likelihood that their next permit action will be opposed. Even if they

²¹ (1) an injury in fact that is (a) concrete and particularized and (b) actual or imminent; (2) a causal connection between the injury and the conduct complained of; and (3) the likelihood that a favorable decision will redress the injury. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–561 (1992); *Croft v. Governor of Texas*, 562 F.3d 735, 745 (5th Cir. 2009).

²² (1) The associations’ members could otherwise sue on their own; (2) the interests the association seeks to protect are germane to the organization’s purpose; and (3) neither the claim asserted nor the relief sought requires the participation of individual members in the lawsuit. *Hunt v. Washington State Adver. Comm’n*, 432 U.S. 333, 343 (1977).

never exceed their air permit limits, or have an excellent compliance history, a failure by facility representatives to meaningfully engage with the community may create the impression that it is a bad neighbor. Once formed, a bad reputation is hard to shake off.

Those living in the fenceline communities are remarkably observant. They are the first to notice how often a flare is smoking. They pay attention to the frequent odors whenever the wind blows from a particular direction. Sometimes they even see that the emissions from a smokestack are mysteriously more “opaque” after dark. Nearby residents notice when caustic white dust lands on their car and strips off the clear-coat. All of these observations may indicate permit violations at the nearby facility. Community complaints might result in an agency enforcement action. It may also lead to an investigation by the citizens themselves or by one of the environmental groups working in the community. If the investigation reveals permit violations for which there is no diligent state or federal enforcement action then a party may file a CAA citizen suit in federal district court.

CAA Citizen Suits for Self-Reported Upset Emissions

TCEQ makes it straightforward to investigate air emission reports. TCEQ rules require that the permit holder notify the agency of all reportable emissions events and emissions from maintenance, startup, and shutdown activities that exceed the reportable quantity.²³ These reports are posted to an online database and available to the public through a web interface.²⁴ Searches can be conducted by “customer” name, by facility (“regulated entity”), by date and by area. All data is self-reported and typically includes the identity of each emissions point (by EPN), pollutant, amount (lbs), permitted limit, and some description of the cause. These events are frequently called “upsets.”

Several CAA citizen suits for self-reported upset emissions have been filed in Texas, as well as in other states. Some of these cases have been litigated and settled, and others remain pending. The theory of the claim is much the same in all these cases. Emissions of air pollutants are permitted, and each source is subject to a numerical limit identified in the permit. If a numerical limit is exceeded, then it must be self-reported to TCEQ. The statute imposes strict liability emissions that exceed the permit limit. This is as true for one single exceedance as it is for a thousand. The district court

²³ 30 Tex. Admin. Code §§ 101.201; 101.211.

²⁴ TCEQ, Air Emission Event Report Database, at <http://www11.tceq.texas.gov/oce/eer/index.cfm>.

may assess a civil penalty of up to \$37,500 per day, per violation (paid into the treasury).²⁵ Alternatively, the court assessing penalties “shall have discretion to order that [the] penalties ... be used in beneficial mitigation projects which ... enhance the public health or the environment.”²⁶

One aspect creating a compelling citizen suit is when a facility has many—hundreds, if not thousands—of upsets, often from the same few pieces of equipment. The plaintiff may then allege that the repeated and frequent upsets are the result of a failure by the defendant to properly maintain, operate, or design the source equipment.

A defendant faced with such a lawsuit might first assess the risk of potentially very large civil penalties, theoretically as high as tens of millions of dollars in some cases. Then considering the difficulty of defending self-reported violations, the defendant might decide that a settlement is preferred. Three such lawsuits have resulted in settlements. In *The City of Point Comfort v. Alcoa World Alumina*, No. 6:07-cv-00013 (S.D. TX, dismissed by agreed order May, 20, 2008), the City alleged that upset emissions of caustic alumina dust were released when the calciners failed resulting in opacity violations on 135 occasions over a three year period. The caustic emissions caused corrosion of city property. The company agreed to repair the damaged city property, take steps to reduce upsets from the calciners as well as reduce other emissions, and establish better liaison with the City and its residents. Two other cases alleged over a million pounds of excess emissions at each of two Texas facilities, one a refinery and the other a chemical plant. *Environment Texas Citizen Lobby v. Shell Oil Company*, No. 4:08-cv-00070 (S.D. TX filed Jan. 7, 2008) and *Environment Texas v. Chevron Phillips Chemical Company*, No. 4:09-cv-02662 (S.D. TX filed Aug. 19, 2009). Settlements in these two cases involved a mix of emissions reductions, emissions controls and agreed penalties to benefit environmental, health and education projects in local communities.

These, and other similar citizen suit cases, have brought much needed attention to the issue of upset air emissions. Previously, upset air emissions appear to have been treated as a normal part of plant operations at some facilities. Repeated upsets from the same sources within a plant would be routinely reported to TCEQ, and perhaps be subject to small

²⁵ 42 U.S.C. § 7413(b) (statutory “civil penalty of not more than \$25,000 per day for each violation”); 40 C.F.R. § 19.4 (Table 1) (applying adjustments); 42 U.S.C. § 7604(g)(1) (penalties deposited into the U.S. Treasury and used for subsequent air enforcement and compliance activities).

²⁶ 42 U.S.C. § 7604(g)(2).

administrative fines. Focused litigation encouraged the owners or operators to recognize the chronic problems at their plants, and take steps to remedy them. The result—fewer emissions and cleaner air. That’s the good news for citizens and communities.

Challenge to EPA’s Approval Into the Texas SIP of an Affirmative Defense for Upset Emissions

Citizen groups have also been active defending and opposing EPA actions. After industry groups sued EPA for its failure to take action pending SIP revisions, EPA began to approve and disapprove the many revisions according to an agreed timetable. As stated earlier, EPA decisions on Texas SIP revisions are appealable by a petition in the Fifth Circuit Court of Appeals. Two environmental groups—Environmental Defense Fund and Environmental Integrity Project—intervened on the side of EPA to defend the agency’s disapproval of the Texas Flexible Permit program against petitions filed by the State of Texas and ten industry groups.²⁷ The court heard oral arguments in early October 2011, but no decision has been issued yet. Two other cases challenging different EPA disapprovals—pollution control standard permit & qualified facilities—resulted in a split. The panel reviewing the pollution control standard permit remanded the disapproval back to EPA with strict instructions and a rather stern rebuke.²⁸ The second panel upheld the disapproval of the Texas qualified facilities SIP Revision.²⁹

Which brings us to the Texas SIP revision that incorporated affirmative defenses for upset emissions, for unplanned startup, shutdown and maintenance events, and for planned startup, shutdown and maintenance events. EPA approved the SIP revision with respect to defenses for CAA violations caused by upset emissions, and unplanned startup, shutdown and maintenance events.³⁰ Pursuant to the rule, if a defendant in an administrative or civil enforcement action can demonstrate that it meets the defense criteria, EPA and the courts are barred from assessing a monetary penalty for the violation. The four approved rule provisions each state that

²⁷ *State of Texas, et al. v. EPA*, No. 10–60614 (5th Cir.).

²⁸ *Luminant Generation Co. v. EPA*, 675 F.3d 917, 921 (5th Cir. 2012) (stating that “the Act confines the EPA to the ministerial function of reviewing SIPs for consistency with the Act’s requirements”); *Id.* at 926 (“In this case, the EPA overstepped the bounds of its narrow statutory role in the SIP approval process.”).

²⁹ *BCCA Appeal Group, et al. v. EPA*, No. 10–60459, 2012 WL 2299504 (5th Cir. June 15, 2012).

³⁰ 75 Fed. Reg. 68,989 (Nov. 10, 2010).

excess emissions “are subject to an affirmative defense to all claims in enforcement actions brought for these events, other than claims for administrative technical orders and actions for injunctive relief, for which the owner or operator proves... [certain listed criteria].”³¹ In the same action EPA simultaneously disapproved the defense for CAA violations resulting from scheduled maintenance, startup, and shutdown.³²

One of the most important CAA enforcement tools is the availability of monetary penalties of up to \$37,500 per violation, per day. As described previously, environmental and citizens groups have effectively used this tool to achieve settlements and consent decrees resulting in significant pollution reductions, and other relief such as beneficial projects in the blighted fenceline communities. To protect the ability of citizens to continue to use the full range of CAA enforcement tools, seven environmental and citizens groups challenged EPA’s approval of the affirmative defenses.³³ At the same time, Industry challenged the disapproval of the other defenses. The cases were consolidated and heard together.³⁴ Oral argument took place on February 5, 2012, and we await the decision. The environmental groups presented two arguments. First, EPA lacks delegated authority to restrict an enforcement scheme that Congress expressly assigned to the district courts, not EPA. Second, was a simple step one of *Chevron* argument.

In CAA civil suits, including citizen suits, the CAA provides that the district court “shall have jurisdiction to restrain such violation, to require compliance, to assess such civil penalty, ... and to award any other appropriate relief.”³⁵ In a citizen suit provision, the statute clearly states, “[t]he district court shall have jurisdiction . . . to enforce such an emission standard or limitation . . . and to apply any appropriate civil penalties...”³⁶ The CAA specifies a list of factors that must be considered in assessing

³¹ 30 Tex. Admin. Code § 101.222(b), (c), (d), and (e).

³² 75 Fed. Reg. at 68,990 (disapproving 30 Tex. Admin. Code § 101.222(h)–(j)).

³³ Environmental Integrity Project & Sierra Club (represented by myself), and Environment Texas Citizen Lobby, Inc., Citizens for Environmental Justice, Texas Environmental Justice Advocacy Services, Air Alliance Houston, & Community In-Power and Development Association (represented by Kelly Haragan of the Environmental Clinic University of Texas School of Law).

³⁴ *Luminant Generation Company, et al. v. EPA*, No. 10–60934 (5th Cir.).

³⁵ 42 U.S.C. § 7413(b).

³⁶ 42 U.S.C. § 7604(a) (emphasis added). The subsections’ reference to “Actions under paragraph 2” refers to actions against the EPA Administrator for the alleged failure to perform any nondiscretionary act or duty under the CAA. 42 U.S.C. § 7604(a). These are not subject to civil penalties.

penalties for violation of the Act.³⁷ In determining the amount of any penalty, EPA in an administrative action and a district court in a civil action:

... shall take into consideration (in addition to such other factors as justice may require) the size of the business, the economic impact of the penalty on the business, the violator's full compliance history and good faith efforts to comply, the duration of the violation as established by any credible evidence (including evidence other than the applicable test method), payment by the violator of penalties previously assessed for the same violation, the economic benefit of noncompliance, and the seriousness of the violation.³⁸

Therefore the CAA commits assessment of penalties in civil enforcement actions to the informed discretion of the district courts.³⁹ It is up to the district court itself to determine liability and assess appropriate penalties in the cases before it. When Congress clearly established that it is the judiciary, and not the agency, that makes these determinations, "an agency may not bootstrap itself into an area in which it has no jurisdiction."⁴⁰ Because the CAA clearly assigns to the district courts the authority to assess any appropriate penalties in civil enforcement actions, EPA does not have the authority to adopt regulations interpreting, and limiting, the scope of that authority.

The Texas affirmative defense prohibits the assessment of any penalties for violations of the CAA for which the Texas defense criteria are

³⁷ 42 U.S.C. § 7413(e).

³⁸ *Id.*; *U.S. v. Anthony Dell'Aquila, Enterprises and Subsidiaries*, 150 F.3d 329, 339 (3d Cir. 1998) ("the court ha[s] a legal obligation to consider each of the factors set forth in [Section 113(e)]").

³⁹ *U.S. v. B & W Investment Properties*, 38 F.3d 362, 368 (7th Cir. 1994) (citing *U.S. EPA v. Environmental Waste Control Inc.*, 917 F.2d 327, 335 (7th Cir. 1991)). See also *Tull v. United States*, 481 U.S. 412, 427 (1987) (similar Clean Water Act provision reflects "Congress' assignment of the determination of the amount of civil penalties to trial judges.")

⁴⁰ *Adams Fruit Co., Inc. v. Barrett*, 494 U.S. 638, 650 (1990) (reviewing the Agricultural Worker Protection Act); also *Kelley v. EPA*, 15 F.3d 1100, 1107–1108 (D.C. Cir. 1994) (reviewing CERCLA); *Tucson Medical Center v. Sullivan*, 947 F.2d 971, 981 (D.C. Cir. 1991) (reviewing the Social Security Act).

met.⁴¹ The Texas defense criteria, however, do not include many of the statutorily required criteria in Section 113(e) and do not permit consideration of “such other factors as justice may require.”⁴² The Texas rule, therefore, conflicts with the plain language of the statute and interferes with the authority assigned by Congress to the district courts to use their own equitable discretion in deciding what additional factors to consider in assessing penalties and how to balance the equities in light of those factors. Under step one of *Chevron*, when “the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.”⁴³

Moreover, from a policy perspective, the insertion of affirmative defenses that industry may utilize is bad for the citizens and fenceline communities who want to protect their clean air. It makes litigation more difficult for citizens that already often lack a voice.

The environmental groups argued that by approving the Texas rule, EPA weakened the enforcement provisions of the Act and significantly increased the burden on citizen plaintiffs seeking to impose civil penalties for CAA violations. By making penalties significantly more difficult to obtain, the rule weakened the Act’s compliance incentives and made violations of the Act, including exceedances of the NAAQS, more likely.

Concluding Thoughts

Environmental groups and citizens are actively litigating Clean Air Act issues. They have been most successful when either going directly into federal district court on citizen suits over upset emissions or when seeking to enforce federal CAA requirements for Texas air permits, such as a failure to consider new NAAQS, MACT determinations or making Title V objections.

If you own or operate a facility, try to be a good neighbor. You may reap some benefits in the future. If you find yourself reporting a whole lot of upsets to TCEQ, ask yourself what is going wrong and then fix the problem—before you get sued. Finally, fear not that if you engage the

⁴¹ 30 Tex. Admin. Code §§ 101.222(b) (listing eleven criteria for upsets defense); 101.222(c) (listing nine criteria for unplanned maintenance, startup or shutdown activity defense); 101.222(d) (criteria for opacity upsets defense); 101.222(e) (criteria for unplanned maintenance, startup or shutdown activity opacity defense).

⁴² 42 U.S.C. § 7413(e).

⁴³ *Chevron U.S.A., Inc. v. N.R.D.C., Inc.*, 467 U.S. 837, 842–43 (1984).

fenceline community you will automatically become their target. Usually the opposite is true.

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CHANGING AIR QUALITY RULES FOR HYDRAULIC FRACTURING

(a/k/a “THE WILD(CATTER) BUNCH”)

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CHANGING AIR QUALITY RULES FOR HYDRAULIC FRACTURING

(a/k/a “The Wild(catter) Bunch”)

I. Introduction

In fond remembrance of the great 1969 western, “The Wild Bunch,” we have given this paper the alternate title “The Wild(catter) Bunch.” This title suggested itself not only because it slides easily into this year’s Environmental Superconference “western” theme – “The Good, the Bad, and the Ugly” – but also because the movie plotline sounds like a summary of what is happening in air quality regulation in the oil patch in Texas, particularly at sites where hydraulic fracturing is performed.

In general, “The Wild Bunch” is the story of an aging group of cowboys coming to terms with the growing disappearance of the traditional American West. Like the Old West, and as discussed in this paper, long-time regulatory schemes that involved little or no federal regulation of air emissions in the “oil patch,” (along with relatively simple state regulatory requirements) are swiftly coming to an end. Additionally, scores of scientific (and, as some say, not so scientific) studies are underway to evaluate the nature and impact of air emissions at hydraulic fracturing operations that are abundant fodder for the litigation that has ensued over them. With new phased-in federal air requirements and heightened state air requirements, the cost and general difficulty of exploiting oil and gas resources is expected to rise significantly. Consequently, operators are seeing “business as usual” in the Texas oil patch disappearing all around them. The hydraulic fracturing industry is under siege and, just like the Old West depicted in “The Wild Bunch,” the “good old days” are fading fast!

The principal purpose of this paper is to focus on the new EPA “green completion” rule for hydraulic fracturing gas wells in the context of pre-existing regulation of exploration and production of oil and gas resources in Texas. In addition, the paper addresses some of the ongoing scientific studies of the air quality impacts of hydraulic fracturing and recent legislation and litigation relating to the same.

II. What is Hydraulic Fracturing?

Hydraulic fracturing is not new and has been performed in one form or another for over sixty years.¹ It is a well stimulation technique used to maximize the extraction of oil and gas from “unconventional” reservoirs. “Unconventional” reservoirs can cost-effectively produce oil and gas only by using a special stimulation technique, like hydraulic fracturing, because the resources are highly dispersed in the rock, rather than occurring in a concentrated underground location. The oil and gas industry uses hydraulic fracturing to create fractures in the rock formation which stimulate the flow of natural gas or oil to production wells that bring it to the surface.²

Wells may be drilled vertically hundreds to thousands of feet below the land surface and may include horizontal or directional sections extending thousands of feet. Fractures are created by pumping large quantities of fluids at high pressure down a wellbore and into the target rock formation. Hydraulic fracturing fluid commonly consists of water, proppant (e.g. sand), and chemical additives that open and enlarge fractures within the rock formation. These fractures can extend several hundred feet away from the wellbore. The proppants then hold open the newly created fractures.

Once the injection process is completed, the internal pressure of the rock formation causes reservoir gas and fluid to return to the surface through the wellbore. The fluid is known as both “flowback” and “produced water” and may contain the injected chemicals plus naturally occurring materials such as brines, metals, radionuclides, and hydrocarbons.³ According to EPA, the flowback also includes a high volume of volatile organic compounds (“VOCs”) and methane, along with air toxics such as benzene, ethylbenzene and n-hexane.⁴ The typical flowback process lasts from three to ten days. As discussed below, EPA’s recent regulations seek, among other things, to impose new process control requirements to capture these air emissions during the flowback period.

III. EPA’s Historical Approach to Regulating Air Emissions from Oil and Gas Operations

A. Some Statutory Background

The Clean Air Act (“CAA”) is the primary means by which EPA regulates potential emissions that could affect air quality.⁵ The CAA requires EPA to set national standards to limit levels of certain pollutants.⁶ EPA regulates those pollutants by developing human health-based and/or environmentally and scientifically-based criteria for setting permissible levels.⁷ Through the CAA, the EPA has established the National Ambient Air Quality Standards (“NAAQS”) for certain “criteria” pollutants—common pollutants from an array of sources, which EPA has determined endanger public health and welfare.⁸ These pollutants are sulfur dioxide (SO₂), oxides of nitrogen (measured by nitrogen dioxide or NO₂), carbon monoxide (CO), ozone (addressed through regulation of volatile organic compounds and nitrogen oxides), particulates (e.g., soot or fly ash) and lead. EPA also has set separate, technology-based standards for hazardous air pollutants (“HAPs”).⁹ Hazardous air pollutants, also often referred to as toxic air pollutants or air toxics, are those pollutants that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects.¹⁰ EPA currently controls 187 different hazardous air pollutants, which include benzene, chlorine and cyanide compounds.¹¹

Section 111 of the CAA authorizes the EPA to develop federal technology-based emission standards which apply to specific categories of stationary sources. These standards are referred to as New Source Performance Standards (“NSPS”) and are generally found in 40 CFR Part 60. These standards are intended to promote use of the best air pollution control

technologies, taking into account the cost of such technology and any other non-air quality, health, and environmental impact and energy requirements. These standards apply to sources in specific source categories, such as manufacturers of glass, cement, and rubber tires, which have been constructed or modified since the proposal of the standard.

The NSPS are developed and implemented by EPA and are delegated to the states. However, even when delegated to the states, EPA retains authority to implement and directly enforce the NSPS. One of the most significant features of the federal NSPSs for purposes of the present topic is that they are directly applicable to new and modified sources without regard to major source permit thresholds and without having to be incorporated into a construction or operating permit. They also have this added complication: they are applicable as of the date they are first proposed in the Federal Register rather than when they are finally adopted.¹² This retroactive feature of NSPSs means that the regulated community has to be vigilant about monitoring proposed NSPS rules or risk being out of compliance when they are ultimately adopted.

As currently constituted, Section 112 of the CAA requires EPA to periodically publish a list of industrial categories and subcategories of major and certain non-major (“area”) sources of the 187 controlled HAPs.¹³ In general, EPA also is required to establish emission standards for new and existing sources that have been listed according to a prescribed schedule.¹⁴ Collectively, these standards are referred to as “National Emission Standards for Hazardous Air Pollutants,” or “NESHAPs”. In addition, EPA is required to perform periodic risk assessments to determine whether or not changes to the emission standards are warranted. For purposes of emission control, the NESHAPs are to reflect “the maximum degree of reduction in emissions of the [regulated] hazardous air pollutants...taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements.”¹⁵ EPA refers to this statutory emission control standard as “maximum achievable control technology” or “MACT.”

B. Traditional Federal Regulation

Oil and gas exploration and production activities emit both criteria and hazardous air pollutants. Historically, oil and gas operations faced little federal regulation because the CAA focuses most of its controls on “major” sources, which are sources that emit a certain number of tons per year of a pollutant.¹⁶ A major source includes “any group of stationary sources located within a contiguous area and under common control” that emits a certain number of tons of regulated pollutant annually.¹⁷ Oil and gas operations often are minor sources and are thus regulated under state minor source programs.¹⁸ Not infrequently, however, oil and gas operations can find their way into “major source” status where the jurisdictional agency seeks to aggregate a site as a “single source” if it meets the following criteria: (1) it is located on one or more “contiguous or adjacent” properties; (2) it is owned or controlled by the same person or entity; and (3) the site belongs to the same two digit major SIC code.¹⁹ This determination has been the source of several recent administrative and judicial proceedings.²⁰ In 2011, the Texas Legislature

adopted specific restrictions on aggregation of certain stationary sources in the oil and gas industry in the state.²¹

Despite the historic pattern of minor source status in the upstream segment, some oil and gas operations face stricter regulation in so-called “nonattainment” areas, which are areas that have exceeded the NAAQS for a criteria pollutant and necessitate control of smaller air pollution sources than those in areas that do not exceed NAAQS (i.e., attainment areas). This is the case for the Barnett Shale, much of which is located in or near the Dallas-Fort Worth ozone nonattainment area. As a result, Barnett Shale production activities must comply with more stringent regulations than similar operations proposed outside of a nonattainment area.

Historically, although EPA has in the past promulgated several NSPSs and NESHAPs that impact oil and gas operations²² EPA has not had any significant role in regulation of air emissions from the upstream operations associated with oil and gas exploration and production (such as hydraulic fracturing of natural gas wells) through the issuance of NSPSs or otherwise. This federal “hands off” approach has left such regulation in oil rich states like Texas to the state and local authorities, and has been an important factor for industry in exploration and production of oil and gas.

IV. The State of Texas’ Approach to Regulating Oil and Gas Operations

A. The Texas Railroad Commission

The Railroad Commission (“RRC”) has jurisdiction over oil and gas operations in Texas but, in the air arena, has asserted that it “does not have regulatory authority over odors or air contaminants.”²³ However, in a March 2010 notice to the regulated community, the RRC stated the following:

Under Statewide Rule 13, the operator is responsible for compliance during all operations at the well, and must effectively control the well at all times. A leaking wellhead may create an undesirable air emission and be a violation of Rule 13 for failure to control the well. Statewide Rule 32 allows a certain amount of gas venting from E&P operations, but imposes limits on authorized venting for the purpose of conserving gas. Exceeding authorized venting pressures may create an undesirable air emission and is not a legal use of gas. Venting in excess of authorized limits may also indicate the need for equipment maintenance and/or equipment failure.²⁴

So, potential RRC regulation of air-emission related activities should be kept in mind.

B. The Texas Commission on Environmental Quality

Under the Texas Clean Air Act, the Texas Commission on Environmental Quality (“TCEQ”) has long regulated air emissions from oil-field activities with rules providing for the following (among other things): (i) the prevention of the creation of a nuisance;²⁵ (ii) limits on visible emissions;²⁶ (iii) emissions event reporting and recordkeeping requirements;²⁷ and (iv) operational requirements to reduce emissions.²⁸ The TCEQ regulations also require owners and operators of “facilities” to obtain an authorization for air emissions prior to the construction of such facilities.²⁹

Historically, TCEQ has developed what it refers to as a “tiered approach” to authorizing certain emissions from oil and gas facilities depending upon the type of operation and the type and amounts of air contaminants that will be emitted. TCEQ’s permitting options include permits by rule (“PBRs”), standard permits, and - for facilities that cannot qualify for a PBR or standard permit - case by case new source review (“NSR”) permits. (A *de minimis* exemption also exists.) Major sources of air emissions also are subject to the federal Clean Air Act Title V operating permit requirements.³⁰

Assuming a facility does not qualify for a *de minimis* exemption, its easiest path to gaining TCEQ air permitting authority is to identify and comply with a PBR. One PBR commonly used to authorize air emissions from exploration and production facilities is TCEQ’s “Oil and Gas Handling and Production Facilities” PBR 106.352.

Effective April 1, 2011, the TCEQ repealed the long-existing version of PBR 106.352 and adopted a new version of this PBR, and also a new Standard Permit for Oil and Gas Handling and Production Facilities (the “Standard Permit”) in the North Central Texas area (i.e. the Barnett Shale region).³¹ Subsection (l) of the new PBR 106.352 contains the old conditions that existed in the repealed version of 106.352 (plus a distance requirement for sour oil and gas facilities). Subsections (a)-(k) are more stringent and apply to the Barnett Shale counties. These new subsections (a)-(k) and the Standard Permit include enhanced operating specifications and emissions limitations for typical equipment (facilities) during normal operation, which includes production and planned maintenance, start-up, and shutdown.³² The PBR and Standard Permit both include a list of best management practices and requires all oil and gas facilities at a site to be permitted under one authorization.³³ Attachment A contains a TCEQ summary/overview of the new program.³⁴

After a little more than a year’s experience with the new/current version of PBR 106.352 and the Standard Permit in effect, TCEQ’s Air Permits Division (“APD”) undertook an evaluation of how these authorities were working in the Barnett Shale region. On May 11, 2012, TCEQ’s Deputy Director of the Office of Air issued an Interoffice Memorandum to the TCEQ Commissioners recommending some changes to PBR 106.352 that would relax the requirements for some Barnett Shale counties. On May 30, 2012, TCEQ proposed changes to PBR 106.352 and the Standard Permit that would remove Archer, Bosque, Clay, Comanche, Coryell, Eastland, Shackelford and

Stephens counties from the applicability of the more stringent subsections (a)-(k) of PBR 106.352 and would allow operations in those counties to comply with the less stringent subsection (l) applicable to the rest of the state. (TCEQ cites to the low density of oil and gas operations near population centers in these 8 counties.) Additionally, the proposed revision would extend the deadline for notifying the TCEQ about facility location and method of authorization from January 1, 2013 to January 5, 2015. Unless an extension of the public comment period is granted, the public comment period on this proposed rule will have closed by press time on this paper.

C. TCEQ Barnett Shale Air Quality Studies

Since 2002, gas production activity in the Barnett Shale area has experienced significant growth and the TCEQ has been improving emissions data from oil and gas production and is conducting in-depth measurements to fully evaluate potential health effects.³⁵ The TCEQ is using state-of-the-art technology to address emissions from Barnett Shale activities and overall oil and gas operations.³⁶ In particular, the TCEQ has used an infrared gas-imaging camera to study emissions from individual tanks or tank batteries associated with upstream oil and gas production in various counties with the Barnett Shale.³⁷ Information and results from such studies as well as of other activities are detailed on the TCEQ's website.³⁸

V. Times They Are A-Changing!

The familiar pattern of regulations is now changing. Change has arrived in the form of new federal NSPSs that apply - for the first time ever - to natural gas wells that are hydraulically fractured.³⁹ As always in the regulatory arena, the devil is in the definitions!

A. New Federal Subpart OOOO

In January 2009, two citizen groups, WildEarth Guardians and the San Juan Citizens Alliance, sued EPA alleging that the Agency had failed to review the NSPS and air toxic standards for the oil and natural gas industry.⁴⁰ In February 2010, the U.S. District Court for the District of Columbia issued a consent decree that required EPA to take actions related to the review of these standards (the "*WildEarth* Consent Decree"). The *WildEarth* Consent Decree, which was recently revised, required that EPA take final action by April 17, 2012. In response to the *WildEarth* Consent Decree, EPA issued a proposed rule on August 23, 2011.⁴¹

On April 17, 2012, EPA signed (but, as of press time on this paper, had not published in the Federal Register) a new final NSPS to reduce the emissions of methane and volatile organic compounds from the oil and gas industry.⁴² Of particular significance in Texas, the final rules include the first federal air standards for natural gas wells that are hydraulically fractured, along with requirements for other sources in the oil and gas industry that currently are not regulated at the federal level.⁴³ These new standards are referred to as "Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution." (40 C.F.R. Part 60, Subpart

OOOO). The new rules also include revisions of 40 C.F.R. Part 63 Subparts HH and HHH, which relate to NESHAPs for natural gas production, transmission and storage facilities.⁴⁴ Below we will only examine the new Subpart OOOO of the final new NSPS applicable to hydraulically fractured gas wells.

B. Green Completion

According to EPA, a key component of Subpart OOOO is expected to yield a nearly 95 percent reduction in VOCs emitted from more than 11,000 new hydraulically fractured gas wells each year.⁴⁵ This significant reduction would be accomplished primarily through the use of a process known as a “reduced emissions completion” (“REC” or “green completion”) to capture natural gas that currently escapes to the air during the phase of completion referred to as “flowback.” In a green completion, special equipment separates gas and liquid hydrocarbons from the flowback that comes from the well as it is being prepared for production. The gas and hydrocarbons can then be treated and used or sold, avoiding the waste of natural resources that cannot be renewed.

EPA has projected that the estimated revenues from selling the gas that currently goes to waste are expected to offset the costs of compliance. EPA’s analysis of the rules shows a cost savings of \$11 to \$19 million when the rules are fully implemented in 2015. Some states, such as Wyoming and Colorado, already require green completions, as do some cities, including Fort Worth and Southlake, Texas. In addition, data provided to EPA’s Natural Gas STAR program show that a number of companies are using green completions voluntarily.⁴⁶

C. Phased-In Compliance

In the final rule, EPA agreed to phase in the rules so that the full array of requirements associated with green completion will be applicable to well completions that begin on and after January 1, 2015.⁴⁷ Use of a “completion combustion device” (e.g. flaring) will be required for well completions begun prior to that date (and after August 23, 2011). According to the EPA, use of green completions will reduce VOC emissions by 95 percent at each well.⁴⁸

D. Exceptions

The final rule also states that green completions are not required for new exploratory (“wildcat”) wells or delineation wells (used to define the borders of a natural gas reservoir), because they are not near a pipeline to bring the gas to market.⁴⁹ In addition, green completions are not required for low-pressure wells, where natural gas cannot be routed to the gathering line. Operators may use a formula based on well depth and well pressure to determine whether a well is a low-pressure well. The rule states that owners/operators must reduce emissions from these wells by flaring during the well-completion process, unless such flaring is a safety hazard or is prohibited by state or local regulations.⁵⁰

E. General Duty Clause

It is worth mentioning, that Section 60.5375(a)(4) of the final rule imposes a specific general duty on oil and gas operators. That section states that an oil and gas operators have “a general duty to safely maximize resource recovery and minimize releases to the atmosphere during flowback and subsequent recovery.” This requirement could become a vehicle for pervasive enforcement by EPA in the years to come.⁵¹

F. Subpart OOOO in Texas (Uh, oh.....)

Under the existing delegation agreement between EPA and the State of Texas relative to the NSPS program,⁵² new NSPS rules are automatically delegated to the State of Texas unless, within 30 days of final promulgation, the State notifies EPA that implementation or enforcement of the standard is not possible or feasible. Given the potential gap between the scope of the new federal standard and the scope of traditional TCEQ air quality regulation of oil and gas operations, there is some possibility that TCEQ might be forced to decline delegation of new Subpart OOOO.

Under the Texas Clean Air Act, TCEQ has historically considered its authority over construction of oil and gas well facilities to be triggered “after the well has been drilled and 72 hours after the well is tested.”⁵³ (TCEQ considers that point to be “start of construction” for permitting purposes.)⁵⁴ “Well tests” also are specifically excluded from the definition of “facility” under the Act and corresponding regulations.⁵⁵ Because the scope of Subpart OOOO and traditional TCEQ jurisdiction over gas wells may not coincide in certain circumstances, there is currently a question as to whether or not TCEQ has the requisite authority to implement and enforce all parts of the new Subpart OOOO. Although the RRC has jurisdiction over work practices, operating procedures, and safety measures at oil and gas sites, its legal authority to assume even partial responsibility for implementation and enforcement of these standards is problematic at best. (See Section IV.A. above.) The TCEQ is reportedly looking into various options that would allow for delegation to TCEQ, but, as of the date of this paper, no decisions have been made.

This is an issue that the regulated community will want to closely monitor since TCEQ may have to make a quick decision about accepting delegation soon after the rule is finally published.

G. Beyond Subpart OOOO

The EPA’s current methodology for defining “major” sources could also bring many more oil and gas sites beneath the major source umbrella, even in relatively clean “attainment” areas.⁵⁶ Moreover, newly-built and existing compressor stations that make a modification and increase their hourly emissions already are subject to NSPS for “stationary spark ignition internal combustion engines.”⁵⁷

VI. Rules Spark Early Criticism

Both industry officials and environmentalists have voiced concerns over how the rules define “natural gas wells.” In response to comments about the intended breadth of the rule, EPA expanded the definition of a natural gas well in an attempt to provide more certainty to the regulated community.⁵⁸ The final rule states that a “[g]as well or natural gas well means an onshore well drilled principally for production of natural gas.” EPA expects that the final rule will result in control of hydraulically fractured gas wells drilled in the four formation types generally accepted as gas-producing formations: (1) high-permeability gas, (2) shale gas, (3) other tight reservoir rock or (4) coal seam.

However, the final rule will not affect (or at least is not supposed to affect) drilling of oil wells. EPA acknowledged public comments expressing concerns about wells drilled in principally oil-rich plays that may also be used for natural gas extraction, but cited a lack of sufficient data on volatile organic compound emissions during completion of hydraulic fracturing at oil wells to support REC requirements for those wells.⁵⁹ Accordingly, the rules might not largely apply in more liquid rich oil formations, such as the Bakken Shale in North Dakota and Montana or the Eagle Ford Shale in Texas.

Some environmentalists are also concerned that definition might exclude “hybrid” wells that produce a mixture of both gas and oil. Industry officials also want clarification on the definition of “gas wells” and “oil wells” as it is difficult to determine how and where the controls should be implemented which could potentially create compliance issues. In addition, industry officials are confused over the provisions in the rule that provide exemptions for “low pressure” wells which they claim conflicts with other language in the rules which states that green completions should be used based on the “feasibility of routing gas to a collection system to be conveyed to market.”⁶⁰

VII. Continuing Controversy

As the level of public and governmental agency scrutiny of the potential air impacts of hydraulic fracturing activities has increased, we are seeing a slew of studies that seek to provide scientific answers to questions being raised, as well as attempts by members of Congress to impose further restrictions on hydraulic fracturing. In addition, as one would expect, super-heated media attention has led to private party litigation against operators of hydraulic fracturing facilities. Accordingly, we briefly discuss some recent studies, a failed bill, and a number of pending Texas lawsuits below.

A. Recent Study Indicates that EPA’s Methane Emissions Are Overstated

On June 1, 2012 the American Petroleum Institute and America's Natural Gas Alliance jointly released a report which found that methane emissions are 50% percent lower than EPA’s

estimates for gas wells thus undermining the agency's projected benefits from the new green completion rules.⁶¹ According to the report, methane emissions from natural gas operations such as liquids unloading (a technique used to remove water and other liquids from the wellbore to improve the flow of natural gas) are 86% lower than EPA estimated. The report also states that methane emissions from well re-fracturing operations (a technique used to prolong production of an existing gas-producing well) are 72% lower than EPA estimates.

The report examined data on 91,000 wells distributed over a broad geographic area and operated by over 20 companies which was 10 times larger than EPA's. According to the report, EPA's calculation method substantially overestimates the amount of methane emissions from hydraulic fracturing and other unconventional natural gas production activities. In 2011, EPA introduced a new calculation method that more than doubled the estimated emissions from natural gas production. EPA's estimates were based on a small set of data submitted by a limited number of companies.⁶²

B. Fort Worth Natural Gas Air Quality Study

On March 9, 2010, in response to concerns from citizens and community groups in the Fort Worth area, the Fort Worth City Council adopted a resolution which appointed a committee to review air quality issues associated with natural gas exploration and production.⁶³ The committee was composed of private citizens, members of local community groups, members of environmental advocacy groups, and representatives from industry. The committee was charged to make recommendations to the City Council on a scope of work for a comprehensive air quality assessment to evaluate the impacts of natural gas exploration and production, to evaluate proposals submitted in response to a solicitation for conducting this study, and to ultimately choose a qualified organization to conduct the study.

Eastern Research Group, Inc. was ultimately selected to perform the Fort Worth Natural Gas Air Quality Study. The results of study were released on July 13, 2011 which indicated that Fort Worth's 600-foot setback distance is adequate and that there were not any significant health threats in residential areas beyond those setback distances.⁶⁴

C. Colorado School of Public Health Study

On March 19, 2012, the Colorado School of Public Health released preliminary results from a study that raises concerns about the potential public health impact of air emissions from unconventional gas drilling operations.⁶⁵ Researchers at the Colorado School of Public Health examined three years of air monitoring data in Garfield County, Colorado and concluded that residents living near natural gas wells may face increased exposure to benzene, a known human carcinogen, and other toxic chemicals, such as ethylbenzene, toluene, and xylene. The researchers found higher lifetime cancer risks for people living closer to the wells. They also concluded that these nearby residents have a higher risk of experiencing neurological and

respiratory health effects, such as headaches, throat and eye irritation, impaired lung capacity, dizziness, fatigue, numbness in the limbs, and tremors.⁶⁶

On March 21, 2012, the Colorado Oil & Gas Association issued a press release in response to the Colorado School of Public Health report saying the report is based on faulty assumptions, including overstating how long it takes to drill a well and using outdated data that fails to reflect significant regulatory changes resulting in reduced emissions.⁶⁷ The Association states that Colorado State University is crafting an emissions study for Garfield County, in collaboration with EPA and others, that will “provide the reliable, relevant data that must precede health impact studies related to oil and gas drilling.”⁶⁸

D. Failed Legislation

On March 17, 2011, the Bringing Reductions to Energy’s Airborne Toxic Health Effects Act (“BREATHE Act”) was introduced in the U.S. House of Representatives.⁶⁹ The BREATHE Act sought to amend Section 112(n)(4) of the Clean Air Act to: (1) include hydrogen sulfide in the list of hazardous air pollutants; (2) repeal the prohibition on aggregating emissions from any oil or gas exploration or production well and emissions from any pipeline compressor or pump station with emissions from other similar units to determine whether such units or stations are major sources of hazardous air pollutants under the NESHAPs; (3) repeal the prohibition on aggregating emissions from any oil or gas exploration or production well for any purpose relating to hazardous air pollutant emission standards; and (4) repeal the prohibition against the EPA listing oil and gas production wells as an area source category of hazardous air pollutants. The bill did not pass.

E. Recent Texas Litigation

In each of the major shale plays throughout the country, there have been a number of recent lawsuits concerning alleged air impacts from oil and gas operations. The litigation has included individual tort claims, citizen suits and even class action litigation.⁷⁰ The recent Texas litigation is summarized below.

1. Sizelove v. Williams Production, et al.

On November 3, 2010, John Mitchell Sizelove and Jaymen Sizelove filed suit against Williams Production Company, LLC, Mockingbird Pipeline, L.P., XTO Energy, Inc., GulfTex Operating, Inc., Trio Consulting & Management, LLC and Exexco, Inc. in the 367th Judicial District Court in Denton County, Texas.⁷¹ The Plaintiffs allege that defendants’ compressor and gas drilling operations caused Plaintiffs to suffer headaches and respiratory problems. Defendants allegedly installed a drill water collection site and gas compressor station 250 feet from the home, a gas pipeline just 400 feet from the home, and eight gas drills within a three-quarter mile radius. The complaint contends that the defendants cut down trees on the property and allowed workers to use the land as a toilet. These operations allegedly lowered the property

value with constant noise and toxic formaldehyde, sulfur dioxide, benzene, toluene, and xylene emissions. Plaintiffs allege claims for nuisance and trespass, and seek property damages, damages for mental anguish, and exemplary damages. The case is currently set for trial on November 26, 2012.

2. Heinkel-Wolfe v. Williams Production, et al.

On November 3, 2012, Margaret Heinkel-Wolfe, Individually and as Next Friend for Paige Caroline Wolfe, a minor filed suit against Williams Production Company, LLC, Mockingbird Pipeline, L.P., XTO Energy, Inc., GulfTex Operating, Inc., Trio Consulting & Management, LLC and Exesco, Inc. in the 362nd Judicial District Court in Denton County, Texas.⁷² Similarly to the *Sizelove* matter, the Plaintiffs allege injuries due to the installation of a drill water collection site and gas compressor station just 990 feet from their home, and a gas pipeline just 700 feet away and eight gas drills within a three-quarter mile radius. Plaintiffs allege these operations have lowered their property value with constant racket and toxic formaldehyde, sulfur dioxide, benzene, toluene, and xylene emissions. Plaintiffs claim to suffer from headaches, respiratory ailments, and troubled breathing as a result of the defendants' drilling and compressing operations, which are polluting the air and water surrounding the plaintiffs' home. In their amended complaint, plaintiffs dropped their negligence claims and allegations of water contamination, but retained causes of action for nuisance and trespass. The matter is currently set for trial on September 17, 2012.

3. Town of Dish v. Atmos Energy Corp., et al.

On February 28, 2011, The Town of Dish filed suit against Atmos Energy Corp., Crosstex North Texas Gathering LP, Enbridge Gathering LP, Energy Transfer Fuel LP, Texas Midstream Gas Services LLC and Enterprise Texas Pipeline LLC in the 362nd District Court in Denton, County, Texas.⁷³ Two other suits were also filed by Dish property owners - one by town Commissioner William Sciscoe and his wife, Denise, and another by the owners of nearby properties.⁷⁴ In the petition, the plaintiff claim that excessive emissions, noise and light from the defendants' compressor station facilities amount to a public nuisance. They also accuse the companies of trespassing for allowing emissions to pollute the town's air.

4. Parr v. Aruba Petroleum, Inc., et al.

On March 8, 2011, Lisa Parr filed suit against Aruba Petroleum, Inc., Ash Grove Resources, LLC, Encana Oil & Gas (USA), Inc., Halliburton Company, Republic Energy, Inc., Ryder Scott Company, L.P., Ryder Scott Oil Company, Tejas Production Services, Inc. and Tejas Western Corp. in County Court at Law No. 5 in Dallas County, Texas.⁷⁵ The plaintiff claims defendants natural gas exploration and development activities occurred close to her home that is located in Decatur, Texas which is within the Barnett Shale. Plaintiff claims that defendants have caused releases, spills, emissions, and discharges which have exposed Plaintiffs and their property to hazardous gases, chemical and industrial wastes. Plaintiffs have asserted causes of

action for assault, intentional infliction of emotional distress, negligence, gross negligence, negligence per se, nuisance, trespass, and strict liability for abnormally dangerous activity. Plaintiff also seeks various damages including exemplary damages and damages for future medical monitoring.

VIII. Conclusion

The times definitely are “a-changing.” It appears that, as the public debate over the safety and health aspects of hydraulic fracturing increases in intensity, so too does regulation of the activity. Interestingly enough, all of these dynamics are occurring alongside the nation’s pursuit of its long-time desideratum of reduced dependence on foreign oil, energy security, and affordable energy prices essential to economic growth. The conflict might be compared to an irresistible force meeting an immovable object. Unlike the imaginable outcome of that confrontation, making choices among environmental protection, energy security, and the economic growth should not be allowed to result in damage to all sides. Enlightened leadership, good science, and pragmatism by all stakeholders must, therefore, remain a public policy imperative.

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Disclaimer: The information provided in this paper and the accompanying presentation is intended solely as an educational resource. It does not constitute legal advice, and should not be used as a substitute for careful review of the rulemaking and related developments themselves as well as consultation with competent legal and technical professionals as to site-specific circumstances. The views expressed in this paper are solely those of the authors and should not be construed as representative of the views of any other person or entity.

ENDNOTES

¹TEXAS RAILROAD COMMISSION, *Hydraulic Fracturing Frequently Asked Questions*, available at: <http://www.rrc.state.tx.us/about/faqs/hydraulicfracturing.php> (last visited on July 6, 2012).

²U.S. ENV’T’L PROT. AGENCY, *The Process of Hydraulic Fracturing*, available at: <http://www.epa.gov/hydraulicfracturing/process.html> (last visited on June 20, 2012).

³*Id.*

⁴U.S. ENV’T’L PROT. AGENCY, *Overview of Final Amendments to Air Regulations for the Oil and Natural Gas Industry, Fact Sheet*, available at: <http://www.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf> (last visited on June 20, 2012).

⁵*Id.*; see also 42 U.S.C. § 7401 *et seq.* (1970); U.S. ENV'T'L PROT. AGENCY, *Summary of the Clean Air Act*, available at: <http://www.epa.gov/lawsregs/laws/caa.html> (last visited on September 22, 2011).

⁶U.S. ENV'T'L PROT. AGENCY, *Summary of the Clean Air Act*, available at: <http://www.epa.gov/lawsregs/laws/caa.html> (last visited on September 22, 2011).

⁷*Id.*

⁸42 U.S.C. § 7408-9.

⁹42 U.S.C. § 7412.

¹⁰U.S. ENV'T'L PROT. AGENCY, *About Air Toxics*, available at: <http://www.epa.gov/ttn/atw/allabout.html#what> (last visited on June 20, 2012).

¹¹*Id.*

¹²42 U.S.C. § 7411(a)(2).

¹³42 U.S.C. § 7412(c).

¹⁴42 U.S.C. § 7412(e).

¹⁵42 U.S.C. § 7412(d)(2).

¹⁶U.S. ENV'T'L PROT. AGENCY, *Pollutants & Sources*, available at: <http://www.epa.gov/ttn/atw/pollsour.html> (last visited on June 20, 2012).

¹⁷42 U.S.C. § 7661(2).

¹⁸See e.g., 30 TEX. ADMIN. CODE, § 106.352.

¹⁹See “*Withdrawal of Source Determinations for Oil and Gas Industries*,” memorandum from Gina McCarthy to Regional Administrators (September 22, 2009) withdrawing the 2007 EPA memo “*Source Determinations for Oil and Gas Industries*,” memorandum from William L. Wehrum to Regional Administrators (January 12, 2007).

²⁰See e.g., *MacClarence v. EPA*, 596 F.3d 1123 (9th Cir. 2010); *WildEarth Guardians v. EPA*, No. 11-9527 (10th Cir. April 25, 2011); *In re BP American Production Co., Florida River Compression Facility*, No. CAA 10-04 (EAB November 17, 2010).

²¹See TEX. HEALTH & SAFETY CODE ANN. § 382.051964.

²²See e.g., 40 C.F.R. Part 60, Subparts KKK (Natural Gas Processing Plants) and LLL (Natural Gas Processing: SO₂ Emissions) and 40 C.F.R. Part 63, Subparts HH (Oil and Natural Gas Production Facilities) and HHH (Natural Gas Transmission and Storage Facilities).

²³Outside the air area, there is much statutory and potential enforcement overlap between the RRC and the TCEQ. For instance, the TCEQ is charged with the principal responsibility of implementing the state’s policy of maintaining the quality of water in the state, except the RRC is expressly declared to be “solely responsible for the control and disposition of waste and the abatement and prevention of pollution of surface and subsurface water resulting from ... activities associated with the exploration, development, and production of oil or gas.” TEX. WATER CODE ANN. §§ 26.003, 26.011, 26.023, 26.027, 26.131(a). The two agencies have adopted a Memorandum of Understanding (“MOU”) which seeks to clarify the respective roles of the two agencies in administering their statutory duties. TEX. ADMIN. CODE, § 3.30. See also TEXAS RAILROAD COMMISSION, *Barnett Shale Information*, available at: <http://www.rrc.state.tx.us/barnettshale/index.php> (last visited on June 29, 2012).

²⁴See TEXAS RAILROAD COMMISSION, *Notice to Oil, Gas & Pipeline Operators Regarding Air Emissions*, available at: <http://www.rrc.state.tx.us/pressreleases/2010/020910.php> (last visited on June 29, 2012).

²⁵30 TEX. ADMIN. CODE § 101.4; see Attachment B.

²⁶30 TEX. ADMIN. CODE § 111.111.

²⁷30 TEX. ADMIN. CODE § 101.201.

²⁸30 TEX. ADMIN. CODE § 101.222.

²⁹30 TEX. ADMIN. CODE, § 116.10.

³⁰For additional useful information please see the TCEQ Regulatory Guidance RG-482 (November 2011).

³¹30 TEX. ADMIN. CODE, § 106.352.

³²See TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, *Background Memorandum* (Jan. 7, 2011), available at: http://www.tceq.texas.gov/assets/public/legal/rules/rule_lib/adoptions/10018106_aex_REVISED%20BU.pdf (last visited on September 27, 2010).

³³TCEQ’s website contains a useful table to assist in determining which requirements of PBR 106.352 are

applicable to a specific oil and gas operation.

<http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/tables-og-scen.pdf> (last visited on June 29, 2012).

³⁴See Sheedy, Keith, *Oil and Gas Regulations and TCEQ Lessons Learned*, North Texas Clean Air Steering Committee (NTCASC) Oil and Gas Task Force Meeting, available at:

<http://www.nctcog.org/trans/committees/ntcasc/OGTF/033011/Item4-2.pdf> (accessed on June 29, 2012).

³⁵See TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, *Barnett Shale Geological Area*, available at: <http://www.tceq.texas.gov/airquality/barnettshale> (last visited on September 27, 2011).

³⁶*Id.*

³⁷See TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, *Barnett Shale: Technical Questions Answered*, available at: <http://www.tceq.texas.gov/airquality/barnettshale/bshale-faq> (last visited on September 27, 2011).

³⁸See TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, *Barnett Shale: Latest Activities*, available at: <http://www.tceq.texas.gov/airquality/barnettshale/bshale-next> (last visited on September 27, 2011).

³⁹The rule also applies to other emissions sources from oil and natural gas exploration, production, processing, and transportation. However, this paper will limit its discussion to the impact on hydraulic fracturing operations.

⁴⁰U.S. ENV'T'L PROT. AGENCY, *Overview of Final Amendments to Air Regulations for the Oil and Natural Gas Industry, Fact Sheet*, available at: <http://www.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf> (last visited on June 20, 2012).

⁴¹*Id.*

⁴²U.S. ENV'T'L PROT. AGENCY: *EPA Issues Final Air Rules for the Oil and Natural Gas Industry*, available at: <http://www.epa.gov/airquality/oilandgas/actions.html> (last visited on May 14, 2012).

⁴³U.S. ENV'T'L PROT. AGENCY: *Overview of Final Amendments to Air Regulations for the Oil and Natural Gas Industry*, available at: <http://www.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf> (last visited on May 14, 2012).

⁴⁴For a helpful background and summary on the new rules package see: Environmental Resources Management, "Final Oil & Gas NSPS OOOO and MACT HH and HHH," ERM webinar, April 27, 2012.

⁴⁵U.S. ENV'T'L PROT. AGENCY: *Overview of Final Amendments to Air Regulations for the Oil and Natural Gas Industry*, available at: <http://www.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf> (last visited on May 14, 2012); see *infra* discussion of "flowback" at p. 4.

⁴⁶*Id.*

⁴⁷U.S. ENV'T'L PROT. AGENCY, *Summary of Key Changes to the New Source Performance Standards*, available at: <http://www.epa.gov/airquality/oilandgas/pdfs/20120417changes.pdf> (last visited on June 20, 2012).

⁴⁸*Id.*

⁴⁹U.S. ENV'T'L PROT. AGENCY, *Summary of Requirements for Processes and Equipment at Natural Gas Well Site*, available at: <http://www.epa.gov/airquality/oilandgas/pdfs/20120417summarywellsites.pdf> (last visited on June 20, 2012).

⁵⁰*Id.*

⁵¹Bridget DiCosmo, *EPA Eyes New Air, Water Enforcement Powers to Inspect Fracking Sites*, Inside EPA (June 29, 2012), available at: <http://insideepa.com/201206292403243/EPA-Daily-News/Daily-News/epa-eyes-new-air-water-enforcement-powers-to-inspect-fracking-sites/menu-id-95.html> (last visited on July 9, 2012).

⁵²Amendment/Delegation of Additional Authority for the New Source Performance Standards...to the State of Texas," effective December 28, 1982, available at:

http://www.epa.gov/region6/6en/a/tx_delegationamendment12281982.pdf (last visited on July 7, 2012).

⁵³See, e.g., "History of Oil and Gas Air Permitting at Texas Commission [on] Environmental Quality," available at: <http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/og-hist-reg.pdf> (last visited on July 7, 2012).

⁵⁴See, e.g., 30 TEX. ADMIN. CODE § 106.352(b)(1).

⁵⁵See TEX. HEALTH & SAFETY CODE § 382.003(6) and 30 TEX. ADMIN. CODE § 116.10(4).

⁵⁶See Memorandum from Gina McCarthy, Assistant Administrator to Regional Administrators, *Withdrawal of Source Determinations for Oil and Gas Industries*, Sept. 22, 2009, available at:

<http://www.epa.gov/region7/air/nsr/nsrmemos/oilgaswithdrawal.pdf> (last visited on September 22, 2011).

⁵⁷ *Id.* (citing Governor's Marcellus Shale Advisory Commission, *supra* note 125, at § 7.3.1 (citing 40 CFR Part 63, Subpart ZZZZ)).

⁵⁸ U.S. ENV'T'L PROT. AGENCY, *Summary of Key Changes to the New Source Performance Standards*, available at: <http://www.epa.gov/airquality/oilandgas/pdfs/20120417changes.pdf> (last visited on June 20, 2012).

⁵⁹ Bridget DiCosmo, *EPA's Definition of 'Gas Wells' Sparks Confusion Over Drilling Air Rules*, Inside EPA (May 24, 2012), available at: <http://insideepa.com/201205242399850/EPA-Daily-News/Daily-News/epas-definition-of-gas-wells-sparks-confusion-over-drilling-air-rules/menu-id-95.html> (last visited on July 9, 2012).

⁶⁰ *Id.*

⁶¹ *Characterizing Pivotal Sources of Methane Emissions from Unconventional Natural Gas Production*, available at: <http://anga.us/media/249160/anga%20api%20survey%20report%201%20june%20final.pdf> (last visited on June 20, 2012).

⁶² *Id.*

⁶³ *Fort Worth Natural Gas Air Quality Study Final Report, Executive Summary* (July 13, 2011), available at: http://fortworthtexas.gov/uploadedFiles/Gas_Wells/ERGReport_ExecutiveSummary.pdf (last visited on June 20, 2012).

⁶⁴ *Id.* A number of Texas cities have adopted or are in the process of adopting local controls for hydraulic fracturing operations within their boundaries. *See e.g.*, Southlake, Texas, Gas Well Ordinance. Article IV. Gas and Oil Well Drilling and Production; Richard Hills, Texas, Gas Well Ordinance. Ordinance No. 996-04. September 14, 2004; Haltom City Ordinance No. 0-2004-026-15. November 22, 2004; Fort Worth, Texas, Ordinance No. 18449-02-2009. February 10, 2009.

⁶⁵ Lisa M. McKenzie, Roxana Z. Witter, Lee S. Newman, and JoIm L. Adgate, Colorado School of Public Health, *Human Health Risk Assessment of Air Emissions from Development of Unconventional Natural Gas Resources* (Mar. 2012), available at: <http://attheforefront.ucdenver.edu/?p=2546> (last visited on July 7, 2012).

⁶⁶ *Id.*

⁶⁷ *See* Colorado Oil & Gas Association statement regarding Colorado School of Public Health Report, March 21, 2012, available at: http://newsroom.coga.org/pr/coga/document/Statement_by_COGA_regarding_CSPH_study.pdf (last visited on July 7, 2012).

⁶⁸ *Id.*

⁶⁹ BREATHE Act, H.R. 1204, 112th Cong. (2011).

⁷⁰ *See e.g.*, *Strudley v. Antero Resources*, No. 2011-CV-22 (Denver Co. Dist. Ct., filed March 23, 2011) (civil tort action); *Tucker v. Southwestern Energy Co.*, No. 1:11-CV-0044 (E.D. Ark., filed May 17, 2011) (class action); *Citizens for Pennsylvania's Future v. Ultra Resources, Inc.* (M.D. Penn., filed July 21, 2011) (citizen's suit). June 06, 2012

⁷¹ *See* Original Petition, *Sizelove v. Williams Production Co., LLC*, No. 10-50355-367 in 367th District Court in Denton County, Texas.

⁷² *See* Original Petition, *Heinkel-Wolfe v. Williams Production Co., LLC*, No. 10-40355-362 in the 362nd District Court in Denton County, Texas.

⁷³ *See* Original Petition in *Town of Dish v. Atmos Energy Corp.*, Civil Action No. 2011-40097-362, in the 362nd District Court of Denton County, Texas.

⁷⁴ *Companies Sued Over Natural Gas Operations in Dish*, Dallas Morning News, March 2, 2011, available at: <http://www.dallasnews.com/news/community-news/denton-county/20110302-companies-sued-over-natural-gas-operations-in-dish.ece> (last visited on July 7, 2012).

⁷⁵ *See* Original Petition in *Parr v. Aruba Petroleum, Inc. et al.*, No. 11-01650-E, County Court at Law No. 5 of Dallas County, Texas.

ATTACHMENT A

Texas Commission on Environmental Quality (TCEQ)
Oil and Gas (O&G) Production Sites Permit by Rule (PBR) and Standard Permit (SP)
March 8, 2011

General Concepts

- Applicability:
 - Equipment authorized includes wellheads, pump jacks, piping components, separators, condensers, treatment systems, gas recovery units, cryogenic units, engines, boilers, heater treaters, storage tanks, underground storage of natural gas, truck loading, flares, vapor combustors, thermal oxidizers, and all supporting infrastructure
 - Includes definitions of “facility”, “site”, “project”, “receptor”
 - Single site-wide authorization type for all dependent equipment (including existing facilities)
- Registration:
 - New projects and dependent facilities within ¼ mile (boundaries exclude pipeline components) and boundaries are fixed (no expansion without additional authorization) after initial registration
 - Requires preconstruction notification, then follow up registration. Notification for PBR & SP through e-Permits. PBR registration thru e-Permits and Standard Permit registration hard copy
 - Include registration flexibility for changes at existing, registered sites with negligible increases
- Best Management Practices (BMP):
 - Specified for new and emissions-increasing facilities (ex: fugitive monitoring, proper maintenance).
 - Specify minimum operational requirements for new and increasing facilities under PBR (proper design and operation of process equipment and controls, accurate and reasonable records)
 - Minimum distance limits (50' to property line or receptor, except safety valves ½ easement distances)
- Emission Controls:
 - PBR controls are optional for operators, but must meet minimum requirements if relied on to meet protectiveness/limits and must make registration federally enforceable (certification).
 - Standard Permit controls must meet BACT by statute.
 - Engine specs proposed for reducing NO_x, CO, VOC & formaldehyde including testing, periodic monitoring, and aggressive schedule changed to NO_x & CO limits only, and extended deadline for older engine upgrades- to 2020 or 2030, no additional sampling, periodic monitoring only if Title V site. Formaldehyde control = federal RICE MACT ZZZZ only
- Emission Limits:
 - Establish PBR “sub-Level”, “Level 1”, and “Level 2”
 - Establish single set of limits for Standard Permit
- Protectiveness Limits (may further restrict acceptable emissions for a given site):
 - Evaluate for protectiveness (focus on benzene as surrogate for all HAPs and VOC) and compliance with ambient standards (H₂S, NO_x, SO₂) for all dependent facilities under common control on contiguous property within ¼ mile of project.
 - Emissions from production and MSS based on a release height/receptor distance with use of provided charts or options for site-specific modeling
 - Exceptions:
 - de minimis increases
 - project only increases if <10% ESL or <4% NAAQS
 - cumulative project increases <25% ESL (starts for any project after adoption)
 - no property line or receptor within ¼ mile (Level 1 PBR), ½ mile (Level 2 PBR), 1 mile (SP)
- Records:
 - Provide clear expectations for source data, emission estimates, equipment operations
 - Specify recordkeeping expectations
 - Minimize duplication

Texas Commission on Environmental Quality (TCEQ)
Oil and Gas (O&G) Production Sites Permit by Rule (PBR) and Standard Permit (SP)
March 8, 2011

Overview of PBR and SP Requirements

Existing Sites (Retroactive Requirements)

- Must notify agency by 2013 via e-Permits with site identification and which rules claimed
- Must authorize planned Maintenance, Start-up, Shutdowns and associated alternate operating scenarios by Jan 5, 2012 – meet emission and impact limits
- Any change resulting in increased actual emissions or new equipment constructed triggers new rule requirements

“Sub-level” / “Level 0” of PBR

- Authorization for wellheads, stripper wells, and metering stations
- Subject only to good working order, 50' minimum distance, limited records
- No notification, registration, emission limits, or protectiveness review
 - Includes de minimis authorization for wellheads, stripper wells, and metering stations (subject only to good working order, 50' distance, and component type/counts, not other BMP or registration/notification)
- Qualify based on equipment type/counts
 - Combination of small engines based on sourness of field gas burned
 - Natural gas wells/piping up to 135 valves, and combination of 2,000 components
 - Crude oil, condensate, gas, or mixtures metering stations and piping up to 25 valves and combination of up to 2,000 components
 - Crude oil, condensate, gas, or mixtures wells and piping up to 4 pump seals and up to 225 components; or
 - Crude oil, condensate, gas, or mixtures wells with 5 pump seals, 150 components, with separators where liquids and gases are returned to pipelines and up to 1200 bbl/day produced water in tanks and trucked off.
 - Crude oil, condensate, gas, or mixtures wells with 2 pump seals, 250 components, with separators where liquids and gases are returned to pipelines and up to 580 bbl/day produced water

“Level 1” PBR:

- Smallest sites (<15 tpy VOC, <20.6 tpy H₂S, <100 tpy NO_x & CO, <5 tpy PM_{2.5}, <10 tpy PM₁₀), no Title V
- Apply BMP and some equipment controls where appropriate for new/changed facilities only
- Meet protectiveness limits and ambient air standards
- Notification (core data + expected rule level) at start of construction through e-Permits with \$25/\$50 fee
- Registration (all details) 6 months from operation start date via e-Permits with 50% reduced fee

“Level 2” PBR:

- Larger sites (<250 NO_x & CO, <25 tpy VOC, H₂S, SO₂, <10 tpy PM_{2.5}, <15 tpy PM₁₀),
- Shall not be PSD or NNSR, but can be major for Title V
- Apply BMP and some equipment controls where appropriate for new/changed facilities only
- Meet protectiveness limits and ambient air standards
- Notification (core data + expected rule level) at start of construction through e-Permits with \$25/\$50 fee
- Registration (all details) 3 months from operation start date via e-Permits and confirm emissions with full fee

Standard Permit Requirements

- Larger sites (> 25/250 tpy), not PSD or NNSR, but can be major for Title V
- Meet protectiveness limits and ambient air standards
- Includes BACT at the time adopted
- Notification (core data + expected rule level) at start of construction through e-Permits with \$25/\$50 fee
- Registration (all details) 3 months from operation start date via e-Permits and confirm emissions post-operational registration with reduced fee for Small Businesses (\$500 total), full fee others (\$900) via traditional PI-1S Form
- Can use previous authorization for MSS under 106.261-262 instead of new protectiveness limits until renewal Jan 1, 2016.
- Renews every 10 years, apply retroactive BACT to existing unchanged facilities covered by the standard permit after Jan 1, 2016 renewals (processed 1/1/2016 – 12/31/2025)

Side-by-Side Comparison
 Repealed 30 TAC §106.352 and Adopted New 30 TAC §106.352

rev 2-28-11

Topic	Current Version	Final Version
Complexity and Stringency	<p>Current PBR limits facility types, references other PBRs for certain equipment (flares, engines); has hourly emission and distance limits only for sulfur compounds and only requires sour sites to register.</p> <p>Lack of consistent registration limits agency information on all regulated sources. Does not have hourly limits for most air pollutants. Cannot be proven to be protective. Unclear requirements for records to demonstrate compliance with rules.</p>	<p>New PBR includes specific design, capture and control requirements, hourly and annual emission limits based on protectiveness, ambient air quality standards (AAQS), detailed sampling, monitoring and records. Can prove protectiveness of health and human welfare and provides practically enforceable records.</p> <p>Requires all existing sites to notify.</p> <p>New requirements apply to new or modified sites in the Barnett Shale 23 counties to register. All other counties state-wide follow old requirements (now in subsection (I)).</p> <p>Commission continuing review for updating requirements for new projects and sites in remainder of state.</p>
Covered Facilities	<p>Applies to limited types of equipment and references other PBRs for certain equipment (flares, engines). Excludes some process and new technologies, does not define "facility", "Project" or "site".</p>	<p>Specifies numerous equipment, operations, and materials. Includes all types of units associated with crude oil and natural gas handling and processing with certain exceptions for when entire process is covered by another PBR, or units too large to meet protectiveness or insignificance. Allows for all processes and technologies which provides for future development and options.</p> <p>Clearly identifies statutory definition of "facility" and regulatory definition of "site". Clearly describes "projects" which trigger new requirements and registration.</p>
Prior registration or Notification required?	<p>YES - facilities handling sour gas must be registered prior to Operations.</p> <p>No -- facilities handling sweet natural gas are not required to register or notify the commission.</p> <p>Not all sites in the state of Texas are identified and their locations are unknown.</p>	<p>For Barnett Shale counties:</p> <p>All existing sites not previously registered must notify through ePermits - allows for all facilities to be identified and their locations known.</p> <p>All new projects required to meet one of several options:</p> <p>Level 0: groups of equipment too small to need notification, calculations or other requirements. Only keep equipment in good working order.</p> <p>Level 1: Preconstruction notification, registration within 180 days of start of operation or implementation of changes to a site.</p> <p>Level 2: Preconstruction notification, registration within 90 days of start of operation or implementation of changes to a site.</p> <p>This allows for all facilities to be identified and their locations known. It also allows for sites to be brought on-line and the production information refined before registration.</p>
Stacking of Authorizations	<p>No current restrictions on uses of multiple PBR, standard permits, and permit authorizations at a single site. Stacking of multiple authorizations means that protectiveness and compliance with the rules cannot be demonstrated.</p>	<p>New PBR and standard permit is a site-wide authorization, including all related sources within 1/4 mile under common interest/control and on contiguous property. Protectiveness and compliance with the rule can be easily demonstrated.</p>

Aggregation/ Site definition	PBR does not define site and does not specify how to determine the boundaries for a site. Sites and agency cannot clearly determine Title V applicability or demonstrate protectiveness if similar facilities are not properly aggregated.	PBR and standard permit define site for determining compliance with protectiveness, ambient air standards and applicability of Title V.
Changes to existing sites	Current PBR does not require registrations for sweet sites. Multiple changes can occur at a site, and the sites may no longer qualify for the PBR. New facilities may be authorized and added to existing sites without triggering a review of the existing facilities. This creates a recordkeeping problem for both the regulated entities and regional offices.	Small changes to a site can be made without having to register, but they must keep record of the physical changes/modifications and the resulting changes in emissions. Once a cumulative increase in emissions is reached, registration of the changes becomes necessary. This allows for the owner/operators to make the small changes needed for the day to day operations, without having to register. It will give both the operators and regional offices defined expectations for when and what paperwork to expect. New facilities or bigger changes to existing OGS which increase the potential to emit require re-authorization of the OGS. New technical design, operation, and control requirements apply to other facilities on site triggering a registration under the new PBR, even if that equipment not changing. The registration of the site allows for an updated technical review to be conducted and an evaluation for protectiveness so as to not perpetuate an existing or projected emissions impacts problem.
Tanks	No specific requirements, except vent height and emission limits for sour gas. Does not demonstrate compliance with H2S state regulations or SO2 NAAQS; has no specific requirements for records or keep in good condition. Flash from crude, condensate, and produced water tanks can be the biggest sources of VOC and H2S emissions at a site.	No open tanks/ponds with substantial VOC or H2S, establishes various options including stack heights, painting, controlling or limiting emissions based on protectiveness. Ensures compliance with H2S state regulations or SO2 NAAQS, best management practices (BMP) and proper maintenance of a potential source of high VOCs and sulfur.
Distance Limitations	Only limits buffer distance to ¼ mile to receptor if sour site. Does not ensure compliance with state and federal sulfur AAQS. Does not consider any other air pollutant protectiveness concerns. No definition of receptor.	Includes minimum of 50 ft distance to receptor. Receptor defined as residence, high-occupancy business, church, school, daycare, hospitals. Requires each registration to demonstrate protectiveness for air pollutants with regulatory limits or with effects screening levels of concern (benzene). Demonstrations can account for a particular sites' configuration, operations, and unique factors and may use options to demonstrate protectiveness (tables, screen, dispersion modeling).
Engines and Turbines	Not authorized under §106.352; must comply with different PBR. Outdated emission limits and requirements for NAAQS demonstration. These rules do not demonstrate compliance with the new NAAQS, and other Federal requirements (NSPS, NESHAPs).	Updated engines requirements are included in the PBR and SP. Requirements dependant on hp and type of engine, with initial sampling, periodic monitoring of performance, biennial sampling, demonstration of hourly and annual NOx NAAQS compliance. Allows for one authorization mechanism that demonstrates compliance with the NAAQS and other Federal requirements.
Flares	Not authorized under §106.352; must comply with separate PBR. Does not require compliance with federal minimum standards nor ensures proper control effectiveness (40 CFR 60.18). These rules do not demonstrate compliance with the AAQS, and other state and Federal requirements.	Updated engines requirements are included in the PBR and SP to ensure compliance with state and federal rules and performance expectations. Allows for one authorization mechanism that demonstrates compliance with the AAQS and other state and Federal requirements.

Best Management Practices	BMPs not explicitly discussed. Allows for ambiguity and uncertainty for what records, maintenance, and expectations are required by the Commission and EPA.	Specific requirements are listed for general facility design and operation: closed hatches; no open-ended pipelines; seals kept in good working order; establish schedules to keep equipment in good working order; fugitive component inspection, monitoring and repair. This eliminates the ambiguity and the owner/operators and regional offices know what the requirements are.
Planned MSS	Some activities authorized, but not all emissions evaluated.	Detailed provisions, includes hourly limits. Number of hours with MSS or alternate operation with higher lbs/hr. Specific activities have to estimate emissions, others just keep records. Must demonstrate protectiveness, must keep detailed records of what the MSS activity is, what the duration was.
Emission Limits	<p>250 tpy for NOx and CO and 25 TPY for any other pollutant.</p> <p>Total emissions of sulfur compounds, excluding sulfur oxides, from all vents shall not exceed 4 lbs/hr; vent height shall be > 20 ft.</p> <p>No hourly limits, cannot demonstrate protectiveness.</p>	A maximum of 250 tpy for NOx and CO or 25 TPY for any other pollutant is acceptable but emissions may be further limited based on Level or protectiveness evaluation. Emissions are based on release height/receptor distance. A distance of less than 50 feet or greater than 5500 feet may not be used. Hourly and annual limits are set for the different pollutants. Must demonstrate protectiveness, all operating scenarios that are protective are authorized, except those specifically listed.

ATTACHMENT B

Executive Summary – Enforcement Matter – Case No. 42947
Braden Exploration, LLC
RN106022320
Docket No. 2011-2113-AIR-E

Order Type:

1660 Agreed Order

Findings Order Justification:

N/A

Media:

AIR

Small Business:

Yes

Location(s) Where Violation(s) Occurred:

Cole Roberrs 1H & 2H Gas Well Site, located on County Road 265, west of Farm-to-Market Road 730, Decatur, Wise County

Type of Operation:

Gas well site

Other Significant Matters:

Additional Pending Enforcement Actions: No

Past-Due Penalties: No

Other: N/A

Interested Third-Parties: None

Texas Register Publication Date: April 6, 2012

Comments Received: No

Penalty Information

Total Penalty Assessed: \$11,250

Amount Deferred for Expedited Settlement: \$2,250

Amount Deferred for Financial Inability to Pay: \$0

Total Paid to General Revenue: \$9,000

Total Due to General Revenue: \$0

Payment Plan: N/A

SEP Conditional Offset: \$0

Name of SEP: N/A

Compliance History Classifications:

Person/CN - Average

Site/RN - Average

Major Source: No

Statutory Limit Adjustment: N/A

Applicable Penalty Policy: September 2002

Executive Summary – Enforcement Matter – Case No. 42947

Braden Exploration, LLC

RN106022320

Docket No. 2011-2113-AIR-E

Investigation Information

Complaint Date(s): N/A

Complaint Information: N/A

Date(s) of Investigation: July 28, 2011

Date(s) of NOE(s): September 27, 2011

Violation Information

1. Failed to prevent the discharge from any source whatsoever, one or more air contaminants or combinations thereof, in such concentration and of such duration as to interfere with the normal use and enjoyment of animal life, vegetation, or property. Specifically, nuisance odors were documented on October 14, 2010, October 15, 2010, October 29, 2010, November 10, 2010, November 13, 2010 and November 23, 2010 [30 TEX. ADMIN. CODE § 101.4 and TEX. HEALTH & SAFETY CODE § 382.085(a) and (b)].

2. Failed to obtain an authorization for the Site. Specifically, the Respondent did not obtain a permit or demonstrate compliance with a Permit by Rule before production started at the Site on November 1, 2010 [30 TEX. ADMIN. CODE § 116.110(a) and TEX. HEALTH & SAFETY CODE §§ 382.0518(a) and 382.085(b)].

Corrective Actions/Technical Requirements

Corrective Action(s) Completed:

The Respondent has implemented the following corrective measures at the Site:

- a. On November 1, 2010, discontinued the flow-back phase of pre-production which caused the nuisance odors on October 14, 2010, October 15, 2010, and October 29, 2010;
- b. On November 10, 2010, replaced Seat 7 and the trim in the compressor, and on November 11, 2010, replaced the spring in the Enardo valve on the vent of the condensate tanks with a heavier gauge spring to address the nuisance odors on November 10, 2010; and
- c. By November 30, 2010, adjusted all vents, hatches, and fugitive areas and removed the temporary tanks from the Site to address the nuisance odors on November 13, 2010 and November 23, 2010.

Technical Requirements:

The Order will require the Respondent to:

- a. Within 30 days, certify that the Site can satisfy the conditions for a Permit By Rule or submit an administratively complete permit application;

Executive Summary – Enforcement Matter – Case No. 42947
Braden Exploration, LLC
RN106022320
Docket No. 2011-2113-AIR-E

- b. If a permit application is submitted, respond completely and adequately, as determined by the TCEQ, to all requests for information concerning the permit application within 30 days after the date of such requests, or by any other deadline specified in writing; and
- c. If a permit application is submitted, within 180 days, submit written certification that authorization to operate a source of air emissions has been obtained or that operation has ceased until such time that appropriate authorization is obtained.

Litigation Information

Date Petition(s) Filed: N/A
Date Answer(s) Filed: N/A
SOAH Referral Date: N/A
Hearing Date(s): N/A
Settlement Date: N/A

Contact Information

TCEQ Attorney: N/A
TCEQ Enforcement Coordinator: Trina Grieco, Enforcement Division,
Enforcement Team 4, R-13, (2010) 403-4006; Debra Barber, Enforcement Division,
MC 219, (512) 239-0412
TCEQ SEP Coordinator: N/A
Respondent: Tony Gardner, Vice President of Operations, Braden Exploration, LLC,
P.O. Box 776, Decatur, Texas 76234
Marj Dahle, Environmental Specialist, Braden Exploration, LLC, P.O. Box 776, Decatur,
Texas 76234
Respondent's Attorney: N/A

Paul G. Gosselink

Co-founding partner and head of the Firm's Air and Waste Practice Group, Paul Gosselink focuses on municipal solid waste permitting and compliance, but has extensive experience in industrial and hazardous waste permitting and remediation, as well as air permitting. He frequently speaks on solid waste issues, including RCRA issues, permitting, the interstate movement of solid waste, and the regulation of landfill gas emissions. He is the co-author of the Solid Waste Chapter in the Environmental Law textbook of the Texas Practice Series. He is a board member of the Texas Chapter of the Solid Waste Association of North America (TxSWANA). He served as Assistant Attorney General for the State of Texas. He has been recognized as a Texas Super Lawyer and by Chambers USA. He received a B.A. from Hobart College, an M.A. from Rutgers University, and a J.D. from Southern Methodist University.

RCRA/Solid Waste Issues – "*Tombstone*"

24th Annual Texas Environmental Superconference

August 2-3, 2012

Prepared by:

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Texas Environmental Superconference
"The Good The Bad & The Ugly " ~ August 2-3, 2012
RCRA/Solid Waste Issues– "Tombstone"

By Paul G. Gosselink*
Lloyd Gosselink Rochelle & Townsend, P.C.

Introduction

When I surveyed the legal landscape in the solid waste field in preparing for this paper, I realized that the three topics I discussed at the 2009 Superconference were still timely and that revisiting them to see whether they were the “game changers” I predicted would be worthwhile. Specifically, did the case of (1) *Burlington Northern and Sante Fe Railway Company v. United States (BNSF)* really change the way litigants and the Courts approached the issues of arranger liability and apportionment; (2) did *United Haulers Association v. Oneida-Herkimer Solid Waste Authority (Oneida)* spark an upsurge in interest by local governments in the passage of flow control ordinances; and (3) the evolving definition of solid waste. I took a slightly different approach in this paper to the third topic, the new definition of solid waste, since the definition continues to evolve as new aspects of solid waste regulation continue to need to be addressed. Therefore this part of the paper focuses on the non-hazardous secondary materials rule (NHSM rule) and the commercial and industrial solid waste incineration rule (CISWI rule) both of which are scheduled to become final in July 2012 and how they can impact the determination of what is a waste and what is a fuel for both solid waste and air quality regulatory purposes.

I think the answer to whether three topics were game changers is: (1) partially, (2) yes and (3) the game is still changing, respectively.

* I received extraordinary research and editing assistance from Jeffrey Reed, Colleen Lenahan and Brady Behrens. All the erudite analysis is theirs. Any misstatements are mine.

I. WHAT HAS BEEN THE ULTIMATE IMPACT OF THE BNSF CASE ON ARRANGER LIABILITY AND APPORTIONMENT

A. Introduction

The United States Supreme Court, in May of 2009, decided *Burlington Northern and Santa Fe Railway Company v. United States* (“*BNSF*”), a decision that was viewed by many as a game-changer in (1) CERCLA arranger liability and (2) liability apportionment in federal Superfund cases.¹ In *BNSF*, the Court analyzed CERCLA’s use of the word “arrange” and determined that arranger liability attaches when facts exist that demonstrate a party’s specific intent to dispose of hazardous waste.² According to the Supreme Court, Shell, the PRP at issue in *BNSF*, did not have the requisite intent for arranger liability to attach because, although it was aware that minor chemical spills were highly probable as a result of its sale of chemicals to the railroad PRPs, it did not intend for such spills to occur.³ Based on that reasoning, CERCLA arranger liability did not attach.⁴

The *BNSF* Court also took up the issue of liability apportionment under CERCLA.⁵ The Court noted that although CERCLA imposes a strict liability standard, it does not mandate joint and several liability in every case.⁶ Joint and several liability is a judicial doctrine developed by the common law, and it is the default standard for CERCLA liability.⁷ Like most common law doctrines, there are exceptions to the default rule. In the case of CERCLA liability, defendants seeking to avoid joint and several liability may do so if they demonstrate a reasonable basis for apportioning liability among PRPs.⁸ Notably, the Court took up the apportionment issue despite the fact that the district court originated the apportionment discussion by dividing liability on its own motion.⁹ The Court scrutinized the record and held that a reasonable basis existed for apportioning liability.¹⁰ Facts the Court found particularly persuasive included the location of the contaminated area in relation to the property owned by the railroads and the amount of contamination actually caused by the railroad.¹¹

At the time of the 2009 Texas Environmental Superconference, it appeared that the *BNSF* decision would result in dramatic increases in litigation over the “intent” element of arranger liability. It also appeared that *BNSF*’s apportionment holding lowered the burden for Superfund defendants in avoiding joint and several liability by establishing a reasonable basis standard for apportionment and increased the discretion of district courts in determining whether the evidence in a particular case reasonably supports apportionment over joint and several liability.

¹ See *Burlington Northern & Santa Fe Railway Co. v. United States*, 556 U.S. 599, 619 (2009).

² *Id.* at 611.

³ *Id.* at 612-13.

⁴ *Id.* at 613.

⁵ *Id.* at 614.

⁶ *Id.* at 613 (citing *United States v. Chem-Dyne Corp.*, 572 F.Supp. 802 (S.D. Ohio 1983)).

⁷ See *Chem-Dyne*, 572 F.Supp. at 808.

⁸ *Burlington Northern*, 556 U.S. at 614.

⁹ *Id.* at 615-16.

¹⁰ *Id.* at 617.

¹¹ *Id.* at 617-18.

Now, three years later, enough courts have analyzed both of the Supreme Court's potentially game-changing holdings in *BNSF* to determine whether *BNSF* actually affected the CERCLA landscape as predicted. This update will show that while *BNSF* appears to have resulted in an increase in the volume of litigation focused on CERCLA arranger liability, it is difficult to discern whether it dramatically changed the results from what they would have been under the law existing at the time *BNSF* was decided. It does seem clear that, in light of *BNSF*, the element of intent is being more thoroughly scrutinized because alleged arranger PRPs have argued, like Shell in *BNSF*, that they had no intent to dispose of hazardous materials by virtue of what they did or sold. This update will also show that, although *BNSF* provided district courts with a yardstick to determine whether liability apportionment is reasonably supported by the facts of a particular case, the body of law surrounding the apportionment of Superfund liability remains largely intact post-*BNSF*. Accordingly, *BNSF* may not have had the broad, game-changing effect predicted in 2009. It did, however, result in courts taking a harder look at the intent element of arranger liability and it provided some guidance to district courts in how to determine whether the apportionment exception to joint and several liability under CERCLA applies to the facts of a particular case.

B. Arranger Liability

As predicted in 2009, the *BNSF* decision has dramatically increased the amount of intent-related litigation regarding arranger liability. Many district courts, and several circuit courts of appeals, have closely examined the intent aspect of arranger liability in light of the *BNSF* decision. Rather than discuss all of the cases that have analyzed the *BNSF* decision, this update will instead provide a summary of three of the most thorough decisions from three different circuit courts of appeals.¹²

Perhaps *BNSF*'s greatest game-changing effect on CERCLA arranger liability litigation is the apparent newfound willingness of PRPs to defend arranger liability claims. The first case discussed below provides an example of a near automatic claim that arranger liability attaches.¹³ The second and third examples, however, are more borderline arranger cases that may not have been resisted but for the arranger liability holding in *BNSF*.¹⁴ While the body of law surrounding CERCLA arranger liability remains largely unchanged post-*BNSF*, the Court's scrutiny of the intent element has demonstrably opened a potential window for PRPs seeking to avoid arranger liability.

1. A Near Slam-Dunk Arranger Liability Case – United States v. General Electric Company

(a) Facts and Procedural History

Throughout the 1950s and 1960s, General Electric ("GE") manufactured electric capacitors containing an extremely hazardous substance called Pyranol at its plants in upstate

¹² See *United States v. General Electric Co.*, 670 F.3d 377, 382-91 (1st Cir. Feb. 2012); *Team Enters. v. W. Inv. Real Estate Trust*, 647 F.3d 901, 907-09 (9th Cir. Sept. 2011); *Celanese Corp. v. Martin K. Eby Constr. Co., Inc.*, 620 F.3d 529, 530-33 (5th Cir. Sept. 2010).

¹³ *General Electric*, 670 F.3d at 379-80.

¹⁴ *Team*, 647 F.3d at 907; *Eby*, 620 F.3d at 530.

New York.¹⁵ GE processed its own Pyranol for use in its electric capacitors using polychlorinated biphenyls (“PCBs”) purchased from other companies.¹⁶ Processed Pyranol that did not meet GE’s purity requirements was designated “scrap Pyranol” and stored in fifty-five gallon drums in designated scrap areas.¹⁷ For approximately ten years during the 1950s and 1960s, GE sold scrap Pyranol to a New Hampshire “chemical scrapper” named Fletcher, who attempted to use the scrap Pyranol as an additive in his custom paint.¹⁸ GE transported roughly 3,600 fifty-five gallon drums of scrap Pyranol to Fletcher’s facility in New Hampshire.¹⁹ Significantly, GE dramatically increased the volume of scrap Pyranol shipped to Fletcher during the last two years of the arrangement—even once Fletcher ceased payment for the scrap Pyranol.²⁰

The Environmental Protection Agency (“EPA”) discovered hundreds of abandoned drums containing scrap Pyranol at Fletcher’s facility in 1987 and added the site to its Superfund list in 1989.²¹ In 2006, the United States initiated a CERCLA action against GE alleging arranger liability in order to recover costs associated with clean-up of the Fletcher facility.²² The district court, in 2008, held that GE “arranged to dispose of hazardous substances at the Fletcher Site and was liable for response costs incurred by EPA.”²³ GE appealed, and unsurprisingly given the egregiousness of GE’s actions in funneling scrap Pyranol to Fletcher with the sole intent of ridding itself of the waste, the Circuit Court held that GE was in fact liable as an arranger under CERCLA.²⁴ Such a result was foreseeable both prior to *BNSF* and following the Court’s *BNSF* holding due to the factual scenario that heavily demonstrates GE’s specific intent to dispose of the hazardous waste.

(b) Arranger Liability Under *BNSF*

The First Circuit Court of Appeals ultimately held GE liable as an arranger under CERCLA after determining that *BNSF* requires a fact-intensive analysis for cases falling in the middle of the *BNSF* continuum of arranger liability.²⁵ The court interpreted the *BNSF* opinion to require “a discernible element of intent to dispose of a hazardous substance” in order for arranger liability to attach to a PRP.²⁶ While the *BNSF* Court found that such intent did not exist in Shell’s case, the First Circuit would have been hard-pressed to overlook GE’s clear intent to dispose of scrap Pyranol here. By closely examining the facts surrounding the arrangement between GE and Fletcher, the First Circuit found that GE possessed the requisite intent for arranger liability to attach—an alternative finding would have been shocking given GE’s all but admitted goal of ridding itself of the hazardous substance in question.

¹⁵ *General Electric*, 670 F.3d at 379-80.

¹⁶ *Id.* at 379.

¹⁷ *Id.* at 380.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *See id.*

²¹ *Id.* at 381.

²² *Id.*

²³ *Id.*

²⁴ *Id.* at 391.

²⁵ *Id.* at 384, 391.

²⁶ *Id.* at 384.

The First Circuit observed that although GE apparently viewed scrap Pyranol as nothing more than waste material, additional evidence of intent to rid itself of the waste material was also present.²⁷ Under the court's interpretation of *BNSF*, that intent drew GE within the purview of CERCLA arranger liability.²⁸ Some of the facts the court found particularly persuasive included GE's control over the flow of scrap Pyranol to the Fletcher facility during the ten-year timeframe and its continued shipment of large volumes of the material after Fletcher ceased payment.²⁹

2. Closer Arranger Liability Cases

The next two cases reached the opposite result: the PRPs were not found to be arrangers. As in the *GE* case, the courts closely scrutinized the intent of the alleged arrangers using the *BNSF* analysis and found no intent to dispose and, therefore, arranger liability did not attach.

(a) *Team Enterprises v. Western Investment Real Estate Trust*

(i) Facts and Procedural History

From 1980 to 2004, Team Enterprises ("Team") used perchlorethylene ("PCE") in its dry-cleaning operation located in Modesto, California.³⁰ Team used a Puritan Rescue 800 filter system ("Rescue 800") designed by one of the defendants in the case, Street, to filter and recycle wastewater containing used PCE.³¹ The Rescue 800 filter system was designed to route filtered and distilled PCE back to Team's dry-cleaning machines and deposit any wastewater into an open bucket.³² Street provided an instruction manual that directed Rescue 800 users to pour wastewater into an open bucket and then dispose of it as necessary.³³ The wastewater contained both visible and invisible amounts of PCE.³⁴ Team scraped off the visible PCE for reuse in its machines and poured the remaining wastewater, which contained dissolved, invisible PCE, into the sewer drain.³⁵ The PCE then leaked into the surrounding soil, and the California Regional Water Quality Control Board deemed the affected property in need of clean-up operations.³⁶

Team performed the clean-up operations at its own expense and sued Street and several other PRPs seeking contribution for clean-up costs under the California Hazardous Substance Account Act ("HASA") and CERCLA.³⁷ The district court held that Street was not an arranger and granted Street's summary judgment motion.³⁸ Team appealed, and the Ninth Circuit Court of Appeals also held that Street's sale of the Rescue 800 filter system to Team did not make it an arranger.³⁹ Accordingly, CERCLA arranger liability did not attach.

²⁷ *Id.* at 387.

²⁸ *Id.*

²⁹ *Id.* at 388.

³⁰ *Team Enters. v. W. Inv. Real Estate Trust*, 647 F.3d 901, 906 (9th Cir. Sept. 2011).

³¹ *Id.*

³² *Id.*

³³ *Id.* at 910.

³⁴ *Id.* at 906.

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

(ii) Arranger Liability Under BNSF

CERCLA arranger liability did not attach here, according to the Ninth Circuit, because the fact-intensive inquiry required by *BNSF* did not demonstrate that Street took intentional steps to dispose of PCE or control the disposal process.⁴⁰ In addition, the court adhered to the useful product doctrine, which holds that arranger liability only attaches “if the material in question constitutes waste rather than a useful product.”⁴¹ Citing *BNSF*’s use of “ordinary meaning” when interpreting the meaning of the word “arrange” in CERCLA, the Ninth Circuit noted that “the useful product doctrine serves a useful proxy for the intent element [of arranger liability] because of the general presumption that persons selling useful products do so for legitimate business purposes.”⁴² Ultimately, the court concluded that Street lacked the requisite intent, under *BNSF*, for arranger liability to attach absent factual circumstances showing that Street sold the Rescue 800 filtration system to Team specifically intending for Team to dispose of PCE.⁴³

Team claimed that because the Street instruction manual recommended the use of an open bucket for storing wastewater from the Rescue 800, it knew contamination was probable and failed to mitigate potential PCE contamination.⁴⁴ That knowledge and subsequent failure to mitigate, according to Team, demonstrated Street’s intent to dispose of PCE and brought it within the purview of CERCLA arranger liability.⁴⁵ Noting that instruction manuals are more akin to recommendations rather than directives, and that Shell, the PRP in *BNSF*, exerted more control over the hazardous substance at issue and was not deemed an arranger by the Supreme Court, the Ninth Circuit rejected Team’s contention that Street controlled disposal in such a way that CERCLA arranger liability would attach.⁴⁶

(b) *Celanese Corporation v. Martin K. Eby Construction Company, Inc.*

(i) Facts and Procedural History

In 1979, the Martin K. Eby Construction Company (“Eby”) was hired by the Coastal Water Authority of Texas (“CWA”) to install an underground water pipeline in Harris County, Texas.⁴⁷ While conducting the installation, an Eby employee struck and damaged a Celanese methanol pipeline with a backhoe.⁴⁸ The Eby employee did not report the incident, and Eby was not aware of the damage caused to the Celanese pipeline.⁴⁹ Deterioration of Celanese’s methanol pipeline, combined with the damage from the Eby incident, eventually created a methanol leak from the pipeline.⁵⁰ Celanese discovered the leak in 2002.⁵¹ By late-2008,

⁴⁰ See *id.* at 908.

⁴¹ *Id.* (citing Cal. Dep’t of Toxic Substances Control v. Alco Pac., Inc., 508 F.3d 930, 934 (9th Cir. 2007)).

⁴² *Id.*

⁴³ *Id.* at 909.

⁴⁴ See *id.* at 910.

⁴⁵ See *id.*

⁴⁶ *Id.*

⁴⁷ *Celanese Corp. v. Martin K. Eby Constr. Co., Inc.*, 620 F.3d 529, 530 (5th Cir. Sept. 2010).

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

Celanese had repaired the pipeline and worked with federal and state agencies to clean-up the site in order to avoid contamination of nearby groundwater.⁵²

In 2009, Celanese sued Eby under CERCLA and the Texas Solid Waste Disposal Act (“SWDA”) to recover remediation costs.⁵³ The district court held that Eby was not liable as a CERCLA arranger under *BNSF* because it was not aware of the damage to the Celanese pipeline.⁵⁴ Celanese appealed, and the Circuit Court held that Eby was not an arranger; therefore, arranger liability under *BNSF* did not attach.⁵⁵

(ii) Arranger Liability Under *BNSF*

Arranger liability did not attach, according to the Fifth Circuit, under *BNSF* because Eby did not take intentional steps or plan to release methanol from the Celanese pipeline.⁵⁶ The court interpreted *BNSF* to require factual evidence of intent to dispose of hazardous waste in order for CERCLA arranger liability to attach.⁵⁷ Celanese attempted to argue that Eby’s “conscious disregard of its duty to investigate [the pipeline incident was] tantamount to taking intentional steps to dispose of methanol.”⁵⁸ The Fifth Circuit disagreed with this contention on the same basis that the Supreme Court declined to attach arranger liability to Shell, noting that Shell in *BNSF* was more culpable than was Eby in this case because Shell knew that some amount of the hazardous substances it sold would likely spill.⁵⁹ Eby, on the other hand, had no knowledge that the Celanese pipeline was damaged at all.⁶⁰ Therefore, the court reasoned, it could not have intended to dispose of methanol such that it should be subject to arranger liability under *BNSF*.⁶¹ Because the record in *Eby* did not support a finding that Eby intentionally disposed of methane by damaging the Celanese pipeline, it was not subject to arranger liability.⁶²

C. Apportionment

In 2009, it appeared that *BNSF* would lower the burden for Superfund defendants in avoiding joint and several liability in their efforts to establish a case for apportionment and that district courts, in light of *BNSF*, would have greater discretion in determining whether a reasonable basis for apportionment exists. While *BNSF* has not given rise to the broad, game-changing results predicted in 2009 in that very few cases have resulted in apportionment of liability, it has changed the CERCLA apportionment liability game in the sense that many Superfund defendants have indeed attempted to avoid joint and several liability by establishing a case for apportionment.

⁵² *Id.* at 530-31.

⁵³ *Id.* at 531.

⁵⁴ *Id.*

⁵⁵ *Id.* at 533.

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

In the immediate wake of *BNSF*, courts initially tended to either decline to conclusively rule on *BNSF*'s impact,⁶³ or take a hardline stance against the proposition that *BNSF* dramatically changed the body of law surrounding CERCLA apportionment.⁶⁴ Over time, however, courts seem to have backed off of the notion that *BNSF* merely applied existing law to a purely factual issue by taking great care in distinguishing factual scenarios from *BNSF* in denying apportionment claims. The first district court case discussed below was issued in 2010, and it provides insight into courts' initial hardline reaction to *BNSF*. The two following district court cases were issued in 2012, and they represent the more recent analysis courts' have apparently begun to undertake.

*1. An Initial Reaction to BNSF – United States v. Iron Mountain Mines, Inc.*⁶⁵

(a) Facts and Procedural History

This case addresses only the apportionment aspect of a CERCLA action that has been ongoing for nearly twenty years.⁶⁶ In 2002, the United States District Court for the Eastern District of California held Iron Mountain Mines, Inc. ("Iron Mountain") jointly and severally liable as a PRP for EPA's costs in remediating acid mine drainage discharges from the California site on which Iron Mountain is located.⁶⁷ In reaching that conclusion, the 2002 court held that Iron Mountain failed to show that the harm caused by the acid mine drainage discharges was capable of apportionment.⁶⁸ In 2009, in light of the Supreme Court's application of a "reasonable basis" standard to liability apportionment in *BNSF*, Iron Mountain moved for reconsideration of the joint and several liability holding issued in 2002 on the basis that *BNSF* constituted "an intervening change in law, which mandates reconsideration."⁶⁹ In response to this assertion, the court held that *BNSF* did not constitute a change in law; rather, it merely restated the law as applied in *Chem-Dyne* and then examined the record to determine a purely factual issue.⁷⁰

(b) Liability Apportionment in Light of *BNSF*

In support of its argument that *BNSF* constituted an intervening change in law, Iron Mountain alleged that *BNSF* mandated district courts to consider apportionment.⁷¹ The district court in *Iron Mountain* dismissed this contention by citing *BNSF*'s reliance on *Chem-Dyne*, which according to the *BNSF* opinion, is the "seminal opinion on the subject of apportionment in CERCLA actions . . ."⁷² The *Iron Mountain* court interpreted this statement, in tandem with *BNSF*'s issue statement, which provided that the primary question on appeal was whether the

⁶³ See *Evansville Greenway & Remediation Trust v. Southern Indiana Gas & Electric Co.*, 661 F.Supp.2d 989, 1013 (S.D. Indiana 2009).

⁶⁴ See *United States v. Iron Mountain Mines, Inc.*, No. 91-0768-JAM-JFM, 2010 WL 1854118 (E.D. Cali. May 6, 2010).

⁶⁵ *United States v. Iron Mountain Mines, Inc.*, No. 91-0768-JAM-JFM, 2010 WL 1854118 (E.D. Cali. May 6, 2010).

⁶⁶ *Id.* at *1.

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.* at *1-*2.

⁷⁰ *Id.* at *3 (citing *United States v. Chem-Dyne Corp.*, 572 F.Supp. 802 (S.D. Ohio 1983)).

⁷¹ *Id.* at *2.

⁷² *Id.* (citing *Burlington Northern & Santa Fe Railway Co. v. United States*, 556 U.S. 599, 613 (2009)).

record provided a reasonable basis for the district court's apportionment, to mean that *BNSF* merely applied existing law to determine a purely factual issue.⁷³ As a result, the court held that *BNSF* did not constitute a change in law that would justify reconsideration of its 2002 order finding that Iron Mountain was jointly and severally liable as a PRP.⁷⁴

The ultimate holding in this case may be attributable, in part, to the procedural context of the apportionment issue. Had the court addressed the apportionment issue in a context other than reconsideration, the result may have turned out somewhat differently. According to the *Iron Mountain* opinion, the standard for reconsideration is a high one: "a party must set forth facts or law of a strongly convincing nature to induce the court to reverse its prior decision."⁷⁵ This high standard for reconsideration, combined with the subtle nature of *BNSF* and its close proximity in time to the *Iron Mountain* case, surely influenced the *Iron Mountain* opinion. This case does, however, provide a useful example of the hardline reaction to the *BNSF* decision.

2. Broadening Interpretations Over Time

(a) *Pakootas v. Teck Cominco Metals, Ltd.*⁷⁶

(i) Facts and Procedural History

From 1906 to 1995, Teck Cominco Metals, Ltd. ("Teck"), a Canadian corporation, deposited slag containing heavy metals and various other hazardous materials into the Canadian portion of the Columbia River.⁷⁷ The slag flowed downstream, south of the Canadian border, and deposited into the Columbia riverbed wholly located in the United States.⁷⁸ The Ninth Circuit previously determined that Teck was subject to CERCLA arranger liability.⁷⁹ In response to that holding, Teck asserted that its liability should be apportioned, rather than joint and several, because it argued that the harm at issue was divisible.⁸⁰ The United States District Court for the Eastern District of Washington disagreed, holding that under *BNSF*, Teck failed to appropriately quantify the harm at issue and that the harm was not theoretically capable of apportionment in terms of degree.⁸¹

(ii) Liability Apportionment in Light of *BNSF*

The district court initially cited *BNSF* for the proposition that the apportionment inquiry entails a two-step process: (1) defining the harm at issue; and (2) determining whether the harm was theoretically capable of apportionment in terms of degree.⁸² As to the first question, the court found that the harm was the entirety of the contamination to the polluted area of the

⁷³ *Id.* at *3.

⁷⁴ *Id.*

⁷⁵ *Id.* at *2 (quoting *Hansen v. Schubert*, 459 F.Supp.2d 973, 998 (E.D. Cali. 2006)).

⁷⁶ *Pakootas v. Teck Cominco Metals, Ltd.*, No. CV-04-256-LRS, 2012 WL 1133656 (E.D. Wash. April 4, 2012).

⁷⁷ *Pakootas v. Teck Cominco Metals, Ltd.* 452 F.3d 1066, 1069 (9th Cir. 2006).

⁷⁸ *Id.*

⁷⁹ *Id.* at 1082.

⁸⁰ *Pakootas v. Teck Cominco Metals, Ltd.*, No. CV-04-256-LRS, 2012 WL 1133656, at *1 (E.D. Wash. April 4, 2012).

⁸¹ *Id.* at *17.

⁸² *Id.* at *1.

Columbia River.⁸³ In quantifying the harm at issue in this case, the court focused on the “synergistic effects of commingled contaminants” from various sources.⁸⁴ Each of Teck’s apportionment arguments assumed that the harm in question encompassed only the pollution caused by the release of Teck’s slag.⁸⁵ This assumption, according to the district court, was fatal to Teck’s position because Teck failed to address the fact that the relevant harm was —the entirety of the contamination instead of the contamination caused solely by Teck’s Canadian facilities.⁸⁶ Ultimately, the court dismissed Teck’s apportionment argument because Teck failed to account for the synergistic effect of its contaminants when commingled with other contaminants from various sources in the relevant portion of the Columbia River.⁸⁷

Regarding the question of whether the harm at issue was theoretically capable of apportionment in terms of degree, the district court held that Teck did not present a reasonable factual basis to apportion liability because it did not offer evidence showing the harm was theoretically capable of apportionment.⁸⁸ Teck argued for apportioning liability based on the respective quantities of pollution discharged by multiple PRPs.⁸⁹ The district court disagreed, finding no evidence demonstrating Teck’s relative contribution to the total contamination.⁹⁰ In *BNSF*, the Court was able to find a reasonable basis for apportionment because “the evidence showed the Railroads’ use of the land only contributed to a small amount of the ‘total contamination.’”⁹¹ In *Pakootas*, there was no evidence, according to the district court, that the volume of slag released by Teck was truly proportional to the harm caused by the slag because Teck’s experts failed to address potential synergistic effects of commingled contaminants from various sources.⁹² Because a nexus between Teck’s slag releases and any actual or threatened releases of hazardous substances already existed, Teck was not permitted to ignore the synergistic or disproportionate effects of any actual or threatened releases of hazardous substances from its slag when attempting to show that the harm at issue was divisible in terms of degree.⁹³

While the *Pakootas* court ultimately declined to find a reasonable basis for apportionment, it took great care to distinguish the facts of the case from the facts of *BNSF*. The *Pakootas* court carefully incorporated the potential synergistic effects of commingled hazardous substances into its analysis in order to distinguish the *Pakootas* facts from *BNSF*. This indicates that while *BNSF* has not had the broad, game-changing impact of decreasing the burden Superfund defendants face in raising an apportionment issue, it does show that courts are cognizant of the discretion afforded by *BNSF* in examining whether a reasonable basis for apportionment exists.

⁸³ *Id.* at *8.

⁸⁴ *Id.* at *13

⁸⁵ *Id.* at *8.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.* at *10.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

(b) *United States v. NCR Corp.*⁹⁴

(i) Facts and Procedural History

In 2007, EPA issued a unilateral administrative order (“UAO”) requiring NCR Corp. (“NCR”) and Appleton Papers, Inc. (“API”) to complete sediment remediation as a result of PCB contamination in Wisconsin’s Fox River.⁹⁵ NCR and API formed a limited liability company to perform the remediation work in 2009 and conducted the clean-up at a rate satisfactory to EPA until 2011.⁹⁶ The companies, believing their chances of recovering clean-up costs from other PRPs were marginal, attempted to scale back the remediation project in early-2011.⁹⁷ EPA did not approve this modification to the remediation plan, and it sought a preliminary injunction to require NCR and API to conduct clean-up at a rate consistent with previous years in the United States District Court for the Eastern District of Wisconsin.⁹⁸

In July of 2011, the court denied EPA’s preliminary injunction because it did not find that API was likely to incur liability under CERCLA.⁹⁹ EPA amended its preliminary injunction in March of 2012 by tailoring its preliminary injunction to NCR alone.¹⁰⁰ NCR attempted to argue that the court should have denied EPA’s preliminary injunction because the cause and harm of the pollution to Fox River was divisible.¹⁰¹ The court ultimately granted EPA’s preliminary injunction requiring NCR to conduct the clean-up at a rate consistent with the previous two years for the duration of the clean-up project.¹⁰²

(ii) Liability Apportionment in Light of *BNSF*

NCR’s chief argument against EPA’s preliminary injunction was that under *BNSF*, the harm from the Fox River pollution was divisible; therefore, joint and several liability was inappropriate and NCR should not have been held solely responsible for the clean-up of Fox River.¹⁰³ The court specifically dismissed NCR’s contention that *BNSF* constituted a watershed decision when it observed that *BNSF* merely upheld the trial court’s apportionment determination as reasonable.¹⁰⁴ According to the *NCR* court, the Supreme Court in *BNSF* did not indicate that the apportionment there was preferable, nor did it weigh-in on the issue of whether the harm was even capable of division.¹⁰⁵ As a result, the district court rejected NCR’s apportionment arguments and granted EPA’s preliminary injunction requiring NCR to conduct clean-up at a rate commensurate with the previous two years.¹⁰⁶

⁹⁴ *United States v. NCR Corp.*, No. 10-C-910, 2012 WL 1490200 (E.D. Wis. April 27, 2012).

⁹⁵ *United States v. NCR Corp.*, No. 10-C-910, 2011 WL 2634262, at *1 (E.D. Wis. July 5, 2011).

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.* at *13.

¹⁰⁰ *United States v. NCR Corp.*, No. 10-C-910, 2012 WL 1490200, at *1 (E.D. Wis. April 27, 2012).

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.* at *2.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

In reaching that conclusion, the court focused on the fact that a PRP seeking apportionment is not objecting to the clean-up work itself, rather, the PRP is objecting to having to pay to perform the clean-up work.¹⁰⁷ The real “harm” in question in *NCR* was the cost of the clean-up because that harm is what the parties sought to apportion.¹⁰⁸ Unlike *BNSF*, where the Court approved of the district court’s apportionment based on the degree of harm caused by the PRPs, the court in *NCR* found little reason to focus on the abstract question of specific and relative amounts of contribution to pollution.¹⁰⁹ The *NCR* court justified this departure because the specific and relative amounts of contribution to pollution, in the context of a riverbed clean-up, bore small relation to the actual cost of clean-up—the costs of dredging were the same regardless of whether an area contains trace or astronomical amounts of PCBs.¹¹⁰ For those reasons, the court determined that the PCB contamination in Fox River constituted a single, indivisible harm that would not justify the apportionment exception to joint and several liability under CERCLA.¹¹¹

NCR provides a similar conclusion to that of *Pakootas* in that the court ultimately held that no reasonable basis for apportionment existed. In addition, the *NCR* court specifically rejected the contention that *BNSF* constituted a watershed decision. On the other hand, the *NCR* court, by recognizing that the *BNSF* Court analyzed the record and upheld the district court’s apportionment determination, implicitly recognized the discretion afforded district courts in determining whether a reasonable basis for apportionment exists. Unfortunately for Superfund defendants attempting to avoid joint and several liability via apportionment, courts have typically fallen in line with *NCR* and *Pakootas* by using their discretion to set a high bar for determining whether a reasonable basis for apportionment exists.

II. FLOW CONTROL

A. Introduction

The U.S. Supreme Court Decision in the case of *United Haulers Ass’n v. Oneida-Herkimer Solid Waste Mgmt. Auth.* (“*Oneida*”)¹¹² has turned out to be a game changer to the extent it spurred more local governments to consider flow control.

To remind the reader, the *Oneida* case distinguished the Supreme Court’s holding in the case of *C & A Carbone, Inc. v. Clarkstown* (“*Carbone*”)¹¹³ where the Court had ruled that the flow control ordinance passed by the Town of Clarkstown, New York violated the dormant commerce clause in that it impermissibly “favored local enterprises by prohibiting patronage of out of state competitors or their facilities.”¹¹⁴ The *Carbone* case became the standard against which flow control ordinances were judged – until the *Oneida* case.

¹⁰⁷ *Id.* at *3.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.* at *6.

¹¹² 550 U.S. 330 (2007).

¹¹³ 511 U.S. 383 (1994).

¹¹⁴ *Id.* Although the dissent in *Carbone* recognized the facility in that case as essentially public; the majority declined to treat it differently from a purely private facility.

In the *Oneida* case the Supreme Court decided that “[T]he flow control ordinances in this case benefit a clearly public facility, while treating all private companies the same . . . [and therefore] . . . such flow control ordinances *do not* discriminate against interstate commerce for purposes of the dormant commerce clause.”¹¹⁵

The facts in *Oneida* were particularly compelling; involving the need to regulate against corruption and existent environmental harm and the fact that the Solid Waste Management Authority had done extensive studies and subjected the proposition to a vote (which passed). Local governments with ideas of implementing a flow control ordinance will have a better chance of withstanding a challenge if they could put a check in as many of those circumstances/boxes as they can. The lynchpin of the *Oneida* holding is not dependent on those factors. Rather, the distinction the Court made between public and private facilities is the key but more “checks” will help.

There has been an upsurge in actions by local governments investigating and, in several cases, passing flow control ordinances. Here, in Texas, the Dallas Flow Control Ordinance has been the focus of attention. Other local governments are watching to learn the ultimate outcome of the case of *National Solid Waste Management Association et al. v. City of Dallas*¹¹⁶ before they decide what, if anything, to do.

B. NSWMA v. City of Dallas

Dallas’ flow control ordinance is being challenged by all the major waste companies and several small, local companies and by the National Solid Waste Management Association (NSWMA), the trade association for the waste disposal industry. The focus of the challenge has been that the ordinance violates Article I, § 10, the Contract Clause of the United States Constitution; the same challenge brought by Allied Waste against Escambia County, Florida discussed in the prior paper.¹¹⁷

It is very notable that the NSWMA plaintiffs challenged Dallas’ Ordinance on multiple grounds – but not on commerce clause grounds. This was, in part, based on the fact that overcoming the *Oneida* precedent on the commerce clause issue (when the owner and operator of the disposal facilities is a public entity and all the private haulers are treated the same) is now very difficult and, in part, because there was apparently no particular plaintiff prepared to assert interstate commerce damages. The approach of developing other creative, non-commerce clause, challenges is more common post *Oneida*. Indeed, the Dallas plaintiffs have also asserted federal antitrust and state law pre-emption claims which have not yet been considered by the Court.

The procedural status of the Dallas case is that the Federal District Court has entered a preliminary injunction prohibiting Dallas from enforcing its flow control ordinance. The Court concluded that, based on the record before it at the preliminary injunction hearing, Dallas had

¹¹⁵ *Id.* At 342 (emphasis added).

¹¹⁶ Complaint, Nat’l Solid Waste Mgmt. Ass’n v. City of Dallas, No. 3:11-CV-03200 (N.D. Tex. Nov. 18, 2011), ECF No. 1.

¹¹⁷ *Escambia County, Florida v. Allied Waste Services of North America, L.L.C.*, 2008 WL 4999229 (N.D. FLA). In the Escambia case Allied Waste withstood a 12(b)(6) Motion to Dismiss challenge in District Court. However, the case has not been further reported.

impaired the contracts (franchise agreements) it had entered into with the waste companies. The parties have filed briefs on the waste companies' request for a permanent injunction. An appeal is likely.

In a nutshell, the Court found that, notwithstanding the laudable purposes Dallas expressed in its ordinance, "the flow control ordinance was enacted as a revenue-raising measure."¹¹⁸ The Court also determined that "the City's desire to raise revenue through the flow control ordinance is not a significant and legitimate public purpose under the facts established at this stage in the proceedings, because the flow control ordinance was not adopted to address a physical problem but was merely adopted for the financial benefit of the city."¹¹⁹

This is in contrast to the Federal District Court in Georgia in the case of *Qualities Compliance Services v. Dougherty Co., Georgia*.¹²⁰ That Court found that Dougherty County's flow control ordinance's acknowledged purpose of revenue generation, was a sufficient rationale. However, as previously noted, the burdens on interstate commerce against which the local revenue benefit to Dougherty County was being weighed were fairly insubstantial.

Contrary to the Dougherty County case, the Dallas District Court found many reasons/facts to support its conclusion that Dallas' flow control ordinance impaired the waste disposal companies rights under their franchise agreements and found that there was no significant legitimate public purpose to counter balance/justify that impairment.

The Dallas District Court focused on the following facts:

1. Dallas did not need the \$15-18 million dollars of revenue that would be generated by the flow control ordinance to fund the programs and projects it espoused since the Sanitation Services Department would independently generate \$11 million dollars without the flow control ordinance and that the Sanitation Services Department generated similar revenue for each of the preceeding three years;¹²¹

2. There was no other identified inability to prevent Dallas from having already undertaken the projects and programs the City asserted the flow control ordinance would enable them to undertake;¹²²

3. The City's long term plan expressly noted that the City had no need or plans to expand its facilities – a clearly contrary position to the position it put forth in support of the flow control ordinance;¹²³

4. There was no evidence of corruption or price fixing;¹²⁴ and

¹¹⁸ Preliminary Junction Order Page 18.

¹¹⁹ *Id.* page 19.

¹²⁰ 553 F.Supp 2nd, 1374 (MDGA 2008).

¹²¹ *Id.* page 20.

¹²² *Id.* page 20.

¹²³ *Id.* page 22.

¹²⁴ *Id.* page 22.

5. There was no evidence of environmental harm or service problems.¹²⁵

In short, there were no “*Oneida*” boxes checked.

It must be pointed out, as the Court itself pointed out, that its decision was based upon the facts that had been developed up to this preliminary injunction stage in the case. More facts could change the result, although this District Court seems pretty convinced of its position. The Fifth Circuit Court of Appeals will be a completely different forum and could have a different view of the very same facts. Dallas has stated it will appeal if the present District Court decision does not change.

If Dallas ultimately wins its case, expect some of the local government units (especially in the DFW area) that have been sitting on the sidelines watching to proceed with the development of their own flow control ordinances. If Dallas loses, what the other local governments do may depend on the Court’s stated reasoning. If Dallas loses for the reasons above enumerated, actions such as performing studies to support and justify the government’s need for the flow control ordinance can be undertaken to overcome one criticism. Not entering into franchise agreements or allowing those agreements to expire and not renewing them obviously removes the contract clause cause of action.¹²⁶ On the other hand, there are some things that the local governments can’t change (and probably don’t want to). For example, if they cannot contend they have to address price fixing or corruption or environmental problems, they certainly don’t want to wish for those problems to simply to be able to have a flow control ordinance. Under either scenario, expect more waste companies to try to establish exclusive or non-exclusive long term franchise agreements where they obligate themselves to take municipal solid waste to the city’s waste disposal facilities as part of their negotiated contractual obligations.

C. Horry County, South Carolina

There have been many local flow control ordinances passed since the *Oneida* decision was issued. The rest of this section will discuss the Horry County, South Carolina flow control ordinance since the lawsuit filed against it is the other “bell cow” case the industry is following. The hauler and out of state landfill plaintiff’s in this case have pled every imaginable theory in their multiple causes of action. I list all of these causes below but will focus on the state pre-emption claim as it is the only cause that has been ruled upon by the South Carolina Supreme Court so far. The list of causes of action are:

- Equal Protection
- Substantive Due Process
- Dormant Commerce Clause
- Contract Clause

¹²⁵ *Id.* page 21-22.

¹²⁶ The City of El Paso passed a flow control ordinance shortly after the *Oneida* case was issued. El Paso elected to delay its effective date until 2014 so as to let the franchise agreement with the large waste company that owned and operated the competing landfill expire.

- 42 U.S.C. § 1983
- Pre-emption
- Vested Rights
- Improper Delegation of Police Power
- Inverse Condemnation
- Intentional Interference with Prospective Contractual Relations
- Unfair Trade Practices Act

Only the state pre-emption claim has been considered so far as explained next.

The case was originally filed in the U.S. District Court in South Carolina based on diversity since the plaintiff's landfill was located in North Carolina. In response to a Motion to Certify filed by the plaintiffs, the U.S. District Court determined that, there was no controlling precedent in the decisions of the South Carolina Supreme Court and since under diversity law it had to apply the law of the forum state, it certified the question of whether South Carolina's state law pre-empted the ability of Horry County to pass flow control ordinance. The Court concluded Horry County had the authority and its state law did not pre-empt this field of regulation. Therefore, the most novel of plaintiff's claims was denied.

As you might imagine, this will not be the end of the story. On the legal front, the lawsuit is continuing. On the political front, lawmakers are deliberating House Bill 4721 and Senate Bill 514, titled Business Freedom to Choose Act. If these bills pass they would overturn Horry County's flow control ordinance.

These two cases are indicators that the solid waste industry is not going to give in without a fight and there will likely be many more lawsuits involving challenges to the multiple flow control ordinances that have been passed since *Oneida*.

III. THE LATEST “NEW” DEFINITION OF SOLID WASTE RULES: NHSM AND CISWI

A. Introduction

At the 2009 Superconference, I discussed the “new” definition of solid waste. Since that time, the definition of solid waste keeps getting revised, and here we go three years later, once again discussing the “new” definition of solid waste. The focus of my paper three years ago addressed recycling issues related to the then “new” definition of solid waste. The focus of this year's paper, however, is on the non-hazardous secondary materials rule (NHSM rule) and the commercial and industrial solid waste incinerator rule (CISWI rule) both of which are in the

proposed final rule stage as this paper is written.¹²⁷ These rules still address the basic issue of what is and what is not a waste as the underpinning for their more specific purpose of identifying the differences between what is a waste and what is a fuel.

When finalizing the 2008 definition of solid waste (DSW Rule), the EPA focused on identifying those materials that should be regulated as a “solid waste” under the RCRA.¹²⁸ The EPA had several goals when promulgating the 2008 DSW rule. In no particular order, they were to encourage safe, environmentally sound recycling; to prevent “sham” recycling, or recycling that did not properly reclaim or recycle materials; and to protect the environment by preventing materials from being discarded that could potentially contaminate the water, air or soil.¹²⁹ To achieve these goals, the EPA drew a distinction between materials that were “discarded” and subject to the definition of solid waste and materials that were “legitimately recycled” and not considered a solid waste.

The NHSM rule was developed in response to a court decision requiring EPA to clearly define which combusted materials meet the definition of solid waste.¹³⁰ The EPA explains in the Advance Notice to Proposed Rulemaking (ANPRM) to the NHSM rule that the principle of treating materials that are “discarded” as solid waste, and exempting materials that are legitimately recycled as non-waste helped guide the EPA when creating this rule.¹³¹ The NHSM rule approaches the question of what is and what is not a solid waste from a slightly different direction than the 2008 analysis. Instead of attempting to specifically define “solid waste,” the NHSM rule sets up a basis upon which to determine what secondary materials may be excluded from being regulated as a solid waste.¹³² It does this by identifying what secondary materials are more like traditional, non-waste, fuels.¹³³

If the secondary material is not excluded from the definition of solid waste (is not a traditional fuel) when combusted, then the CISWI regulations may be applicable.¹³⁴ The impact of the CISWI rule is that it subjects facilities that burn waste to more stringent limitations than facilities that burn traditional fuels.¹³⁵ Specifically, those facilities that burn waste are subject to the more stringent pollution controls contained in Section 129 of the Clean Air Act (CAA)¹³⁶, while facilities that burn non-waste are subject to the less stringent pollution controls contained

¹²⁷ The final rule is expected to be published by the end of July 2012. *See* Identification of Non-Hazardous Materials that are Solid Waste, 76 Fed. Reg. 15,456 (March 21, 2011) (to be codified at 40 C.F.R. pt. 241) (hereinafter “Identification of NHSM Rule”).

¹²⁸ Under Subtitle C of RCRA, the EPA has authority to regulate hazardous waste. Because a material cannot be “hazardous waste” without being a “solid waste,” the definition of solid waste is the starting point for regulating hazardous materials under the RCRA.

¹²⁹ Revisions to the Definition of Solid Waste, 73 Fed. Reg. 64,668 (Oct. 30, 2008) (to be codified at 40 C.F.R. pts. 261, 270).

¹³⁰ *Natural Res. Def. Council v. EPA*, 489 F. 3d 1250 (D.C. Cir. 2007). (Hereinafter referred to as “NRDC”).

¹³¹ *See* Advance Notice of Proposed Rulemaking (ANPRM), Non-Hazardous Materials that are Solid Waste, 74 Fed. Reg. 41 (Jan. 2 2009). (hereinafter “ANPRM”).

¹³² Identification of NHSM Rule, 76 Fed. Reg. at 15,456.

¹³³ A “secondary material” is defined as “any material that is not the primary product of a manufacturing or commercial process.” (*See* Solid Wastes Used as Fuels 40 C.F.R. § 241.2 (2011)).

¹³⁴ *See* Identification of NHSM Rule, 76 Fed. Reg. at 15,462.

¹³⁵ Identification of NHSM Rule, 76 Fed. Reg. at 15,456.

¹³⁶ *See* Clean Air Act § 129, 42 U.S.C. § 7429 (2012).

in Section 112 of the CAA.¹³⁷ Not surprisingly, the regulated community does not want the secondary materials they are combusting to be deemed a solid waste and filed extensive comments on the proposed CISWI and NHSM rules.

If the secondary material meets the definition of a traditional fuel, the analysis is simple: the combustible secondary material has never been discarded and is not a solid waste.¹³⁸ However, the definition of traditional fuel is narrow and the NHSM rule's criteria are complex, so uncertainty remains and comments from both environmental groups and the regulated industry have sought clarification of the rule.

B. How did the EPA get here?

The history of how EPA got here is pretty convoluted. It is offered below in an effort to provide some background/context for the rest of this part of the paper.

1. History

In 2000 the EPA promulgated the first new source performance standards (NSPS) and emissions guidelines (EG) for nine specified pollutants (CISWI rule).¹³⁹ After promulgation of the 2000 CISWI rule, the Sierra Club filed a petition for review challenging EPA's regulations in the D.C. Circuit.¹⁴⁰ In 2001, the EPA granted a request for reconsideration of the CISWI rule and agreed to take further comments on the definition of "commercial and industrial solid waste incineration unit" and "commercial or industrial solid waste."¹⁴¹ During this time, the D.C. Circuit issued a decision in response to EPA's maximum available control technology (MACT) standards for the cement kiln industry.¹⁴² As a result of the court's ruling, EPA requested a voluntary remand without vacatur for the CISWI rule to address concerns related to EPA's procedures for establishing MACT floors for CISWI units.¹⁴³ Neither the petition for reconsideration or the voluntary remand by the EPA affected the applicability of the CISWI rule, and the rule remained in place.

After reconsideration of the 2000 CISWI Rule, in 2005, the EPA published the "CISWI Definitions Rule."¹⁴⁴ This rule established definitions for "solid waste," "commercial or industrial solid waste incineration unit" and "commercial or industrial solid waste."¹⁴⁵ The purpose of the 2005 CISWI Definitions Rule, according to the EPA, was to promote the use of biomass and other alternative fuels by excluding units that recovered energy from biomass or

¹³⁷ See Clean Air Act § 112, 42 U.S.C. § 7412 (2012).

¹³⁸ Solid Wastes Used as Fuels or Ingredients Rule, 40 C.F.R. § 241.3 (2011).

¹³⁹ Final Rule for Standards of Performance for Commercial and Industrial Incineration Units, 65 Fed. Reg. 75,338 (Dec. 1, 2000). (Hereinafter "CISWI 2000 Rule")

¹⁴⁰ See Proposed Rule for Commercial and Industrial Units that are Solid Wastes and Identification of Non-Hazardous Secondary Materials, 76 Fed. Reg. 80,552, 80,455 (Dec. 23 2011). (Hereinafter "Proposed CISWI and NHSM Rule").

¹⁴¹ See *Id.* at 80,455.

¹⁴² See *Cement Kiln Recycling Coalition v. EPA*, 255 F. 3d 855 (D.C. Cir. 2001).

¹⁴³ See Proposed CISWI and NHSM Rule, 76 Fed. Reg. at 80,455.

¹⁴⁴ Standards of Performance for CISWI Units, 70 Fed. Reg. 55,568 (Sept. 22, 2005). (Hereinafter "CISWI Definitions Rule").

¹⁴⁵ *Id.*

other alternative fuels from being regulated as a CISWI.¹⁴⁶ This rule proposed that industrial boilers that used biomass or other alternative fuels for energy recovery purposes not be considered solid waste incineration units and therefore not be subject to the Section 129 air requirements of the CAA.¹⁴⁷

In 2007, the 2005 CISWI Definitions Rule was struck down by the U.S. Court of Appeals for the D.C. Circuit in *Natural Resources Defense Council v. EPA*¹⁴⁸ (NRDC). In NRDC, the court ruled that EPA ignored language in the CAA that requires facilities that burn solid waste to be regulated as solid waste incineration units.¹⁴⁹ The court stated that the CAA requires *any* unit that combusts solid waste material should be regulated as a solid waste incinerator unit, regardless of whether the material is burned for energy recovery.¹⁵⁰ In the same decision, the court vacated the 2005 emissions standards for commercial, industrial and institutional major source boilers and process heaters (the Boiler MACT Rule), reasoning that the “standards will be far smaller and more homogenous after all CIWSI units, as the statute unambiguously defines them, are removed from its coverage.”¹⁵¹ As a result of this ruling, the 2005 Definitions Rule was vacated, and the 2000 CISWI rule remained in effect.

In response to NRDC, the EPA took a different approach in order to exclude certain materials that were burned for energy recovery from being regulated as a CISWI. In 2009, the EPA issued an ANPRM¹⁵² which evaluated the use of secondary materials in combustion units, and sought to identify when secondary materials should be regulated as a waste under Section 129 of the CAA, and when they should be regulated as a non-waste fuel under Section 112.¹⁵³

Following the ANPRM, the EPA issued the proposed NHSM rule in 2010.¹⁵⁴ The proposed rule changed the framework for identifying when secondary materials would be considered solid waste. Instead of listing when a material would be considered a solid waste, the rule sought to identify a way to evaluate secondary materials based on criteria to determine if it is more like a fuel, or more like a waste. Among the criteria identified, the proposed rule stated that secondary materials transferred to a third party would generally be considered discarded and thus a solid waste.¹⁵⁵ The rule also proposed that secondary materials must contain levels of contaminants that are “comparable or less than” those of a traditional fuel when combusted in order to be exempt from Section 129 requirements.¹⁵⁶ Comments on the proposed rule from the regulated industry typically argued that secondary materials should not be considered “discarded” if transferred to a third party and that the rule was overly restrictive. Comments

¹⁴⁶ *Id.* at 55,573.

¹⁴⁷ *Id.* at 55,572.

¹⁴⁸ NRDC, 489 F. 3d at 1250.

¹⁴⁹ NRDC, 489 F. 3d at 1258.

¹⁵⁰ *Id.*

¹⁵¹ *Id.* at 1261.

¹⁵² ANPRM, 74 Fed. Reg. at 41.

¹⁵³ *Id.* at 41.

¹⁵⁴ Proposed Identification of Non-Hazardous Materials that are Solid Waste Rule, 75 Fed. Reg. 31,844 (Jun. 4, 2010).

¹⁵⁵ *Id.* at 31,874.

¹⁵⁶ *Id.* at 31,883.

from environmental groups expressed concern that the proposed NHSM rule was too broad, and that some secondary material burned for energy recovery should be considered a solid waste.¹⁵⁷

2. The March 21, 2011 Rule

On March 21, 2011, the EPA promulgated the final NHSM Rule and CISWI rule.¹⁵⁸ Under the final NHSM Rule, non-hazardous secondary materials are presumed to be solid waste when combusted¹⁵⁹ unless the material can be excluded in one of two ways. The first way is if the material satisfies one of the criteria under Section 241.3(b) of the regulations.¹⁶⁰ The second way to be excluded from being regulated as a solid waste is if the EPA administrator grants a non-waste determination.¹⁶¹

Section 241.3(b) lists the following criteria. If one of the criteria is satisfied, the non-hazardous secondary materials are considered a non-waste fuel when combusted:

- (1) when the secondary materials stay within the control of the generator and meet the legitimacy criteria,
- (2) when the combusted material is specifically listed (e.g. scrap tires or resinated wood), is not discarded, and satisfies the legitimacy criteria,
- (3) if the secondary material is used as an ingredient in a combustion unit that satisfies the legitimacy criteria, or
- (4) when the fuel or ingredient used in the combustion unit is produced from the processing of discarded secondary material and satisfies the legitimacy criteria.¹⁶²

The legitimacy criteria is essential to identifying which secondary materials are more like fuels and ingredients when used in combustion units. In order to satisfy the legitimacy criteria, and be considered a non-waste fuel, the material must:

- (1) be managed as a valuable commodity,
- (2) have heating value and be used in a combustion unit that recovers energy, and

¹⁵⁷ *Id.* at 15,467-68.

¹⁵⁸ On the same day, the EPA also revised emission standards for Sewage Sludge Incinerators (SSI) and Major and Area Source Industrial and Commercial Boilers. *See* Standards of Performance for Sewage Sludge Incinerators, 76 Fed. Reg. 15,372 (Mar. 21, 2011)(to be codified at 40 C.F.R. pt 60); National Emissions Standards for Major Sources: Boilers and Process Heaters, 76 Fed. Reg. 15,608, (Mar. 21, 2011)(to be codified 40 C.F.R. pt 63).

¹⁵⁹ 40 C.F.R. § 241.3.

¹⁶⁰ 40 C.F.R. § 241.3(b)

¹⁶¹ 40 C.F.R. § 241.3(c)

¹⁶² 40 C.F.R. § 241.3(b).

(3) contain contaminants¹⁶³ at levels comparable or lower than those in traditional fuels which the unit is designed to burn.¹⁶⁴

In addition to satisfying the criteria of 241.3(b), a secondary material that is combusted may be excluded from being considered a solid waste if the EPA grants a non-waste petition.¹⁶⁵ When evaluating a non-waste petition, the Regional Administrator will consider several factors to determine if the material is more similar to a fuel than a waste. Some of the factors include whether the secondary material is treated like a traditional fuel, whether others treat the secondary material like a product rather than a waste, and whether the material will be used in a reasonable time frame.¹⁶⁶

Changes to the CISWI regulations included revised new source performance standards (NSPS) for new units and emissions guidelines (EG) for existing CISWI units. The final CISWI rule requires new units to comply with NSPS six months after promulgation of the rule or upon start-up, while existing units must comply with the EGs five years after promulgation of the rule.¹⁶⁷ In May 2011, EPA stayed the effective date of the CISWI rules,¹⁶⁸ an action which has since been vacated by the U.S. District Court of Appeals.¹⁶⁹ Shortly after, EPA issued a no-action assurance letter, stating that they will not enforce any of these requirements for new and existing boilers under the 2011 CISWI and Boiler MACT rules. Because EPA is not enforcing these rules, states are not implementing the NHSM rule,¹⁷⁰ but states will need to implement these rules once they are finalized. Texas plans to implement them through its Title V program and by adopting them into the TCAA § 113 rules.

3. Revised Rules

On December 23, 2011, the EPA proposed revisions to both the CISWI rule and the NHSM rule.¹⁷¹ The CISWI rule proposed revised emissions limits for some subcategories of CISWIs, and reinstated the definition of “contained gaseous materials” into the CISWI rules, providing much needed clarification for the landfill gas and biogas industries. Under the NHSM rule, EPA proposed revisions to the definitions of “clean cellulosic biomass,” “contaminants,” and “established tire program” to broaden the scope of materials that are eligible to be classified as a NHSM.¹⁷²

¹⁶³ The final rule defined “contaminants” as “any constituent in non-hazardous secondary materials that will result in the emissions of any of the air pollutants listed in CAA §112(b), or the nine pollutants listed under section 129(a)(4).” 40 C.F.R. § 241.2.

¹⁶⁴ 40 C.F.R. § 241.3(d).

¹⁶⁵ 40 C.F.R. § 241.3(c).

¹⁶⁶ 40 C.F.R. § 241.3(c)(1).

¹⁶⁷ See National Emission Standards for Hazardous Air Pollutants for Commercial and Industrial Solid Waste Incineration Units, 76 Fed. Reg. 15,704 (March 21, 2011).

¹⁶⁸ Industrial and Commercial Solid Waste Incinerator Unit Delay Notice, 76 Fed. Reg. 28,662 (May 18, 2011)

¹⁶⁹ *Sierra Club v. Jackson*, 813 F. Supp 2d 149 (D.D.C. 2011).

¹⁷⁰ Except North Carolina is applying NHSM rule. See North Carolina Division of Air Quality, *Landfill Gas and Solid Waste Questions and Answers*, dated May 2, 2012, available at http://www.ncair.org/permits/memos/landfill_gas_QA.pdf.

¹⁷¹ Proposed CISWI and NHSM Rule, 76 Fed. Reg. at 80,452.

¹⁷² *Id.* at 80,470.

In addition, the EPA proposed to clarify the legitimacy criteria used to evaluate whether a NHSM is considered a fuel.¹⁷³ The new proposed criteria would permit a secondary material to make contaminant comparisons based on groups of contaminants.¹⁷⁴ This would allow a material's particular volatile organic compound (VOC) to be compared to the total VOC content of a fuel, instead of comparing it to the individual VOC.¹⁷⁵ Additionally, the proposed rules allow the NHSM to be compared to not only traditional fuels, but to any other fuel that the combustion unit was designed to burn, creating greater flexibility for comparing contaminant levels.¹⁷⁶ These changes are seen as increasing the chances that a NHSM may be classified as a fuel and excluded from the definition of solid waste.

C. Remaining Problems

Following the promulgation of the NHSM rule and revised CISWI rule, criticism and comments about nearly every aspect of the rules were submitted to the EPA. Most of these concerns focused on the issue of whether a facility would be subject to Section 129 of the Clean Air Act or whether that facility would be subject to less stringent limitations under Section 112. Not surprisingly, many regulated industries wanted their secondary materials to be considered non-waste fuels, so they could avoid the more stringent Section 129 requirements.¹⁷⁷ Taking a closer look at two of these industries, the landfill gas industry and alternative fuel industry, provides a better understanding of the uncertainty surrounding the NHSM rule and CISWI regulations.

1. Environmental and Economic Impacts

The EPA itself predicted in its most recent preamble to the CISWI rules that many operators and owners of CISWI units will likely discontinue combusting waste if they are required to meet Section 129 emission requirements. Since the promulgation of the CISWI rule in 2000, no new CISWI units have been constructed and more than 50% of existing units have closed.¹⁷⁸ This trend is likely to continue as these rules are implemented.¹⁷⁹

Although no new CISWI units may be constructed, the EPA has identified possible environmental impacts from the CISWI regulations for water, waste and energy associated with the more stringent pollution control requirements and, at the other end of the analysis spectrum, the expected closures. For example, the EPA estimates that an additional 90-billion gallons of water per year would be used by the remaining units to meet the new CISWI regulations.¹⁸⁰ As more CISWI units cease combusting waste, more of this waste will be sent to landfills. The EPA estimates that approximately 110,417 tons per year will be diverted from CISWI units to landfills.¹⁸¹ Energy impacts will also increase as a result of the new rule. Additional controls, such as air pollution control devices will cause an increase in energy use for those facilities, such

¹⁷³ *Id.* at 80,476.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.* at 80,477.

¹⁷⁶ *Id.* at 80,476.

¹⁷⁷ Proposed CISWI and NHSM Rule, 76 Fed. Reg. at 80,466.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ *Id.* at 80,467.

¹⁸¹ *Id.*

as waste burning kilns and other incinerators, that choose to install those controls. Energy impacts will also increase as a result of some of those same facilities deciding to cease combusting waste, and instead opting to burn traditional fuel.¹⁸² The EPA estimates that approximately 56 Trillion Btus per year (TBtu/yr) of energy previously generated from these facilities will need to be replaced – most probably by burning traditional fuels.¹⁸³

In addition to these environmental impacts, the EPA estimates that the cost to industry of installing these additional controls by the facilities which remain will reach an overall capital investment of \$859 million, and an annual cost of \$270 million.¹⁸⁴ As mentioned, these significant economic impacts are going to be the reason some CISWI units cease combusting waste, and likely will deter new CISWI units from being built. There may also be billions of stranded costs in the landfill gas to energy industry alone if the existing investments in collection systems and power generation are abandoned.

While there are many concerns from the regulated industry over these environmental and economic impacts, it should not be overlooked that there are also significant benefits expected from the CISWI rule. The EPA estimated that human health benefits from the revised regulations, especially the reductions anticipated in particulate matter (PM), specifically, 2.5 PM, would likely translate to a range of between \$330 million to \$800 million in monetized human health benefits in 2015 alone.¹⁸⁵

2. Landfill Gas/Biogas Concerns

The landfill gas and biogas industry were particularly active in voicing their concerns about the NHSM rule, and the question of whether landfill gas will be regulated as a solid waste still remains a concern for them. Previously, under the 2000 CISWI and 2005 CISWI rule, landfill gas and biogas were excluded from being considered a solid waste. The 2000 CISWI rule included a definition of “solid waste” that included the phrase “contained gaseous material,” which, in turn, was defined as “gases that are in a container when that container is combusted.”¹⁸⁶ “Contained gaseous material” was typically interpreted to not include gases transported via pipeline to a boiler and therefore were not considered waste and consequently not subject to the CISWI (Section 129) emissions requirements.

The promulgation of the NHSM and CISWI rules sparked concerns from the landfill gas and biogas industry because they fear the NHSM rule changed the interpretation of “contained gaseous material” and the industry would have to meet the NHSM rule’s exclusion requirements in order to not be deemed a solid waste. Specifically, the industry was concerned because EPA alluded to the fact that “contained gaseous material” would be interpreted differently and would need to be weighed against the rule’s legitimacy criteria.¹⁸⁷

¹⁸² *Id.*

¹⁸³ *Id.*

¹⁸⁴ Proposed CISWI and NHSM Rule, 76 Fed. Reg. at 80,467.

¹⁸⁵ *Id.*

¹⁸⁶ 2000 CISWI Rule, 65 Fed. Reg. at 75,373.

¹⁸⁷ U.S. Environmental Protection Agency, Comfort Letter to Waste Management, Aug. 5, 2011, *available at* <http://www.epa.gov/osw/nonhaz/define/pdfs/landfill-gas.pdf>. (hereinafter “Waste Management Comfort Letter”).

The landfill gas and biogas industry actively sought clarification from the EPA that landfill gas is not “contained gaseous material” and is therefore excluded from the CISWI permitting requirements. The industry also specifically requested that EPA determine that landfill gas be considered a “traditional fuel” when combusted in any type of boiler and clarify whether vented gas that directly enters the atmosphere would be considered “discarded” and therefore subject to the CISWI regulations.¹⁸⁸

In response to these comments from the landfill gas industry, the EPA issued several “comfort letters”. Comfort letters are letters written by the EPA to an interested party, and are meant to clarify a regulation or contested issue.¹⁸⁹ On August 5, 2011, in response to concerns from Waste Management, the EPA issued a comfort letter clarifying that the EPA did not intend to change its prior interpretations of “contained gaseous material” for purposes of defining solid waste under RCRA which means landfill gas will not be presumed to be a solid waste.¹⁹⁰ The EPA also clarified that vented gas would not be considered discarded, and not subject to the solid waste requirements.¹⁹¹ The more controversial determination by the EPA, however, was the response to Waste Management’s request to classify landfill gas as a traditional fuel. In its comfort letter to Waste Management, the EPA responded that landfill gas will not be considered a “traditional fuel” when it is generated from a landfill.¹⁹² Because combustion devices are regulated under either the CISWI rule or Boiler MACT Rule based on what they burn, the landfill gas industry remains concerned that they could be regulated as a waste instead of a fuel if they cannot satisfy the exclusion criteria.¹⁹³ If landfill gas is regulated under Section 129 of the CAA, there is a real prospect that many landfill gas to energy facilities will not be able to cost effectively satisfy the pollution control requirements and be forced to abandon their facilities – likely resulting in a legal challenge or leaving billions of dollars in stranded costs behind.

3. Alternative Fuels

While the NHSM rule has been met with a great amount of criticism, there are industries that greatly benefit from its promulgation. Particularly, many producers of alternative fuels are now able to avoid being regulated as a waste. In addition, the proposed rules provide an opportunity for producers of alternative fuels to obtain a determination from the EPA that these fuels are not solid wastes when they are combusted for energy recovery.¹⁹⁴ Many producers of alternative fuels submitted comments to the EPA in an attempt to broaden the scope of materials that could be considered a non-waste.

¹⁸⁸ *See Id.*

¹⁸⁹ *See* Waste Management Comfort Letter, attached as Appendix A and the Comfort Letter to American Forest Paper Association, May 13, 2011, attached as Appendix B.

¹⁹⁰ Waste Management Comfort Letter at 1.

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ The landfill gas industry is also concerned with revisions to the Boiler MACT Rule, which regulates fuels and landfill gas under section 112. Revisions to this rule have classified landfill gas as a “Gas 2 unit,” which is subject to more stringent emissions limitations. The industry is advocating to have landfill gas be classified as a “Gas 1 unit,” which is only required to meet work practice standards of the rule, and not the rule’s more stringent emissions limitations. *See* National Emissions Standards for Major Sources: Boilers and Process Heaters, 76 Fed. Reg. 15,608, 15,639 (Mar. 21, 2011)(to be codified 40 C.F.R. pt 63).

¹⁹⁴ Proposed CISWI and NHSM Rule, 76 Fed. Reg. at 80,473.

Following the promulgation of the March 21, 2011 rule, members of several alternative fuel industries expressed concern that their material would not be able to be excluded from the definition of solid waste. Like the landfill gas industry, producers of biofuels were concerned that materials such as crop residues and agricultural biomass were not clearly within the scope of being considered a non-waste/traditional fuel when combusted.¹⁹⁵ EPA addressed this problem by clarifying the definition of “clean cellulosic biomass” in the December 23, 2011 rule so as to broaden the scope of materials that can be considered more like a traditional fuel.¹⁹⁶

4. Contaminants

Other comments following the March 21, 2011 rule included the concern that the rule did not properly identify “contaminants” when evaluating the legitimacy criteria. While the March 21, 2011 rule lists specific contaminants, commenters noted that this failed to identify all potential pollutants because certain CAA pollutants form during combustion.¹⁹⁷ The EPA sought to address this issue in the proposed rule, by listing elemental precursors to pollutants.¹⁹⁸ These two proposed changes by the EPA represent an apparent internal conflict within the agency between expanding the scope of materials that are able to be regulated as a fuel under Section 112 of the CAA and ensuring that the burning of solid waste is properly and stringently regulated under Section 129 of the CAA. As the rule continues to develop, EPA must balance these two concerns and find a way to promote renewable energy while regulating air and waste. The final rule is projected to be published in late July 2012.

Conclusion

After reviewing these three topics it seems safe to conclude that there will continue to be focus placed on the intent of the alleged arrangers and that the District Courts do not seem persuaded to delve into the mechanics of apportionment even though I think we can expect litigants to continue to try to fit within the structure of the BNSF facts and ruling. It also seems safe to conclude that we could discuss flow control again next year as we wait to see the outcome of the Dallas and Horry County cases. And who knows what the latest “new” definition of solid waste will be.

¹⁹⁵ See *Id.* at 80,474.

¹⁹⁶ Proposed CISWI and NHSM Rule, 76 Fed. Reg. at 80,470.

¹⁹⁷ *Id.*

¹⁹⁸ *Id.* at 80,475.

Appendix A: Waste Management Comfort Letter



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

August 5, 2011

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Ms. Sue Briggum
Vice President, Federal Public Affairs
Waste Management
701 Pennsylvania Ave., NW
Washington, DC 20004

Dear Ms. Briggum:

I appreciated the opportunity to meet with you and others from Waste Management and the Delaware Solid Waste Authority on July 8, 2011 to discuss your concerns related to EPA's final rule entitled, *Identification of Non-Hazardous Secondary Materials (NHSM) That Are Solid Waste*. 76 FR 15456 (March 21, 2011). In addition, thank you for your July 12, 2011 letter and attachments, which provided additional information regarding Waste Management's positions and concerns related to the NHSM rule's characterization of landfill gas. Specifically, we understand that several of the responses in the *Response to Comments Document for the Identification of Non-Hazardous Secondary Materials that are Solid Waste* (February 2011) (notably at 3b-I3-1, 3b-I3-2, and 3b-I3-4) have raised questions as to whether the Environmental Protection Agency (EPA) has changed its interpretation of what constitutes a "contained gaseous material," as well as its position regarding the regulation of landfill gas.

As you are aware, representatives from other industry sectors have raised concerns about the contained gas language in the Response to Comments Document. In a letter to Mr. Tim Hunt dated May 13, 2011, a copy of which is enclosed, we clarified that EPA was not changing any of its previous positions regarding what constitutes a "contained gaseous material" for purposes of defining the term "solid waste" under the Resource Conservation and Recovery Act (RCRA) and that the Agency's previous statements and interpretations remain in place.

Similarly, I would like to clarify that the Agency is not changing any of its previous statements and interpretations concerning landfill gas. As we noted in the May 13, 2011 letter to Tim Hunt regarding contained gas, EPA did not solicit comment on landfill gas in the NHSM proposal, and did not analyze or address it in the preamble to the final rule because the Agency did not intend to issue a different interpretation than it had in the past.

Finally, I would like to clarify one of the Agency's responses in the Response to Comment Document that you identified as raising questions.¹ Specifically, Comment [3b-I3-2] discussed comments requesting the Agency clarify that landfill gas and sewage digester gas are "traditional fuels" that are not solid wastes when combusted in any type of boiler. EPA responded by stating that the Agency disagrees that landfill gas or sewage digester gas are traditional fuels. They may be considered commodity fuels that have been processed from waste materials, but they would have to meet all the requirements necessary to be considered a processed commodity fuel.

EPA continues to believe that landfill gas is not a traditional fuel when it is generated from the landfill. However, as indicated in the comment response, and as you explained further during our meeting, landfill gas is processed (filtered, dewatered, and compressed) before it can be used on-site or off-site. For certain uses, landfill gas must be even further processed before it is used as a fuel.

EPA also notes that landfill gas may be subject to work practice standards for gases that are comparable to natural gas and refinery gas (Gas 1), as opposed to numeric emission limitations for Gas 2 fired boilers and process heaters, under the Clean Air Act emissions standards issued for major source boilers and process heaters (the "Boiler MACT").

Information that Waste Management provided to EPA regarding landfill gas compared to natural gas and refinery gas,² suggests that landfill gas may meet the requirements for other Gas 1 fuels, and if so, would be required to meet work practice standards under the Boiler MACT. See 76 FR 15668-9 (section 63.7521(f)-(i) and Table 6) for specific regulatory requirements.

Thank you for your continued interest in protecting the environment. If you have further questions, please contact James Berlow, Director of ORCR's Program Implementation and Information Division, at berlow.jim@epa.gov or (703) 308-8404.

Sincerely,



Suzanne Rudzinski, Director
Office of Resource Conservation and Recovery

¹ The other two responses that you identified in the Response to Comments document do not relate directly to landfill gas and thus, we do not address them in this letter.

² See memorandum from Tom Kraemer of CH2MHill to Amy Banister, Waste Management, July 7, 2011.

Appendix B: American Forest Paper Association Comfort Letter



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MAY 13 2011

Mr. Tim Hunt
Senior Director, Air Quality
American Forest and Paper Association
1111 Nineteenth Street, N.W.
Washington, D.C. 20036

Dear Mr. Hunt:

I would like to thank you and other representatives of forest products industries for meeting with my staff on April 26, 2011, to discuss your concerns with the Identification of Non-Hazardous Secondary Materials That Are Solid Waste (NHSM) final rule. We are evaluating a number of the concerns you raised, but wanted to get back to you quickly on the "contained gas" issue that you raised in that meeting and in an issue paper that you forwarded to us on April 13, 2011. We understand that our response to the fourth comment in Part 3b.1.3. of the document *Responses to Comments Document for the Identification of Non-Hazardous Materials that are Solid Waste* (February 2011) has created concerns among the regulated community that the Environmental Protection Agency (EPA) has changed a long-standing interpretation of what constitutes a "contained gaseous material" for purposes of defining the term "solid waste" under the Resource Conservation and Recovery Act (RCRA). We have not changed our prior interpretation but would like to clarify the response.

EPA was responding to a comment requesting that we include in the NHSM final rule a definition of "contained gaseous material." The Agency does not believe that including such a definition in the rule is necessary. However, our response seems to have caused confusion about whether the Agency was changing its prior interpretations regarding the burning of gaseous materials, for example in fume incinerators, and whether or not such burning is considered to be treatment of a solid waste by burning.

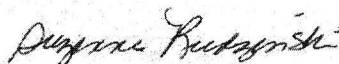
The response does not change any previous EPA positions. We clarify here that the Agency's previous statements and interpretations remain effective. Thus, burning of gaseous material, such as in fume incinerators¹ (as well as other combustion units, including air pollution control devices that may combust gaseous material) does not involve treatment or other management of a solid waste (as defined in RCRA section 1004 (27)).

¹ See, for example, 47 FR 27530, June 24, 1982, where it states "Fume incinerators which are used to destroy gaseous emissions from various industrial processes, for example, are not subject to regulation under RCRA."

We also note that since the Agency did not solicit comment on this issue in the proposal, and did not analyze or address it in the preamble to the final rule or in the Regulatory Impact Analysis (RIA) for the rule, it is clear that the Agency did not intend to issue an interpretation that would change previous EPA statements regarding how "contained gaseous material" is interpreted for purposes of RCRA and for purposes of section 129 of the Clean Air Act.

Thank you for your continued interest in protecting the environment. If you have further questions you may contact George Faison, of my staff, at faison.george@epa.gov or 703-305-7652.

Sincerely,



Suzanne Rudzinski, Director
Office of Resource Conservation and Recovery

John C. Cruden Bio

John C. Cruden is the President, Environmental Law Institute, a nationally recognized non-profit association that provides research, education, and publications in the area of environmental law and policy. He was raised in Michigan and is a graduate of the United States Military Academy, University of Santa Clara (summa cum laude, 2006 Alumni Special Achievement Award), and University of Virginia (honors). He is a member of the bars of the District of Columbia and California, a number of federal courts, and the U.S. Supreme Court.

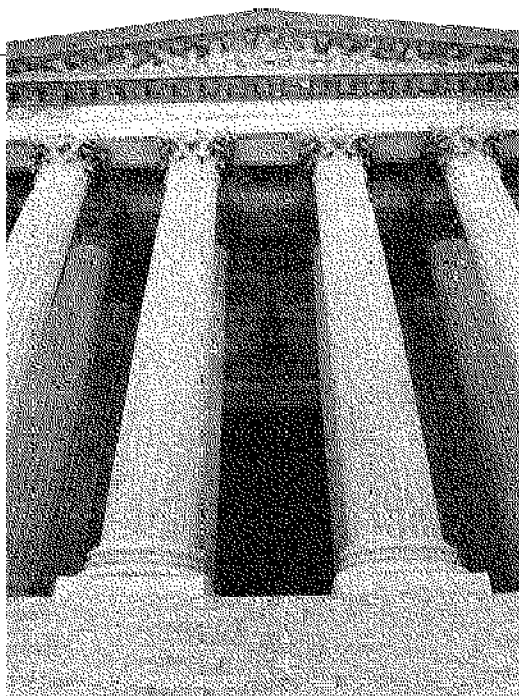
Before coming to ELI, John was, for over two decades, the career Deputy Assistant Attorney General, Environment and Natural Resources Division, U.S. Department of Justice. In that capacity he supervised all federal civil environmental enforcement and litigation involving agencies of the United States. He has personally litigated and led settlement negotiations in numerous environmental cases, many with reported decisions. Prior to becoming Deputy Assistant Attorney General, Mr. Cruden was Chief, Environmental Enforcement Section.

Before joining the Department of Justice, Mr. Cruden was the Chief Legislative Counsel of the Army. After graduating from West Point, he served in airborne, ranger, and Special Forces units in Germany and Vietnam before attending law school. After working for Justice Stanley Mosk, California Supreme Court, he attended the Army's Judge Advocate General's Graduate Course where he was named outstanding graduate. His subsequent military assignments include significant assignments in the Pentagon and Europe, as well as being General Counsel, Defense Nuclear Agency.

John has received the Presidential Rank Award from three different Presidents. He has also received the Federal Bar Association's Younger Award and the American Bar Association's Mary C. Lawton Award for Outstanding Government Service. Mr. Cruden's military awards include the Bronze Star, Legion of Merit, Defense Meritorious Service Medal, Air Medal with Oak Leaf Clusters and the Vietnamese Cross of Gallantry with Silver Star.

Mr. Cruden is a Past President of the District of Columbia Bar, the second largest bar in the nation, and was the first government attorney to be elected and serve as President. He is listed in Who's Who in the World, Who's Who in America and Who's Who in American Law. John is also a Past Chairman, ABA Section of Environment, Energy, and Resources and a Fellow of the American Bar Foundation. In 2010, he was listed by a national magazine as one of the top 500 lawyers in America.

Mr. Cruden is a swim coach for Special Olympics and a past recipient of Fairfax County's Volunteer of the Year award for his work with mentally handicapped children.



THE FORUM

A Debate About the Debates: Environment, Energy, and Natural Resources and the Presidential Race

Policy on the environment, energy, and natural resources has seldom figured prominently in a presidential election, all the less so as time elapses since the first Earth Day. To judge by the more than twenty debates thus far in the current presidential campaign, it isn't likely to be on top of the agenda this year. Although regulation itself has been featured in the campaign — recall the criticism of the new lightbulb efficiency standards and of the Solyndra bankruptcy, not to mention rejection of climate change science — broader topics in environmental policy have largely taken a back seat to jobs, the budget, the economy, and foreign relations. Yet environmental policy, properly constructed, can have a positive effect on all these concerns.

Energy policy affects public health, surely a matter of concern to voters and a major ex-

pense, yet it ranks low in polls except for the high cost of gasoline. And energy policy affects foreign policy, as our former commitment in Iraq demonstrates, but energy only seems to matter to voters when they take out their wallets. The same applies for topics in environmental policy and natural resources policy.

But it doesn't have to be that way. We wrote to a select group of American environmentalists with broad policy experience to seek their counsel on a key question: "What should the presidential candidates be discussing concerning the important issues of environment, energy, and natural resources facing the United States' people?" And we sought their suggestions of "What question (or questions) should be asked of the candidates in the presidential debates that will help us learn how they in turn will confront these issues?"



Paul J. Allen

*Senior Vice President and
Chief Environmental Officer*
CONSTELLATION ENERGY



Sherwood Boehlert

Chairman (retired)
HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE



E. Donald Elliott

Partner
WILLKIE FARR & GALLAGHER
LLP



Michael B. Gerrard

Director, Climate Change Law
COLUMBIA LAW SCHOOL



Kenneth P. Green

Resident Scholar
AMERICAN ENTERPRISE
INSTITUTE



Ann R. Klee

*Vice President, Environment
Health and Safety*
GENERAL ELECTRIC CO.



Katherine McFate

President
OMB WATCH



Granta Y. Nakayama

Partner
KIRKLAND & ELLIS LLP



Jacqueline Patterson

*Director, Environmental and
Climate Justice Program*
NAACP



Mark Udall

Member
SENATE ENERGY AND
RESOURCES COMMITTEE



Christine Whitman

President
WHITMAN STRATEGY GROUP



David Yarnold

*President and Chief Executive
Officer*
NATIONAL AUDUBON SOCIETY

Clean Energy Is the Foundation of a Prosperous Society

PAUL J. ALLEN

The candidates should be discussing the vital and essential linkage between greater economic prosperity and enhanced environmental protection, both based on wise energy policy.

Candidates must recognize that prosperity and a clean environment are mutually dependent upon the type of energy infrastructure we use to undergird our economy — in short, that clean energy is the sturdiest foundation for the economy.

Candidates must recognize that prosperity is also tied directly to the protection of public health. This means establishing and strongly enforcing science-based limits for safeguarding the quality of our air, water, land, and oceans.

These linkages are clearest in those policies which have harnessed market-based solutions with strong science-based environmental and resource protection rules. A great example is the Acid Rain Program in the federal Clean Air Act, but there are many other examples, including Corporate Average Fuel Economy standards, the Energy Star program, appliance efficiency standards, and even the government auction of radio spectrum (itself a vital natural resource and a great boon to our high tech economy and a key underpinning of the coming clean energy revolution).

Any candidate for president must be able to explain how his or her policies and leadership will yield advances in clean energy technologies and steer the country toward wiser and more frugal uses of natural resources while protecting public health from environmental hazards.

Any candidate for president must be able to explain how he or she

would harness the twin objectives of cleaner energy and resource conservation, and how that would be coupled with competitive markets to spur investment that creates good jobs in sustainable businesses.

Any candidate for president must be able to identify which priorities are most urgent and show the leadership to take action even when the political tides might be at odds with the empirical evidence of pending hazards — the key case in point being regulation of greenhouse gas emissions.

And any candidate for president must be able to tackle the inter-generational nature of these issues by demonstrating to today's voters that while the decisions we make now may not yield all of the fruits of our wisdom until we are gone, the wisdom remains, and it dictates that we make choices now that will protect future generations.

Any successful president will help us identify the harmful externalities of our industries, and help us find the market mechanisms to put proper costs on those externalities, to steer the best investments toward technologies that will have less environmental impact.

In short, a successful president will help us combine the economics of the market with the goals and technology of cleaner energy production and more efficient energy usage to preserve our air, water and unspoiled places.

Climate change is among our most challenging environmental and energy issues. My question for the candidates: "How urgent is the problem posed by emissions of greenhouse gases? Can we wait another four years before taking action? Will you introduce a new approach for federal climate protection legislation — something different than was attempted in 2010?"

Paul J. Allen is Senior Vice President, Corporate Affairs, and Chief Environmental Officer of Constellation Energy.

Republicans Need To Readjust the Course Heading

SHERWOOD BOEHLERT

To be asked what the presidential candidates should be saying about the environment is, for me, to be forced to acknowledge just how far the Republican party is veering off course.

The Republican candidates, whatever their past positions, seem hell-bent on casting energy and environmental policy as divisive and polarizing issues, ignoring areas of public consensus, and, I think, of national need.

So, what I would like is for the presidential candidates of both parties to sign on to a set of fundamental consensus principles to establish the parameters of the debate. My suggested principles would include:

- Protecting air, water, and land is a fundamental federal responsibility. The marketplace, voluntary action, and state regulations are not capable, by themselves, of providing Americans with clean air, pure water, and open spaces.

- The current statutory framework, implemented by the Environmental Protection Agency and other federal agencies, has been highly successful at producing the environmental and health improvements Congress intended at affordable costs.

- Global climate change is real, is caused largely by human activity, and represents a worldwide threat that needs to be addressed.

- The United States needs to move toward a more energy efficient, clean energy economy to enhance public health, national security, the environment, and our long-term economic prospects.

- That transition will not take place, at least not rapidly enough, without the federal government

playing an active role that includes everything from helping to underwrite research and development to imposing efficiency and renewable energy requirements.

Signing on to such principles would still leave plenty of room for meaningful argument. They don't dictate answers to questions like, "Is EPA going too far with its latest utility emission limits?" or "What system would be best for reducing greenhouse gas emissions?" or "Should the Keystone pipeline be granted a permit?" But if candidates agreed to principles like these, it would shift environmental policy back into the arena of policy debate and out of the maelstrom of ideological warfare.

No doubt, getting such agreement this year is a pipe dream. But the candidates ought to be asked directly where they stand on the basic premises that have guided policy successfully for decades and that much of the public continues to share.

The public needs to understand just how stark a choice is being offered. Reporting that minimizes the extent of the disagreement or that shrugs off fundamental disputes as mere campaign rhetoric does the American electorate a grave disservice. As Ezra Klein noted recently in the *Washington Post*, elected officials generally work to keep their campaign promises. And in any event, what's said in campaigns sets the context and limits for governing. We live in a cynical time, but words still matter.

At the very least, the nation should emerge from the 2012 campaign with a clear sense of which ideas will drive environmental and energy policy over the next four years. Personally, I hope we'll build on, and learn from what's worked in the past. Once, that would have been viewed as conservatism.

Sherwood Boehlert represented New York state in the Congress and chaired the House Science Committee.

We Need an Honest Debate About Priorities

E. DONALD ELLIOTT

"America is broke." Even President Obama acknowledges that. Government cannot do everything; we need to set priorities.

Today's federal environmental statutes were passed when we still thought we could afford to do it all. They put EPA on autopilot, churning out technology-based regulations without regard to competing national priorities or whether they impose costs disproportionate to their benefits.

Those new federal regulations that require industry to spend money to control tiny theoretical risks kill jobs and harm the poor. But not all federal regulations are job-killers. Preventing real harms that are larger than what the regulation costs benefits the economy, saves lives, and reduces health care costs.

Our current political dialogue is misleading on both sides: one party maintains that every environmental regulation is a "job-killer" while the other claims everything is a necessary "investment" to protect our children and win the future. Both are caricatures. What we need is a more honest, mature dialogue about environmental and energy priorities.

Congress is paralyzed and can't adjust priorities. Executive branch review by the Office of Information and Regulatory Affairs was created to separate foolish regulations from sensible ones. But it too no longer works. EPA has gotten so good at over-estimating risks that no one believes its estimates of thousands of lives saved by each of its rules. Plus as a White House office, OIRA's decisions appear politically motivated.

We need a new, independent, non-partisan environmental and

energy evaluation process to define the scientific and economic facts for debate. Like the Congressional Budget Office or the National Academy of Sciences, it would independently evaluate environmental regulations and energy programs. That's what the National Environmental Policy Act was passed to do: create a credible factual record for policy choices about the environment, but ironically, the most controversial and costly agency, EPA, has a statutory exemption.

The non-partisan regulatory review I propose should not be limited to new regulations. We should also revise or eliminate obsolete rules and those that we can no longer afford. Devolving some authority back to the states helps but is not a cure-all. States cannot judge global or national policies whose benefits accrue outside their borders. The president should have corresponding legal authority to suspend or delay programs if costs are found disproportionate to benefits by independent non-partisan reviewers.

The truth is we have spent too much in some areas and too little in others. Time to strike a better balance but first we have to get the science and the numbers right. That's what a famous philosopher, Confucius, who was also a prime minister, called "the rectification of terms" and he said it was the single most important thing that one can do to improve public discourse.

My question to the candidates: "How will you create an honest, informed dialogue about our environmental and energy priorities?"

E. Donald Elliott is Professor (adjunct) of Law, Yale Law School, and Partner, Willkie Farr & Gallagher LLP Washington, D.C. He served as General Counsel of EPA and liaison to the Office of Management and Budget (1989-91).

Science Heads List of Candidate Debate Queries

MICHAEL B. GERRARD

Question 1: How would your administration make decisions on questions of science? Those who favor or oppose government action for economic or ideological reasons have taken to hiring their own scientists. Sometimes these experts usefully think outside the accepted boxes and bring fresh insights, but often instead they spread fringe ideas based on flimsy data. These purchased expert opinions can then be used to impede or reverse progress on solving pressing problems.

There are established institutions that can serve as a forum for poring through the existing science and determining what we know and what questions remain, and how much confidence we can have in our theories. The congressionally chartered National Academy of Sciences is in the forefront, but there are many others. Society must be open to new ideas and creative approaches, and distinguishing the transformative thinker from the crackpot is a challenge, but when it comes to setting policy, choices must be made. Mr. Candidate, to whom will you be listening?

Question 2: How will you prepare the country for a changing climate? We are past the point where reducing greenhouse gas emissions will halt climate change. Cutting emissions is absolutely essential, as that could prevent the worst impacts, but for at least the next several decades the earth will continue to warm.

If we go on constructing infrastructure, energy systems, dwellings, and other elements of the built environment as if tomorrow's climate was going to be the same as

yesterday's, we will be wasting huge sums and will be putting our works — not to mention our people — in harm's way. Mr. Candidate, will you ensure that future federal planning will fully account for the changing climate, and will you help state and local governments adapt as well?

Question 3: What is the future of coal, and how will you help shape it? Coal is the source of 46 percent of this country's electricity and 35 percent of its energy-related greenhouse gas emissions, as well as large portions of other air pollutants that imperil public health. Certain methods of extracting it also cause great damage to our land, our waters, and the health of our workers. It faces competition from abundant and inexpensive natural gas, and increasingly stringent air pollution regulations. At the same time, the federal government is leasing large tracts of coal resources, especially in Montana and Wyoming, and preparations are being made to create rail and port facilities to transport the coal west to China to help meet its almost insatiable demand for electricity.

New technologies are being developed — though in fits and starts — to capture and sequester the carbon dioxide from coal burning. So far it looks like the economic, energy, and water cost of applying these technologies would be very high, and the ability to store large quantities of gas for centuries is highly uncertain. But coal is central to the economy of several states, and it is difficult to envision an economy that does not continue to rely heavily on coal for at least the balance of this century. Mr. Candidate, how will you ensure that we can transition away from coal at minimum disruption to the economy, and that the environment will be safeguarded as much as it can while we do?

Michael B. Gerrard is Andrew Sabin Professor of Professional Practice and director of the Center for Climate Change Law at Columbia Law School.

Energy: Abundant, Affordable, Reliable, Resilient

KENNETH P. GREEN

When it comes to energy and environment, the American people face the same challenge we have always faced: how to balance our need for abundant, affordable, reliable, and resilient flows of energy with our desire to protect the environment, and intelligently husband our natural resources.

Striking that balance, however, cannot be done in a situation where our leaders (and would-be leaders) are either ignorant of, or in denial of, the critical role that energy plays in human empowerment, opportunity, productivity, mobility, and competitiveness. We are, in fact, an energy civilization.

To be clear, this is not a purely partisan problem: both sides have their energy fallacies. On the left, there is the belief that renewables such as wind and solar power are ready to displace a significant fraction of our conventional energy supply, both technologically and economically. They are not, as the experiences of Europe (as well as our own renewable debacles such as Solyndra) make crystal clear. On the right, there is an ongoing love of nuclear power that borders on the fetishistic, given reams of analysis suggesting that nuclear power is neither economically nor environmentally beneficial.

Both the left and right wish to pick winners and losers in the energy marketplace; that is, when they're not calling for a nonsensical "all of the above" policy that calls for all forms of energy production regardless of cost. Both sides display an ignorance of how world energy markets work, and misrepresent the power of whatever policies they might bring to bear on things like

the world price of oil.

Here are a few questions that should be asked of our presidential candidates:

First, given the centrality of energy use in American society, what concrete steps will you take to lower the costs of energy, and increase its abundance and reliability?

Second, it is true that government support of basic research and development has promoted many technological breakthroughs. It is equally true that government support of applied R&D is generally a bad idea, displacing private investment and gambling with tax dollars. Will you limit government investment to basic R&D, and stop gambling with tax dollars to subsidize applied R&D at companies such as Solyndra?

Third, America's boom in unconventional natural gas production looks like a game-changing advance in our energy production and consumption. It is already displacing more-polluting forms of energy production, and lowering energy costs for consumers. Will you publicly instruct your EPA and other agencies to refrain from regulating the technology behind this boom (hydraulic fracturing) unless there is a clear and compelling risk to public health that outweighs the obvious benefits of facilitating a natural-gas-powered future?

Four, environmentalists wish to focus on forcing people to use less energy through "efficiency" and "conservation" measures that are little more than rationing. Do you support energy freedom for Americans, or do you believe that it is government's job to force people to use less energy?

Abundant, affordable, reliable, and resilient energy is vital to America's prosperity. We need leaders who both understand this, and will use rational means to facilitate its production.

Kenneth P. Green is a Resident Scholar at the American Enterprise Institute.

Energy Security and Technology Innovation

ANN R. KLEE

The next presidency of the United States must address the pivotal issue of energy — no issue is more important to our economic and security interests. After decades of environmental regulation, the United States is unquestionably a leader in environmental protection — with stringent programs to ensure clean water, clean air, and responsible management of waste. By contrast, we have no comprehensive energy policy, and certainly not one that recognizes the realities of the 21st century.

In the face of a Congress unlikely to enact comprehensive energy legislation, the question for the 2012 candidates must be: How will you and your administration articulate, and most importantly, secure our energy future? What policies will you implement using existing regulatory authority or partnerships with the states to promote the development of conventional and unconventional energy resources; how will you direct appropriate funding for innovation; how will you facilitate the necessary upgrades to our antiquated infrastructure? All of this can, and should be, accomplished in a manner that lowers the environmental impact and ensures efficient use of resources.

The emergence of unconventional gas offers one of many opportunities for the next administration to work with states to promote innovative technology, reduce greenhouse gas emissions, and grow the economy. In 2010, the shale gas industry supported more than 600,000 jobs; by 2035 that number is projected to exceed 1.6 million. Legitimate issues concerning potential impacts to aquifers, air emissions from equipment, produced water quality, and

chemical use must be addressed, but where states have stepped up, the federal role should be limited.

Approval of the XL Pipeline must also be a priority. The question should not be whether to import oil from Canada, but how to site and build the pipeline safely.

It's also time to make the smart grid a reality. The average voter is unlikely to ask the candidates about energy infrastructure — as Steve Jobs once said, "Consumers don't know what they want until we've shown them" — but we know that advanced electrical infrastructure and energy management systems are critical to accelerate the deployment of renewable energy technologies such as wind and solar, minimize energy loss in transmission, and maximize energy efficiency by the end user. This is not something that can be accomplished one state at a time; it requires federal leadership and can start with a step as modest as the secretary of energy delegating his authority pursuant to the 2005 Energy Policy Act to the Federal Energy Regulatory Commission for congestion corridor siting.

The president must encourage technology advancement by supporting fundamental R&D, protecting intellectual property rights, and removing trade barriers. He must provide direction for EPA to work collaboratively with the states and other federal agencies to promote, rather than stifle, energy technologies. And the next administration must recognize that it is in our national interest to deploy all fuel sources — clean coal, natural gas, nuclear, and renewables.

We are at a crossroad. The United States can continue to be a leader in the development and deployment of technology, a driver of innovation, or it can cede that role to others willing to execute policies that advance growth and new technology and, yes, environmental benefits.

Ann R. Klee is Vice President, Environment Health & Safety, for General Electric Co.

Water and Fracking Should Top the List

KATHERINE MCFATE

In the United States, we've been blessed with an abundance of natural resources. The quality and quantity of these resources have played a large role in the success of our nation. Nowhere is this more evident than in our fresh water supply.

The rivers, lakes, and underground aquifers in the United States provide 349 billion gallons of fresh water per day, to supply drinking water to the American people, irrigate our crops, and enable a wide variety of industry sectors to produce electricity and goods. Unlike at least 80 nations throughout the world, our country is not facing a widespread water shortage — yet.

The massive investment in natural gas extraction underway using hydraulic fracturing — also known as fracking — could change this. Fracking is a method of natural gas extraction that involves punching through layers of rock and then forcing large quantities of water, at high pressures, into the hole to fracture shale to release gas deposits from deep underground. It can take 2 to 10 million gallons of water to fracture a single drilling well in a deep shale bed, and this water is mixed with a combination of largely undisclosed toxic chemicals.

The process diverts enormous quantities of water from other uses (agriculture, ranching, human consumption) and makes that water unsuitable for other purposes. Even more alarming, the toxic chemicals used in fracking often contaminate surface water and groundwater. Once groundwater is poisoned, it's generally poisoned for a very long time.

While we think of water as a

renewable resource, it is not unlimited. People in the West and Southwest know this. It is not clear the natural gas industry does. With fracking, we may be trading short-term profits and energy stores for the long-term destruction of our water supplies.

Given all this, here are the questions to ask each of our presidential candidates: Would you require that all natural gas companies disclose the chemicals used in natural gas extraction, including fracking, so that local communities can better understand the potential long-term public health costs of hydraulic drilling? How will you ensure that drilling for natural gas does not lead to long-term damage or the permanent poisoning of our water supplies and land? Would you support requirements that natural gas extraction operations abide by the national standards of the Clean Water Act and the Safe Drinking Water Act to prevent surface and groundwater contamination?

Katherine McFate is President of OMB Watch.

Questions Are Easy; Answering Them Is Hard

GRANTA Y. NAKAYAMA

Your readers know first hand that environmental and energy policy affect our nation's health and economic competitiveness. However, polling consistently indicates "our" issues rank low on the list of voter concerns. Any discussion usually arises within the context of a larger debate over the economy, jobs, or government regulation.

The political discussion can disappoint. Candidates routinely pledge their support of a clean environment, clean energy, energy independence, and affordable energy. These same candidates routinely avoid discussing how to achieve these difficult and costly goals. Is it too much to expect a policy debate to break out during an important national election? How would the candidates respond to the following questions before an audience of environmental and energy practitioners?

Are EPA's efforts to use the Clean Air Act a necessary first step to demonstrate leadership and begin the difficult task of addressing climate change? Or are these efforts misguided due to technical uncertainty and the awkward fit between the statute and the global nature of this issue? Would you sign an international climate accord that does not include limits on emissions from major developing countries?

Is it realistic to set the National Ambient Air Quality Standards at the level with no adverse health effects for non-threshold pollutants (where the negative health impacts scale with exposure)? Wouldn't a literal interpretation of the Clean Air Act mean the NAAQS standard for such pollutants should be zero?

Should the cost of implementing a NAAQS be considered when developing the standards, or is the goal of protecting human health a universal value not for sale?

Should the Clean Water Act's jurisdiction be clarified legislatively? Or should the Supreme Court determine the CWA's jurisdictional reach case by case? What is the proper demarcation of federal jurisdiction over water quality?

Should the Toxic Substances Control Act be reauthorized? Or should additional chemical regulation proceed on an individual basis through targeted state and federal legislation?

Should EPA classify coal ash as a hazardous waste?

Should the federal gas tax be raised? Should the United States continue to rely on the Corporate Average Fuel Economy system to dictate motor vehicle efficiency or allow a free market to decide?

Will you allow the Keystone pipeline to be built? Or is extraction of the tar sand oils and the pipeline path too environmentally risky?

Should hydraulic fracking be regulated by EPA or left to the states?

After Fukushima, should the United States press forward with advanced nuclear reactors? What is your solution for storing the growing volume of nuclear wastes?

Should the U.S. fund specific alternative energy technologies in the wake of Solyndra? Would the government's resources be better directed towards basic research?

With the large federal deficit what will be your policy with respect to sales of public lands?

Should EPA be abolished, remain an independent agency, or be elevated into a department with permanent cabinet status?

Granta Y. Nakayama is Partner at Kirkland & Ellis LLP. He was formerly EPA Assistant Administrator for the Office of Enforcement and Compliance Assurance.

Jobs vs. Public Health Is A False Dilemma

JACQUELINE PATTERSON

Climate change is happening. Carbon dioxide emissions come largely from fossil fuels. Burning them also emits mercury, arsenic, lead, and other toxins, which are responsible for birth defects, respiratory illnesses, heart disease, and learning challenges. Climate change causes sea level rise, which displaces communities, decreases agricultural yields, and increases the number of severe storms.

With these facts established, how have we allowed climate change to become a partisan issue? How have we reached the point where members of one party deny that it exists, while members of another party are often afraid to mention it?

As I consider the upcoming election, I need those vying for my vote to make bold, yet pragmatic commitments to addressing an issue that is critical to the wellbeing of the world and particularly to those who live at the margins of society.

Instead, many decisionmakers appear to be following a false narrative that says that preserving our environment and the health of our communities will kill jobs. I take exception.

First, studies show that a shift to energy efficiency and safe, clean energy production is not an end to work, but a transition, and new jobs will spring up in the communities where such energy is produced. There are many, many jobs waiting to be created in the green energy sector, and green-collar workers' benefit packages will be supplemented by increased longevity and a higher quality of life.

Second, such a simplistic analysis falsely pits the value of one group's wellbeing over another's. To say

that one should keep a coal plant burning in order to save the jobs of those working inside suggests that the income earned by those workers is more important than the health of the workers, the communities being polluted, and the millions who stand to be affected by extreme weather, sea level rise, and decreased food production.

It is a moot point because no such choice is required.

With our technology, our brilliant members of academia, and the immense resources of this great nation of ours, declaring communities and countries to be expendable while we cling to old technologies and false notions about job loss is criminal.

Between 2009 and 2010 jobs in solar energy doubled and opportunities increased significantly in wind, geothermal, and energy efficiency. And the expansion continues. With political will, we can have an energy portfolio that works for all.

I will use my vote in 2012 to demand that my elected officials stop playing political games with the lives of so many and pursue the bounty of viable options for energy efficiency, energy generation, and economic development by safe and sustainable means. When next I go to a candidate forum I will be asking:

"What are your plans to fulfill the moral obligation you have as the leader of the world's largest superpower to address the scientifically proven existence of climate change?"

"If elected, how will you ensure that this becomes a bipartisan issue?"

"If elected, how will you ensure that we as a nation make aggressive strides to ensure that our energy production does the least harm and upholds the civil and human rights of all, workers and communities alike?"

Jacqueline Patterson is Director of the NAACP Environmental and Climate Justice Program.

We Can Be Prepared For Our Energy Future

MARK UDALL

“Regulatory certainty.” “American energy.” “All-of-the-above energy strategy.” These are ideas we’ve heard from candidates talking about their energy proposals on the presidential campaign trail. It’s a critical topic — our national energy strategy is integral to our economic future. In order to win the global economic race, we must seize the opportunity before us to become a global clean energy leader. And that’s why the question I’d like to hear the candidates answer is whether they would support a national Renewable Electricity Standard.

The concept of an RES, which would require a portion of our electricity to be produced from renewable sources, has caught on across the country. My home state of Colorado was on the cutting edge. Almost a decade ago, I led a bipartisan campaign for a ballot measure that would create a statewide standard requiring that 10 percent of our electricity come from renewable sources by 2015. At the time, skeptics decried the standard as unrealistic and costly. But voters approved the measure overwhelmingly, and by 2010, it was so successful that the skeptics had been won over, and the state had upped the standard to 30 percent by 2020.

Today, more than half of all states have an RES. These standards have boosted economies across the country, fueling the design, manufacture, and installation of clean energy technologies, creating jobs, and reducing harmful emissions.

I know that success can be replicated on a national scale. A national RES would strengthen America’s all-of-the-above energy strategy with

no increase in government spending, while greatly improving market certainty for the clean-tech industry and the thousands of jobs they create.

In the last Congress, a bipartisan group of 35 senators introduced a modest but promising bill that would have set a national RES of 15 percent by 2021. Although I believe a more ambitious 25 percent by 2025 standard would better boost our burgeoning clean energy economy, this bill would have been a step in the right direction.

We’re hearing a lot right now about the need for more help for traditional energy sources, particularly oil and gas. I agree we need to continue responsible development of our nation’s oil and gas, but it only makes sense that as we deplete finite natural resources we must simultaneously look to our energy future. We need a balanced policy that represents the realities of our current energy needs while being honest about our energy future and the urgent need to reduce carbon emissions.

We also need a policy that allows Americans to do what we do best — innovate to solve problems and sell that technology to the rest of the world. We can’t afford to wait. Countries like China, Germany, and India are rapidly developing solar, wind, and geothermal technologies. And they are creating jobs and expertise while we debate how to proceed.

The fact of the matter is that the 21st century will bring massive changes in our energy supply whether we are ready or not. We will not have a choice on that matter, but we can choose to be prepared when that time comes by kick-starting our renewable energy future today with a national RES.

Mark Udall (D-Colorado) serves on the Senate Energy and Natural Resources Committee.

Energy the Focus of the Country’s Economic Needs

CHRISTINE TODD WHITMAN

With high unemployment rates, a burgeoning federal debt, and a country still in recession, economic topics have largely overshadowed environmental policy discussions in the lead up to the 2012 election except as a throw-away for all that is wrong with the country. To ignore or demonize environmental issues is to both the candidates’ and country’s peril. When properly implemented, environmental policy can foster economic growth.

With additional debates for the Republican candidates on the horizon in a few weeks, there exists a prime opportunity for future debate moderators to bring environmental matters into the campaign discussion. Three questions would help voters assess the remaining candidates’ environmental policies in an area of major concern to the country — our energy future:

How would your administration meet our growing energy needs, and balance this demand with environmental protection?

Will nuclear energy play a role in your administration’s proposed energy mix?

How would you encourage energy conservation?

Providing reliable, affordable energy is one of the primary challenges facing our nation. By 2035, America will need 24 percent more power than it consumes today. We need to do much better with efficiency and with renewables, but we will still need power that is available 24/7. Even with conservation efforts, Americans will continue to increase their use of electricity, and we should want it to be affordable and clean.

In addressing both the first and second questions, nuclear energy is one area where I would hope the candidates for president could agree. Nuclear energy provides a reliable, carbon-free source of electricity that costs less per kilowatt-hour than all other major sources of electricity, making it attractive for federal and household budgets alike as well as positive for the environment.

As we examine our economy, one thing is clear: we simply are not creating enough jobs to keep pace with population growth. We continue to lose jobs in many industries to lower cost labor markets. In addition to its cost and environmental benefits, nuclear power brings significant job creation. Each new reactor requires as many as 2,400 workers in peak construction periods, and once operable, 400 to 700 full-time positions need to be filled. These jobs pay substantially more than average salaries, and these jobs cannot be sent offshore. All told, each nuclear plant generates an estimated \$430 million in a year in total output for the local community.

Nuclear power is just one example of where sound policies can benefit consumers, the environment, and the economy. It is by no means the only answer to our environmental challenges, but it should be part of the mix. Unfortunately, environmental issues are not often considered the top concerns of voters, but the upcoming Republican debates as well as those that will be held this fall between President Obama and the other nominees provide an opportunity for voters to examine these vital issues. For the sake of both our environment and our economy, we cannot afford to ignore — or allow the candidates to ignore — environmental policy matters any longer.

Christine Todd Whitman is the President of the Whitman Strategy Group. She was Governor of New Jersey and Administrator of the Environmental Protection Agency.

Will You Balance Conservation and Business Needs?

DAVID YARNOLD

The true wealth of a nation is reflected in the places it has set aside for wilderness and wildlife. Public land and parks enhance the quality of life for communities, help generate tourism revenue, and create local jobs. Annually, outdoor recreation, including bird watching, drives a total of \$730 billion, supporting 6.5 million jobs, or 1 of every 20 jobs in the United States. But it does more than that. Connecting with nature reduces obesity and stress, and instills pride and stewardship of our great natural heritage.

Author Richard Louv has described the burgeoning effects of Nature Deficit Disorder, including attention disorders and depression, for children and teens across the country. What will you tell your grandchildren you did to preserve America's natural resources for them?

Last spring I visited Kearney, Nebraska, to see the famous Sandhill Crane migration. When they took off at dawn — twenty thousand of them — it was just deafening and made the hair on my arms stand up! So if I do have a sound in my soul now, it's the Sandhill Cranes, whose Nebraska habitat would be destroyed by the Keystone Pipeline. At Audubon we know that where birds thrive, you have clean water and clean air, and what's good for birds is good for people.

To the candidates, tell us about one experience that formed your relationship with nature.

Then, please tell us whether you would allow construction of the Keystone XL pipeline.

There are practical solutions to many conflicts between development and conservation. For ex-

ample, Audubon has worked closely with the Department of the Interior and leaders in the wind industry to reach a consensus on new guidelines that will allow renewable energy development to move forward, while safeguarding wildlife and wild places. What are the most important factors you'd consider in evaluating proposed rules or legislation that affect both business and natural resources?

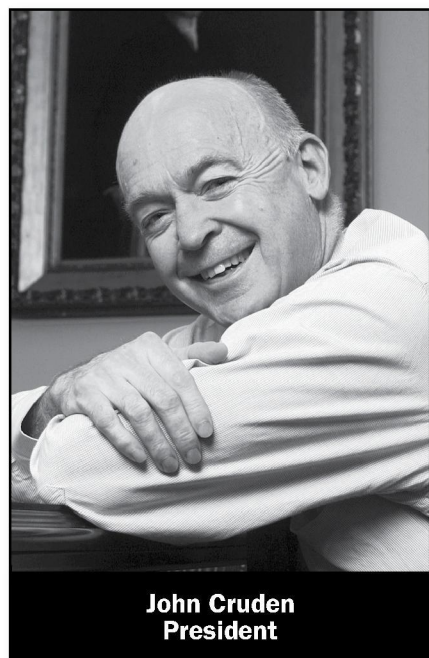
The Environmental Protection Agency plans to take one step toward curbing greenhouse gas emissions from power plants in the coming weeks when it proposes standards for future power plants. But plans to require existing plants to cut their emissions remain murky, despite the administration's stated intentions. Do you support greenhouse gas emission regulations for existing plants?

The Arctic National Wildlife Refuge, which was established to preserve unique wildlife, wilderness, and recreation, is an exceptional example of an unspoiled wilderness. We all know what a disaster the Gulf oil spill was; allowing drilling in the biological heart of a protected national wildlife refuge with rare polar bears, caribou, and millions of birds would risk an ecological catastrophe. Would you permit drilling in the Arctic National Wildlife Refuge?

David Yarnold is President and CEO of the National Audubon Society.

Closing Statement

Why Is the Environment the Invisible Issue at the Polls?



John Cruden
President

As I write this column we are in the midst of a quintessentially American process, the every-four-year selection of presidential candidates for both parties. After watching endless debates — there have been about 20 thus far — I’ve come to the conclusion that sophisticated questions are often avoided and answers relegated to bumper-sticker phrases. This has been especially true of environmental policy. As to the candidates’ stump speeches, there is a paucity of comment on environment, energy, and natural resources. That is not unusual. In most presidential campaigns the environment has been the invisible issue, and it has been fading ever more over time. This, despite polls that consistently show that Americans are in favor of strong measures to protect their neighborhoods and the natural environment.

ELI is dedicated to creating “a healthy environment, prosperous economies, and vibrant communities founded on the rule of law.” In that regard, our strategic plan lists as a value statement “truth telling

about the environment without regard to partisan implications.”

With that sentiment as a guiding light, this issue of *The Environmental Forum* features 12 leading experts, representing the entire spectrum of informed thought. Each expert was asked to identify what issues in energy, environment, and natural resources should be discussed during the campaign. They were then asked to identify questions that presidential candidates should be asked in the debates, many more of which are expected before the November election.

The resulting debate on the debates is published in this issue’s FORUM section (pages 46–55). I believe you will find the wide range of thought both illuminating and challenging.

The suggested questions range from former Governor and EPA Administrator Christine Whitman asking whether a candidate supports the expansion of nuclear power, which she sees as less expensive and less polluting than competing energy sources, to Senator Mark Udall declaring that we need “a policy that allows Americans to do what we do best — innovate to solve problems and sell that technology to the rest of the world. David Yarnold, president and chief executive officer of the National Audubon Society, and Ann Klee, vice president for environment, health, and safety of General Electric Company, both want candidates to address the Keystone XL oil pipeline from Alberta to the Gulf of Mexico refineries.

Professor Don Elliott’s thoughtful piece focuses on the need to set priorities, while Jacqueline Patterson of the NAACP asks, “If elected, how will you ensure that we as a nation make aggressive strides to ensure that our energy production does the least harm and upholds the civil and

human rights of all, workers and communities alike?” Meanwhile, Kenneth P. Green of the American Enterprise Institute lists five excellent questions, starting with: “What concrete steps will you take to lower the costs of energy, and increase its abundance and reliability?” Former House Science Committee Chair Sherwood Boehlert asks that the candidates “sign on to a set of fundamental consensus principles to establish the parameters of the debate,” and he goes on to suggest the principles.

ELI is going to use this “debate on the debates” to advance environment issues during the presidential election campaign. We intend to use this FORUM discussion in several different ways. First, we will convene subject matter experts, including some of the FORUM authors, to further identify and elaborate on the most pressing questions that we believe should be addressed. Second, ELI will then provide those questions to the presidential candidates and the individuals moderating their debates.

We believe strongly that the nation is best served by clear questions and an opportunity for the candidates to prepare informed, thoughtful answers that may well shape policy in a future administration. As Representative Boehlert says, to do otherwise is to see environmental policy as divisive and polarizing, ignoring areas of public consensus and of national need.

Constance C. Westfall
Strasburger & Price, LLP

For more than 26 years, Constance (“Connie”) Westfall has represented industrial and institutional clients on a wide range of environmental matters. Since 1998 Connie has been a Partner in the Strasburger & Price, LLP Environmental Practice Group, where she is currently Senior Counsel.

Connie assists industrial facilities to develop, implement and assess their permitting and compliance strategies. She has represented petroleum refineries, steel manufacturing facilities, and commercial hazardous waste facilities in auditing, enforcement matters and in the investigation and remediation of contaminated soil and groundwater. Connie has litigated an extensive variety of environmental legal issues before federal and state agencies and courts and currently serves as Co-Chair of the U.S. Oil Recovery Site PRP Group, a federal Superfund Site.

Connie is a past chair of the State Bar Environmental and Natural Resources Law Section. She frequently writes and speaks on environmental topics, including: “*The Long and Winding Road: The EPA’s Amendments to the Oil Spill Prevention, Control and Countermeasures Rules*, 74 Tex. Bar J. 382 (2011). Connie is one of the contributing authors to the recently published ESSENTIALS OF TEXAS WATER RESOURCES treatise.

Connie received her Juris Doctor, with Honors, from the University of Texas School of Law and a Bachelor of Science, with Highest Honors, from the University of Texas at Austin. She served as a Judicial Clerk to the United States Court of Appeals, Fifth Circuit. Connie has been recognized in *Who’s Who in America* and *Who’s Who in American Law*.

Barry Smitherman was appointed to the Railroad Commission of Texas in July 2011. Barry, a fourth generation Texan, has a unique blend of private and public sector experience and has long served the people of Texas with honor and distinction.

After growing up in Highlands, Texas; a working class neighborhood on the east side of Houston, Barry had a distinguished career in business. In 2002, Barry began his career in public service by becoming a prosecutor in the Harris County District Attorney's office where he prosecuted a wide variety of criminal cases.

In 2004, Smitherman was appointed to the Public Utility Commission, where in 2007 he became Chairman. At the PUC, Barry managed with a keen eye on efficiency, ending unnecessary expenditures and programs, while managing a staff that crafted and oversaw one of the fastest-growing electric markets in the world. By the time Barry left the PUC, he had cut the budget and cut staffing levels, all while increasing the agency's performance.

The move from the PUC to the RRC is the next step forward for Barry to exercise his proven, free-market principled leadership within the energy sector. Since his appointment at the Railroad Commission, Barry has instituted an agency-wide review of agency processes and procedures with an eye towards increasing efficiency, promoting transparency, and being more responsive to the needs of Texans. This review has already resulted in a decrease in administrative personnel, an increase in field personnel and inspectors, and the initiation of a complete overhaul of the Commission's enforcement procedures.

Barry graduated from Texas A&M University receiving a BBA summa cum laude. He received his J.D. from The University of Texas School of Law. Afterward he received a M.P.A. at Harvard University and was awarded the first Joel Leff Fellowship in Political Economy by the Kennedy School of Government.

Barry currently serves as Texas' representative on both the Interstate Oil and Gas Compact Commission and the Southern States Energy Board, and as Vice Chair of the National Association of Regulatory Utility Commissioners' Gas Committee. He is on the Visiting Committee of the Bureau of Economic Geology with the Jackson School of Geosciences at The University of Texas at Austin, The University of Texas School of Law Center for Global Energy, International Arbitration, and Environmental Law, and the Eanes Education Foundation Advisory Board. Barry has previously served on the Department of Energy's Electricity Advisory Committee and as an Adjunct Professor of Public Administration at St. Thomas University.

Barry and his wife live in Austin with two of their four wonderful children. Their two oldest sons attend Texas A&M University. The Smithermans are active members of Lake Hills Church.

Charles G. Groat

Chip Groat is Director of the Center for International Energy and Environmental Policy, Associate Director of the Energy Institute, and Director and Graduate Advisor of the Energy and Earth Resources Graduate Program. He holds the John A. and Katherine G. Jackson Chair in Energy and Mineral Resources in the Department of Geological Sciences, Jackson School of Geosciences, and is Professor, LBJ School of Public Affairs at The University of Texas at Austin. He assumed these positions in June 2005 after serving 6 ½ years as Director of the U.S. Geological Survey, having been appointed by President Clinton and retained by President Bush. He served as interim dean of the Jackson School of Geosciences at UT from July 2008 to August 2009. On February 1, 2012, he was appointed as the President and CEO of The Water Institute of the Gulf, a not-for-profit research corporation dealing with deltaic and coastal systems.

Prior to his position with the U.S. Geological Survey, he was Associate Vice President for Research and Sponsored Projects at The University of Texas at El Paso following a term as Director of the Center for Environmental Resource Management and Professor of Geological Sciences there. His previous experience includes Associate Director and Acting Director of the Bureau of Economic Geology and Associate Professor of Geological Sciences at The University of Texas at Austin; Chairman of the Department of Geological Sciences at The University of Texas at El Paso; State Geologist and Director of the Louisiana Geological Survey; Assistant to the Secretary of the Louisiana Department of Natural Resources administering the Coastal Zone Management and Coastal Protection programs; Professor of Geology and Geophysics and Director of the Center for Coastal, Energy and Environmental Resources at Louisiana State University; and Executive Director of the American Geological Institute.

He has been a member of the National Research Council Board on Earth Sciences and Resources and the Outer Continental Shelf Policy Board. He is a past President of the Association of American State Geologists and of the Energy Minerals Division and Division of Environmental Geosciences of the American Association of Petroleum Geologists.

His degrees in geology are from the University of Rochester (A.B.), University of Massachusetts (M.S.), and The University of Texas at Austin (Ph.D.)

His current interests focus on advancing the role of science and engineering in shaping policy and informing decisions, and on ways to increase the integration of the science disciplines as a means of improving the understanding of complex resource and environmental systems.



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Eddie Lewis, who joined the firm in 1993, is a partner in Fulbright & Jaworski L.L.P.'s Houston office. He focuses his practice in the environmental law area, including environmental litigation, enforcement, compliance counseling, remediation, permitting, auditing, and transactional matters. Prior to joining the firm, Eddie worked as a chemical engineer. His practice frequently involves legal issues in which complex technical issues are at the forefront.

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- "Leading Environmental Attorneys in Texas," *Chambers & Partners*
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- Houston-Galveston Area Emission Reduction Credit Organization, Director
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- 1992 - J.D., with honors, The University of Texas School of Law
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LEGAL ISSUES FACING HYDRAULIC FRACTURING OPERATIONS

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Legal Issues Facing Hydraulic Fracturing Operations

I. INTRODUCTION

With oil and natural gas exploration and production experiencing a boom in the United States, hydraulic fracturing activities have increasingly found themselves in the crosshairs in many different arenas, ranging from the news media to the courtroom, from the regulatory realm to the entertainment industry. Such developments in the area have involved the usual players, including state agencies with jurisdiction over the environment or oil and gas-related operations, federal agencies such as the U.S. Environmental Protection Agency (“EPA”), as well as environmental organizations that bring media attention to the issues, and private citizens bring lawsuits under a myriad theories. Throughout these developments, one interesting trend that is relatively new to the environmental field has been the emergence of local governmental entities, such as municipalities and water conservation districts, which have attempted to become the newest crop of oil and gas regulators.

While certain aspects of oil and gas activities traditionally have been somewhat spared from the full weight of many of the primary federal environmental protection statutes—for example various provisions of the Clean Water Act (“CWA”), Resource Conservation and Recovery Act (“RCRA”), and Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”)—to say that the oil patch has been unregulated when it comes to air, water, and waste issues could not be further from the truth. Nonetheless, perception, as opposed to reality, is often a driving force behind many regulatory developments. With the prevalence of hydraulic fracturing operations and the media scrutiny that has followed the industry as a result, combined with the fact that these various environmental media—air, water and waste—are all touched by the technique, public attention and attempts to expand regulation of the industry seem far from over. The primary legal developments affecting hydraulic fracturing operations are discussed in turn.

II. FEDERAL REGULATION OF HYDRAULIC FRACTURING

By far, the activity within the oil and gas production realm that has garnered the most attention in the past several years has been hydraulic fracturing—or fracking (or even fracing). Hydraulic fracturing is a production service that involves injecting a fluid mixture—comprised primarily of water and sand—into a targeted geologic formation thousands of feet below the surface at pressures sufficient to create small fractures in the rock formations. These fractures are held open by the sand or other “proppants” used in the “frac fluid” and allow the oil or natural gas to more effectively flow out from the hard rock formation and into the wellbore. Small amounts of chemical additives are also found in frac fluids to enhance the fluid performance.

Fracking has been attributed as a technological key to the recovery of unconventional oil and gas resources like shale, coalbed methane, and tight sands. While other technologies (like horizontal drilling) have played a role in unlocking more hydrocarbons from the shale formations in which they are trapped, the refinement of hydraulic fracturing techniques has been among the most important. It is estimated that up to 90% of all oil and gas wells now utilize hydraulic fracturing during the well completion.

One of the primary environmental concerns regarding to hydraulic fracturing is the technique’s impact on drinking water quality. Federal, state, and local governments are becoming increasingly concerned that the practice may expose underground sources of drinking water (“USDW”) to the chemical compounds in the fluids used in process. Moreover, hydraulic fracturing operations have also been implicated in the debate over water usage issues, waste disposal practices, and air emissions allowances.

A. Federal Safe Drinking Water Act (“SDWA”)

The primary Federal statute that potentially regulates the actual injection of hydraulic fracturing fluids is the Safe Drinking Water Act (“SDWA”), 42 U.S.C. §§ 300f to 300j-26. This statute is the source of

Federal authority for regulating the injection of fluids into the subsurface, although the SDWA generally directs the EPA to delegate implementation and enforcement of the Underground Injection Control (“UIC”) program to the States as appropriate. *Id.* § 300h-1.

1. *Current Scope of SDWA Permitting Authority*

SDWA directs the EPA to promulgate regulations—the UIC program—that will prevent underground injections which endanger drinking water sources. *Id.* § 300h(b)(1). The statute defines “underground injection” as “the subsurface emplacement of fluids by well injection.” *Id.* § 300h(d)(1). Importantly, due to amendments included in the Energy Policy Act of 2005, SDWA exempts from the definition of “underground injection” fluids or propping agents (other than diesel fuels) injected pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities. *Id.* § 300h(d)(1). Thus, hydraulic fracturing is not presently regulated under the SDWA *unless* diesel fuel is utilized in the injection fluid mixture. As a result, the U.S. EPA does not have the authority to directly regulate the vast majority of hydraulic fracturing operations in the United States, *i.e.*, those not involving diesel fuel.

Use of Diesel Fuel in Hydraulic Fracturing Is Regulated

In the event that diesel fuel is utilized as a component in hydraulic fracturing fluids, the EPA has stated its intention that such operators or service providers must obtain a Class II¹ injection well permit prior to performing the operation.² Current UIC regulations for Class II wells refer to requirements applying to “owners or operators.” *See e.g.*, 40 C.F.R. § 144.28(e) (requirements for Class I, II and III wells authorized by rule). Under this program, however, the operator is not necessarily an “operator” in the traditional oil and gas sense, but rather because the oil/gas well *is* the Class II well, the service provider performing the fracturing may also be the operator of the well.

Thus, if Class II injection well permitting obligations are triggered, owners/operators become subject to a series of general requirements including providing notice to land owners/tenants within a one-quarter radius of the intent to apply for a Class II permit, which must provide a description of planned injection activities, the name and depth of injection zone, the maximum pressure and volume, and the fluid to be injected. 40 C.F.R. § 147.305(f). Operations would also be subject to technical requirements aimed at protecting USDWs, including meeting casing and cementing specifications, among others. *Id.* § 147.305(b), (c), and (d).

Defining ‘Diesel Fuel’

A substantial debate had arisen over what “diesel fuel” means in the context of the SDWA. While industry has generally urged that EPA’s pending “guidance” on use of diesel fuel should define the

¹ Class II wells are wells that inject fluids (1) which are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production and may be comingled with wastewaters from gas plants that are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection; (2) for enhanced recovery of oil or natural gas; and (3) for storage of hydrocarbons that are liquid at standard temperature and pressure. 40 C.F.R. § 144.6. Under current regulations, operators of a new Class II well must obtain a permit. *Id.* §§ 144.11; 144.31. Permit conditions include maximum injection volumes and/or pressures, demonstration of financial responsibility, and demonstration of mechanical integrity. *Id.* § 144.52.

² After considerable debate and litigation, in early 2011 EPA clarified on its website that it will require those using diesel in hydraulic fracturing fluid to obtain a Class II well permit: “While the SDWA specifically excludes hydraulic fracturing from UIC regulation under SDWA § 1421 (d)(1), the use of diesel fuel during hydraulic fracturing is still regulated by the UIC program. **Any service company that performs hydraulic fracturing using diesel fuel** must receive prior authorization from the UIC program.” *See* EPA, http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydroreg.cfm (last visited Jul. 7, 2012) (emphasis added). On February 23, 2012, EPA settled litigation brought by the Independent Petroleum Association of America and U.S. Oil & Gas Association concerning this issue. *IPAA v. EPA*, No. 10-1233 (D.D.C. filed Aug. 12, 2010).

substance narrowly as the two chemicals identified by the Chemical Abstract Service (“CAS”) number system as diesel, environmentalists and some members of Congress have asserted that EPA should define diesel broadly to include any petroleum-derived fuel that could power a diesel engine or any substance that contains benzene, toluene, ethylbenzene, or xylene (collectively referred to as “BTEX”).

Last fall, several members on the House Committees on Energy and Commerce and Natural Resources sent EPA Administrator Jackson a letter urging the agency to craft a definition of diesel fuel that is not only “broad enough to protect human health” and the environment, but also provides consistency to industry. At the same time, several industry blogs indicated that the Acting Director of EPA’s Drinking Water Protection Division suggested at the Ground Water Protection Council’s annual forum that industry should expect a broad definition of diesel fuel in the draft guidance. A broader definition of diesel fuel could result in increased regulation of hydraulic fracturing by triggering the need for a Class II well permit when injecting a wide array of petroleum substances as part of fracturing activities.

However, in early May 2012, EPA finally released its proposed permitting guidance concerning the use of diesel fuel in fracturing operations. 77 Fed. Reg. 27,451 (May 10, 2012). This proposed guidance clarifies that when six specific petroleum substances (defined by CAS number) are injected, these activities must be permitted as Class II wells under the UIC Program. On July 3, 2012, EPA extended the public comment period on the proposed permitting guidance until August 23, 2012.

While most operators and service companies have stopped using diesel fuel in their fracturing operations, some commentators believe EPA’s new permitting guidance could become the basis of regulating all such fracturing activities, particularly if Congress ever passed the “FRAC Act” removing the exemption under SDWA (further described below).

2. *EPA’s Emergency Powers under SDWA*

Despite the SDWA’s exclusion of hydraulic fracturing from the definition of underground injection, EPA believes that it has the authority under the SDWA to issue an emergency order to any company the EPA considers to be endangering human health or welfare. 42 U.S.C. § 300i.

Notably, on December 7, 2010, EPA Region 6 exercised this authority by issuing an emergency “imminent and substantial endangerment” order to Range Resources Corp., alleging that the operator had contaminated two water in Parker County, Texas, in the Barnett Shale formation wells with methane and benzene. The order required the company to provide clean drinking water to the affected residents and begin to remedy the problem within forty-eight hours. Although the order alleged that improper cementing of the well—not injection of hydraulic fracturing fluids itself—caused the gas leakage, the action taken demonstrated that EPA is willing to use its emergency powers whenever it believes oil and gas activities threaten a USDW. Range challenged the order on the basis that its actions did not cause the methane and benzene to become present in the wells. *E.g., Range Resources Corp. et al. v. U.S. EPA*, No. 11-60040 (5th Cir. filed Jan. 20, 2011). In January 2011, the United States also initiated an enforcement action against Range for alleged failure to comply with the emergency order; this action was stayed by the district court pending Range’s appeal in the Fifth Circuit. *EPA v. Range Resources*, No. 3:11-cv-00116-F (N.D. Tex., filed Jan. 18, 2011). On March 30, 2012, without explanation, the EPA withdrew its emergency order, causing the enforcement action and Range’s appeal to become moot.

EPA Region 8 issued a similar Emergency Administrative Order to three operators: Samson Hydrocarbons Company (n/k/a SGH Enterprises, Inc.), Murphy Exploration & Production Company-USA, and Pioneer Natural Resources USA, Inc. The Region 8 Order alleged contamination in the East Poplar oilfield in Roosevelt County, Montana, which is within the boundaries of the Fort Peck Indian Reservation. This Region 8 Order specifically mentioned activities including “secondary recovery injection wells” which may refer to hydraulic fracturing operations. The companies filed Petitions for Review of the Region 8 Order in the Third Circuit Court of Appeals. *SGH Enters., Inc. f/k/a Samson Hydrocarbons Co. v. U.S. EPA*, Case No. 11-1027; *Murphy Exploration & Prod. Co.-USA v. U.S. EPA*,

Cause No. 11-1042; *Pioneer Natural Res. USA, Inc. v. U.S. EPA*, Cause No. 11-1044. Like with the Range Resources matter in, EPA withdrew this emergency order, rendering the challenges moot. *SGH Enters., Inc., et al v. EPA*, Cause No. 11-1044 (3d Cir. dismissed Mar. 28, 2012).

3. *EPA Study on Impact of Hydraulic Fracturing on Drinking Water*

During the second half of 2010, EPA issued “voluntary” information requests to nine leading hydraulic fracturing service providers in anticipation of a comprehensive study of the potential risks associated with the process (“EPA Study”). The task of conducting such a study was identified in the Fiscal Year 2010 budget report of the U.S. House of Representative Appropriation Conference Committee.

In describing the EPA Study on its website, EPA notes that the public has “increasing concerns about its potential impacts on drinking water resources, public health, and environmental impacts in the vicinity of these facilities.”³ Two primary areas of concern expressed about fracking are the potential for groundwater contamination and the amount of water used in the process.

In November 2011, EPA released its peer-reviewed Final Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources (“Final Study Plan”), which focuses on four topics:

- (1) the consumption of water in hydraulic fracturing operations and the impact of hydraulic fracturing on the drinking water supplies,
- (2) the addition of hydraulic fracturing chemicals into water and the potential for spills of the mixture at the well site to impact drinking water,
- (3) the injection of hydraulic fracturing fluids into the Earth’s subsurface and the potential for contaminants to migrate from hydraulic fracturing fluid into USDW, and
- (4) flowback and produced water which returns to the surface after hydraulic fracturing is completed, and the impact of flowback and produced water on drinking water.

EPA has announced seven locations for case studies in different formations across the nation in order to obtain pertinent information about the potential impacts:

- Haynesville Shale – DeSoto Parish, LA
- Marcellus Shale – Washington County, PA
- Bakken Shale – Killdeer and Dunn Counties, ND
- Barnett Shale – Wise and Denton Counties, TX
- Marcellus Shale – Bradford and Susquehanna Counties, PA
- Marcellus Shale – Washington County, PA
- Raton Basin – Los Animas County, CO

EPA is scheduled to release interim reports of its findings by the end of 2012, with final reports to be released beginning in 2014.

Ultimately, industry should anticipate that the interim and final results of the EPA Study could be used by EPA, Congress, and other entities to justify new or additional regulation of various aspects of hydraulic fracturing. In fact, the EPA’s Final Study Plan identifies potential new requirements that EPA could envision imposing on such operations, including specifications for well design, construction and siting; hydraulic fracturing operations and the constituents of hydraulic fracturing fluids; and well maintenance

³ EPA, Hydraulic Fracturing, <http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm> (last visited July 7, 2012).

and abandonment.⁴ Additional potential regulatory outcomes of the EPA Study with respect to consumption and disposal of water are discussed below in the subsection titled “Regulation of Water Usage and Disposal in the Course of Hydraulic Fracturing.”

Potential Regulation of Well Design, Construction, and Siting

Well Design and Construction—EPA believes that proper well design and construction play a major role in preventing contamination of USDW.⁵ See Final Study Plan at 13. According to EPA, flaws in casing or cementing can allow fracturing fluids to seep into near-surface aquifers, causing contamination. As a result, if the EPA Study concludes that mandates are needed to prevent migration of hydraulic fracturing fluids to near-surface aquifers, EPA may attempt to impose additional requirements on oil and natural gas operators and/or service companies, including well design standards and testing of well integrity. While operators may be the likely direct targets of such potential reforms, in practice, compliance with such measures may fall to the services providers that actually perform the work.

Well Siting—EPA also appears to be concerned that pre-existing subsurface faults and fractures make predicting the location and length of fractures difficult. As a result, EPA may require oil and natural gas operators to take preexisting water wells, hydrocarbon wells, other injection wells, and underground mines into account when planning a hydraulic fracturing project. Specifically, EPA may require the operator to follow certain practices to ensure that hydraulic drilling fluids do not migrate through pre-existing faults and fractures to USDW.

The EPA Study results may also cause EPA to attempt to require the operators and/or service providers to consider the naturally occurring substances in the targeted hydrocarbon foundation and the chemical and/or biological reaction that such substances may have with the selected drilling fluid. Thus, if such reactions increase the chance that hydraulic fracturing fluids will migrate through the subsurface to USDW, then EPA may require the driller to take these conditions into account.

Potential Regulation of Hydraulic Fracturing Operations and Fluid Constituents

According to the Final Study Plan, EPA believes that current hydraulic fracturing practices performed by service companies may lead to the contamination of USDW with hydraulic fluids. As a result, EPA may impose additional requirements on the hydraulic fracturing operation itself. For example, EPA may require that surface injection pressure, slurry rate, proppant concentration, fluid rate, and proppant rate be continuously monitored during the hydraulic fracturing process to determine if the hydraulic fracture is operating as intended. See Final Study Plan at 34. EPA may require that models be used during the fracturing process to make real-time adjustments to the fracture design. *Id.*

⁴ In some cases, the potential requirements discussed below already apply to Class II wells. Because oil and natural gas drilling operations using hydraulic fracturing are currently excluded from the regulations, such wells are not Class II wells. However, if Congress were to simply repeal the exemption and regulate hydraulic fracturing wells as Class II wells, some of the requirements discussed would apply automatically by regulation. For example, current regulations require that “injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure that the pressure during injection does not initiate new fractures or propagate existing fractures in the confining zone adjacent to the USDWs. In no case shall injection pressure cause the movement of injection or formation fluids into an underground source of drinking water.” 40 C.F.R. § 146.23(a)(1).

⁵ Throughout the Final Study Plan, EPA references American Petroleum Institute (“API”) standards, which are generally regarded as voluntary best management practices in the oil and natural gas drilling industry. In at least one past rulemaking by another United States agency, the Bureau of Ocean Energy Management, Regulation and Enforcement (“BOEMRE”), which regulates offshore drilling on the United States Outer Continental Shelf, the agency took API standards and transformed them from voluntary guidelines to regulatory requirements. Although there is no guarantee that EPA would approach regulation of hydraulic fracturing in the same way, BOEMRE’s actions signal a trend among regulatory agencies in the United States to adopt voluntary industry best management practices as mandatory requirements.

Moreover, in order to collect real-time data regarding the location of the injected hydraulic fracturing fluids, EPA may require that microseismic monitors and tiltmeters be used during fracturing to plot the positions of the fractures to ensure that the fluid does not come impermissibly close to USDW. Finally, EPA is concerned about “fluid leakoff,” whereby hydraulic fracturing fluids are lost into subsurface formations. Thus, EPA may impose restrictions on pressure or volume of injected fluids so as to control fluid leakoff. While lessees or operators may also be included as responsible parties if such regulatory reforms are enacted, clearly the service providers that perform the actual operations could be directly regulated with additional obligations.

4. *Practical Implications of EPA’s Study and Potential Increased Regulation*

Some practical consideration for service providers vis-à-vis the EPA Study is that such companies hold much of the information regarding actual well construction and hydraulic fracturing operations that is the target of the study. Thus, like the “voluntary” information requests sent to service providers in the past, it should be anticipated that service companies will also be tapped for information throughout the course of the EPA Study.

While the above potential regulatory requirements would, if enacted, increase the costs associated with well construction, cementing, and hydraulic fracturing, a more significant threat to the drilling industry may be that permits for certain wells may be delayed or denied if fracturing activities are to be located within close proximity of USDW. Moreover, the results of the EPA Study could lead EPA to attempt to limit the types of chemicals that are allowed to be used in hydraulic fracturing. Finally, as is already occurring through state regulation, operators and service providers may soon face a standard set of affirmative obligations to disclose the chemical components of hydraulic fracturing fluids.

5. *Potential Legislative Repeal of SDWA Exemption for Hydraulic Fracturing*

In 2009, Democratic members of the U.S. House of Representatives and Senate introduced the Fracturing Responsibility and Awareness of Chemicals Act (“FRAC Act”). H.R. 2766, S. 1215, 111th Cong. (2009). The same bill was reintroduced in both houses of Congress on March 15, 2011, but has not emerged from committee consideration. See H.R. 1084, S. 587, 112th Cong. (2011). These versions of FRAC Act propose that the SDWA exemption for hydraulic fracturing be repealed, and would require operators—i.e., the “person conducting hydraulic fracturing operations”—to disclose the a list of chemicals and the anticipated volumes intended to be injected. While no attempt to pass a reform bill has yet to be successful, continued legislative activity to pass similar bills should be anticipated.

Such legislative reforms that could potentially require companies that perform hydraulic fracturing to obtain an UIC permit, would in turn impose a number of new requirements on oil and natural gas drilling operations, including, but not limited to, monitoring, recordkeeping, public disclosure of the constituents of hydraulic fracturing fluids, and obligations to follow certain best management practices.

B. Federal Clean Air Act (“CAA”)

Hydraulic fracturing activities have garnered the attention of EPA air regulators with several measures that directly address air emissions stemming from such operations. Dating back to 1970, Congress enacted the Clean Air Act (“CAA”) to “protect and enhance the quality of the nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” 42 U.S.C. § 7401(b)(1).

1. *Mandatory Reporting of Greenhouse Gas Emissions*

In 2007, the U.S. Supreme Court forever altered the climate change legal landscape by holding in *Massachusetts v. EPA*, 549 U.S. 497 (2007), that carbon dioxide was a pollutant subject to regulation under the Clean Air Act. This landmark decision opened the door for regulation of all greenhouse gases

(“GHGs”) by obligating EPA to consider the regulation of carbon dioxide emissions under the CAA, an undertaking that has been a priority of the Obama administration. In December, 2009, EPA issued its “Endangerment Finding,” stating that GHGs threaten the public health and welfare of the American people. *See* Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act; Final Rule, 74 Fed. Reg. 66495 (Dec. 7, 2009).

The Endangerment Finding provided the statutory prerequisite to EPA regulation of GHG emissions from motor vehicles, and has led to additional GHG regulations for stationary sources. As a result, EPA promulgated rules establishing monitoring, reporting and recordkeeping requirements for a wide range of industrial and mobile sources that emit, produce or import GHGs. *See* Mandatory Reporting of Greenhouse Gases; Final Rule, 74 Fed. Reg. 56260 (Oct. 30, 2009). On November 30, 2010, the EPA finalized a rule to expand the Mandatory Greenhouse Gas Reporting Rule to the oil and gas industrial sector beginning in year 2011. Mandatory Reporting of Greenhouse Gases: Petroleum and Natural Gas Systems; Final Rule (Nov. 30, 2010) (codified at 40 C.F.R. Pt 98, Subpt. W).

Under the Mandatory Reporting rule, GHG emissions at onshore and offshore production facilities, as well as gathering, processing, and transportation and distribution facilities. The final rule requires petroleum and natural gas facilities that emit 25,000 metric tons or more of carbon dioxide equivalent per year to report annual methane (CH₄) and carbon dioxide (CO₂) emissions from equipment leaks and venting, and emissions of CO₂, CH₄, and nitrous oxide (N₂O) from gas flaring and from onshore petroleum and natural gas production stationary and portable combustion emissions and combustion emissions from stationary equipment involved in natural gas distribution. 40 C.F.R. § 98.231.

Specifically, the operator of an onshore petroleum and natural gas production facility must report relevant GHG emissions from certain source types on a single well pad or associated with a single well pad, including gas well venting during well completions and well workovers both with and without hydraulic fracturing. Moreover, for specific well-related sources, the rule requires emissions data collection at the time of the emissions event rather than at the reporter’s discretion during a calendar year and for which use of best available monitoring methods (“BAMM”) will be allowed. These sources are gas well workovers and well completions using hydraulic fracture, and well testing/flaring. *Id.* § 98.233(g), (l).

On December 23, 2011, EPA issued an amended final rule in order to include technical revisions and corrections, and to clarify terms and definitions. 76 Fed. Reg. 80,554 (Dec. 23, 2011). Among the provisions that were clarified were the definition of the Onshore Petroleum and Natural Gas Production source category, which now reads as follows:

Onshore petroleum and natural gas production means all equipment on a *single* well-pad or associated with a *single* well-pad (including but not limited to compressors, generators, dehydrators storage vessels, and portable non-self-propelled equipment which includes well drilling and completion equipment, workover equipment, gravity separation equipment, auxiliary non-transportation-related equipment, and leased, rented or contracted equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of petroleum and/or natural gas (including condensate). This equipment also includes associated storage or measurement vessels and all enhanced oil recovery (EOR) operations using CO₂ or natural gas injection, and all petroleum and natural gas production equipment located on islands, artificial islands, or structures connected by a causeway to land, an island, or an artificial island.

76 Fed. Reg. at 80,574 (Dec. 23, 2011) (final amended § 98.230(a)(2) (*bold/italics* showing revisions)). Another key definition that EPA added in December 2011 clarifies when equipment is *associated with* a single well pad:

Associated with a single well-pad means associated with the hydrocarbon stream as produced from one or more wells located on that single well-pad. The association ends

where the stream from a single well-pad is combined with streams from one or more additional single well-pads, where the point of combination is located off that single well-pad. Onshore production storage tanks on or associated with a single well-pad are considered a part of the onshore production facility.

Id. at 80,590 (final amended § 98.238 (Definitions)). However, EPA has acknowledge that Onshore Production facilities and Natural Gas Distribution facilities have unique characteristics and therefore the “facility” definition for these segments differ from the definition of facility in the general provisions:

Facility with respect to onshore petroleum and natural gas production for purposes of reporting under this subpart and for the corresponding subpart A requirements means all petroleum or natural gas equipment on a single well-pad or associated with a single well-pad and CO₂ EOR operations that are under common ownership or common control including leased, rented, or contracted activities by an onshore petroleum and natural gas production owner or operator and that are located in a single hydrocarbon basin as defined in § 98.238. Where a person or entity owns or operates more than one well in a basin, then all onshore petroleum and natural gas production equipment associated with all wells that the person or entity owns or operates in the basin would be considered one facility.

Id. (final amended § 98.238).

2. *New Source Performance Standards (“NSPS”)*

New Source Performance Standards (“NSPS”) are national emission standards for new and modified stationary sources within particular industrial categories that the EPA has determined cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. See 42 U.S.C. § 7411(b)(1)(A); 40 C.F.R. Part 60. NSPS provisions are based on the pollution control technology available to the specific categories of industrial sources and apply to sources built after EPA proposes the standards. Once approved by EPA, States have the primary responsibility for assuring compliance with the NSPS, which are enforced State Implementation Plans (“SIP”).

On April 18, 2012, the EPA released a final rule establishing emissions standards for additional activities within the oil and natural gas industry, including the first-ever federal limitations on air emissions associated with hydraulic fracturing completions for natural gas wells. This rulemaking has not yet been published in the Federal Register, but is available at <http://www.epa.gov/airquality/oilandgas>. Specifically, EPA created Subpart OOOO in the NSPS program, to be codified at 40 C.F.R. §§ 60.5360-.5430, and revising existing Subparts HH and HHH in the National Emission Standards for Hazardous Air Pollutants (“NESHAPS”) program to expand the scope of the regulations (described below).

New Subpart OOOO establishes volatile organic compound (“VOC”) emission standards for new and re-fractured wells, compressors, pneumatic controllers, and condensate and crude oil storage vessels, as well as SO₂ emission standards for new crude oil facilities with certain sulfur feeds (collectively, the affected facilities) that are constructed, reconstructed or modified after August 23, 2011, the state the proposed rule was published.

Each natural gas wellhead is a separate affected facility; however, triggering Subpart OOOO applicability for a wellhead does not by itself trigger applicability for associated or downstream equipment. Subpart OOOO requirements apply to flowback activities following hydraulic fracturing operations, with each recompletion of a fractured or refractured existing gas well considered a modification that also triggers Subpart OOOO applicability.

Subpart OOOO requires operators of wildcat, delineation, and low-pressure wells to (1) route flowback to a gas-gathering line or collection system and employ sand traps, surge vessels, separators, and tanks—

EPA calls this recovery process a “green completion”; (2) route salable quality gas to the gas flow line as soon as practicable; and (3) capture and direct flowback emissions that cannot be directed to the flow line to a completion combustion device. 40 C.F.R. § 60.5375. Certain other wells that are affected sources must also combust emissions and, beginning on January 1, 2015, utilize green completion practices.

Affected facilities are subject to a number of notification, testing, monitoring, recordkeeping, and reporting requirements, including a two-day advance notification before completing a natural gas production well.

Potential Implications for New Source Review Permitting Programs

Generally, new stationary sources that are subject to the NSPS program are also subject to the New Source Review (“NSR”) preconstruction permit program. The promulgation of new NSPS Subpart OOOO places the issue of whether flowback emissions following the hydraulic fracturing of a natural gas well or other wellhead activities are subject to the NSR permitting requirements. Historically, EPA has not required such emissions to be authorized in a NSR permit, and most states—which are the primary implementers of NSR through their EPA-approved State Implementation Plans (“SIPs”)—have considered these emissions to be temporary or de minimis in nature and part of the construction process for which no permit authorization was required. In light of statements in EPA’s preamble to the final rule noting that flowback after hydraulic fracturing may result, on average, in 23 tons of VOC emissions per event from a single natural gas well, the oil and gas industry should expect this issue to be revisited.

3. *New Source Review (“NSR”)*

Generally, construction of new major stationary sources and major modifications of existing stationary sources is prohibited until that source obtains a preconstruction NSR permit that conforms with federal law and regulations. The permitting requirements depend on whether the region in which the particular facility is located is in compliance with the federal National Ambient Air Quality Standards (“NAAQS”).

Although the CAA does not mandate pre-construction permitting for non-major sources (a/k/a minor sources), as a matter of practice, most states that implement the NSR program have developed such programs in order to meet their air quality needs. Within this realm, however, air emissions from oil and gas production operations have not been a primary focus of regulatory agencies when compare to larger, industrial facilities.

While the states may implement minor source permitting for air quality, for areas where EPA is the sole permitting authority, such as in Indian Country, the EPA had historically not developed a minor NSR permitting program. Dating back to 2006, EPA proposed a rule for the Review of New Sources and Modifications in Indian Country (the “Tribal NSR Rule”), but EPA did not promulgate a final version of the rule until July 1, 2011. *See* Review of New Sources and Modifications in Indian Country; Final Rule, 76 Fed. Reg. 38, 748 (Jul. 1, 2011). The Tribal NSR became effective August 30, 2011. This development gives EPA the opportunity to decide whether emissions from hydraulic fracturing are considered in NSR permitting for which EPA is the permitting authority.

Promulgation of Final Rule

The Tribal NSR Rule establishes NSR permitting requirements for minor stationary sources (classified as “true” and “synthetic”) throughout Indian Country and NSR permitting requirements for major stationary sources in those areas of Indian Country designated as non-attainment. Thus, effective August 30, 2011, projects to construct new synthetic minor stationary sources or to modify existing synthetic minor stationary sources need an NSR permit before construction may begin—this may include oil and gas production facilities depending on their expected emission levels. The Tribal NSR Rule also includes permitting requirements for true minor stationary sources, which are those that do not need federally

enforceable requirements to stay below major permitting thresholds; however, these permit requirements will not apply until September 2, 2014.

Scope of Emissions May Include of Well Completions/Hydraulic Fracturing Emissions

The Tribal NSR Rule excludes fugitive emissions from the calculation of potential to emit (“PTE”) for most oil and gas operations and mobile source emissions for all operations, although fugitive emissions must be included for the sources listed in 40 C.F.R. § 52.21(b)(1)(iii) and 40 C.F.R. Part 51, Appendix S, Paragraph II.A.4(iii). The mobile source exclusion and existing EPA policies regarding “secondary emissions” should be sufficient to exempt drilling equipment emissions from NSR permitting, so long as the self-propelled or portable equipment does not remain on location for more than 12 months. *See* 40 C.F.R. §§ 49.152(d), 51.50, 52.21(b)(18); EPA NSR Guidance (Jun 1, 2004), available at <http://www.epa.gov/region7/air/nsr/nsrmemos/lilytemp.pdf>.

However, the EPA’s recently adopted NSPS for the Oil and Gas Source Category requires controls for emissions during blowback resulting from hydraulic fracturing of a natural gas well. Based on this control requirement, EPA may now expect well completion emissions to be included in PTE calculations and NSR authorizations. Moreover, EPA may consider the direct emissions from a well (such as organics in drilling muds and completion fluids) to be stationary sources, even if drilling has not been completed.

Start of Actual Construction in Drilling Operations

Determining the “start of construction” for various well facilities and equipment may become critical. Currently, there appears to be no one standard determining when construction commences when dealing with oil and gas wells. For example, in Texas, historically “start of construction” for an oil or gas well was the “date on which construction of sources of emissions begins at the site after the well has been drilled and 72 hours after the well is tested.” *See* History of Oil and Gas Air Permitting at Texas Commission of Environmental Quality, available at <http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/og-hist-reg.pdf>.

Under EPA regulations, “[b]egin actual construction means, in general, initiation of physical on-site construction activities on an emissions unit which are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying underground pipework and construction of permanent storage structures.” 40 C.F.R. § 52.21(b)(11). EPA guidance states that physical on-site construction will generally mean something more than site clearing and excavation work, or the erection of auxiliary buildings or construction sheds. U.S. EPA, MEMORANDUM ON “COMMENCE CONSTRUCTION” UNDER PSD (July 1, 1978).

Based on the EPA’s description of oil and gas operations in the new Oil and Gas NSPS and existing PSD and NSR guidance regarding commencement of construction, EPA may determine that the start of drilling, or perhaps even the setting of conductor casing, to be the commencement of construction of a new well facility subject to the new Tribal NSR Rule. Still, a justifiable position would be that the commencement of construction should be triggered following well completion and testing or the construction of a tank battery associated with a well.

It is also possible that construction may be considered to be commenced when an owner/operator enters a contract obligating it to carry out a site-specific program of continuous construction, or else suffer losses of 10% or more of the total project cost. Although the EPA’s definition of “commence” uses the phrase “continuous program of actual on-site construction,” agency guidance clearly allows some pauses after the commencement of construction. 40 C.F.R. § 52.21(b)(9). Specifically, an NSR authorization will not lapse unless construction is interrupted for more than 18 months. U.S. EPA, MEMORANDUM ON “COMMENCE CONSTRUCTION” UNDER PSD (July 1, 1978).

Limiting Potential to Emit

Determining a facility's potential to emit ("PTE") is critical to the NSR process. PTE is based on physical and operational design, without consideration of add-on control equipment or operational limitations, unless these measures are required by a federally enforceable provision. Thus, add-on equipment cannot be used to limit PTE unless: (a) operation of the equipment is required by a federal rule, such as an NSPS; (b) the equipment are passive in nature (e.g., a floating roof); or (c) the equipment is "inherent process equipment" and not primarily a control device.

Due to the federally enforceable mandates the new NSPS Subpart OOOO, oil and gas operators will in many cases be able to calculate PTE for constituents such as VOCs, NO_x, CO, and SO₂ based on controlled emissions and may therefore be able to use these rules to make proposed stationary sources synthetic minor.

Reducing PTE to below major stationary source or major source thresholds with federally enforceable provisions will make a source a synthetic minor, whereas reducing PTE below major source thresholds through the use of passive controls or inherent process equipment can make the source a true minor. Although there are benefits to synthetic minor source status, such as exemption from Title V permitting or from certain NESHAPs, synthetic minor source status does not provide an escape from preconstruction permitting for sources under the Tribal NSR Rule for which construction commences after August 30, 2011. Rather, a source must be a true minor source in order to avoid preconstruction permitting (until September 2, 2014) or a de minimis source to avoid all permitting.

C. Other Federal Measures Relevant to Hydraulic Fracturing

Other environmental provisions located in Federal laws and regulations are potentially implicated by hydraulic fracturing operations, just as many other specific techniques and activities in the oil patch fall may under the general scope of broad-based regulations.

1. Clean Water Act ("CWA")

Hydraulic fracturing often results in large volumes of produced water and hydraulic fluid flowback coming to the surface. As a result, either oil and gas drilling operators or the service providers conducting the operations must dispose of these fluids in a permissible fashion. Generally, flowback water recovered from the process, is an "exploration and production" oil and gas waste that is generally exempt from regulation as a hazardous waste under Subtitle C of the Resource Conservation and Recovery Act ("RCRA"). 42 U.S.C. § 6921(b). However, other federal and state regulations can apply to the handling and disposal of such flowback material.

The primary means by which operators dispose of the flowback fluids are: (1) by discharging the wastes to surface waters authorized by permit under the National Pollutant Discharge Elimination System ("NPDES") program (or a comparable state program that receives delegation), see 33 U.S.C. § 1342; 33 C.F.R. Parts 122 to 135; or (2) by injecting the wastes into the subsurface, which is regulated by the SDWA as a Class II well.⁶ Other methods include recycling, disposal at commercial facilities, or disposal at a publicly owned treatment works ("POTW") under the CWA. According to EPA, flowback and produced water may contain a variety of chemicals used in the original hydraulic fracturing mixture, plus materials from the well including radionuclides and high concentrations of dissolved solids. Final Study Plan, at 23.

⁶ Such flowback wastes may not be injected into the subsurface without a permit under the SDWA. Injection wells for the disposal of oil and gas related exploration and production wastes are classified as Class II wells. While the initial injection of hydraulic fracturing fluids is not currently regulated under the SDWA, re-injection of wastewater generated by the fracturing process is subject to the requirements of the SDWA, such permitting requirements may fall to the service company if it is tasked with such disposal functions under its contract.

Thus, surface water discharges of the flowback regulated by the NPDES or state-equivalent program would be subject to treatment standards and effluent conditions. In order to obtain a permit, persons wishing to discharge, whether the operators or service companies, may need to follow a variety of technology-based or even effluent-based standards, monitoring, and recordkeeping requirements. *Id.* § 1342. In the event that the service provider is tasked with sending flowback wastewaters to a POTW for treatment, it may need to comply with pretreatment requirements specific to the POTW. 40 C.F.R. § 403.8(f). Treatment is typically performed by on- or off-site wastewater treatment facilities.

To date there are no current or proposed regulatory provisions under the CWA that otherwise directly impose obligations on service providers for hydraulic fracturing, cementing, or tubing operations.

2. *Comprehensive Environmental Response, Compensation, and Liability Act*
("CERCLA")

An oil or gas producer that contaminates a site with wastes or hazardous substances other than petroleum or natural gas may be subject to liability for cleanup costs under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). 42 U.S.C. §§ 9601 *et seq.*; *specifically id.* § 9607 (imposing liability for cleanup costs of hazardous substances on certain parties). CERCLA provides a scheme for federal and state governments, as well as certain private parties, to bring suit to hold potentially responsible parties ("PRPs") liable for the "release or threatened release" of a hazardous substance. *See id.* §§ 9606(a), 9601(14), (22).

In defining "hazardous substance" for determining PRP liability, CERCLA excludes from the definition "petroleum, including crude oil . . . natural gas, [and] natural gas liquids." *Id.* § 9601(14). However, because hydraulic fracturing fluids contain non "petroleum" substances (other than perhaps diesel fuel), the EPA has authority under CERCLA to impose remedial orders on operators for contamination allegedly caused by fracking fluids themselves. *See* John C. Martin, et al., Fractured Fairy Tales: The Context and Regulatory Constraints for Hydraulic Fracturing, ROCKY MTN. MIN. L. FOUND. Paper No. 3 at 8 (2010).

In fact, EPA has asserted its authority under CERCLA section 104(e) to investigate allegations of contamination from hydraulic fracturing operations in the Pavillion, Wyoming area. In December of 2011, EPA released a draft report outlining findings from the Pavillion groundwater investigation for public comment and independent scientific peer-review. EPA, Draft Report Investigation of Ground

Contamination near Pavillion, Wyoming, available at:
http://www.epa.gov/region8/superfund/wy/pavillion/EPA_ReportOnPavillion_Dec-8-2011.pdf (last visited July 7, 2012).

The conclusions drawn by EPA in its draft report have been the subject of much debate. Of note, EPA stated that the sampling data "indicates likely impact to ground water that can be explained by hydraulic fracturing." EPA also reported that it detected high concentrations of benzene, xylenes, gasoline range organics, diesel range organics, and total purgeable hydrocarbons in ground water samples from shallow monitoring wells near surface storage and waste pits, which indicates that pits are a source of shallow ground water contamination in the area of investigation. However, these shallow wells were not drinking water wells and such concentrations still have not been detected in drinking water.

Of course, the Pavillion investigation has garnered considerable attention of the media, industry, regulators and Congress. The groundwater versus drinking water distinction has been lost in the finger-pointing between environmentalists and industry. In order to subject the report and its results to further scrutiny, in February 2012, the House Science subcommittee held a hearing entitled Fractured Science, regarding the Pavillion investigation. Ultimately, EPA has extended the public comment and peer-review period until October 2012.

3. Toxic Substances Control Act (“TSCA”)

The Toxic Substances Control Act (“TSCA”) requires EPA to promulgate rules regarding the disclosure of information about chemical substances and mixtures of substances. 15 U.S.C. § 2601 (2011). TSCA defines a “chemical substance” as most organic and inorganic substances, although it exempts certain chemicals such as pesticides, food and drugs, tobacco, and mixtures of two or more chemical substances that do not form a chemical reaction. *Id.* §§ 2602(2), 2602(8). The provisions of TSCA most relevant to the oil and gas industry are found in sections 4, 5, and 8. *Id.* §§ 2603, 2604, and 2607.

Section 4 requires EPA to promulgate rules requiring *manufacturers and/or processors of chemical substances or mixtures* to test the health and environmental effects of the chemicals. The statute also requires manufacturers and processors to collect data regarding their chemicals in order to assist EPA in determining whether the chemical presents an unreasonable risk of injury to human health or the environment. *Id.* § 2603(b)(1), 2603(b)(3). Section 4 identifies carcinogenesis, mutagenesis, teratogenesis, behavioral disorders, and cumulative or synergistic effects as the primary data points of interest. *Id.* § 2603(b)(2). If test results indicate that a chemical substance or mixture presents a significant risk of serious or widespread harm to human beings from cancer, gene mutations, or birth defects, the statute directs EPA to initiate an appropriate rulemaking that would restrict uses of the chemical in order to prevent or reduce the risk. *Id.* § 2603(f).

Section 5 of TSCA requires *manufacturers* of a chemical substance to notify EPA prior to manufacturing or processing a new chemical or prior to using an existing chemical in a new way. *Id.* § 2604(a). This notice is known as a “Pre-Manufacture Notice,” or “PMN.” *Id.* The PMN should describe, among other information, the name, identity, and molecular structure of each chemical, the categories of use, the total amount of the substance manufactured or processed, and a description of the byproducts resulting from the manufacture, process, use, or disposal of the substance. *Id.* § 2604(d).

Section 8 of TSCA directs the EPA to require *manufacturers and processors of chemical substances and mixtures* to maintain records of significant adverse reactions alleged to have been caused by the chemicals. *Id.* § 2607(c). Companies in possession of such health and safety studies must provide EPA with a list of the studies conducted by the company, known to the company, or reasonably ascertainable by the company, as well as copies of the studies. *Id.* § 2607(d). Further, if a company obtains information which reasonably supports the conclusion that the substance or mixture presents a substantial risk of injury to health or the environment, the company must immediately inform the EPA unless the company has knowledge that EPA already has the information.

EPA Regulatory Action

Although it appears that various provisions of TSCA could apply to chemicals used in hydraulic fracturing operations, EPA has not historically used its authority under TSCA to target the hydraulic fracturing industry.⁷

However, in August 2011, environmental groups filed petitions under TSCA calling for EPA to require manufacturers and processors of chemicals used in oil and gas exploration and production—including those used in hydraulic fracturing fluids—both to conduct toxicity testing and submit to EPA health and

⁷ Note also that the Emergency Planning and Community Right to Know Act (“EPCRA”) requires certain organizations that use toxic chemicals to, among other things, complete annual forms that report toxic releases from the facility, does not apply to oil and gas production operations. 42 U.S.C. § 11023(a) (requiring the preparation of a toxic chemical release form). However, oil and gas producers are not required to report their annual releases of toxic chemicals under EPCRA. *Id.* § 11023(b) (explaining that the requirements of this section shall apply to “owners and operators of facilities that have 10 or more full-time employees that are in Standard Industrial Classification Codes 20 through 39,” which later converted to NAICS codes under 40 C.F.R. §§ 372.23(b) & 372.23(c)—none of which include oil and gas production activities).

environmental data they already have on hand. In November, EPA partially granted the petition, stating that EPA would develop rules requiring makers of chemicals used in hydraulic fracturing fluids to submit existing information to EPA identifying the chemicals, their intended uses, quantities produced and health or environmental exposure to or effects of the chemicals. EPA denied other aspects of the petition, including calls to require manufactures to conduct toxicity testing, and EPA limited the scope of the reporting rules only to chemicals used in hydraulic fracturing—it did not include other E&P chemicals, such as those used in drilling muds, additives to cement, and others.

Importantly, EPA’s TSCA reporting rules will apply to manufacturers and processors of the chemicals themselves, whereas the various disclosure initiatives imposed by States tend to focus on operators or service companies. Similarly, the EPA rules are intended to provide EPA with information sufficient to understand the potential risks of the subject chemicals at an aggregate, national level, not a local, even well-by-well scale.

EPA plans to develop an Advance Notice of Proposed Rulemaking (ANPRM) and initiate a stakeholder process to provide input on the design and scope of its proposed TSCA reforms, but no time-table has been announced. Any proposed rules will be subject to notice and public comment periods before they become final.

Proposed Legislative Reforms

On April 24, 2011, the “Safe Chemicals Act of 2011” (S. 847) was introduced in the Senate, with the stated purpose to overhaul TSCA by requiring chemical manufacturers to prove their substances are safe before they go on the market. While not directly targeting hydraulic fracturing or cementing chemicals and operations, this and other general TSCA reform measures are linked from time to time by Congressional members, the EPA, media and others, when citing examples of why TSCA reform is overdue. What, if any, reforms result that could impact service providers in the oil and gas industry remains to be seen.

4. *Endangered Species Act (“ESA”) and National Environmental Policy Act (“NEPA”)*

Depending on the location of a proposed well site—i.e., on federal lands or otherwise subject to federal action—oil and gas producers may face additional requirements under the Endangered Species Act (“ESA”). 7 U.S.C. § 136; 16 U.S.C. §§ 1531 *et seq.* The ESA provides for the conservation of threatened and endangered plants and animals, and the habitats in which they are found by regulating any activity that will “take” any endangered or threatened species of fish or wildlife; the definition of “take” includes “harm” including adverse habitat modification. If a project will harm endangered species or adversely modify the habitat of any endangered or threatened fish or wildlife (or otherwise “take” such species), a permit under Section 10 of the ESA and possibly a Habitat Conservation Plan will be required.

Under Section 7 of the ESA, Interagency Cooperation, each federal agency is required to ensure that its proposed actions (e.g., permits, licenses, grants, contracts, and the like) do not jeopardize the continued existence of a species or result in the adverse modification of critical habitat. If a proposed federal action “may affect” a species, the federal action agency is required to consult with the U.S. Fish and Wildlife Service about the direct, indirect, and cumulative effects of the action on endangered or threatened species, including fish, wildlife, and plants.

Some state requirements may implicate the ESA by entailing the disclosure of whether a proposed operating site contains any listed threatened or endangered species. *See, e.g.,* N.Y. State Dep’t of Env’tl. Conservation, Division of Mineral Resources, Environmental Assessment Form, Attachment to Drilling Permit Application, No. 85-16-5, available at http://www.dec.ny.gov/docs/materials_minerals_pdf/eaf_dril.pdf (last visited Aug. 8, 2011).

Like the ESA, the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 4321-4370f, can be implicated by oil and gas activities that require federal action or have a federal component. A “federal action” includes “projects and programs entirely or partly financed, assisted, conducted, regulated or approved by federal agencies; new or revised rules, regulations, plans, policies, or procedures.” 40 C.F.R. § 1508.18.

Thus, federal agency actions, including issuance of federal permits under the ESA or conducting parcel sales and issuing leases by the Bureau of Land Management (“BLM”), within the Department of the Interior, that may “significantly affect the human environment” are subject to NEPA review, which requires a “hard look” at the environmental consequences of the proposed action, including direct, indirect, and cumulative effects. This review involves preparation and submittal of an Environmental Information Document (“EID”) by the applicant to the agency, followed by preparation by the agency of a concise Environmental Assessment (“EA”) in support of a Finding of No Significant Impact (“FONSI”). If a FONSI is not justifiable, NEPA requires the agency to prepare a detailed Environmental Impact Statement (“EIS”). The FONSI and EIS are subject to public notice and comment procedures. A procedurally or substantively inadequate NEPA review can form the basis of a challenge in court to the Record of Decision (“ROD”) or to the permit, or to other federal agency action that triggered the review.

NEPA has been implicated recently in several oil and gas projects within the jurisdiction of the Department of the Interior, although generally the agency has faced fewer environmental protests of oil and gas leases on public lands than in the past. Significant proposals to drill thousands of new wells in the Uintah Basin of northwestern Utah and the Jonah Infill field in Wyoming, are just two of the current projects undergoing NEPA review. In addition to ESA concerns for animals such as the sage grouse, the Jonah Infill project in particular has been potentially held up by the region’s declining air quality, specifically the potential that the Sublette County, Wyoming area could be designated as noncompliant with the federal ozone standard before the project begins construction.

Additionally, NEPA has recently been utilized as a sword by environmentalists to challenge natural gas development on the East coast, including in areas serving as a watershed for New York City. Here, a citizen group sued the Delaware River Basin Commission and various other federal agencies in order to compel them to prepare an EIS and health impacts statement prior to taking any further action on proposed regulations that would allow natural gas development in the Delaware River Basin. *Damascus Citizens For Sustainability, Inc. v. U.S. Army Corps of Engineers, et al.*, No. 11-cv-03857 (E.D.N.Y. filed Aug. 10, 2011). Among other arguments, this challenge contends that horizontal drilling and hydraulic fracturing technologies, although utilized elsewhere in the U.S. for some time, are relatively new to the Marcellus Shale region, and the impacts of such practices, including the constituents of the frac fluids, must be better assessed by the agencies before the basin’s oil and gas regulations are finalized.

5. *Transportation-Related Regulations*

Any hazardous fracturing fluids that are transported to a site may be covered by comprehensive federal hazardous transportation laws. The Hazardous Materials Transportation Act of 1975 first empowered the Secretary of Transportation to designate as hazardous any “particular amount and form” of a material that “may pose an unreasonable risk to health and safety or property.” 49 U.S.C. § 5103. The Hazardous Materials Transportation Uniform Safety Act of 1990, was Congress’s attempt to simplify and clarify the mix of conflicting state, local, and federal regulations. 49 U.S.C. §§ 5101 *et seq.* This statute includes provisions to encourage uniformity among different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials. Hazardous material transportation regulations are extensive and located throughout 49 C.F.R. Parts 101, 106, 107, 171–180.

6. *Exemption from Resource Conservation and Recovery Act (“RCRA”)*

A substantial exemption for fracking operations is the exemption of “exploration and production” oil and gas wastes from Subtitle C of the Resource Conservation and Recovery Act (“RCRA”). 42 U.S.C. §§ 6901 *et seq.* RCRA Subtitle C regulates hazardous waste in a “cradle-to-grave” system from generation through disposal. *Id.* § 6922 (describing regulations to be promulgated by EPA to create standards applicable to generators, transporters and the treatment, storage, or disposal of hazardous wastes).

Congress conditionally exempted the disposal of the hazardous wastes associated with oil and gas production from Subtitle C (addressing the transportation, labeling, and disposal of hazardous wastes) in 1980. *Id.* § 6921(b)(2)(A). EPA fully exempted these wastes from regulation in 1988. Regulatory Determination for Oil and Gas and Geothermal Exploration, Development and Production Wastes, 53 Fed. Reg. 25,446, 25,447 (July 6, 1988).

EPA’s 1998 determination specifically cited “well completion, treatment, and stimulation fluids” as examples of exempt wastes; however, EPA also noted that “unused fracturing fluids or acids” were not wastes included in the exemption. 53 Fed. Reg. 25,453–54. EPA clarified its regulatory interpretation on March 22, 1993, adding:

A simple rule of thumb for determining the scope of the exemption is whether the waste in question has come from down-hole (i.e., brought to the surface during oil and gas E&P operations) or has otherwise been generated by contact with the oil and gas production stream during the removal of produced water or other contaminants from the product (e.g., waste demulsifiers, spent iron sponge). If the answer to either question is yes, the waste is most likely considered exempt.

58 Fed. Reg. 15,284, 15,285. Moreover, EPA issued a guidance document in 2002, “Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations,” repeating these example wastes that are and are not exempt, and the rationale underlying the determination (available at <http://www.epa.gov/osw/nonhaz/industrial/special/oil/oil-gas.pdf> (last visited Aug. 8, 2011)). Still, EPA noted that even if such wastes may be exempt under Subtitle C, they may still be subject to state and other federal waste management regulations, and it was “important to remember that all E&P wastes require proper management to ensure protection of human health and the environment.” Thus, such recovered flowback fluids could still be subject to state regulations regarding disposal of oil- and gas-related wastes, including rules for underground injection.

7. *Mineral Leasing Act of 1920*

While not directly an environmental statute, Mineral Leasing Act of 1920, as amended and supplemented generally governs oil and gas development on Federal and Tribal lands (as well as those on non-Federal lands where the mineral interests are owned by the United States). 30 U.S.C. §§ 181 *et seq.* Under the authority granted in the Mineral Leasing Act, the BLM is charged with promulgating rules and requirements that are made applicable to “operating rights owners” (e.g., lessees) and, more specifically, operators for all exploration and production operations conducted on a Federal or Indian oil and gas lease. 43 C.F.R. Part 3000, subparts 3161 and 3162.

Examples of specific requirements that operators must meet include submittals of drilling applications and plans, proposals for subsequent well operations (including “chemical stimulation”), reporting and recordkeeping of various well data, and general duties to protect the health and safety of the environment. 43 C.F.R. §§ 3162.3-1 to .3-4; 3162.4-1 to .4-3, and 3162.5-1 to .5-4. Other than submitting sundry notices regarding subsequent well operations and the general duty not to impact the environment, current BLM rules do not otherwise regulate hydraulic fracturing operations.

Proposed Revisions by BLM to Operator Requirements

In late January 2012, the BLM first released draft proposed revisions to the Subsequent Well Operations requirements that would require substantial disclosure of fracturing fluid components (among other technical requirements). Draft Proposed 43 C.F.R. §§ 3162.3-2, .3-3. BLM's January 2012 draft proposal would essentially require the *operator* to submit a sundry notice that includes a full disclosure of the type of proppant and all additives to the proposed stimulation fluid. *Id.* § 3162.3-3(a)(4) – (56).

After releasing the initial draft, in May 2012 BLM released an updated proposed rule for public comment, which scaled back some of the requirements. Proposed Rule, Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands, 77 Fed. Reg. 27,691 (May 11, 2012). Still, as currently proposed, the BLM rule calls for several disclosure requirements, including chemical components of injection fluids, sources of waters, measured depth of casing and perforations in the casing, as well as technical regulations related to well-bore integrity and issues related to flowback water. BLM anticipated finalizing this rule by the end of 2012, however, the BLM recently extended the public comment period until September 10, 2012. 77 Fed. Reg. 38,023 (Jun. 26, 2012).

III. CURRENT AND PROPOSED STATE REGULATION OF HYDRAULIC FRACTURING

States are generally considered to be the primary jurisdictions for implementing and enforcing regulations for what is often viewed as traditional oil and gas subject matter. In addition, in the absence of Federal regulation of topics revolving around hydraulic fracturing, including disclosure requirements, many States have taken action to fill the void.

A. Texas

In Texas, the Railroad Commission of Texas (“RRC”) has authority over all oil and natural gas drilling operations. TEX. NAT. RES. CODE ANN. § 81.051 (West 2011). Generally, the RRC requires a permit for all drilling and/or well deepening activities. 16 TEX. ADMIN. CODE § 3.5 (2011). The regulations prohibit *operators* of oil and natural gas exploration and production wells from causing or allowing pollution of surface or subsurface waters in the states. *Id.* § 3.8. Violations of the statutes and regulations carry a penalty of up to \$10,000.00 per day. TEX. NAT. RES. CODE ANN. § 81.0531.

1. Fracturing Disclosure Requirements or Other Potentially Relevant Obligations

On December 13, 2011, the RRC adopted the Hydraulic Fracturing Chemical Disclosure Rule, pursuant to House Bill 3328, which mandates that operators disclose the chemicals used in hydraulic fracturing to the RRC on a well-by-well basis. 16 TEX. ADMIN. CODE § 3.29.

The new disclosure rule applies to all wells for which the RRC issues an initial drilling permit on or after February 1, 2012. *Id.* The *fluid supplier and service company* must, within 15 days of well completion, disclose to the well operator: (1) each additive used in the hydraulic fracturing fluid and the trade name, supplier, and a brief description of the intended use or function of each additive, (2) each chemical ingredient intentionally included in the fracturing fluid, (3) the actual or maximum concentration of each chemical ingredient listed, and (4) the Chemical Abstracts Service (“CAS”) number for each chemical ingredient. *Id.*

While the names and physical characteristics of the chemicals used must be provided, the *operator* is not required to disclose the quantity of each used chemical. *Id.* Under the law, trade secrets are exempted from disclosure. *Id.* However, certain parties will have standing to challenge a trade secret designation: (1) the landowner of the surface estate where the well is located, (2) adjacent landowners, and (3) certain state agencies. *Id.* As with many trade secret laws governing chemicals, the exemption would not apply if a health professional or emergency responder requests the information for the purpose of providing medical treatment. *Id.*

2. *Tradition Oil and Gas Measures and Delegated Regulations*

Water Use

In Texas, the state owns all of the surface waters, and any entity seeking to withdraw surface water must either fall into a permitting exemption or obtain an “appropriation” for use of the water from the TCEQ. An appropriation gives its holder a “place in line” to withdraw a certain amount of water if it is available. Consumers of water may purchase water from parties that own a permanent appropriation.⁸

In contrast, groundwater in Texas is subject to the law of capture in the absence of regulation. TEX. WATER CODE ANN. ch. 36 (West 2008). Under the doctrine of capture, the surface owner is allowed to pump water to the surface within certain constraints, including for example, not negligently causing subsidence on neighboring lands. However, many areas in Texas are now subject to regulation through local Groundwater Conservation Districts (“GCD”). *Id.* A GCD can regulate water well spacing, production or both. *Id.* § 36.116. However, certain oil and gas operations may be exempt from GCD permitting requirements. According to the statute, the following types of oil and gas operations do not require a GCD permit:

the drilling of a water well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well and the well is located on the same lease or field associated with the drilling rig

Id. § 36.117(b)(2). The RRC interprets the word “exploration” in the above exemption to encompass hydraulic fracturing activities. RRC Website, *available at* <http://www.rrc.state.tx.us/barnettshale/wateruse.php> (last visited Mar. 6, 2012). Thus, so long as the groundwater well is (1) used solely for oil and gas drilling or exploration, (2) located on the same lease or field as the oil or gas well, and (3) the holder of the oil and gas permit is responsible for drilling and operating the well, the operator need not obtain a groundwater permit from the local GCD. Even if a permit is not required, certain regulations may still apply, for example, registration of the well, equipment specifications, and reports on the amount of groundwater consumed. In addition, the RRC requires a permit to drill a water well to recover water that is below the base of useable water quality. 16 TEX. ADMIN. CODE § 3.5.

Waste and Pollution Prevention Issues

In the 2011 Texas Legislative Sessions, several measures were adopted that directly and indirectly impact hydraulic fracturing. For example, effective September 1, 2011, the RRC will have additional authority under the Texas Natural Resources Code to enact groundwater protection recommendations and regulations regarding oil and gas drilling activities, including requirements relating to the depth of surface casing for wells. Tex. H.B. 2694, 82nd Leg., R.S. (2011).

Thus, an area where RRC regulations may have a more direct impact on fracking operations are Water Protection rules, whereby the RRC enforces its “no pollution” provision by regulating the handling and disposal of oil and gas fluids and wastes. *Id.* § 3.8(b), (d); see also § 3.8(e) (Pollution Prevention), § 3.98 (Standards for Management of Hazardous Oil & Gas Waste), § 3.9 (Disposal Wells), and § 3.46 (Fluid

⁸ By statute, Texas exempts a limited category of oil and gas exploration and production from surface appropriation requirements: “[w]ithout obtaining a permit, a person who is drilling and producing petroleum and conducting operations associated with drilling and producing petroleum may take for those purposes state water from the Gulf of Mexico and adjacent bays and arms of the Gulf of Mexico in an amount not to exceed one acre-foot during each 24-hour period. TEX. WATER CODE ANN. § 11.142(c).

Injection into Productive Reservoirs). Generally, all such regulations are imposed against the owner or operator of the wells.

The RRC is responsible for “the control and disposition of waste and the abatement and prevention of pollution of surface and subsurface water resulting from: (1) activities associated with the exploration, development, and production of oil or gas or geothermal resources . . .” TEX. WATER CODE ANN. § 26.131. With respect to the off-site disposal of hydraulic fracturing wastes, the RRC has adopted the federal RCRA exemption for oil and gas hazardous wastes by reference. 16 TEX. ADMIN. CODE § 3.98(e)(3)(A). While not deemed “hazardous waste” under RCRA, frac flowback fluids nonetheless meet the definition of oil and gas waste as a material “to be disposed of or reclaimed which have been generated in connection with activities associated with the exploration, development, and production of oil or gas or geothermal resources,” including “spent completion fluids, and other liquid, semi-liquid, or solid waste material.” *Id.* § 3.8(a)(26). Generally, therefore, assorted permits are required from the RRC for many facets of dealing with such wastes, including permits to transport, store, handle, treat, reclaim, or dispose of oil and gas wastes, whether these are accomplished onsite or at a different location. *Id.*, §§ 3.8(d), 3.9.

For disposal of frac fluid by underground injection, the RRC has authority over such Class II injection wells, while the Texas Commission on Environmental Quality (“TCEQ”) has authority over most types of Class I, III, IV, and V wells under the UIC program. 40 C.F.R. §§ 147.2200–.2201. The disposal of saltwater or other oil and gas waste by injection into a formation which is not producing oil, gas or geothermal resources must comply with Title 16, Rule 3.9 of the Texas Administrative Code as well as Title 3, Chapter 27 of the Texas Water Code. 16 TEX. ADMIN. CODE § 3.9(1).

Onsite pits are regulated by the RRC. Per the RRC’s Surface Waste Management Manual,⁹ disposal or storage of oil and gas wastes in a pit must not result in pollution of surface or subsurface water. A permit from the RRC is required to operate a pit.

Current Developments Regarding Water Use and Reuse

Against the backdrop of the RRC’s regulatory requirements concerning disposal of oil and gas wastes and the protection of freshwater resources, Texas has taken some steps over the years to facilitate the reclamation and recycling of frac flowback water within the state. In light of the public’s concern over water resources, generally, combined with the severe drought conditions experienced in 2011 and characteristics of the emerging Eagle Ford Shale play, the practice of recycling of flowback fluids is expected to increase so long as is economical and effective.

While no formal regulations address filtering or treatment of flowback for reuse in terms of meeting a certain standard or condition, company presentations found indicate that a driving factor in such treatment is whether the fluid would be effective in the subsequent fracking operations. For example, in recent years, Range Resources reported that in Pennsylvania, it was fracturing wells with fluids containing flowback water run through a 25 micron filter, adding anti-scaling chemicals and biocides, and mixing it with 80% or more fresh water, which resulted in effective fracking jobs. Through a Department of Energy grant, several universities and laboratories are now studying “Pretreatment Options to Allow Re-Use of Frac Flowback and Produced Brine for Gas Shale Resource Development.” *See* National Energy Technology Laboratory (NETL) website.¹⁰

⁹ RRC’s Surface Waste Management Manual, Chapter IV, available at <http://www.rrc.state.tx.us/forms/publications/SurfaceWasteManagementManual/index.php> (last visited July 8, 2012).

¹⁰ See http://www.netl.doe.gov/technologies/oil-gas/Petroleum/projects/Environmental/Produced_Water/00847_Pretreat.html.

For its own part, the RRC has utilized the Commercial Recycling provisions of its regulations, 16 TEX. ADMIN. CODE Ch. 4, Subch. B, in order to accommodate and authorize the requests of oil and gas operators in the Barnett and Eagle Ford Shale areas to reclaim, recycle, and reuse frac flowback water. Ultimately, such provisions set the minimum standards for permitting and operating requirements for mobile and stationary commercial facilities that recycle oil and gas wastes subject to the RRC's jurisdiction. *Id.* § 4.201.

The RRC's recycling provisions were not necessarily designed for frac flowback operations; for example, there are no established forms or protocols for submitting such flowback recycling applications or other materials to the agency. However, industry and the agency have relied on the general terms of the recycling regulations, and applicants may submit a generic permit application to the Technical Permitting section of the RRC. The application must contain certain basic information as set forth in Subchapter B, as well as certain "minimum" information discussing the following components of the proposed recycling operation:

- Engineering and Geologic Information (§ 4.206)
- Siting Information (§ 4.207)
- Real Property Information (§ 4.208)
- Design and Construction Information (§ 4.209)
- Operating Information (§ 4.210)
- Monitoring Information (§ 4.211)
- Closure Information (§ 4.212)

A recycling permit issued under the RRC's regulations may be for a stationary facility, where material is transported to the facility and the resulting product is then used wherever it is allowed, or a mobile unit, which an operator would be allowed to move from wellhead to wellhead, lease to lease, in order to treat the recycled at each location as needed. A permit is issued for a five-year term, and must contain certain general provisions including financial security and notice requirements. *Id.* § 4.217. If the permit application and proposed operations meet the required standards for issuance, the permit will contain provisions regarding minimum standards for siting, design and construction, operations, monitoring, and closure that must be met. *See id.* §§ 4.216, 4.218–4.222.

Over the past few years, several companies have applied for, and the RRC has approved, recycling projects designed to reduce the amount of fresh water used in oil and gas development activities. The RRC has differentiated somewhat between true "recycling" permits authorized under 16 TEX. ADMIN. CODE Ch. 4 and "pilot projects" for which companies were allowed to perform essentially the same operations but under the guise of testing and reporting the results thereof back to the RRC. Essentially, however, the standards required of the two programs are largely the same, including limits on constituent levels for incoming and outgoing fluid streams—incoming oil and gas waste may not exceed a total dissolved solids (TDS) concentration of 30,000 parts per million (ppm), and the recyclable product must have a final salt concentration of between 2 and 10 percent. Some authorizations allow the recycling of any non-hazardous oil and gas waste, while others specified that only frac flowback and produced water from certain formations were acceptable. All authorizations contain engineering and operational conditions such as the approved methods of delivery of materials to the facilities, storage requirements and specifications for tanks and pits and berms, disposal requirements, and operations limitations on how and where the recycled materials may be utilized. Additional details are available on permit authorizations and other water conservation measures on the RRC's website, http://www.rrc.state.tx.us/barnettshale/wateruse_barnettshale.php.

Air Emissions Issues

Briefly, Texas has been delegated authority under the CAA to implement emissions requirements that are applicable to the owner or operator of a well facility. Driven largely by concerns over emissions associated with oil and gas facilities in the Barnett Shale, the TCEQ issued a new, more-stringent Permit-

by-Rule (“PBR”) and Standard Permit for oil and gas facilities located in the Barnett Shale counties. To use the new PBR and Standard Permit, applicants must make detailed demonstrations regarding whether emissions from new or modified facilities will impact neighboring citizens. Although the new PBR and Standard Permit are limited to operations in the Barnett Shale, the TCEQ had originally proposed that they be applied state-wide and, therefore, it is possible that they will be expanded in the future to cover the rest of Texas.

The Texas air permitting regime presents a case study that may be indicative of the potential issues concerning implementation of the EPA’s new NSPS Subpart OOOO provisions regarding green completions at hydraulically fractured wells. Historically, Texas has not considered emissions during well completions to be included in pre-construction permitting programs, as the start of construction for such wells was construction of sources at the site after the well has been drilled and 72 hours after the well is tested.¹¹ Subpart OOOO, however, requires emission control measures be utilized during well completion activities before well testing, and such emissions may be required to be considered in pre-construction permitting programs. Not only would this situation upend the state’s permitting regime, but the TCEQ, like other state environmental agencies, may not have sufficient resources at its disposal to implement this new component. Thus, whether states seek delegation of Subpart OOOO by incorporating the provisions into a SIP remains to be seen.

3. *Proposed New Laws or Amendments to Existing Laws*

While no proposed new laws or amendments imminent for passage in Texas, the Texas House Committee on Energy Resources continues to study the implications of hydraulic fracturing and will ensure hydraulic fracturing regulations that match the needs of the state. The Committee will also continue to coordinate with the House Committee on Natural Resources regarding water quality issues in oil and gas production.

B. Colorado

The Colorado Oil and Gas Conservation Commission (“COGCC”) has authority over oil and gas operations in within the state, except for those on Federal and Tribal lands where the BLM has retained jurisdiction. Generally, all producers, operators, transporters, refiners, gasoline or other extraction plant operators and initial purposes must file a Registration for Oil and Gas Operations (Form 1) with the COGCC Director. 2 Colo. Code Regs. § 404-1:302. Additionally, before commencing operations for the drilling or re-entry of a well, the applicant—generally the operator—must complete a Form 2 to receive a Permit-to-Drill. *Id.* § 404-1:303.

1. *Fracturing Disclosure Requirements or Other Potentially Relevant Obligations*

On December 13, 2011, the COGCC adopted rules governing the disclosure of chemicals contained in hydraulic fracturing fluids, applicable to hydraulic fracturing treatments performed on or after April 1, 2012. *Id.* § 404-1:205A. Importantly, *fluid vendors and service providers are required to provide the operator* of the well with the identity of each hydraulic fracturing additive, as well as each chemical intentionally added to the fracturing fluid, within 30 days of treatment completion and within 90 days of commencing hydraulic fracturing treatment, respectively. *Id.*

Within 60 days following the conclusion of the hydraulic fracturing treatment, *operators* must complete a chemical disclosure registry form and post the information on the chemical disclosure registry. *Id.* The form must include the operators name as well as (1) the total volume of water used in the fracturing treatment of the well; (2) each hydraulic fracturing additive used in the fracturing fluid and the trade name, vendor, and a brief description of its use or function; (3) each chemical intentionally added to the base fluid; (4) the maximum concentration of each chemical intentionally added; and (5) the chemical abstract number service number for each chemical intentionally added to the base fluid. *Id.*

¹¹ See <http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/og-hist-reg.pdf>.

The vendor, service provider or operator may claim that the specific identity of a chemical and/or the concentration of a chemical is a trade secret, but the claim must be indicated on the chemical disclosure registry form. *Id.* Chemicals claimed to be a trade secret must have their chemical family or another descriptor enclosed on the form, and the vendor, service company or operator must identify the specific identity and amount of any chemicals claimed to be a trade secret to a health professional for purposes of diagnosis or treatment and to the COGCC in the event of a spill or release. *Id.* Service providers are not responsible for inaccurate information provided by the vendor and the vendor is not responsible for inaccurate information provided by a third party manufacturer of the fracturing additives. *Id.*

Colorado's disclosure requirements are in addition to reforms promulgated in 2009, requiring operators to maintain Material Safety Data Sheets ("MSDS") and Chemical Inventories for Chemical Products used in drilling, completion, and work-over operations, including fracture stimulation. An "operator" is defined as a person "who exercises the right of control the conduct of oil and gas operations." *Id.* § 404-1-100 (2009). However, these requirements are only applicable if the Chemical Product is kept in an amount exceeding five hundred pounds during any quarterly reporting period. If the chemical product vendor considers the Chemical Product to be a Trade Secret, then the operator only needs to maintain the identity of the Trade Secret Chemical Product. *Id.* § 404-1-205.d. The operator will not be required to maintain information concerning the identity of chemical constituents or the amounts of the Trade Secret Chemical Product. *Id.*

2. *Tradition Oil and Gas Measures and Delegated Regulations*

All surface and groundwater in Colorado, regulated under the Colorado Water Quality Control Commission of the CDPHE, is a public resource meant for beneficial use.¹² Colo. Rev. Stat. § 37-92-103(3). Colorado utilizes the doctrine of prior appropriation and entities receive a water right, a right to use a portion of the public's water resources. Colo. Const. art. XVI, §§ 5-6 (1876); Colo. Rev. Stat. § 37-92-102(1). Such water consumption issues may be presented to a service provider that is charged under its contract with supplying waters used in the completion activities.

Generally, however, the COGCC places the responsibility for compliance with traditional oil and gas regulations upon the operator of the oil or gas well. 2 Colo. Code Regs. § 404-1:317 (General Drilling Rules). Such rules state that a casing program must be adopted for each well in order to protect any potential oil or gas bearing zones penetrated, that sufficient casing must be run to depths below all known or reasonably estimated usable domestic fresh water sources, and certain surface casing must be cemented by pump and plug or displacement or other approved method with sufficient cement to fill the annulus to the top of the hole. *Id.* § 404-1:317(d), (e). Other provisions regarding the cementing of surface and intermediate casing stat that the "operator shall ensure" the quality of cementing is adequate. *Id.* § 404-1:317(h), (i).

COGCC manages handling and disposal of flowback fluid through its rules applicable to Drilling, Completion, Production and Storage, which are made applicable to the *operators* of the oil or gas wells. 2 Colo. Code Regs. § 404-1:317B(a). In Intermediate Buffer Zones, water supply segments between 301 and 500 feet, COGCC requires that flowback and stimulation fluids are contained within tanks that are placed on a well pad or in an area with downgradient perimeter berming. *Id.* § 404-1:317B(d). For new wells in a Surface Water Supply Area and in the External Buffer Zones, water supply segments between 501 and 2,640 feet, operations must use pitless drilling systems or containment of all drilling flowback and stimulation fluids. § 404-1:317B(e).

With respect to the off-site disposal of hydraulic fracturing wastes, the CDPHE and COGCC have authority to implement the RCRA hazardous waste program exemption for oil and gas hazardous wastes.

¹² Beneficial use is "the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made." COLO. REV. STAT. § 37-92-103(4).

6 Colo. Code Regs. § 1007-2-9.1.2. The COGCC also has the authority to regulate the disposal of produced nonpotable water, drilling fluids and other oil field wastes which are uniquely associated with exploration and production operations. 2 Colo. Code Regs. § 404-1:901. Exploration and production waste associated with oil and gas location and removal operations, are exempt from regulation under Subtitle C of RCRA. All non-hazardous/non exploration and production wastes are considered solid waste and thus require storage, treatment and disposal in accordance with 6 1007-2.

Pursuant to Colorado's delegation of authority under the Clean Water Act, prior to discharging any pollutant into state water from a point source, an entity must first obtain a permit from the CDPHE. 5 Colo. Code Regs. § 1002-61.3(1).

The COGCC has jurisdiction over all Class II injection wells apart from those located on Indian lands. Prior to underground disposal of water or other fluids into a Class II well, written authorization must be obtained from the COGCC Director. 2 Colo. Code Regs. § 404-1:325(a). To obtain authorization, an Underground Injection Formation permit Application and an Injection Well Permit Application are to be filed. *Id.* Disposal of oil and gas waste fluids may be handled by the service providers, in which case, these regulations are directly applicable to service providers rather than the operators.

Air Emissions Issues

Colorado is one of the few states which utilizes "green completion" practices for air emissions purposes. *Id.* § 404-1:805(b)(3). Green completions minimize the release of greenhouse gases and volatile organic compounds, and the practices are required for oil and gas wells "where reservoir pressure, formation productivity, and wellbore conditions are likely to enable the well to be capable of naturally flowing hydrocarbon gas in flammable or greater concentrations at a stabilized rate in excess of 500 MCFD to the surface against an induced surface backpressure of 500 psig or sales line pressure, whichever is greater." *Id.* Green completion practices are not required for exploratory wells. *Id.* Operators who believe that green completions are not feasible may request a variance from the COGCC Director. *Id.* When green completion practices are not required or not feasible, "operators shall employ Best Management Practices to reduce emissions." *Id.*

3. Proposed New Laws or Amendments to Existing Laws

Colorado Senator Morgan Carroll has sponsored the "Water Rights Protection Act" which would affect oil and gas drilling and hydraulic fracturing in eastern Larimer County. Carroll's bill, sponsored in the House by Rep. Roger Wilson, would require the state to write new rules regulating hydraulic fracturing near federal Superfund sites as well as sites containing radioactive material. Additionally, companies would be required to report the amount of water planned to be utilized, and the bill would ban hydraulic fracturing within a half mile of surface water unless all fracturing fluid is contained in a closed-loop system.

C. Montana

The Montana Board of Oil and Gas Conservation ("MBOGC"), under the administrative control of the Montana Department of Natural Resources and Conservation ("MDNRC"), has authority over oil field operations, including pit construction and reclamation, as well as water injection wells. Regulations generally prohibit commencing the drilling of an oil or gas well without the operator first filing a notice of intention to drill and obtaining a drilling permit from the MBOGC. Mont. Code Ann. § 82-11-122. Oil and gas developers and operators must also comply with notice requirements prior to commencement of drilling operations. *Id.*

1. *Fracturing Disclosure Requirements or Other Potentially Relevant Obligations*

On August 26, 2011, new regulations issued by the MBOGC became effective requiring owners or operators to file permit applications that include the volumes and types of materials to be used in the proposed hydraulic fracturing activities. Mont. Admin. R. 36.22.608, 36.22.1015-16, 36.22.1106, 36.22.1010. Upon well completion, owners or operators of a well must disclose the amounts and types of chemicals used, including additive types, chemical ingredient names, and the CAS Registry numbers to the MBOGC. *Id.* at 36.22.1015. Owners, operators, and service contractors may qualify for trade secret exemptions, however, the quantity of the exempted chemicals must be identified along with the trade name, inventory name, chemical family name, or other unique name. *Id.* at 36.22.1016. As with many trade secret laws governing chemicals, the exemption would not apply if the information was needed by a health professional to diagnose or treat an individual or was needed in responding to a spill or release of the trade secret product. *Id.*

2. *Tradition Oil and Gas Measures and Delegated Regulations*

The Montana Department of Environmental Quality (“MDEQ”) regulates the monitoring of water quality issues. All surface, underground, flood, and atmospheric waters within Montana are the property of the state. Mont. Const. art. IX, § 3(3). The owners of water rights own only a right to use the water to the optimum beneficial use without waste. Mont. Code Ann. § 85-2-422. Montana utilizes the doctrine of “prior appropriation” which creates a priority system. Any entity diverting water from a surface water source must receive a Permit to Appropriate Water from the MDNRC prior to beginning construction. *Id.* §§ 85-2-301, 85-2-302.

Under its delegated authority, the MDEQ has the authority to issue, deny or suspend permits to discharge industrial wastes or other wastes into state waters, including fracturing flowback waters. Mont. Code Ann. § 75-5-402. However, discharges of industrial wastes or other wastes are not subject to the ground water permit requirements with regards to: (1) discharges or activities at disposal wells injecting fluids associated with oil and gas exploration and production regulated under the federal underground injection control program and (2) water injection wells, reserve pits, and produced water pits used in oil and gas field operations and approved pursuant to Title 82, chapter 11. *Id.* § 75-5-401.

Wastes may not be injected by any entity without a permit from the MBOGC. Injection wells that inject fluids for purposes of enhancing oil or natural gas recovery or in connection with oil or natural gas production are Class II injection wells. *Id.* § 82-11-101. In Montana, the MBOGC has exclusive jurisdiction over all class II injection wells. *Id.*

D. *North Dakota*

The drilling and production of oil and gas in North Dakota is regulated by the Oil and Gas Division of the North Dakota Industrial Commission (“NDIC”).

1. *Fracturing Disclosure Requirements or Other Potentially Relevant Obligations*

The NDIC requires a permit for any operations involving the exploration of subsurface minerals. N.D. Admin. Code 43-02-02-12. The regulations require operators, contractors, drillers, carriers, gas distributors, *service companies* and pipe pulling and salvaging contractors to take precautions to prevent waste and to take action to avoid pollution of surface and ground waters. *Id.* at 43-02-02-05, 43-02-03-06. A civil penalty of up to \$12,500, where each day’s violation is a separate offense, may be assessed for any violations of rules or regulations of the NDIC. N.D. Cent. Code § 38-08-16.

The NDIC and NDIC’s director have access to all well records, and owners, operators, drilling contractors, and service companies must allow the NDIC to inspect these records as well as the operations of the wells. N.D. Cent. Code § 43-02-03-14. A surety bond or cash bond must be submitted by owners

or operators to the NDIC prior to commencing drilling operations for oil, gas, or injection. *Id.* 43-02-03-05.

On January 23, 2012, the NDIC approved and adopted new regulations governing the practice of hydraulic fracturing, effective April 1, 2012. N.D. Admin. Code 43-02-03, 43-02-12. When hydraulic fracture stimulation is performed through an intermediate casing string or through a frac string run inside an intermediate casing string, these new regulations require that, within 60 days of performing hydraulic fracture stimulation, the owner, operator, or service company must post on the FracFocus Chemical Disclosure Registry all elements made viewable by the FracFocus website. *Id.* 43-02-03-27.1. Operators are charged to the responsibility to respond to, contain, and clean up any oil spills or discharged fluids. *Id.* 43-02-03-30.1.

2. *Tradition Oil and Gas Measures and Delegated Regulations*

The State Water Commission (“Commission”) implements the statewide water development program. N.D. Cent. Code § 61-02-01.1. The Commission has the authority to define, declare, and establish rules for the sale of waters and water rights to corporations, limited liability companies, and associations. *Id.* § 61-02-14. In North Dakota, surface waters, apart from diffused surface waters, waters under the surface in defined subterranean channels or diffused percolating underground water belong to the public but are subject to appropriation for beneficial use,¹³ and priority in time is given the superior water right. *Id.* §§ 61-01-01, 61-04-06.3. Prior to appropriating waters of the state by any person, a water permit from the state engineer must be obtained. *Id.* § 61-04-02.

Rules for general oil and gas exploration and development wells are generally applicable to the owner or operator of the wells. Nonetheless, certain obligations may implicate a service provider’s bailiwick. For example, all wells drilled for subsurface minerals must utilize strings of casing which are properly cemented. *Id.* at 43-02-02-17. The pump and plug method shall be utilized in cementing, unless another method is approved by the NDIC. *Id.* All production wells must be equipped with tubing and the pressure must be monitored so that leaks or breaks may be detected. *Id.*

Within 30 days of well completion, the operator must file a completion report with the state geologist containing pertinent information as well as elevation and location information, sample logs, and washed and packaged sample cuts or core chips. *Id.* at 43-02-02-22.

Operators are required to report the amount of water produced by each well on a monthly basis. N.D. Cent. Code § 43-02-03-47. Regarding Class II UIC wells for the disposal of oil field wastes, prior to underground injection, a permit from the NDIC must be obtained by the operator of the injection well, detailing, among other things, (1) the average and maximum daily rate of fluids injected, (2) the average and maximum surface injection pressure, and (3) the existing or proposed casing, tubing, and packer data. N.D. Admin. Code 43-02-05-04. Injection of fluid into an underground source of drinking water is prohibited, unless the source of water is an exempted aquifer. *Id.* at 43-02-05-02.

Similarly, the operator of an injection well must file a report with the state geologist before the tenth day of the second month following injection detailing the amount of production made by each well during the month, the amount of liquid injected into the well, the composition of the liquid, and the source of the liquid. *Id.* at 43-02-02-31, 43-02-02-30. A similar report must be submitted to the NDIC on or before the fifth day of the second month succeeding the month in which the well is capable of injection. *Id.* at 43-02-05-12.

Injection wells must be cased and cemented to prevent “movement of fluids into or between underground sources of drinking water or into an unauthorized zone.” *Id.* at 43-02-05-06. Additionally, all injection wells are to be equipped with tubing and packer set at a depth approved by the director of the NDIC. *Id.*

¹³ Water must be used in the best interest of the people of the state. N.D. CENT. CODE § 61-04-01.1.

Operators of injection wells must demonstrate the mechanical integrity of the well prior to commencing operations and at least once every five years. *Id.* at 43-02-05-07. Thus, as in other states, if the service provider is the operator of the Class II injection disposal well under the contract with the oil/gas well operator, these requirements would apply to the service providers.

Prior to drilling, production well operators must provide a pit of sufficient size to hold fluid and drill cuttings. N.D. Admin. Code 43-02-02-15. As applicable to any entity, saltwater liquids and brines produced must be disposed of without polluting any freshwater. *Id.* at 43-02-02-32. Saltwater liquids and brines produced must be disposed of without polluting any freshwater. *Id.* As such, the NDIC has the power to condemn any pit that does not properly contain saltwater liquids or brines. *Id.* Water that remains in a drilling or reserve pit used in drilling and completion operations must be removed from the pit and disposed of in a way approved by the NDIC director. *Id.* at 43-02-03-19.2 While a lined earthen pit or open receptacle may temporarily be used to retain oil, water, cement, solids or fluids, the contents must be removed within 72-hours after operations are completed. *Id.* at 43-02-03-19.3.

E. Wyoming

The Wyoming Oil and Gas Conservation Commission (“WOGCC”) instituted rules and regulations regarding hydraulic fracturing in September, 2010.

1. Fracturing Disclosure Requirements or Other Potentially Relevant Obligations

Under WOGCC rules, an operator must: (1) seek and receive approval prior to hydraulic fracturing treatments, (2) provide detailed information regarding the hydraulic fracturing process, including the source of water and/or trade name fluids and types of proppants, and (3) provide actual hydraulic fracturing data in detail and resulting production details. 55-3 WYO. CODE R. § 1(a).

The WOGCC has issued specific well stimulation regulations at Chapter 3, Section 45 of the agency’s non-code rules. WOGCC Rules¹⁴ § 3-45. For example, prior to approving stimulation, the owner or operator may be required to perform mechanical integrity tests of the casing or casing-tubing annulus.

An owner or operator or service company must provide to the WOGCC, for each stage of the well stimulation program, the chemical additives, compounds and concentrations or rates proposed to be mixed and injected, including: (i) the stimulation fluid identified by additive type; (ii) the chemical compound name and Chemical Abstracts Service (CAS) number; (iii) the proposed rate or concentration for each additive shall be provided (such as gel as pounds per thousand gallons, or biocide at gallons per thousand gallons, or proppant at pounds per gallon, or expressed as percent by weight or percent by volume, or parts per million, or parts per billion); and (iv) the owner or operator or service company may also provide a copy of the contractor’s proposed well stimulation program design including the above detail. The WOGCC retains discretion to request from the owner or operator and/or the service company, the formulary disclosure for the chemical compounds used in the well stimulation(s).

The owner or operator must provide a detailed description of the proposed well stimulation design, including (i) the anticipated surface treating pressure range; (ii) the maximum injection treating pressure; and (iii) the estimated or calculated fracture length and fracture height.

Importantly, since the WOGCC prohibits the injection of volatile organic compounds, such as benzene, toluene, ethylbenzene and xylene (BTEX) compounds or any petroleum distillates, into groundwater, prior approval from the agency is required if these components are proposed to be injected for well stimulation into hydrocarbon bearing zones. Nonetheless, it is acceptable to use produced water that may contain small amounts of naturally occurring petroleum distillates as well stimulation fluids.

¹⁴ Available at: <http://soswy.state.wy.us/Rules/default.aspx>.

Upon completion of well simulation activities, the owner or operator or service company must submit a Well Completion or Recompletion Log (Form 3), or a Sundry Notice (Form 4), the following post well stimulation detail:

- (i) The actual total well stimulation treatment volume pumped;
- (ii) Detail as to each fluid stage pumped, including actual volume by fluid stage, proppant rate or concentration, actual chemical additive name, type, concentration or rate, and amounts;
- (iii) The actual surface pressure and rate at the end of each fluid stage and the actual flush volume, rate and final pump pressure;
- (iv) The instantaneous shut-in pressure, and the actual 15-minute and 30-minute shut-in pressures when these pressure measurements are available;
- (v) In lieu of (i) through (iv) above, the *owner or operator* shall submit the actual well stimulation service contractor's job log, without any cost/pricing data from the field ticket, or an Owner or Operator representative's well treatment job log or any report providing the above required information.

2. *Tradition Oil and Gas Measures and Delegated Regulations*

Operators must obtain prior State Oil and Gas Supervisor approval to acidize, cleanout, flush, fracture, or stimulate a well by submitting an Application for Permit to Drill. *Id.* Prior to entering upon land for purposes of oil or gas operations, the operator must provide written notice to owners of the proposed operations. Wyo. Stat. § 30-5-401(d). Otherwise, an operator who has the right to any oil or gas under the land may enter the land and conduct oil and gas operations to remove the oil or gas so long as the operator attempted in good faith to negotiate and secure written consent or waiver from the surface owner. *Id.* § 30-5-402(a). A statement certifying that good faith attempt, along with the contact information of the surface owner and operator, must be filed before the WOGCC will approve a permit to drill. *Id.* § 30-5-403.

The WOGCC rules also establish drilling, casing, cementing, blowout prevention, and construction rules, all of which identify the owner or operator as the party charged with compliance. 55-3 WYO. CODE R. §§ 22-23. For example, to obtain an permit to drill, the owner must include in its application a description of the cementing program, including API class of cement, additives to be used, slurry density to be mixed, estimated volumes to be used, including percent of excess volume. WOGCC Rules § 3-8(c)(viii).

Within 30 days of well completion, the operator must present a report on the operations, including a detailed account of the work done, the manner in which the work was performed, the daily production of oil, gas, and water, and the quantity of sand, crude, chemical, or other materials utilized. *Id.* at § 12. However, Wyoming has a statute to protect trade secrets, and as of August 2011, Wyoming regulators granted trade secret exemptions for 146 chemicals to 11 different companies and rejected only two trade secret requests. *See* WYO. STAT. ANN. § 16-4-203(d)(v).

It is the owner, operator, or service contractor's duty to plug any hole in accordance with the WOGCC in a manner which protects fresh water formations and oil or gas bearing formations. 55-3 WYO. CODE R. § 18. Once a well or core hole is plugged and abandoned, a Subsequent Report of Abandonment must be filed within 30 days. *Id.* § 17.

Under the State Engineer's Office Wyoming Board of Control, Wyoming utilizes the prior appropriation system, a system based upon 'first in time, first in right,' for both surface water and groundwater rights. WYO. STAT. §§ 41-3-901-919. Water permits may be permanent or temporary, and permanent water

rights are senior to temporary water permits or use authorizations, which can be shut off by a permanent water right holder if the temporary use is impairing the permanent right. *Id.* § 41-3-112.

In areas where groundwater depletion is occurring or is likely to occur, Wyoming law establishes control areas wherein certain corrective controls can be implemented. *Id.* § 41-3-912. Such corrective controls may include: (1) closing the area to further appropriations, (2) requiring junior appropriators to cease or reduce withdrawals, (3) requiring a system of rotation for using groundwater in the area, or (4) instituting well spacing requirements. *Id.* § 41-3-915.

The Wyoming Department of Environmental Quality (“WDEQ”) has authority over wastewater discharge permits. Causing, threatening, or allowing the discharge of any pollution or waste into state waters without a permit is prohibited. WYO. STAT. § 35-11-301. Management of flowback water is not specifically addressed in Wyoming rules and regulations. With respect to the off-site disposal of oil or natural gas wastes, the WDEQ has intended that Wyoming’s hazardous waste rules be consistent with the federal RCRA exemption for oil and gas hazardous wastes. *Id.* § 35-11-503(d).

Disposal of fresh water, salt water, or brackish water is permitted only upon approval of the WOGCC Supervisor, obtained pursuant to an application filed with the WOGCC. 55-4 WYO. CODE R. § 5. Disposal wells must be cased and cemented in a way that oil, gas, or fresh water sources are not damaged. *Id.* Mechanical integrity must be tested by the owner or operator of the disposal well at least once every 5 years. *Id.*

Wyoming also utilizes green completion techniques under the Chapter 6, Section 2 Oil and Gas Production Facilities Permitting Guidance (“Guidance”). The Guidance is a supplement to the Wyoming Air Quality Standards and Regulations New Source Review permitting program. Currently, green completion techniques are utilized in southwest Wyoming, Jonah Field and Pinedale Anticline development areas.

F. Oklahoma

Oklahoma has adopted regulations that are more specifically aimed at controlling hydraulic fracturing activities. The Oil and Gas Division of the Oklahoma Corporation Commission (“OCC”) regulates oil and natural gas activities.

1. Tradition Oil and Gas Measures and Delegated Regulations

State regulations identify approximately 35 OCC rules that touch upon the management of hydraulic fracturing operations, though most are in the overall scope of regulation of oil and gas operations in general. OKLA. ADMIN. CODE § 165:10-3-10(b). For example, all wells, including those utilizing fracturing, require a permit. *Id.* § 165:10-3-1. An operator must give at least 24 hours’ notice to the conservation district prior to conducting fracturing operations. *Id.* § 165:10-3-4(e).

Moreover, “in the completion of an oil, gas, injection, disposal, or service well, where acidizing or fracture processes are used, no oil, gas, or deleterious substances shall be permitted to pollute any surface and subsurface fresh water.” *Id.* § 165:10-3-10(a). To prevent such pollution, non-commercial pits that may contain fracture fluids must be properly constructed with a geomembrane liner. *Id.* § 165:10-7-16(b)(1). Regulations require a permit to drill, regulate surface and production casing, and require notification to the state of any failures of the surface or production casing. *Id.* §§ 165:10-3-19(a)(3); 10-3-3; 10-3-4.

Like Texas, Oklahoma requires that “all operators, contractors, drillers, service companies, pit operators, transporters, pipeline companies, or other persons shall at all times conduct their operations in a manner that will not cause pollution.” *Id.* § 165:10-7-5. In Oklahoma, the OCC has authority over Class II UIC

wells, while the Oklahoma State Department of Health has authority over Class I, III, IV, and V wells. 40 C.F.R. §§ 147.1850–147.1851.

G. Pennsylvania

Earlier this year, the Pennsylvania legislature passed the Act of February 14, 2012, P.L. ___, 58 Pa. C.S. §§2301-3504 (“Act 13”), a measure that amended provisions of Title 58 (Oil and Gas) of the Pennsylvania Consolidated Statutes. Act 13 consolidated the Oil and Gas Act with modifications and additions relating to well permits, well location restrictions, well site restoration, protection of water supplies, notification to public drinking water systems, containment for unconventional wells, transportation records regarding wastewater fluids, corrosion control requirements, gathering lines, well control emergency response, and hydraulic fracturing chemical discharge requirements. The measure also addressed air emissions, public nuisances, enforcement orders, and provided for local ordinances relating to collection of fees from oil and gas operations. The impact fee is determined on an annual basis according to the average price of natural gas—currently, the fee is \$50,000 per well. 58 P.S. § 2302.

1. Fracturing Disclosure Requirements or Other Potentially Relevant Obligations

Under the state’s new Oil and Gas Act, 58 P.S. § 601.101 *et seq.*, service providers who performs any part of a hydraulic fracturing treatment and a vendor who provides hydraulic fracturing additives directly to the operator for a hydraulic fracturing treatment must furnish the operator with the information required for disclosure not later than 60 days after the commencement of the hydraulic fracturing. 58 P.S. § 3222.1(b). Within 60 days following the conclusion of fracturing, the well operator must make a chemical disclosure on the FracFocus registry. *Id.*

Modeled after the Colorado and Texas disclosure laws (among others), the Pennsylvania measure allows for the vendor, service provider or operator to claim that the specific identity of a chemical or the concentration of a chemical, or both, are a trade secret or confidential proprietary information. However, the disclosure must identify the identity and amount of any chemicals claimed to be a trade secret or confidential proprietary information to health professionals who request the information for purposes of diagnosis or treatment of a patient, as long as the professional executes a confidentiality agreement. *Id.* § 3221.10.

2. Tradition Oil and Gas Measures and Delegated Regulations

An oil or gas well may not be drilled or altered without first having obtained a well permit issued by the Pennsylvania Department of Environmental Protection (“PADEP”). *Id.* § 3211(a). Such well permits must address water management issues: specifically, compliance with an approved water management plan must be a condition of any permit issued for the drilling or hydraulic fracturing of gas wells in unconventional formations. Importantly, no person may withdraw or use water from water sources within the state for the drilling or hydraulic fracture stimulation of any natural gas well completed in an unconventional gas formation except in accordance with a water management plan approved by the PADEP. *Id.* § 3211(m). When assessing a water management plan, the agency must determine that the requested water use will not adversely affect the quantity or quality of water available to other users and will otherwise protect the designated and existing uses of the water source, and will not cause adverse impact to the water quality in the watershed as whole. Significantly, the water management plan must include a reuse plan for fluids that will be used to hydraulically fracture wells.

Additional measures under the state’s new Oil and Gas Act and regulations promulgated thereunder (e.g., 25 PA. ADMIN. CODE Chs. 78, 79, 91) apply to fracking operations. Generally, a well operator must restore or replace water supplies if a water supply is damaged in the course of drilling. 25 PA. CODE § 78.51 (Feb. 4, 2011). This requirement applies regardless of the type of drilling or activity. As a defense to an allegation that drilling contaminated nearby groundwater, the operator must have tested

nearby water wells prior to drilling or, if no such wells exist, the operator must install and test groundwater monitoring wells nearby planned drilling. *Id.* § 78.52.

Further, under the state's waste control and disposal regulations, drilling companies must prepare and implement a plan the concerning oil and gas wastes including tophole water, drilling fluids, additives, stimulation fluids and well servicing fluids. *Id.* §§ 78.55, 91.34. Disposal and enhanced recovery well permits are required under § 78.18, which essentially requires an EPA authorization under the UIC program under 40 C.F.R. Pt. 146. Pennsylvania has detailed well casing requirements in order to protect fresh groundwater strata. 58 P.S. § 601.207; 25 PA. ADMIN. CODE §§ 78.71, 78.81–87. Finally, regulations require that an operator use blow-out prevention equipment after setting casing with a competent casing seat in certain circumstances, including when drilling out solid core hydraulic fracturing plugs to complete a well. *Id.* § 78.27(a).

Some state agencies and local permitting authorities have implemented temporary or specific local restrictions—or even de facto moratoria—on fracturing activities. Pennsylvania has a moratorium in effect for areas within the watershed of the Delaware River Basin. Local governments have attempted to ban or severely restrict hydraulic fracturing activities as well. For example, the City of Pittsburgh, Pennsylvania place severe restrictions on hydraulic fracturing within their borders. Most local ordinances attempted to be put in place throughout the country have typically been aimed at imposing reasonable limitations or restrictions concerning nighttime operations or noise and dust controls.

H. New York

Some states, like New York, are taking a more aggressive approach to addressing hydraulic fracturing. New York has proven to be one of the more hostile jurisdictions to hydraulic fracturing operations. Under New York law, a permit is required for oil and gas drilling operations. N.Y. Comp. Codes R. & Regs. Tit. 6, 617.2. In order to obtain a permit, a project must pass a State Environmental Quality Review (“SEQR”). *Id.* § 617.3. Since 1992, New York has been fulfilling the SEQR requirement for oil and gas permits by issuing such permits under a Generic Environmental Impact Statement on the Oil, Gas, and Solution Mining Regulatory Program. N.Y. Dept. of Env'tl. Conservation (“NYDEC”), *available at* www.dec.ny.gov/docs/materials_minerals_pdf/fgeisexecsum.pdf.

In 2008, the NYDEC determined that some aspects of horizontal drilling and high-volume hydraulic fracturing warranted additional study in a Supplemental Generic Environmental Impact Statement (“SGEIS”). While the Draft SGEIS was first released in September 2009, further environmental review was ordered by the NY governor, requiring a Revised Draft SGEIS. Per NYDEC policy, no permits for horizontal, high-volume hydraulically fractured wells were allowed to be issued until completion of updated and supplemental Environmental Impact Statements, which are anticipated to be completed in 2012. On July 8, 2011, the NYDEC released a full Preliminary Revised Draft SGEIS; however, additional public comment periods, socioeconomic study information will result in yet additional revision to the SGEIS before ever becoming final.

New York has also seen a flurry of proposed legislation, including a bill that would shift the presumption of contamination onto a drilling operator if nearby water supplies become contaminated, bills similar to Colorado and Wyoming's disclosure requirements, and bills proposing outright bans of certain chemicals used in hydraulic fracturing operations. However, given the uncertainty surrounding the Revised Draft SGEIS, it is difficult to predict whether any of the proposals will be enacted.

IV. LITIGATION TRENDS

Since August 2009, over fifty lawsuits complaining of issues allegedly resulting from hydraulic fracturing activities have been filed in state and federal courts in Arkansas, Colorado, Louisiana, New York, Ohio, Pennsylvania, Texas, and West Virginia. The majority of plaintiffs in these suits are either landowners who leased oil and gas rights to the defendants, or landowners who reside in close proximity to where

hydraulic fracturing operations have been conducted. Other shale and hydraulic fracturing lawsuits have been brought concerning earthquakes, environmental issues, regulatory enforcement, municipal bans, government regulations, and oil and gas lease disputes.

A review of lawsuits focused on hydraulic fracturing activities reveals that the most commonly pled causes of action by plaintiffs include: negligence, trespass, public and private nuisance, strict liability for ultra-hazardous activity, breach of contract, and fraud. Plaintiffs have generally named an array of defendants in such actions, including lease holders, operators, and service companies. Most of these cases are still in active stages of litigation; in fact to date while some settlements have been entered into, there are no identifiable judgments against well operators, drilling contractors, or service companies for tort-based allegations of damages resulting from hydraulic fracturing.

Although causes of action are generally established through state-specific statutes or development of common law, many tort theories are essentially similar across the states. The discussion below summarizes the basic elements of commonly-employed claims that could potentially be brought against an oil or natural gas operator using hydraulic fracturing techniques.

A. Litigation Involving Alleged Contamination and Other Torts

The majority of hydraulic fracturing lawsuits allege some component of contamination or threatened contamination of soils and/or groundwater. Such lawsuits have typically involved a plaintiff alleging that nearby hydraulic fracturing activities have contaminated well water or caused other property damage.

Common tort theories raised by plaintiffs include negligence, nuisance, and trespass. Generally, a claimant alleging negligence must prove that (1) the defendant owed a legal duty to the plaintiff, (2) the defendant breached the duty, and (3) the breach was a proximate cause of the plaintiff's personal injury or property damages. *E.g., D. Houston, Inc. v. Love*, 92 S.W.3d 450, 454 (Tex. 2002). Personal injury and property damage claims are often raised under this theory.

A claimant alleging a nuisance must show that the defendant is causing a condition that substantially interferes with the plaintiff's use and enjoyment of his land by causing conditions of unreasonable discomfort or annoyance to persons of ordinary sensibilities. *E.g., Schneider Nat'l Carriers, Inc. v. Bates*, 147 S.W.3d 264, 269 (Tex. 2004). This theory is most often used to recover reductions in property value.

A claimant alleging trespass must prove that (1) the plaintiff owns or has a lawful right to possess real property, (2) the defendant entered the plaintiff's land and the entry was physical, intentional, and voluntary, and (3) the defendant's trespass caused injury to the plaintiff. *E.g., Pentagon Enterprises v. Southwestern Bell Telephone Co.*, 540 S.W.2d 477, 478 (Tex. App—Houston [14th Dist.] 1976, writ ref'd. n.r.e.). Claimants use trespass to recover property damage caused by unauthorized entry on private property.

The following case summaries are not intended to be an exhaustive list of all cases filed, but rather a representative sample of such cases across the various jurisdictions.

1. Maring v. Nalbone, et al., No. K12009001499 (N.Y. Sup. Ct., filed Aug. 27, 2009)

One of the earliest cases to implicate hydraulic fracturing operations—though the complaint cites general drilling and operations—was *Maring v. Nalbone, et al.*, No. K12009001499 (N.Y. Sup. Ct., filed Aug. 27, 2009). Josephine Maring filed suit in Chautauqua County, New York against John Nalbone Jr., Universal Resource Oil & Gas, EnerVest Operating LLC, and Dallas Morris Drilling Inc., who allegedly own and operate approximately 20 natural gas wells within a two mile radius of plaintiff's property. Plaintiff alleges causes of action for trespass, nuisance, and negligence, claiming that defendants' drilling and extraction activities have resulted in the contamination of her water well with methane gas, making the

water unfit for ordinary use. Maring seeks damages in the amount of \$250,000 plus litigation costs, but since the defendants' appearance, there has been little activity in the case.

2. *Zimmermann v. Atlas America, LLC*, No. 2009-7564 (Pa. Ct. Com. Pl., filed Sept. 21, 2009)

Unlike *Maring*, in *Zimmermann v. Atlas America, LLC*, No. 2009-7564 (Pa. Ct. Com. Pl., filed Sept. 21, 2009), the plaintiffs allege that hydraulic fracturing operations specifically contributed to the claims at issue. The Zimmermanns are a married couple owning the surface rights to their property in Pennsylvania. After attempting to prevent Atlas from conducting drilling operations on their property, the Zimmermanns entered into a settlement agreement with Atlas. The claims of contamination in the pending lawsuit arose after drilling had commenced.

The previous agreement permitted Atlas to conduct hydraulic fracturing operations on the Zimmermann farm. The Zimmermanns now allege that Atlas used toxic chemicals during the process, and that the use of such chemicals contaminated and polluted freshwater aquifers underlying the property. The Zimmermanns claim that their natural water source and Heirloom Tomato farmland were destroyed as a result of Atlas's hydraulic fracturing operations, claiming that Atlas contaminated their soil and water with carcinogens and other pollutants, and that such contamination was beyond the agreed disturbance originally contemplated by the parties' settlement agreement. The suit alleges claims of trespass, nuisance, negligence, negligence per se, *res ipsa loquitur*, fraud and misrepresentation, and breach of the settlement agreement. The Zimmermanns also allege that Atlas violated casing requirements of the Pennsylvania Oil & Gas Act.

The Zimmermanns' trespass claim alleges that their surface rights extend to aquifers comprising the water table underlying the property. The Zimmermanns' nuisance claim asserts that the contamination of their land and water, along with the release of noxious and harmful detectable gases into the air on their property, constitutes a private nuisance. In their negligence claim, the Zimmermanns allege that Atlas duties owed to them by: (1) failing to conduct its mining operations in a reasonable manner to protect the property; (2) failing to employ alternative methods in the hydraulic fracturing process; (3) failing to take proper precautions to prevent toxic and carcinogenic chemicals from escaping and damaging the property; (4) failing to take appropriate measures after discovering damage to the surface estate; (5) selecting well sites that were in close proximity to the Zimmermanns' home and natural water aquifers; and (6) employing the hydraulic fracturing method with knowledge that the use of such method would cause the surface estate of the property to be contaminated. The Zimmermanns' fraud claim alleges that prior to the commencement of drilling on their property, Atlas knew that the chemicals injected into sub-surface reservoirs contained and/or would release known hazardous contaminants into the Zimmermanns' soil and water. Finally, the Zimmermanns allege that Atlas breached the settlement agreement by disturbing substantially more than the agreed acreage of property.

On August 4, 2011, the Court ruled on Preliminary Objections filed by Atlas. Finding that the *res ipsa loquitur* claim was insufficient as a matter of law and that the claim for gross negligence was redundant, both were dismissed. The court also dismissed the fraud and misrepresentation claim for lacking an averment of the existence of a duty and lacking specificity as to an alleged breach, but the court allowed amendment of the complaint to correct the allegations and reinstate the claim. The Zimmermanns seek compensatory damages including permanent destruction of property, permanent destruction of water aquifers, loss of water well use, and reduction in value of property, and punitive damages.

Following the court's ruling on Preliminary Objections, the parties have engaged in contentious discovery, with motions to quash depositions, motions for sanctions and to compel production of documents and videotapes, and motions for protection. There have also been motions to disqualify counsel. The injunction hearing, originally scheduled for September 20, 2011, was continued until April 27, 2012, thus delaying the trial of this case until after the court rules on other motions.

3. *Fiorentino v. Cabot Oil & Gas Corp., et al.*, No. 3:09-cv-02284 (M.D. Pa., filed Nov. 19, 2009)

Perhaps one of the highest profile hydraulic fracturing lawsuits, pending in federal district court in Pennsylvania, is *Fiorentino v. Cabot Oil & Gas Corp. and Gas Search Drilling Services Corp.*, No. 3:09-cv-02284 (M.D. Pa., filed Nov. 19, 2009), involving properties in and around Dimock, Pennsylvania. In *Fiorentino*, nineteen families consisting of 62 plaintiffs (“Plaintiffs”) sued Cabot Oil & Gas Corporation and Gas Search Drilling Services Corporation (collectively, “Cabot”) for violations of the Pennsylvania Oil and Gas Act, the Pennsylvania Hazardous Sites Cleanup Act, as well as common law claims of negligence, gross negligence, negligence per se, nuisance, strict liability, fraudulent misrepresentation, breach of contract, medical monitoring trust fund.

Among other things, according to the Plaintiffs, Cabot’s oil and gas operations (1) released combustible gas into the headspaces of Plaintiffs’ water wells; (2) caused elevated levels of dissolved methane to be present in Plaintiffs’ water wells; (3) discharged natural gas into Plaintiffs’ groundwater; (4) allowed excessive pressure to build up within gas wells near Plaintiffs’ homes and water wells which resulted in an explosion; (5) spilled diesel fuel onto the ground near Plaintiffs’ homes and water wells; (6) discharged drilling mud into diversion ditches near Plaintiffs’ homes and water wells; (7) caused an explosion due to the accumulation of evaporated methane in wellheads; and (8) caused three significant spills within a ten day period (which garnered a separate enforcement action by the Pennsylvania Department of Environmental Protection, described below).

The Plaintiffs’ negligence claim is premised on negligence per se, common law negligence, and gross negligence. According to Plaintiffs, Cabot breached its duties by negligently releasing hazardous chemicals and failing to take reasonable measures and precautions to avoid or respond to the release of such hazardous chemicals. Plaintiffs allege that the release of such chemicals contaminated water supplies, damaged property and natural resources, and caused serious personal injury. Plaintiffs further allege that Cabot’s actions were grossly reckless, wantonly negligent, and were done with utter disregard for the consequences to Plaintiffs and others.

Plaintiffs claim that Cabot created and maintained an ongoing nuisance in the Dimock gas well area by: (1) allowing gas wells to exist and operate in a dangerous and hazardous condition; (2) allowing spills and releases, and/or the threats of spills and releases, of hazardous chemicals; and (3) allowing spills and releases to spread to surrounding areas, including Plaintiffs’ properties and drinking water supplies. In the strict liability claim, Plaintiffs allege that the chemicals and combustible gases used, processed, and stored by Cabot are ultrahazardous and abnormally dangerous.

Further, the plaintiffs claim that the use, processing, and storage of fracturing fluid at Cabot’s gas wells, adjacent to or on residential properties, constitutes an abnormally dangerous and ultrahazardous activity. In fact, Plaintiffs allege that persons coming into contact with the chemicals sustain severe injuries, and, therefore, Cabot may be held strictly liable regardless of the degree of caution that Cabot may exercise.

In *Fiorentino*, the plaintiffs seek compensatory damages including loss of property value, natural resource damage, medical costs, loss of use and enjoyment of property, loss of quality of life, emotional distress, and personal injury. Plaintiffs also seek punitive damages, the cost of remediation, the cost of future health monitoring, an injunction, and litigation costs and fees.

On June 1, 2010, Cabot filed a motion to dismiss all claims alleged by Plaintiffs for failure to state a claim under Rule 12(b)(6) of the Federal Rules of Civil Procedure. On November 15, 2010, the court denied the motion to dismiss on all claims except for gross negligence. Of the more interesting components of the motion to dismiss and ruling, Cabot argued that the strict liability claim must be dismissed because cases infer that Pennsylvania law holds that petroleum and natural-gas related activities are not “abnormally dangerous” or “ultra-hazardous.” While denying the dismissal of this count, the court recognized that the record before it was insufficiently developed to render an informed

decision as to whether the cases cited by Cabot should apply to the well-drilling activities at issue. *Fiorentino*, 750 F. Supp. 2d 506, 512 (M.D. Pa. 2010). Therefore, the court allowed Cabot to reassert this argument if additional facts uncovered during discovery are relevant to the determination. Following the denial of the motion to dismiss, the parties are still engaged in contentious discovery.

4. *Scoma v. Chesapeake Energy Corp., et al.*, No. 3:10-cv-01385 (N.D. Tex., filed Jul. 15, 2010)

The next major tort-based lawsuit in the chronology is *Scoma v. Chesapeake Energy Corp., et al.*, No. 3:10-cv-01385 (N.D. Tex., filed Jul. 15, 2010). The Scomas owned land in Johnson County, Texas, near oil and gas wells being developed by Chesapeake Energy Corporation, Chesapeake Operating, Inc., and Chesapeake Exploration, LLC (collectively, “Chesapeake”). The Scomas brought an action for negligence, nuisance, and trespass against Chesapeake, alleging that Chesapeake stored drilling waste at sites and disposal wells near their property and disposed of fracturing waste in injection wells near their property. According to the complaint, the plaintiffs’ water well became contaminated as a result of Chesapeake’s hydraulic fracturing and disposal activities, allegedly showing an increase in benzene, toluene, ethylbenzene, xylene, barium, and iron.

In their nuisance claim, plaintiffs alleged that Chesapeake interfered with their private interest in their land by contaminating their only source of drinking water, thereby preventing Plaintiffs from the use and enjoyment of their well water for drinking and washing. Plaintiffs further claimed that the contaminated well water offended their senses and made the enjoyment of their property uncomfortable and inconvenient. In their trespass claim, Chesapeake allegedly exceeded the rights granted for drilling on land adjacent to plaintiffs’ property, causing petroleum byproducts to enter Plaintiffs’ land and contaminate their water. The damages requested included cost of testing, loss of use of land, loss of market value of land, loss of intrinsic value of well water, emotional harm and mental anguish, nominal damages, exemplary damages, and injunctive relief. The parties agreed to a settlement and on December 9, 2011, the court entered a Final Judgment dismissing all claims with prejudice.

5. *Berish v. Southwestern Energy Production Co., et al.*, No. 3:10-cv-01981 (M.D. Pa., Sept. 29, 2010)

Heading back to Pennsylvania cases, in September 2010, a group of thirteen families (“Plaintiffs”) filed suit in Susquehanna County state court against Southwestern Energy Production Company and its parent Southwestern Energy Company (collectively “Southwestern Energy”). *Berish v. Southwestern Energy Production Co., et al.*, No. 2010-1882 (Pa. Ct. Com. Pl., Sept. 14, 2010). The case was removed to the Middle District of Pennsylvania on September 29, 2010. *Berish*, No. 3:10-cv-01981 (M.D. Pa., Sept. 29, 2010). On January 23, 2012, the Plaintiffs filed a motion for leave to file an amended complaint in order to add four new defendants—Halliburton Energy Services, Inc.; BJ Services Company, Inc.; Schlumberger Ltd.; and Union Drilling, Inc.—and to allege a cause of action for fraudulent misrepresentation. Trial is currently scheduled for February 2013.

The *Berish* complaint alleges that beginning in 2008, hydraulic fracturing and horizontal drilling in close proximity (700 to 1700 feet) to plaintiffs’ water wells caused the wells to become contaminated. Plaintiffs claim that Southwestern Energy’s natural gas well was improperly cased, allowing contaminants such as diesel fuel, barium, manganese, and strontium to migrate to the water wells. According to the complaint, at least one plaintiff is exhibiting neurological symptoms consistent with exposure to heavy metals.

Plaintiffs allege many of the same causes of action as the *Fiorentino* plaintiffs, namely, negligence per se, common law negligence, nuisance, trespass, strict liability for abnormally dangerous or ultrahazardous activities, medical monitoring trust fund, and violation of the Pennsylvania Hazardous Sites Cleanup Act. However, unlike in *Fiorentino*, on February 3, 2011, the Court dismissed the citizen’s suit under section 1115 of the Pennsylvania Hazardous Sites Cleanup Act. Ultimately, the plaintiffs seek costs for

remediation of the hazardous substances and contaminants and for the purchase of an alternative source of water, as well as compensatory damages for lost property value, damage to the natural resources around their properties, loss of quality of life, emotional distress, loss of use and enjoyment of their properties, emotional distress as to one plaintiff, inconvenience and discomfort, and personal injury. The complaint also requests punitive damage and preliminary and permanent injunctions against future contamination, as well as reasonable attorneys' fees.

6. *Armstrong v. Chesapeake Appalachia, LLC, et al.*, No. 10-cv-000680 (Pa. Ct. Com. Pl., filed Oct. 27, 2010).

In October 2010, Plaintiff Judy Armstrong filed suit in Bradford County, Pennsylvania against Chesapeake Appalachia LLC, Chesapeake Energy Corporation, and Nomac Drilling, LLC ("Defendants"). *Armstrong v. Chesapeake Appalachia, LLC, et al.*, No. 10-cv-000680 (Pa. Ct. Com. Pl., Oct. 27, 2010). The case was removed to the Middle District of Pennsylvania on December 6, 2010 (No. 3:10-cv-02453) on the basis of diversity jurisdiction. However, on January 20, 2011, Plaintiff added two new plaintiffs and two new Pennsylvania-domiciled defendants to the lawsuit which destroyed diversity jurisdiction. The matter was remanded to state court on July 29, 2011. Currently pending before the Court is a motion to stay the case and to compel arbitration.

The Armstrong plaintiffs own property and water wells located three miles from oil and gas wells owned and operated by the defendants. The complaint alleges that defendants' use of improper drilling techniques, including defective and ineffective well casings, caused methane, ethane, barium, and other harmful substances to enter into and contaminate the water supply. Plaintiffs allege that at least one family has been forced to evacuate their property. The plaintiffs claim damages under theories of negligence, negligence per se for violations of various state statutes, nuisance, strict liability, and trespass. The complaint requests punitive damages, medical monitoring damages, property damage and the cost of an alternative water source. The allegations are similar to those in the *Fiorentino* and *Berish* matters.

In response to plaintiffs' suit, the Pennsylvania Department of Environmental Protection initiated a joint review of possible natural gas drilling violations by Chesapeake. Although the results of the joint review were inconclusive, Chesapeake and the agency reached a settlement agreement on May 17, 2011, described below.

7. *Hagy v. Equitable Production Co., et al.*, No. 2:10-cv-01372 (S.D. W. Va., Dec. 10, 2010)

The Hagy family filed suit in West Virginia state court on October 26, 2010 against Equitable Production Co., Warren Drilling Company, Inc., BJ Services Company USA, and Halliburton Energy Services, Inc. (collectively, "Defendants"). *Hagy v. Equitable Prod. Co., et al.*, No. 10-c-163 (Jackson County Cir. Ct., filed Oct. 26, 2010). The case was removed to the U.S. District Court for the Southern District of West Virginia on December 10, 2010.

The Hagy complaint alleges contamination of their property and water well, which is located approximately 1,000 feet from Defendants' natural gas wells. Plaintiffs claim to suffer neurological symptoms consistent with toxic exposure to heavy metals. The alleged causes of action include negligence, negligence per se, nuisance, strict liability, trespass, and medical monitoring trust funds. Plaintiffs seek an injunction against further drilling activities, along with compensatory damages, punitive damages, the cost of future health monitoring, and litigation fees and costs.

On July 22, 2011, the court dismissed the Hagy's claims of strict liability and medical monitoring and dismissed the claims of nuisance and trespass for two of the adult children who no longer lived on the property. The Hagy adult children voluntarily dismissed all their other claims on May 7, 2012, after settling with Halliburton Energy Services, Inc. and Warren Drilling Company, Inc. On June 29, 2012, the district court granted summary judgment to BJ Services with regards to the remaining claims against it

due to a lack of any theory of causation supported by the evidence obtained through discovery. *Hagy v. Equitable Production Co.*, 2012 U.S. Dist. LEXIS 91773 (S.D.W.V. Jun. 29, 2012).

8. *Harris v. Devon Energy Prod. Co., L.P.*, No. 4:10-cv-00708 (E.D. Tex., Dec. 22, 2010)

Plaintiffs Doug and Diana Harris sued Devon Energy Production Co., LP (“Devon”) in the U.S. District Court for the Northern District of Texas (Case No. 3:10-cv-02554) on December 15, 2010; the case was transferred to the Eastern District of Texas on December 22, 2010. According to Harris, Devon drilled bore holes under and near Harris’s property in Denton County, Texas. The plaintiffs claimed that after Devon Energy commenced hydraulic fracturing operations, their groundwater became contaminated and polluted with a gray substance. According to the complaint, testing results showed high levels of metals including aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, nickel, potassium, sodium, strontium, titanium, vanadium, and zinc.

The complaint alleged causes of action for nuisance, trespass, negligence, fraud, and strict liability, although the court dismissed the fraud claim on July 12, 2011.¹⁵ Damages sought in this case included loss of the use of land and groundwater, loss of market value of property, loss of the intrinsic value of well water, expenses related to testing contaminated water, expenses incurred from buying water from an alternate source, emotional harm and mental anguish, medical monitoring damages, remediation, nominal damages, and exemplary damages.

Shortly after Devon filed a motion for summary judgment, on December 6, 2011, the plaintiffs filed a motion to dismiss *without prejudice*, stating that “recent testing showed that the contamination is no longer at a toxic level for human consumption.” Plaintiffs creatively stated that “[b]ecause the Plaintiffs’ groundwater has apparently purged itself of elevated levels of toxic substances, Plaintiffs cannot trace or prove that Defendant Devon was the cause of the Plaintiffs’ toxic water.” Devon opposed Plaintiffs’ dismissal motion, asking that the court dismiss the case *with prejudice* and award attorneys’ fees. On January 25, 2012, the court granted Plaintiffs’ motion and the lawsuit was dismissed without prejudice.

9. *Baker v. Anschutz Exploration Corp., et al.*, No. 6:11-cv-06119 (W.D.N.Y. Mar.9, 2011)

In February 2011, fifteen landowners filed suit in the Supreme Court of the State of New York, Chemung County against Anschutz Exploration Corporation, Conrad Geoscience Corporation, and Pathfinder Energy Services, Inc. (collectively, “Defendants”). This case was removed to the U.S. District Court for the Western District of New York on March 9, 2011. The complaint alleges many of the same causes of action as the *Fiorentino* and *Berish* lawsuits, namely, negligence per se, common law negligence, nuisance, strict liability, trespass, and medical monitoring. Plaintiffs also allege causes of action for premises liability, fear of developing cancer, and deceptive business acts and practices.

Plaintiffs allege that Defendants were negligent in their drilling, construction, and operation of natural gas wells such that: (1) combustible gas was released into the headspaces of Plaintiffs’ water wells; (2) elevated levels of dissolved methane, propane, or other natural gases were caused to be present in Plaintiffs’ wells; (3) natural gas was caused to be discharged into Plaintiffs’ groundwater; (4) excessive pressures were caused to be present within gas wells near Plaintiffs’ homes and water wells; (5) pollutants including toxic sediments and industrial waste were caused to be discharged into the soil and water near Plaintiffs’ homes and water wells; and (6) drilling muds and fluids were caused or allowed to be discharged onto the surface and into the subsurface near Plaintiffs’ homes and water wells. Plaintiffs further claim that when hired by Anschutz to investigate possible contamination, Conrad Geoscience

¹⁵ The *Harris* suit raised virtually the same allegations and causes of action as previously filed suits in Texas, including *Sizelove v. Williams Production Co., LLC, et al.*, No. 2010-50355-367 (367th Dist. Court, Denton County, Tex. filed Nov. 3, 2010) and *Mitchell v. EnCana Oil & Gas (USA) Inc., et al.*, No. 3:10-cv-02555 (N.D. Tex., filed Dec. 15, 2010).

failed to conduct a reasonable and prudent investigation, in conformity with industry standards that would have warned Plaintiffs about the contamination.

The Baker suit is still in the midst of discovery, with Defendant Anschutz moving to limit the first rounds of discovery to (1) finding out whether there is any toxic contamination in Plaintiffs' wells, (2) to articulating the claimed causal connection between any contamination and Defendants' wells, and (3) to describing Plaintiffs' specific injuries. The plaintiffs seek several hundred million dollars in compensatory and punitive damages.

10. *Andre v. EXCO Resources, Inc., et al.*, No. 5:11-cv-00610-TS-MLH (W.D. La. Apr. 15, 2011) & *Beckman v. EXCO Resources, Inc., et al.*, No. 5:11-cv-00617-TS-MLH (W.D. La. Apr. 18, 2011)

Plaintiff David Andre brought suit against EXCO Resources, Inc. and EXCO Operating Company (collectively "EXCO") on April 15, 2011, on behalf of "consumers of water in the immediate vicinity of DeBroeck Landing, Caddo Parish, Louisiana." Three days later, Daniel Beckman and seven other plaintiffs (collectively "the Beckman Plaintiffs") filed suit against EXCO as well. Because the Beckman Plaintiffs resided in Shreveport, LA, they were not included in the Andre suit's purported class. However, both lawsuits were filed regarding the same alleged incident and seek the same relief.

According to both complaints, on April 18, 2010, a natural gas well operated by EXCO near DeBroeck Landing "experienced problems resulting in the contamination" of the Caddo Parish aquifer and the Beckman Plaintiffs' and Andre's properties. While the complaints do not allege that EXCO engaged in hydraulic fracturing, the Beckman Plaintiffs and Andre seek to compel disclosure of the formulation of the "drilling muds and solutions" allegedly used by EXCO in the natural gas well in order to allow "appropriate tests and monitoring of the aquifer [to] take place."

Both complaints allege causes of action for negligence, strict liability, nuisance, trespass, unjust enrichment, and impairment of use of property. Andre and the Beckman Plaintiffs seek a variety of damages, including groundwater remediation costs, diminution of property value, and losses from property market value "stigma." They also seek a declaratory judgment, "general and equitable relief," economic damages, and mental anguish and emotional distress damages. Additionally, both actions seek an order requiring remediation by EXCO of the groundwater and development of a "long-term monitoring program" near the site of the alleged well failure and the allegedly contaminated aquifer.

11. *Kamuck v. Shell Energy Holdings GP, LLC, et al.*, No. 4:11-cv-01425-MCC (Mid. Pa. Aug. 3, 2011)

Edward Kamuck filed suit claiming damages from hydraulic fracturing activities on his 93-acre tract of land in the Marcellus Shale, which was once part of a larger, three hundred twenty-three (323) acre tract that was subject to a separate mineral estate agreement at the time of his purchase in 2009. Shell solicited Mr. Kamuck and the owners of the other parcels to enter into new agreements, Mr. Kamuck was the only owner to refuse. Thereafter, Shell commenced drilling the adjoining parcels, and Mr. Kamuck brought suit including ten separate claims: breach of contract, breach of a duty of good faith and fair dealing, anticipatory trespass, private nuisance, negligence in drilling operations, and strict liability for ultra-hazardous activity.

Kamuck complained that fracking fluid contains significant amounts of hazardous, toxic and carcinogenic chemicals which remain in the well and come to the surface and which harm his property and his health. He further complained that 100 to 150 vehicles a day go directly past his residence (within 45 feet) on an unpaved, dusty road, creating noise and dust, and that the unidentified fluid that the defendants spray on the dirt roads to suppress dust drains into the ditches and seeps into the ground.

Kamuck sought injunctive relief prohibiting all fracking operations and related activities, and brought claims for anticipatory trespass, private nuisance, negligence, negligence per se, gross negligence, and strict liability. On April 27, 2012, upon defendants' Rule 12(b)(6) motion, the Court dismissed the claims for anticipatory trespass, negligence per se, and gross negligence. Further, the court indicated that it would entertain motions for summary judgment on the remaining claims of negligence, strict liability, and private nuisance after discovery was completed.

The court ruled that the negligence claim was allowed to survive under the allegations that "hundreds of diesel trucks . . . operate at all hours of the day," these create noise and emit fumes and kick up dirt and dust particles. The duties of care claimed by Kamuck included the duty to drill responsibly, and to prevent water contamination. Because Mr. Kamuck is a totally disabled Vietnam war veteran, the disturbances allegedly prevented him from sleeping at night and made it difficult for him to breathe. Although the allegations, if supported, may prove simple negligence, the court insisted they could not prove negligence per se nor could they prove gross negligence.

The strict liability claim was allowed to survive because of Pennsylvania case law that suggests that, "since the determination of whether or not an activity is abnormally dangerous is fact-intensive, courts often wait until discovery is complete before making this determination." *Fiorentino v. Cabot Oil & Gas Corp.*, 750 F. Supp. 2d 506, 2010 WL 4595524 (M.D. Pa. Nov. 15, 2010); *Berish v. Southwestern Energy Prod. Co.*, 763 F. Supp. 2d 702, 705 (M.D. Pa. 2011).

The private nuisance claim survived the motion to dismiss based on Pennsylvania's "significant harm" test because, like the strict liability claim, the test is fact intensive. While dust and road noise are generally not enough to satisfy the test, the contamination of groundwater and streams with fluids from hydraulic fracturing fluids could be sufficient, if proven.

12. *Mangan v. Landmark 4, LLC*, No. 1:12-cv-00613 (N.D. Ohio, March 12, 2012) &
Boggs v. Landmark 4, LLC, No. 1:12-cv-00614 (N.D. Ohio, March 12, 2012)

Finally, in a recent case out of Ohio, Mark and Sandra Mangan and William and Stephanie Boggs ("Plaintiffs") filed their complaints on March 12, 2012, alleging that Defendant Landmark 4, LLC ("Landmark") had contaminated their properties and persons with toxic, carcinogenic, and ultra-hazardous materials by releasing, spilling, or discharging these materials during hydraulic fracturing of wells located within 2502 feet of Plaintiffs' property, homes, and water well supplies. Seeking injunctive relief to prevent continuing and future contamination, Plaintiffs assert causes of action for medical monitoring, negligence, strict liability, private nuisance, unjust enrichment, negligence per se, battery, intentional fraudulent concealment, and negligent misrepresentation.

Plaintiffs' causes of action for unjust enrichment, battery, and intentional fraudulent concealment contain interesting allegations. Plaintiffs state that Landmark has been unjustly enriched by its acts and omissions in causing contaminants to enter their properties: "These acts and omissions allowed Defendant to save millions of dollars in costs they should have been expended to property contain and control the substances emanating from their facility." The claim for battery is based on Landmark's alleged intentional and willful generation, discharge, and transport of contaminants, its concealment of discharges, and its failure to remediate causing "direct, harmful and/or offensive contact with Plaintiffs.

As for intentional fraudulent concealment, Landmark is accused of knowingly failing to disclose to Plaintiffs and to public authorities the "nature, extent, magnitude, and effects of" Plaintiffs' exposure to the contaminants allegedly released by Landmark. Plaintiffs claim that had they known the information allegedly concealed by Landmark, they would not have consented to be exposed to the contaminants: "Plaintiffs reasonably believed that" Landmark's activities did not pose any potential health hazard to the groundwater, air, soil, and natural resources in and around the facility.

On April 10, 2012, Landmark filed a motion to dismiss the claims of negligence, strict liability, battery, and intentional fraudulent concealment, which is still pending.

B. Litigation Stemming from Agency Enforcement

Related to the *Fiorentino* lawsuit discussed above, on December 16, 2010, the Pennsylvania Department of Environmental Protection (“PADEP”) announced a resolution of an enforcement action against Cabot Oil and Gas Corporation.¹⁶ The PADEP action was brought on behalf of nineteen resident families whose water wells were allegedly affected by methane contamination as a result of nearby drilling activities. Under the settlement, the families collectively were entitled to receive \$4.1 million in compensation and other concessions, and a \$500,000 penalty was to be paid to the PADEP. The settlement allows Cabot to continue its hydraulic fracturing operations, and the families were allowed to maintain their individual tort claims against the company.

A similar settlement with the PADEP was entered into with Chesapeake Energy Corporation on May 17, 2011, related to the claims in the *Armstrong* matter, also discussed above.¹⁷ The PADEP began investigating Chesapeake in response to plaintiffs’ allegations. A joint review between Chesapeake and the PADEP to study possible natural gas drilling violations produced inconclusive results. Nonetheless, Chesapeake agreed to settle with PADEP by paying a \$900,000 penalty for alleged contamination of the water supply and an additional \$188,000 for violations regarding unrelated tank fires. Chesapeake is allowed to continue operations and drilling subject to obtaining approval from the PADEP. The settlement does not affect the plaintiffs in *Armstrong*.

The United State entered the enforcement realm on December 7, 2010, when the EPA issued an Emergency Administrative Order (“EAO”) against Range Production Company and Range Resources Corporation (“Range”) pursuant to Section 1431 of the Safe Drinking Water Act, 42 U.S.C. § 300i. Range owns and operates natural gas wells in the Barnett Shale filed in and around Fort Worth, Texas.

The EAO purported to identify contaminants that “may present an imminent and substantial endangerment to the health of persons,” and alleged that two water wells were affected by Range’s drilling activities. The EAO required Range to: (1) notify the EPA of whether it intended to comply with the EAO within 24 hours; (2) provide replacement water supplies to the recipients of water from the affected water wells within 48 hours; (3) install explosivity meters at the affected dwellings within 48 hours; (4) submit a survey listing water wells within 3000 feet of the gas wells at issue with a plan for EPA approval to sample those wells to see if they have been contaminated, including air and water samplings; (5) submit a plan for EPA approval to conduct soil gas surveys and indoor air analyses for all dwellings served by the affected water wells within 14 days; and (6) submit a plan to identify gas flow pathways to the affected aquifer if possible, and remediate impacted areas of the aquifer.

Range disputed the EPA’s finding and the validity of the EAO, and the Texas Railroad Commission’s parallel investigation concluded that Range’s operations did not cause or contribute to the alleged contamination of the water wells. On January 18, 2011, the United States filed a complaint for injunctive relief and civil penalties in the Northern District of Texas alleging that Range violated the EAO, which resulted in the presence of contaminants that may pose an imminent and substantial endangerment. *U.S. v. Range Production Co. and Range Resources Corp.*, No. 3:11-cv-00116 (N.D. Tex., Jan. 18, 2011).

On January 20, 2011, Range filed a petition for review of the EAO with the Fifth Circuit Court of Appeals (Case No. 11-60040), arguing that the EAO violated its due process rights. On June 20, 2011,

¹⁶ See Greenwire: Pennsylvania, Cabot reach settlement over methane contamination (Dec. 16, 2010), available at <http://www.eenews.net/Greenwire/2010/12/16/20/> (last visited Apr. 14, 2011).

¹⁷ See Municipal Authority Files Suit Over Drilling Activity, McLean Publishing Co. (Nov. 24, 2010) available at <http://www.thecourierexpress.com/courierexpresscourierexpresslocal/900518-349/municipal-authority-files-suitover-drilling-activity.html> (last visited Apr. 14, 2011).

the U.S. District Court for the Northern District of Texas entered an order staying its action until the Fifth Circuit ruled on Range's petition. Oral arguments in the Fifth Circuit were heard on October 3, 2011; however, a decision from the Fifth Circuit became moot when the EPA quickly withdrew its EAO on March 29, 2012, after the U.S. Supreme Court's decision in *Sackett v. Environmental Protection Agency*, 566 U.S. ___, 2012 WL 932018 (Mar. 21, 2012). The court's decision in *Sackett* called into question the practice of issuing certain administrative orders without a meaningful opportunity for the recipient to challenge the basis of the order. As a result of the withdrawal of the EAO, the Fifth Circuit dismissed its case on April 2, 2012 while the District Court action was dismissed on March 30, 2012.

C. Litigation Involving Drilling Contracts and Hydraulic Fracturing

In *Coastal Oil and Gas Corp. v. Garza Energy Trust*, the plaintiff attempted to recover damages from an operator using hydraulic fracturing on a neighboring mineral lease by alleging that the hydraulic fracturing fluids unlawfully drained the plaintiff's mineral lease.¹⁸ 268 S.W.3d 1, 7 (2008). The plaintiff's theory was that the hydraulic fracturing fluids had entered their property, causing damage in the form of enhanced drainage of hydrocarbons from the plaintiff's property to the defendant's property.

Texas courts had previously established that if an operator drills a well that originates on the defendant's land but crosses underneath the surface into another person's mineral rights (a "slant well"), the neighboring landowner has a cause of action against the operator. *Id.* at 14. However, the court distinguished hydraulic fracturing from slant drilling because hydraulic fracturing merely enhances the flow of hydrocarbons from one mineral lease to another where it is lawfully extracted. In contrast, in a slant well the well actually crosses into the neighbor's property, extracting the minerals directly from the neighbor. *Id.*

Ultimately, the Texas Supreme Court ruled that drainage caused by hydraulic fracturing is not a form of trespass, but rather, such causes of action are barred by the rule of capture, which under the common law allows a mineral leaseholder to collect all of the oil that it can through a well drilled on its own lease, even if the result is to drain hydrocarbons out from under another's lease. *Id.* at 13.

A claim for trespass in Texas requires the claimant to establish that he has been injured by the defendant's actions. *Id.* at 12. Here, the plaintiffs could not show injury, because damages for drainage were barred by the rule of capture. *Id.* at 13. Thus, the court did address whether the entry of hydraulic fracturing fluid into another's land that causes injury is a trespass.

Because the court left this issue open, it is possible that neighboring property owners who believe that they have been injured by hydraulic fracturing will continue to attempt to bring claims for trespass. Potential damage claims that could be raised if a court were to rule that pumping hydraulic fracturing fluid into another's land include damages for injury to (1) groundwater/well water, (2) the subsurface mineral interest, or (3) in very unusual cases, the surface estate. Since the practice of horizontal drilling increases the length of the bore hole and thereby increases the area potentially affected by hydraulic fracturing, these practices may increase the sphere of potential plaintiffs who may bring an action for trespass.

D. Litigation Involving Earthquakes

On March 23, 2011, Jacob Sheatsley filed a class action claiming that "Central Arkansas has seen an unprecedented increase in seismic activity, occurring in the vicinity of" wastewater disposal injection wells which are part of hydraulic fracturing operations. *Sheatsley v. Chesapeake Operating, Inc. and*

¹⁸ The parties agreed that hydraulic fracturing fluids and proppants had crossed the property line. *Garza*, 268 S.W.3d at 7. The parties disagreed on whether the "effective length," which is the area where the hydraulic fracturing cracks are actually increasing production at the well, crossed the property line. *Id.* However, the distinction did not factor into the court's ruling.

Clarita Operating, LLC, Cause No. 2011-28, In the Circuit Court of Perry County, Arkansas 16th Division, removed to the U.S. District Court for the Eastern District of Arkansas, Western Division, Case No. 4:11-cv-00353-JLH, on April 4, 2011.

According to the Arkansas Geological Survey, there had been 599 seismic events in Guy, Arkansas between September 20, 2010 and the date of the lawsuit, including the largest earthquake in 35 years on February 28, 2011, measuring 4.7 on the Richter Scale. On that same day, the U.S. Geological Survey recorded as many as 29 earthquakes in the vicinity of Greenbrier and Guy, Arkansas, ranging in magnitude from 1.7 to 4.7. The *Sheatsley* suit alleged causes of action for public nuisance, private nuisance, absolute liability, negligence, and trespass, all based on the interference with the use and enjoyment of property and on the risk of serious personal harm and property damage from the earthquakes.

Four additional class actions complaints followed with the same allegations—all were originally filed in state court and removed to federal court.¹⁹ On August 31, 2011, all four lawsuits were consolidated under Case No. 4:11-cv-00474, *Hearn v. BHP Billiton Petroleum (Arkansas) Inc., et al.* With the filing of these additional class actions, on July 13, 2011, Sheatsley voluntarily dismissed his lawsuit in “an effort to streamline these cases and further judicial economy.”

On September 15, 2011, and on November 1, 2011, respectively, defendants Clarita Operating LLC and BHP Billiton Petroleum (Arkansas) Inc. were dismissed from the *Hearn* class action. On December 15, 2011, plaintiffs filed a First Amended and Consolidated Class Action Complaint, adding Deep Six Water Disposal Services, LLC as a defendant and expanding their claims to include damages for (1) physical damage to their homes and commercial real estate; (2) losses attributable to the purchase of earthquake insurance; (3) losses in the fair market value of their real estate; (4) economic loss due to temporary stoppage of business operations; and (5) emotional distress. A stipulated Order regarding expert discovery was signed on January 10, 2012. On February 28, 2012, the Court issued an Amended Final Scheduling Order, scheduling a class certification hearing for March 15, 2013 and setting trial for March 24, 2014.

E. Litigation Concerning Municipal Bans on Hydraulic Fracturing

In *Northeast Natural Energy, LLC and Enrout Properties, LLC v. The City of Morgantown, West Virginia*, Northeast Natural Energy, LLC (“Northeast”) had signed several lease agreements with landowners in the Morgantown area, including with Enrout Properties, LLC (“Enrout”). Civil Action No. 11-C-411; In the Circuit Court of Monongalia County, West Virginia (June 23, 2011). In March 2011, Northeast obtained drilling permits with the West Virginia Department of Environmental Protection (“WVDEP”), but two months later, the Morgantown Utility Board questioned certain aspects of the permits as to the wells’ impact on the Monongahela River, specifically as to spill containment, spill prevention, well integrity, waste disposal, and fracking fluid containment. Northeast agreed to comply with the Board’s requests for additional safeguards. On June 7, 2011, the City of Morgantown initiated enactment of an ordinance completely prohibiting “drilling a well for the purpose of extracting or storing

¹⁹ *Frey v. BHP Billiton Petroleum (Arkansas) Inc., et al.*, Cause No. 23CV-11-488, In the Circuit Court of Faulkner County, Arkansas, 2nd Division (May 23, 2011), removed to the U.S. District Court for the Eastern District of Arkansas, Western Division, Case No. 4:11-cv-0475-JLH, on June 9, 2011; *Hearn v. BHP Billiton Petroleum (Arkansas) Inc., et al.*, Case No. 23CV-11-492, In the Circuit Court of Faulkner County, Arkansas, 2nd Division (May 24, 2011), removed to the U.S. District Court for the Eastern District of Arkansas, Western Division, Case No. 4:11-cv-00474-JLH, on June 9, 2011; *Lane v. BHP Billiton Petroleum (Arkansas) Inc., et al.*, Case No. 23CV-11-482, In the Circuit Court of Faulkner County, Arkansas, 3rd Division (May 20, 2011), removed to the U.S. District Court for the Eastern District of Arkansas, Western Division, Case No. 4:11-cv-00477-JLH, on June 9, 2011; *Palmer v. BHP Billiton Petroleum (Arkansas) Inc., et al.*, Case No. 23CV-11-491, In the Circuit Court of Faulkner County, Arkansas, 3rd Division, Case No. 4:11-cv-00476-JLH, on June 9, 2011.

oil or gas using horizontal drilling with fracturing or fracking methods within the limits of the City...or within one mile of the corporate limits of the City...”

As a result, Northeast and Enrout challenged the ordinance, claiming that the City violated their constitutional rights by adopting a regulation in derogation of State rules promulgated by the WVDEP which regulate natural gas extraction. Plaintiffs contend that the WVDEP regulations preempt and preclude enforcement of the ordinance. The City argued that it had the authority to enact and enforce the ordinance under the “Home Rule” provision in the West Virginia Constitution by characterizing the hydraulic fracturing process as a nuisance.

The court found that the State legislature gave the WVDEP the “primary responsibility for protecting the environment; other governmental entities, public and private organizations and our citizens have the primary responsibility of supporting the state in its role as protector of the environment.” W.Va. Code § 22-1-1(a)(2) (1994). Additionally, the WVDEP is to “consolidate environmental regulatory programs in a single state agency, while also providing a comprehensive program for the conservation, protection, exploration, development, enjoyment and use of the natural resources of the state of West Virginia.” W.Va. Code § 22-1-1(b)(2)-(3) (1994). Thus, the WVDEP controls the development of oil and gas in the State, including the issuance of permits. While acknowledging that the City has an interest in the control of its land, on August 12, 2011, the Court held that, in light of the State’s interest in oil and gas development and operations throughout the State and the all-inclusive authority given to the WVDEP, the City’s ordinance is preempted by State legislation and is invalid. This decision of the Court was not appealed.

In *Weiden Lake Property Owners Association, Inc. v. Klansky and Cabot Oil & Gas Corp.*, 2011 N.Y. Misc. LEXIS 4081 (N.Y. Sup. Ct.-Sullivan Cnty, Aug. 18, 2011), the court ruled that activities under a mineral lease were prohibited by protective covenants established by the owners association prohibiting commercial uses of properties. The Weiden Property Owners Association, Inc. was formed to oversee and manage the subdivision and to maintain Weiden Lake and dam. The association had established Protective Covenants that included provisions restricting the subject premises to single family homes, agricultural and/or recreational use.

Jeff Klansky purchased one of the lots in the subdivision and entered into a lease that granted Cabot Oil & Gas Corporation the exclusive right to “explore for, drill for, produce and market oil, gas and other hydrocarbons” from Klansky’s lot for five years. Klansky received \$99,255 as a signing bonus and made no representations concerning the property.

Upon learning of Klansky lease, Plaintiff filed suit and sought summary judgment that the activities under the lease were prohibited by the Protective Covenants. The Court agreed and ruled that the covenants unambiguously restricted the use of land in the community to single family residential, agricultural or recreational use. The court also determined that Klansky did not have to return the signing bonus due to the “no representation” clause and because Cabot was a sophisticated business entity and knowingly decided to enter into the lease, approve title and pay the signing bonus with full knowledge of the protective covenants.

In *Anschutz Exploration Corporation v. Town of Dryden and Town of Dryden Town Board*, ___ N.Y.S.2d ___, No. 2011-0902 (N.Y. Sup. Ct., filed Sept. 6, 2011), a court ruled that local ordinances were not preempted by state law. On August 2, 2011, the Town of Dryden amended its Zoning Ordinance to ban all activities related to the exploration for, and production or storage of, natural gas and petroleum within the town’s limits. One provision read: “No permit issued by any local, state or federal agency, commission or board for a use which would violate the prohibitions shall be deemed valid within the Town.” Dryden Zoning Ordinance Section 2104[5].

Prior to the ordinance amendment, Anschutz Exploration Corporation (“Anschutz”) had acquired gas leases covering approximately 22,000 acres in the town and had invested approximately \$5.1 million in

activities within the town. On September 6, 2011, Anschutz filed suit to nullify Dryden's Ordinance under New York Environmental Conservation Law § 23-0303(2) ("ECL"), which states that the "provisions of this article shall supersede all local laws or ordinances relating to the regulation of the oil, gas and solution mining industries; but shall not supersede local government jurisdiction over local roads or the rights of local governments under the real property law."

On February 21, 2012, after analyzing of the legislative history of ECL § 23-0303(2), the court determined that generally the Amended Zoning Ordinance as a whole was not preempted by State law, but ordered Section 2104[5] to be severed and stricken from the Ordinance.

Finally, in *Cooperstown Holstein Corporation v. Town of Middlefield*, ____ N.Y.S.2d ____, No. 2011-0930 (N.Y. Sup. Ct.), the Town of Middlefield had enacted a zoning law which effectively banned oil and gas drilling within the geographical borders of the township by stating that "heavy industry and all oil, gas or solution mining and drilling are prohibited uses..." of property within the Town. Cooperstown Holstein Corporation had already obtained several leases on properties situated in Middlefield.

As in *Anschutz*, Plaintiff brought a lawsuit to have Middlefield's zoning law overturned, claiming that New York ECL § 23-0303(2) preempted any regulations emanating from local authorities with respect to the regulation of gas, oil, and solution drilling or mining. On February 24, 2012, this court ruled that the state law did not "preempt a local municipality... from enacting land use regulation within the confines of its geographical jurisdiction and, as such, local municipalities are permitted to permit or prohibit oil, gas and solution mining or drilling in conformity with such constitutional and statutory authority."

F. Litigation Concerning Municipal Zoning Regulation of Hydraulic Fracturing

In *Robinson Township, et al v. Commonwealth of Pennsylvania, et al*, No. 284 M.D. 2012 (Pa. Comm. Ct. Mar. 29, 2012), seven municipalities from three counties, the Delaware Riverkeeper Network, and Dr. Mehernosh Kahn ("Plaintiffs") sued the Commonwealth and three state departments seeking an injunction to prevent the Act of February 14, 2012, P.L. ___, 58 Pa. C.S. §§2301-3504 ("Act 13") from becoming effective. Act 13 is a substantial re-write of the Commonwealth's Oil and Gas Act, imposing statewide standards for where wells, compressor stations and other drilling-related structures can be built. It requires all local drilling regulations to be reasonable; and any questions as to reasonableness would be determined by the Public Utility Commission. 58 Pa. C.S. §§ 3302-3309.

Plaintiffs challenged whether the state is authorized to supersede local regulation of gas drilling by restricting the municipalities' ability to zone natural gas drilling and barring them from keeping natural gas wells out of residential zones, except for dense neighborhoods. In their motion for preliminary injunction, the municipalities argued that, due to the requirements of the Municipalities Planning Code 53 P.S. § 10101 et seq., 120 days was insufficient time to amend their ordinances and that "the oil and gas industry has taken the position that it has free reign for the installation of any and all of its infrastructure as of April 14, 2012." The Court agreed with Plaintiffs and issued a preliminary injunction on April 12, 2012, stating:

While the ultimate determination on the constitutionality of Act 13 is not presently before the Court, the Court is of the view that municipalities must have an adequate opportunity to pass zoning laws that comply with Act 13 without the fear or risk that development of oil and gas operations under Act 13 will be inconsistent with later validly passed local zoning ordinances. For that reason, pre-existing ordinances must remain in effect until or unless challenged pursuant to Act 13 and are found to be invalid. To the extent that Chapter 33 or any other provision of Act 13 may be interpreted to immediately pre-empt pre-existing local ordinances, a preliminary injunction is issued pending further order of the Court. Additionally, the Court agrees with petitioners that 120 days is not sufficient time to allow for amendments of local ordinances and, therefore, will preliminarily enjoin the effect date of Section 3309 for a period of 120 days.

G. *Potential Litigation Matters on the Horizon*

While some plaintiffs may already be bringing personal injury claims due to contamination or exposure to chemicals in fracturing fluids, one potential claim that operators and service providers may face in the future could be those from employees or others who may be exposed to silica dust during various stages of hydraulic fracturing operations. Such claims may be brought under theories of negligence, strict products liability, and breach of warranty. *E.g.*, *Martinez v. Humble Sand & Gravel*, 940 S.W.2d 139 (Tex. App. El Paso 1996).

High quality silica sand is often a proppant added to fracturing fluids that are injected into the well bore. While such sand itself is not necessarily a concern, many activities may result in silica dust emanating from the sand if it is not kept moist. Airborne dust may be generated by on-site vehicle traffic, ejected from hatches and ports on sand movers during refilling operations, released from transfer belts on sand movers, or created as sand drops into or is agitated in a blender hopper.

In fact, on June 21, 2012, the Occupational Safety and Health Administration (“OSHA”) and the National Institute for Occupational Safety and Health (“NIOSH”) issued an alert to workers performing hydraulic fracturing operations, claiming that field studies show that workers “may be exposed to dust with high levels of respirable crystalline silica.”²⁰ The agencies noted that breathing silica day after day are at a greater risk of developing silicosis, a lung disease where lung tissue around trapped silica particles reacts, causing inflammation and scarring and reducing the lungs' ability to take in oxygen. In the hazard alert, the agencies state that engineering controls, work practices, protective equipment, worker training, and product substitution could help protect workers from repeated exposure to silica dust.

Silicosis is classified into three types: chronic/classic, accelerated, and acute;

Chronic/classic silicosis, the most common type, occurs after 10–20 years of moderate to low exposures to respirable crystalline silica. Symptoms associated with chronic silicosis may or may not be obvious; therefore, workers need to have a chest x-ray to determine if there is lung damage. As the disease progresses, the worker may experience shortness of breath when exercising and have clinical signs of poor oxygen/carbon dioxide exchange. In the later stages, the worker may experience fatigue, extreme shortness of breath, cough, and, in some cases, respiratory failure.

Accelerated silicosis can occur after 5–10 years of high exposures to respirable crystalline silica. It is similar to chronic silicosis, but progresses more rapidly.

Acute silicosis occurs after only a few months or a few years following exposures to extremely high levels of respirable crystalline silica. Symptoms of acute silicosis include rapidly progressive and severe shortness of breath, weakness, and weight loss. Though much less common than other forms of silicosis, acute silicosis nearly always leads to disability and death.

The basic mechanism in the medical community for diagnosing silicosis requires a history of exposure to silica dust, radiographic (X-ray) evidence of silicosis, and “the absence of any good reason to believe that the radiographic findings are the result of some other condition. It is also important that the time between exposure and the onset of disease is consistent with the latency period typical of silicosis.” *In re Silica Prods. Liab. Litig.*, 398 F. Supp. 2d 563, 589 (S.D. Tex. 2005) (citing Hans Weill, et al., *Silicosis and Related Diseases*, in *OCCUPATIONAL LUNG DISORDERS* 286 (3rd ed. 1994); Daniel E. Banks, *Silicosis*, in *TEXTBOOK OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE* 380-81 (2nd ed. 2005)). It is generally accepted that the diagnosis of silicosis rests on, basically, three factors: (1) an appropriate chest X-ray

²⁰ OSHA Website, http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.html (last visited July 8, 2012).

showing primarily small, rounded opacities involving at least one of the upper lung zones of an alveoli profusion; (2) an adequate exposure history which means that a physician takes from the patient showing a history of exposure to potentially toxic, environmental substances including organic dust and inorganic dust and that the intensity and duration of exposure was sufficient to explain the abnormalities on the chest X-ray; and (3) the absence of any other disease that would be more likely to explain the X-ray findings or clinical symptoms or whatever than silicosis. *Id.* at 590.

The question remains whether workers may develop silicosis or other respiratory symptoms and whether a barrage of lawsuits will follow. Unfortunately, even with the OSHA/NIOSH alert, courts have recognized that defendants may not escape liability for failure to warn simply because a user has some general knowledge of a product's inherent dangers. *E.g., White v. W.G.M. Safety Corp.*, 707 F. Supp. 544, 549 (S.D. Ga. 1988) (knowledge that breathing dust was generally bad does not bar recovery for failure to warn of specific danger of silicosis from breathing sand).

V. CONCLUSION

The past several years have seen their share of legal issues impacting hydraulic fracturing operations within the oil and gas production sector. As oil and gas exploration and production continues to expand in the United States, it can only be expected that additional attention and more stringent environmental regulations and new theories upon which to base lawsuits that implicate hydraulic fracturing will continue to emerge.



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She handles all aspects of federal and state Superfund and remediation matters, including the appeal of administrative orders and contribution litigation, and she counsels clients on contaminated property issues and regulatory issues in corporate and real estate transactions. Her practice also includes work related to offshore E&P matters, such as regulatory compliance and liability analyses. In addition, Mrs. MacIver has experience defending environmental claims in bankruptcy proceedings.

Mrs. MacIver has written and presented on a number of environmental issues. This includes:

- “The Changing Face of Offshore Environmental Regulation,” West LegalEd Center CLE webinar, June 28, 2012
- “*Intervening To Oppose A CERCLA Consent Decree*,” Environmental Law360, Nov. 2, 2010
- “*Settlement Policy and Practice as a Centerpiece of the Superfund Program*,” Law of Environmental Protection, Environmental Law Institute (Steven Leifer, Michael Heister, Megan Berge and Blake Hudson, co-authors) 2008-2009
- “*Environmental Liabilities in Real Estate Transactions*,” University of Houston Law Center CLE, Houston, Mar. 2008

OFFSHORE OIL AND GAS

*State Bar of Texas
24th Annual Texas Environmental Superconference
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¹ Opinions expressed herein are those of the author, and not those of Baker Botts L.L.P. or any of its partners or employees.

I. Introduction

Environmental issues of the offshore oil and gas industry are as broad and varied as the ocean where these activities occur. The parties involved include lessees; owners and operators of vessels, facilities, and mobile offshore drilling units (“MODU”); cargo owners; oil traders; technology and service providers; federal and state agencies; shareholders; third parties; and others. The issues intersect different areas of the law including litigation, regulatory and administrative law, transactional issues, and crisis and risk management. The numerous statutes and regulations are complex and swiftly changing. Affected industries and lawyers must stay attune and respond quickly to changes to ensure continued compliance with the requirements. This is no small task. As the Secretary of the United States Department of Interior (“DOI”) noted, changes in the regulation of offshore drilling over the past two years constitute “the largest overhaul in American history.”²

The impetus of many of the recent changes was the explosion and release of oil from the Macondo prospect being drilled by the MODU Deepwater Horizon in the Gulf of Mexico (“GOM”) on April 20, 2010 (the “Macondo Incident”). The explosion resulted in 11 deaths, a number of injuries and a subsurface discharge of large volumes of oil. Within 24 hours of the explosion, the United States Coast Guard, the Department of Homeland Security, the Department of Commerce, the DOI, the National Oceanic Atmospheric Administration, and the Environmental Protection Agency (“EPA”) were involved in the response to the explosion, as well as state and local governmental authorities. Some of the major regulatory changes since the Macondo Incident are discussed in Section IV of this paper.

The offshore oil and gas industry is also subject to a complex web of potential liability, in particular if there is a release or potential release of oil. There are numerous laws that apply a variety of penalties and provide for damages and recovery of costs in the event of a release. The typical vehicle for liability is the Oil Pollution Act of 1990 (“OPA 90”).³ It is supplemented by many other federal and state laws. A discussion of the liability scheme is included in Section III.

II. Economic Background

This paper focuses on the legal consequences of the liability structure and changes to the regulatory scheme. There is also an important interplay between the legal issues and economic impacts. A recent report by the Southern Methodist University Cox Maguire Energy Institute addresses the state of offshore drilling from this perspective. The author found that there is a “regulatory risk premium” impacting the economics of offshore drilling.⁴ The report posits that this is due in part to issues with the permitting process. According to government reports, the number of permits issued since April 2010 has increased; however, this does not necessarily equate to increased operations. In fact, a large percentage of these permits are re-approvals of exploration plans and development plan approvals issued prior to the Macondo

² DOI Secretary Ken Salazar, *America’s Energy Future*, Live Chat (Feb. 2012).

³ 33 U.S.C. §§ 2701-2762, 46 U.S.C. § 3703a.

⁴ See Bernard L. Weinstein, *The Outlook for Energy Production in the U.S. Gulf of Mexico: How the Regulatory Risk Premium is Restraining Production* (May 2012), available at <http://www.noia.org/website/download.asp?id=53442>.

Incident. For new permits that are being issued, the timeframe for approval is still considerably longer than it was before the Macondo Incident. The length of time between one period of the process, the time between “deemed submission” and approval, has returned to normal. On the other hand, the period of time between when the operator first submits an application until it is deemed submitted has tripled.⁵ Thus, the overall time to issue a permit is still significantly longer than it was prior to 2010. Finally, while the number of MODUs in the GOM is near the levels that existed before the Macondo Incident as of May 2012, only a portion of these are engaged in drilling-related activities.⁶ It appears the offshore oil and gas industry is still in recovery mode.

This paper addresses two issues that may be influencing the regulatory risk premium: (1) expansive and complex liability, and (2) changes to the statutory and regulatory scheme.

III. Liability For Releases

A. Oil Pollution Act of 1990

1. Background

OPA 90 was enacted in the shadow of a previous oil spill. In March of 1989, the Exxon Valdez grounded in the Prince William Sound, rupturing eight of its eleven cargo tanks and spewing more than 10 million gallons of crude oil. The liability related to the release was governed by a number of laws, including the Clean Water Act (“CWA”)⁷ and maritime law. At the time, many potential claimants were unable to recover for their losses under a bright line rule that precluded recovery under maritime law for economic losses absent physical damage, the *Robins Dry Dock* rule.⁸ There were also concerns about the ability to adequately respond to and address spills. In response to these and other concerns, Congress enacted OPA 90 to clarify and expand liability for any discharge or threat of discharge of oil into or upon navigable waters or adjoining shorelines. It includes coverage of purely economic losses and sets up a scheme of strict, joint and several liability for each responsible party (“RP”).⁹

2. The Law

The scope of OPA 90 is broad. It applies to vessels, offshore facilities, onshore facilities, and pipelines located in, or operating in, on, or under the navigable waters of the United States or subject to the jurisdiction of the United States. Under OPA 90, if there is a release, the named RP is responsible for responding to the incident, receiving and responding to claims, and a host of other tasks. The definition of RP varies based on the type of vessel or facility involved in an incident.¹⁰ For a vessel, the RP is a person owning, operating, or demise chartering the vessel. For an offshore facility, the RP is a lessee or permittee of the area where

⁵ *Id.* at 9.

⁶ *Id.* at 7.

⁷ The Federal Water Pollution Control Act, 33 U.S.C. § 1251-1387.

⁸ *Robins Dry Dock & Repair Co. v. Flint*, 275 U.S. 303 (1927).

⁹ 33 U.S.C. § 2702(a); *see also* *GMD Shipyard Corp. v. M/V Anthhea Y*, 2004 WL 2251670, at *14, n.3 (S.D.N.Y. Oct. 6, 2004).

¹⁰ 33 U.S.C. § 2701(32).

the facility is located or the holder of a right of use and easement under applicable state law or the Outer Continental Shelf Lands Act (“OCSLA”). The RP for an onshore facility is any person owning or operating the facility. MODUs are treated as both tank vessels and offshore facilities under OPA 90. For pipelines, the RP is a person who owns or operates the pipeline.

Under OPA 90, the RP is liable for removal costs incurred by government or private parties,¹¹ and for the following damages and costs of assessing damages:

- (1) damages for injury to, destruction of, loss of, or loss of use of, natural resources;
- (2) injury to, or economic losses resulting from destruction of real or personal property;
- (3) loss of subsistence use of natural resources;
- (4) net loss of taxes, royalties, rents, fees, or net profits due to the damages to real property, personal property, or natural resources;
- (5) loss of profits or impairments of earning capacity due to damages to real property, personal property, or natural resources; and
- (6) net costs of providing increased or additional public services during or after removal activities.¹²

OPA 90 includes a tiered limit on an RP’s liability, which varies based on the type of facility or vessel involved in the incident. The maximum liability cap is currently set at \$75 million for damages, with no limit on the RP’s liability for removal costs.¹³ OPA 90 provides that a MODU is treated as a tank vessel up to the limit on liability for tank vessels.¹⁴ Thus, the owner or the operator of the MODU itself is liable for up to the first \$23,496,000¹⁵ in removal costs and damages. If costs exceed that amount, then the MODU is treated as an offshore facility, and the lessee becomes the RP for the excess damages and removal costs.¹⁶

The statutory limit on liability for damages does not apply if: (1) the release was caused by gross negligence, willful misconduct, or the violation of an applicable federal safety, construction, or operating regulation by an RP or an agent or employee of an RP or a person acting pursuant to a contractual relationship with an RP;¹⁷ (2) the RP fails to report the discharge;¹⁸ or (3) the RP fails to cooperate with or abide by the orders of officials regarding removal activities.¹⁹

¹¹ Private parties can recover removal costs only for acts consistent with the National Contingency Plan.

¹² 33 U.S.C. § 2702(b).

¹³ *Id.* at § 2704(a)(3).

¹⁴ *Id.* at § 2704(b)(1).

¹⁵ The maximum amount could be less based on the size of the MODU. *See id.* at § 2704(a).

¹⁶ 33 U.S.C. § 2704(b)(2).

¹⁷ *Id.* at § 2704(c)(1).

¹⁸ *Id.* at § 2704(c)(2)(A).

¹⁹ *Id.* at § 2704(c)(2)(B), (C).

There are defenses available, such as an act of God, an act of war, or an act or omission of a third party, other than an employee or agent of the RP or a third party whose act or omission occurs in connection within a contractual relationship with the RP.²⁰ As with the limit on liability, the defenses are limited. For example, an RP cannot claim the statutory defenses if the RP fails to: (1) report the incident if the RP knows or has reason to know of the incident; or (2) provide all reasonable cooperation and assistance to the responsible official for removal activities, or comply with an order issued under Section 1321(c) or (e) of the Intervention on the High Seas Act.²¹ If the discharge is related to an event that occurred prior to an RP's acquisition of ownership, there is also a defense for an "innocent owner."²² To qualify, a potential purchaser must comply with strict requirements, including compliance with an all appropriate inquiries standard.²³

Finally, even if an RP qualifies for a defense, or is otherwise entitled to recover from a third party, it may still be required to pay all of the damages and claims upfront. It can seek recovery from a third party or the fund later, but in the case of a major incident, an RP may expend millions (or even billions) before it is able to recover from other parties.

With respect to changes to the law, there have been attempts to modify OPA 90 in the past two years, including several bills introduced to remove the limits on liability for an RP of an offshore facility,²⁴ but these efforts have had little success to date. The primary change since April 2010 is that OPA 90 was expanded to include liability for cargo owners in some limited circumstances.²⁵

3. Questions

OPA 90 did not resolve every issue in the realm of offshore liability. Questions still persisted, such as what laws apply when state waters are impacted, what constitutes an "operator," and the scope of other vague definitions (*e.g.*, "vessel"). There are only a handful of cases addressing preemption issues. These are discussed in Section III.D. below.

With respect to definitions, the case law is lacking. There is, however, at least one district court that has considered the term "operator." That court adopted the rule applicable under a comparable environmental law (the Comprehensive Environmental Response, Compensation and Liability Act, or "CERCLA") that operators are persons who "manage, direct, or conduct the operations specifically related to pollution."²⁶ This could be read to suggest that existing CERCLA case law may help delineate what actions are considered "operating" a vessel or facility for purposes of being an RP under OPA 90.

²⁰ *Id.* at § 2703(a).

²¹ 33 U.S.C. § 2703(c).

²² 33 U.S.C. §§ 2703(d)(1)(B), (d)(2); 33 C.F.R. § 137.1, *et. seq.*

²³ 33 U.S.C. § 2703(d)(1)(B).

²⁴ *E.g.*, H.R. 492, 112th Cong. (2011).

²⁵ 33 U.S.C. § 2701(32)(A).

²⁶ *Harris v. Oil Reclaiming Co.*, 94 F.Supp.2d 1210, 1213 (D. Kan. 2000).

B. Section 311 of the Clean Water Act

At the same time OPA 90 was enacted, Congress modified CWA Section 311. This section provides liability for removal costs related to the discharge of a harmful amount of oil or hazardous substances into or upon navigable waters of the United States, adjoining shorelines, or into or upon the water of the contiguous zone, or which may affect the natural resources of the United States.²⁷ EPA presumes a discharge of oil to be harmful if the discharge: (1) violates applicable water quality standards; (2) causes a film of sheen or discoloration on the surface of the water or adjoining shorelines; or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or on adjoining shorelines.²⁸

The RPs are the owners and operators of vessels and offshore facilities.²⁹ Such RPs are liable for the costs of removal and mitigation of damages.³⁰ Much of the CWA appears to overlap with recoveries available under OPA 90; however, unlike OPA 90, there is no private right of action under the CWA.³¹ The CWA also provides for civil, administrative and criminal penalties.³²

C. Other Laws

There are numerous other laws that may be implicated by a release of oil. For example, if the release violates certain regulations or permit conditions, if employees are injured or killed, or if the release results in the take of endangered species, the following may apply: the OCSLA,³³ the Refuse Act,³⁴ the Death on the High Seas Act,³⁵ the Endangered Species Act,³⁶ and the Marine Mammal Protection Act.³⁷ These are just a handful of the potential laws and issues that may be triggered by a release of oil. Other potential claims include liability for injuries alleged to be the result of chemical dispersants used to respond to oil releases.

Where an incident occurs, what causes it, and what resources are impacted are key factors in determining which federal laws may apply. In addition, separate state laws and common laws may apply as well. Whether the applicable laws are preempted by OPA 90 or otherwise is a separate consideration.

D. Preemption

OPA 90 stipulates that it does not affect, and shall not be construed to affect, the authority of the United States or any State or political subdivisions thereof “(1) to impose additional liability or additional requirements; or (2) to impose ... any fine or penalty ... for any

²⁷ 33 U.S.C. §§ 1321(b)(3), 1321(f)(1)-(4).

²⁸ 40 C.F.R. § 110.3.

²⁹ 33 U.S.C. § 1321(f).

³⁰ *Id.* at § 1321(b)(9-10).

³¹ *See, e.g., Middlesex County Sewerage Auth. v. Nat'l Sea Clammers Ass'n*, 453 U.S. 1 (1981).

³² 33 U.S.C. §§ 1319, 1321.

³³ 43 U.S.C. §§ 1331-1356.

³⁴ 33 U.S.C. § 407.

³⁵ 46 U.S.C. § 30302.

³⁶ 16 U.S.C. §§ 1531-1544.

³⁷ *Id.* at §§ 1361-1423(h).

violation of law; relating to the discharge, or substantial threat of a discharge, of oil.”³⁸ Taken literally, this provision indicates that entities facing liability under OPA 90 could also face liability under other federal or state laws or regulations. Additionally, two federal district courts have held that OPA 90 does not preempt claims brought under other federal statutes, even though the claims involve the same underlying incidents.³⁹ Recent decisions regarding state law reached a different conclusion. These decisions were issued in the litigation following the Macondo Incident.

Several states made claims in these lawsuits alleging, among other things, past, present, and future damages, including damages to natural resources and property, economic losses, and penalties under OPA 90, maritime law, and separate state laws. Under separate motions to dismiss the states’ claims, the Eastern District of Louisiana examined the issue of preemption. Ultimately the Court found that claims of negligence and products liability under general maritime law (including the availability of punitive damages) were not preempted by OPA 90.⁴⁰

Notwithstanding, the Court held that the states’ requests for damages and penalties under state statutes were preempted by OPA 90 and the CWA.⁴¹ In those decisions, the District Court cites the Supreme Court’s opinion in *International Paper Co. v. Ouellette*⁴² to support its finding that the state claims are preempted by federal law. In *Ouellette*, Vermont property owners sued a New York paper mill under Vermont nuisance law for discharging pollutants to waters that flowed from New York into Vermont. The Court in *Ouellette* held that the CWA preempts a common law nuisance suit that applies the law of the affected state (*i.e.*, Vermont) but does not preempt a common law nuisance suit that applies the law of the source state (New York). The Supreme Court supported its decision with a discussion of Congress’s intent, in enacting the CWA and 1972 amendments, to create a comprehensive federal mechanism to regulate water pollution.

Applying the logic of *Ouellette*, the U.S. District Court held that the CWA and OPA 90 preempt claims for recovery and damages that are based on the laws of affected states. In the Order on States’ Actions, the Court explored the parallels between the Vermont landowners’ nuisance suit against the New York paper mill and the State of Louisiana’s claims for recovery for the Deepwater Horizon spill under Louisiana⁴³ state law. Like the New York paper mill in *Ouellette*, the Court notes, the RP in the Macondo Incident was regulated under a national pollution discharge elimination system (“NPDES”) permit. Thus, discharges by the Deepwater Horizon, like discharges by the paper mill, are regulated under the federal CWA. The Court applied the reasoning from *Ouellette* and, consistent with that decision, found that

³⁸ 33 U.S.C. § 2718(c).

³⁹ *United States v. M/V Cosco Busan*, 557 F.Supp.2d 1058, 1063 (N.D. Cal. 2008) (holding that “OPA contains an unambiguous savings clause that expressly preserves the authority of the United States to impose liability pursuant to statutes other than OPA”); *United States v. Egan Marine Corp.*, 2009 WL 855964, *2-*3 (N.D. Ill. 2009) (same).

⁴⁰ *In re Oil Spill by the Oil Rig “Deepwater Horizon” in the GOM*, 808 F.Supp.2d 943, 962-63 (E.D.La. 2011).

⁴¹ *Id.*; *In re Oil Spill by the Oil Rig “Deepwater Horizon” in the GOM*, Case 2:10-md-02179-CJB-SS8Da4578 (E.D. La. Nov. 14, 2011) (“Order on States’ Actions”).

⁴² 479 U.S. 481 (1987).

⁴³ Alabama made similar requests for recovery under Alabama law. The Court found both states’ claims were preempted.

Louisiana was preempted from applying state law to recover for pollution originating outside the affected state.

The Court also discussed in some detail why the savings clauses in the CWA and OPA 90 did not “save” the affected states’ claims under state law.⁴⁴ In particular, CWA Section 311(o)(2)⁴⁵ allows states, despite the CWA, to impose requirements or additional liability “with respect to the discharge of oil...into any water within such State.”⁴⁶ The Court emphasized, however, that this provision is restricted to discharges that occur within the affected state. Therefore, in this case, because the discharge of oil occurred in federal waters and not within Louisiana, the CWA savings clause is inapplicable. Furthermore, the Court found that the savings clause in OPA 90 did not apply because CWA Section 311(o)(2) and OPA 90 Section 2718 conflict. The Court noted that “the CWA controls in this instance because it is the more specific statute; *i.e.*, the CWA contains penalties for discharges.”⁴⁷

State law may still play a role in future analyses. The Court acknowledged that its decisions did *not* conclude that state law could never apply to conduct outside of state waters.⁴⁸ There are a multitude of reasons a state may wish to seek recovery under its own statutes as opposed to OPA 90. The state’s oil pollution laws may include additional types of damages, higher (or no) limits on damages, or a broader definition of RP. For example, the Texas Oil Spill Prevention and Response Act of 1991 (“TX-OSPRA”) does not contain a limit on liability for offshore drilling facilities⁴⁹ and has a broader definition of an RP. “Responsible person” includes owners and operators of vessels or facilities and “*any person who causes, allows, or permits* an unauthorized discharge of oil or threatened unauthorized discharge of oil.”⁵⁰ In addition to unlimited liability for damages and response costs, TX-OSPRA includes penalties that can be as high as three times the amount of the costs incurred as a result of the discharge.⁵¹

IV. Regulatory Changes

A. Agencies

Less than one month after the Macondo Incident, DOI Secretary Salazar issued an order to divide the Mineral Management Service (“MMS”), the agency charged with the majority of offshore oil and gas regulation, into three separate agencies: Office of Natural Resource

⁴⁴ See Order on the States’ Action, at *12.

⁴⁵ According to the Fifth Circuit, CWA Section 311(o)(1) “should not affect or modify the remedies of any private or public party, including the government, to recover for actual damage to property from an oil spill.” *United States v. Dixie Carriers, Inc.*, 627 F.2d 736, 742 (1980). Additionally, CWA Section 311(o)(2) “does not preempt a state from imposing separate liability for oil spills on water *within its borders*.” *Id.* (emphasis added).

⁴⁶ 33 U.S.C. § 1321(o)(2).

⁴⁷ Order on the States’ Action, at *13.

⁴⁸ *In re Oil Spill by the Oil Rig “Deepwater Horizon” in the GOM*, 808 F.Supp.2d at n. 15.

⁴⁹ TEX. NAT. RES. CODE § 40.202(b).

⁵⁰ *Id.* at § 40.003(20) (emphasis added).

⁵¹ *Id.* at § 40.251(d) (A person responsible for the discharge that does not abate, contain, or remove the pollution, is liable for penalties of \$25,000 per day the discharge is not abated, contained or removed, or not more than three times the costs incurred by the fund established under TX-OSPRA.).

Revenue (“ONRR”), Bureau of Ocean Energy Management (“BOEM”), and Bureau of Safety and Environmental Enforcement (“BSEE”).⁵²

1. ONRR

Effective immediately upon the order, the ONRR was split from MMS and moved into the organization of the Assistant Secretary for Policy, Management and Budget. The ONRR manages revenue from traditional and renewable offshore energy resources, including auditing functions and enforcement regarding reporting and payment of royalties. Since the agency began as part of MMS in 1982, to date it has collected more than \$39.5 million in civil penalties, an average of approximately \$1.33 million per year.

There are signals that since ONRR has separated, it may be increasing its enforcement efforts. In recent months (March and April 2012), the ONRR issued civil penalties of more than \$3.6 million.⁵³ This is almost triple the previous yearly average in just two months. Increased enforcement with respect to revenue may be an ongoing trend in the future.

2. BOEM

The remaining functions of the prior MMS were vested temporarily into the Bureau of Ocean Energy Management, Regulation, and Enforcement (“BOEMRE”). This agency managed the leasing, permitting, and enforcement functions until these functions could be further divided into two separate agencies. During the interim period, BOEMRE continued to operate, issuing permits, notices, and new regulations. One year later, the agency was further divided into BOEM and BSEE.

BOEM, led by Director Beaudreau, is in charge of leasing and air quality compliance, including plan administration, environmental studies, National Environmental Policy Act analysis, resource evaluation, economic analysis and the renewable energy program.

3. BSEE

BSEE, initially led by former Director Bromwich, is charged with permitting, inspections, oil spill response, and the training and environmental compliance duties. In December 2012, James Watson was named as the new director. Director Watson previously served as the Federal On-Scene Coordinator for the government-wide response to the Macondo Incident.

B. New Regulations

When BOEM and BSEE were split, so to were the regulations. The rules that apply to BSEE matters remained in 30 C.F.R. Chapter II, but the rules for BOEM were moved to 30 C.F.R. Chapter V. New substantive requirements have been added as well, including the

⁵² DOI Secretarial Order No. 3299 (May 19, 2010).

⁵³ BOEM Press Release, April 30, 2012, <http://www.onrr.gov/about/pdffdocs/20120430.pdf>, last visited July 9, 2012 (\$1.9 million civil penalty against Cabot alleging inaccurate records); BOEM Press Release, March 29, 2012, <http://www.onrr.gov/about/pdffdocs/20120329.pdf>, last visited July 9, 2012 (\$1.7 million civil penalty against Merrion for late royalty payments).

Drilling Safety Rule and the Workplace Safety Rule on Safety and Environmental Management Systems.

1. The Drilling Safety Rule

The Drilling Safety Rule impacts permit applications and drilling.⁵⁴ This rule implements recommendations from the May 27, 2010 report from DOI to the President, “Increased Safety Measures for Energy Development on the Outer Continental Shelf.” This report was developed as a result of the Macondo Incident. The report includes a series of recommendations designed to make drilling on the Outer Continental Shelf safer and decrease the likelihood of a future release of oil. The rule is intended to strengthen drilling standards.

Among the new obligations, the rule requires a professional engineer to independently certify that the casing and cementing program is appropriate for the purpose for which it is intended under expected wellbore pressure.⁵⁵ The rule also incorporates new standards for well-design, casing, and cementing, and made the American Petroleum Institute’s (“API’s”) recommended practice 65—Part 2 (“RP 65-2”) mandatory.⁵⁶ RP 65-2 addresses the isolation of potential flow zones during well construction. Agency involvement in the process is also increased. For example, Section 250.456(j) of the rule requires BSEE approval to switch from heavy drilling fluid to light drilling fluids.⁵⁷

The Drilling Safety Rule was submitted as an interim rule and the public comment period remained open for 60 days. BSEE has received and processed all of the comments, and the updated proposed final rule was submitted to the Office of Budget and Management (“OMB”) for review on April 26, 2012. Once OMB review is complete, BSEE is expected to publish the final rule quickly. The agency has not indicated what changes it may make in response to the comments it received.

2. The Workplace Safety Rule

The Workplace Safety Rule on Safety and Environmental Management Systems, commonly referred to as the SEMS rule, was finalized shortly after the Macondo Incident. However, this rule was not entirely a reaction to the incident. The SEMS rule had been under consideration earlier. The MMS proposed a version in 2009, although that version contained far fewer requirements.⁵⁸ It consisted of four elements—Hazards Analysis, Management of Change, Operating Procedures, and Mechanical Integrity.⁵⁹ This early version of the rule was not finalized and ultimately it was replaced with the current version of the SEMS rules published on October 15, 2010.⁶⁰

⁵⁴ See 75 Fed. Reg. 63346 (Oct. 14, 2010).

⁵⁵ 30 C.F.R. §§ 250.418(h), 250.420(a)(6).

⁵⁶ 30 C.F.R. § 250.198(h)(79).

⁵⁷ 30 C.F.R. § 250.456(j).

⁵⁸ 74 Fed. Reg. 28639 (June 17, 2009).

⁵⁹ *Id.*

⁶⁰ 75 Fed. Reg. 63610 (Oct. 15, 2010).

The final rule made all 13 elements of API's recommended practice 75 ("RP 75") mandatory and added other stringent requirements.⁶¹ For example, the rule requires that the operator enter a bridging document with contractors regarding the parties' understanding of the operator's SEMS program.⁶² With respect to audits, the rule includes requirements to use an "independent third party" or "designated qualified personnel" as the auditor.⁶³ The operator is required to notify BSEE 30 days prior to conducting the audit regarding the scope of the audit and the identity of the "nominated" auditor.⁶⁴ Prior to the audit, BSEE can reject the nominated auditor, and BSEE can require other changes to the audit plan, such as modification to the proposed facility list.⁶⁵ BSEE also has the option to participate in the audit.⁶⁶ An audit report is due within 30 days following completion of an audit, and corrective action must be completed within 30 days of submittal of the report.⁶⁷

The agency has a number of options regarding how to address alleged noncompliance with the new SEMS rules. Depending on the alleged violation, it may seek civil penalties, issue component or facility shut-in orders, or seek probation or disqualification of an operator.⁶⁸

The rule became effective on November 15, 2010, but operators were given until November 15, 2011 to comply with the SEMS requirements. Due to the extended deadline for operators to comply with the SEMS requirements, SEMS audits have only recently begun. BSEE intends to expand these compliance audits as the SEMS II rule is finalized.⁶⁹ Thus, the full impact of the new rule has not been fully realized yet.

V. Changes on the Horizon

The industry has been working to stay current with the new rules and guidance issued over the last two years and the pace is not slowing. Additional SEMS rules, new requirements for blowout preventers, permitting changes, and potential legislative changes are still on the horizon.

A. SEMS II

Approximately a year after the initial SEMS rule was issued, BSEE proposed SEMS II.⁷⁰ The rule will add new requirements and makes existing requirements more stringent. As proposed, SEMS II eliminates the option to use designated qualified personnel to perform the

⁶¹ See, BOEMRE, *Fact Sheet: The Work Place Safety Rule on Safety and Environmental Management Systems*, <http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=45791> (last visited July 9, 2012).

⁶² 30 C.F.R. § 250.1914.

⁶³ 30 C.F.R. § 250.1920(a).

⁶⁴ 30 C.F.R. § 250.1920(b).

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ 30 C.F.R. § 250.1920(c),(d).

⁶⁸ 30 C.F.R. § 250.1957; BSEE, SEMS POTENTIAL INCIDENT OF NONCOMPLIANCE LIST, <http://www.bsee.gov/uploadedFiles/SEMS%20PINC%20List%2015Nov11.pdf>. (last visited July 9, 2012).

⁶⁹ DEP'T OF THE INTERIOR, BUDGET JUSTIFICATIONS AND PERFORMANCE INFORMATION, FISCAL YEAR 2013 (2012).

⁷⁰ 76 Fed. Reg. 56683 (Sept. 14, 2011).

required audits. This may lead to a shortage of auditors because the rule already disqualifies auditors who helped prepare the operator's SEMS program. Eliminating the use of designated qualified personnel will further narrow the pool of potential qualified candidates to conduct audits.

The SEMS rule and the proposed SEMS II rule do not expressly provide an extension of time if BSEE rejects the auditor an operator has nominated. Therefore, operators may need to submit nominations of auditors much earlier than the 30 days prior to the audit required by the rule. Operators need to allow time to make alternate arrangements if BSEE rejects a nomination. The first SEMS audits must be completed by November 13, 2013. If operators do not complete audits by this date, they may be subject to enforcement, as discussed in the previous section.

Other notable changes in SEMS II are the expected requirement that all employees and personnel, including contractors, have stop work authority for any activity under BSEE jurisdiction, new rules regarding "Ultimate Work Authority," and a requirement that operator's have a plan of action showing how employees are involved in implementing the SEMS plan. The comment period on this rule closed November 14, 2011, and finalization is anticipated later this year.

B. Blowout Preventer Rules

The director of BSEE announced that the agency "will be proposing new rules for how blowout preventers are designed, how they must perform and how they must be maintained over their lifespans."⁷¹ The original plan to develop these rules was to issue an advance notice of proposed rulemaking but instead, DOI and BSEE are pursuing a faster path to develop the new regime for blowout preventers ("BOPs").⁷² The DOI hosted a BOP forum in May 2012, and invited stakeholders to provide input on BOPs. Deputy Secretary of the Interior Hayes stated that there are at least four things he is looking for in a proposed rule:

- (1) BOPs need to be able to cut whatever is in their way and completely seal off the well;
- (2) there should be a safety net for BOPs;
- (3) BOPS need better sensors to indicate what is happening at the bottom of the sea; and
- (4) additional training should be required for anyone working with BOPs.⁷³

The proposed BOP rule is anticipated later this year.

⁷¹ James A. Watson, Director, BSEE, *The Lessons we Learned from Deepwater Disaster*, HOUSTON CHRONICLE, Apr. 19, 2012, available at <http://www.chron.com/opinion/outlook/article/The-lessons-we-learned-from-Deepwater-disaster-3495909.php#page-1>.

⁷² Comments by DOI Deputy Sec. Hayes, May 22, 2012 BOP Forum in Washington, D.C.

⁷³ *Id.*

C. National Pollutant Discharge Elimination System

The current National Pollutant Discharge Elimination System (“NPDES”) permit for New and Existing Sources in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category for the Western Portion of the Outer Continental Shelf of the GOM (GMG290000), offshore of the Texas and Louisiana coasts, expires September 30, 2012. EPA recently published notice of the proposed new General Permit in the Federal Register on March 7, 2012. EPA proposed seven major changes to the permit:

- (1) Define operators for the purpose of the permit;
- (2) Delete New Source Exemption language;
- (3) Add a toxicity test requirement for hydrate control fluids;
- (4) Add a provision on spill prevention best management practices;
- (5) Authorize de minimis discharges caused by subsea safety valve testing;
- (6) Require electronic Notice of Intent and discharge monitoring reporting;
and
- (7) Establish updated critical dilutions for whole effluent toxicity limitations for produced water.⁷⁴

The comment period closed May 7, 2012, and the new permit is anticipated prior to the expiration of the current permit. If the permit is not reissued before the expiration date, new coverage would not be available between the expiration date and the effective date of the reissued permit. Existing coverage would be administratively continued in the interim.

VI. Conclusion

There are unique and difficult challenges in the field of offshore drilling, from the task of keeping employees safe, to completing difficult drilling projects, and protecting the environments in which these complex operations occur. On top of that, companies face expansive liability schemes and evolving regulatory requirements such as those discussed in this paper. As existing regulations change and new regulations are issued, operators and others involved will need to vigilantly monitor the new developments and reexamine their internal programs to keep pace and comply. Companies also need to reevaluate their exposure and ways to potentially mitigate or limit liability.

⁷⁴ 77 Fed. Reg. 13601 (March 7, 2012).



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**A PRIMER ON ENVIRONMENTAL RISK – A
TOXICOLOGIST’S PERSPECTIVES
“ONE-EYED JACKS”**

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A PRIMER ON ENVIRONMENTAL RISK – A TOXICOLOGIST’S PERSPECTIVES

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1.0 ENVIRONMENTAL RISK INTRODUCTION

In 1983, the National Research Council (NRC) issued “*Risk Assessment in the Federal Government: Managing the Process*” (NRC, 1983) or the “Red Book”. The Red Book describes the risk assessment process that has become central to environmental regulations and environmental protection. The Red Book also first identified the framework for conducting risk assessments that has served as the primary basis for all major rules and other regulatory initiatives since that time, and has helped to standardize the human health risk assessment process. In the almost 30 years since the Red Book was issued, the state of the science for risk assessment has expanded and changed significantly, and risk assessments now serve to support an even wider range of regulatory decisions to ensure the safety of food, drugs, consumer products and the environment in the United States and other countries.

Much of this paper is based on principles and risk assessment methods identified in the Red Book as well as the Environmental Protection Agency’s (EPA) *Risk Assessment Guidance* (EPA, 1989) for investigation/remediation programs and newer EPA guidance on the topic. However, the same or very similar risk assessment framework and ideology applies to other regulatory initiatives and program areas such as the Clean Air Act, Toxic Substances Control Act, Clean Water Act, etc. As such, the concepts described in this paper are not solely focused on remediation projects, but rather apply to the broader spectrum of risk-based decision making. In effect, this methodology has been actively used for over 20 years and a great deal of research has been conducted to help reduce uncertainty and improve the models and methods used.

Because of the potentially enormous resources used and required in this process (and associated rules based on risk assessments), it is vitally important that the “process” is right, but is it? Industrial groups and non-governmental organizations alike criticize the risk assessment process for various reasons. The often conflicting criticisms include (but are not limited to):

- Too complex, costly, and time-consuming;
- Too conservative;
- Too difficult to communicate to lay people;
- Does not consider exposure to multiple stressors or chemicals;
- Does not consider cumulative risks;
- Must rely on too many assumptions of fact, many of which are untestable;
- Not scientifically rigorous enough; and
- Too much uncertainty.

Due to the many criticisms and challenges regarding the risk assessment process and the emerging scientific advances that might improve the process, such as toxicogenomics and biomarkers, EPA asked the NRC to conduct an independent study of the process and identify specific areas that could be improved. The NRC released its report, *Science and Decisions: Advancing Risk Assessment* (NRC, 2009), which offered a number of significant changes in an attempt to enhance the credibility and usefulness of risk assessment. One of the major recommendations suggests focusing greater attention on design in the scoping and planning of a project to reduce risk, thereby shifting the burden of proof from a scientific analysis to a risk management-driven process. This shift in philosophy is more closely aligned

with the Precautionary Principle whereby preventative action is taken in the face of scientific uncertainty and the burden of proof is shifted to the proponents of an activity (i.e., the compound or activity is “guilty” until proven innocent). Other NRC (2009) recommendations are more technical in nature and relate to uncertainty, variability, the use of default assumptions, the dose-response assessment for cancer and non-cancer risks, and cumulative risk. It is likely too early to tell which of these recommendations will be implemented or to what extent they will be implemented, but the challenges to the regulated community as well as within EPA and state environmental agencies could be enormous given the broad paradigm shift that these recommendations embody.

This paper provides a brief overview of the risk assessment process, the evolution of environmental risk assessment, especially in light of NRC’s recent recommendations, a toxicologist’s perspective on the adequacy of risk assessment with several examples, a discussion of how the risk assessment process can affect public perception, and concludes with some ideas on how to strike a meaningful balance between science, judgment and risk assessment.

1.1 The Risk Assessment Process

Risk assessment is a process where the magnitude of a given risk is characterized so that risk managers can determine whether the risk or hazard is at a level that warrants managing, regulating, or reducing. Environmental risk assessment, therefore, covers the risk to all ecosystems (including humans) potentially exposed to air, water (surface water and groundwater), sediment, soil, and/or biota. The Red Book first described the human health risk assessment process as a four-step paradigm consisting of hazard identification, exposure assessment, dose-response or toxicity assessment, and risk characterization. Risk communication is sometimes included as a fifth step in the paradigm while risk management is a completely separate task that can include legal input, economic considerations and policy decisions and is usually conducted by a different individual, group, or organization. Ideally, risk assessment is a scientific evaluation that is free from risk management and policy decisions.

Hazard identification evaluates the chemicals of potential concern in regards to the characteristics and relevance of the experimental routes of exposure as they apply to the specific scenario under consideration. In the exposure assessment, the magnitude of exposure (or dose) is quantified based on the amount of chemical potentially present in a given media, the chemical’s fate and transport properties as well as the transport properties of the source and receiving media, the chemical concentration at the point of exposure, the exposure setting, the routes and rates of uptake, the duration and frequency of exposure, and the characteristics of receptors potentially exposed to the chemical. The dose-response or toxicity assessment provides a description of the relationship between the dose of a chemical and the anticipated health effect (or lack thereof). Risk characterization provides the risk estimates and hazard quotients for the chemicals of potential concern, identifies the limitations and uncertainties in the evaluation, and communicates the actual likelihood of risk to potentially exposed populations.

The risks and hazards determined in a risk assessment are the results of conditional estimates given multiple assumptions for exposure, toxicity, and other variables and, as such, uncertainty and variability are inherent to the process, even in the well-understood and well-defined aspects of risk assessment. To be able to accurately understand the risk assessment and to be able to make meaningful risk management decisions, it is imperative that information related to uncertainty and variability be communicated along with the risk assessment.

The risk assessment process is often reversed, per se, to establish “safe” levels or cleanup levels to be used in various regulatory programs or as the basis for a rule-making initiative. Unfortunately, when this

occurs, the uncertainty and conservatism that is inherent to the process gets pulled into the “safe” level but often the uncertainty and conservatism is not communicated. As such, it is assumed that this “safe” level precisely describes a level above which some potential “harm” is expected, and this value without any descriptors of uncertainty or variability becomes an undeniable “safe” level. Because a “safe” level is easy to communicate to project managers, regulators, citizens, politicians, etc. and easy for them to understand, this information often gets conveyed, repeated and misrepresented.

1.2 Protective versus Predictive Risks

Most risk estimates and risk-based screening levels are designed to be protective of human health, rather than predictive, and in general (and rightly so) err on the side of caution to protect public health and the environment. Risk estimates are truly scientific judgments but somewhere between the risk assessment and risk management, the concept of risk estimates as inherently imprecise has been lost (Felter and Dourson, 1998). This is unfortunate because many people, including risk managers, then believe that these overly protective values actually represent a predictive value, a level above which toxicity will be observed, and that simply is not the case. Even when a theoretically toxic dose is introduced to a receptor in a controlled laboratory study, it is not always possible to predict if toxicity will be observed in an individual because of intrinsic differences in toxicokinetics, toxicodynamics, and susceptibility.

It is vitally important that the uncertainty associated with the risk estimate get included in risk communication (written or verbal) and risk management decisions. Even the basic toxicity value typically used in risk assessments (the reference dose and cancer slope factor for non-carcinogenic and carcinogenic effects, respectively) is derived to include a level of conservatism. In fact, their definition reflects this uncertainty, which risk assessors understand but many others do not. For example, cancer slope factors from EPA are presented as the 95% upper confidence limit on the dose-response curve, with EPA caveating the estimate to say that risk assessors believe the actual cancer risk to be somewhere below this upper confidence limit, potentially as low as *zero*. Various papers describe the impact uncertainty and the use of default assumptions can have on a risk assessment (Calabrese and Baldwin, 1995; Dourson and Parker, 2007; Pittinger et al, 2003). Most if not all of these scientific judgments are purposefully chosen to be protective not predictive of health risks and this information absolutely needs to get communicated to risk managers and others to assist in decision making.

2.0 A TOXICOLOGIST’S PERSPECTIVE

The simple definition of toxicology is the study of adverse effects from exogenous agents on living organisms (although endogenous agents can be toxic too!). Toxicology, like risk assessment, is both a science and an art. The science of toxicology is defined as the observational and data-gathering phase, whereas the art of toxicology consists of using the data to predict outcomes of exposure (Klaassen, 2007). The dose-response relationship is the correlation between the characteristics of exposure and the spectrum of toxic effects and is often summarized in the fundamental tenet of toxicology from *Paracelsus* that “the dose makes the poison”. While everything is toxic, it is the dose that determines whether it will cause an adverse effect.

Toxicologists often conduct risk assessments since their educational training and research are similar to the scientific process used in risk assessment. Fortunately or not, toxicologists understand risk, but this may increase their tolerance or acceptance to risk since, in general, the more we know about a topic or issue, the less worried we are about it. With that said, below are several thoughts from a toxicologist and examples of where the risk assessment process is “right” and others where additional evaluation or consideration might be beneficial.

2.1 Exposure, Exposure, Exposure

The primary objective of the exposure analysis step in the risk assessment process is to estimate the source, type, magnitude, and duration of contact with an environmental chemical of interest. Exposure is often used interchangeably with dose (although that assumes 100% absorption at the point of contact and that is not always true). Regardless, understanding exposure is vitally important because in the absence of exposure, there can be no risk or hazard.

Great strides have been made in understanding exposure (Lioy, 2010) yet rudimentary default exposure assumptions are pervasive in risk-based programs. Many risk-based programs rely on default exposure assumptions to generate screening levels and other risk-based levels that serve as the basis for a rule. Using default assumptions can help to quickly and efficiently screen chemicals and sites to allow resources to focus on those issues that are of greater relative concern. These screening values often become the cleanup limit or risk management driver and it can be very difficult to use more site-specific assumptions related to the contact rate, exposure frequency, and/or duration. For many sites or situations, the use of default assumptions and a screening level evaluation may be appropriate, but sometimes it is not, and a discussion with the regulatory agency charged with reviewing the risk assessment or remediation project can be very valuable.

For example, the Regional Screening Level (EPA, 2012) for naphthalene in groundwater of 0.00014 mg/L is calculated using the California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment's inhalation unit risk value for tap water based on an inhalation pathway via naphthalene vapors emanating from tap water during domestic tap water use including while showering. This RSL is used by many state environmental agencies for screening purposes and to delineate the extent of affected groundwater. It has even been recommended as a remedial action level, although RSLs are not derived for that purpose.

The model used to estimate an air concentration from tap water (e.g. shower volatilization model) and subsequent exposure to naphthalene is very conservative, especially since naphthalene is considered semi-volatile and this model has not been verified for semi-volatile compounds. For two different projects, alternate screening levels were used since it was demonstrated with site-specific information that the groundwater was not used for domestic purposes and, as such, the exposure assumptions and scenario used to derive the RSL were inappropriate. It is also important to note that there can be abundant uncertainty related to the toxicity values (in addition to the "standard" uncertainty associated with deriving toxicity values) used when developing screening levels and naphthalene provides a good example of the impact that this issue may have on a risk-based project. The carcinogenic toxicity data used for naphthalene is for worker exposure and, although the CalEPA's general approach for deriving carcinogenic toxicity factors and the toxicity value for naphthalene has been used for over 10 years, the EPA has not adopted the CalEPA toxicity value for naphthalene into the Integrated Risk Information System because of the uncertainty and debate associated with the naphthalene data. The use of site-specific exposure information increased the screening level by roughly 50 times, which greatly affected the risk management decision-making at these sites.

The exposure assessment is often cited in a risk assessment as having the most significant uncertainty in an overall risk determination (Klaassen, 2008). Spending the resources necessary to collect site-specific data to accurately identify potential exposure and estimate dose can be very beneficial to reducing uncertainty in the risk assessment.

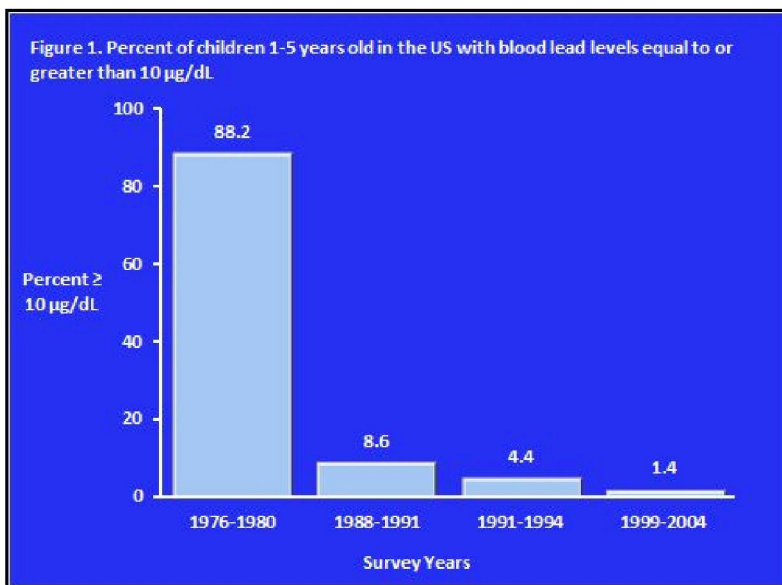
2.2 Chemical-Specific Examples

Probably few compounds or chemicals have been studied more extensively than lead and mercury. Both occur naturally in the environment and, as such, humans have always had some level of exposure to both compounds since man's evolution. Once it was realized that these metals have unique chemical properties that were useful to man, exposure to them increased significantly. Today, there are both natural and anthropogenic sources for lead and mercury that contribute to the body burden of all living organisms, but because of regulatory efforts and awareness, exposure to both compounds has been decreasing.

A tremendous amount of toxicological data and epidemiological data are available for lead and mercury, which should in theory allow for an increase in precision in the scientific understanding, risk assessments, and risk management decisions for both compounds. The increased knowledge and information, however, has been accompanied by greater scientific debate as well as a politicization of this dialogue. A more in-depth discussion (but by no means comprehensive) of specific risk assessment issues associated with these compounds is provided below.

2.2.1 Lead

Blood lead measurements in children have declined drastically since the 1970s, as shown in Figure 1 (Jones et al, 2009). These data document that the public health efforts to reduce the number of children with elevated blood lead levels in the general population continue to be successful; however, children living in homes containing lead-based paint or lead-contaminated dust continue to have higher rates of elevated blood lead levels and remain a major public health concern (CDC, 2009). The declining blood lead levels in children in the U.S. is a result of banning lead from gasoline, residential paint, the solder used in food cans and water pipes, reduced emissions from industrial point sources, and other public health efforts to increase awareness that have been initiated since the 1970s (ATSDR, 2007).



Recently the Centers for Disease Control and Prevention (CDC) lowered the “safe” threshold for lead exposure from 10 µg/dL to 5 µg/dL based on the belief that there is no safe level of lead in young children

because of an apparent lack of a toxicity threshold in neurobehavioral studies. The new “safe” level is based on the US population of children ages 1-5 years old who are in the top 2.5% of children when tested (CDC, 2012). This shift in policy places greater importance on primary public health prevention and is reflective of the decreasing “background” concentrations of blood lead in the general population. It should be noted that actual lead poisoning as defined by the CDC has not changed, such that clinical intervention is necessary for blood levels at or above 45 µg/dl. The CDC and other public health agencies recommend additional screening, awareness education, and home/environmental evaluations when a child’s blood lead measurement is between the “safe” level and 45 µg/dl.

Despite the fact that elevated blood lead levels are correlated with low income, living in large metropolitan areas and/or living in older homes, risk-based regulations and policies for lead address media and concerns unrelated to these factors. The reduction in the acceptable or “safe” blood lead level and the eventual application of this “safe” level to changes in existing regulations and policies will likely be problematic since this “safe” level will be used as a threshold to base regulations on when in fact, it was a policy decision. It will remain to be seen if this type of paradigm shift of regulating to “background” provides additional health benefit and true risk reduction or is simply an expensive exercise that increases regulatory requirements. For example, if the National Ambient Air Quality for lead is lowered further to reflect this new “safe” level as has been suggested by EPA, it is very likely that more areas will become non-attainment for lead either without identifiable point sources or available control technologies that can reduce emissions further.

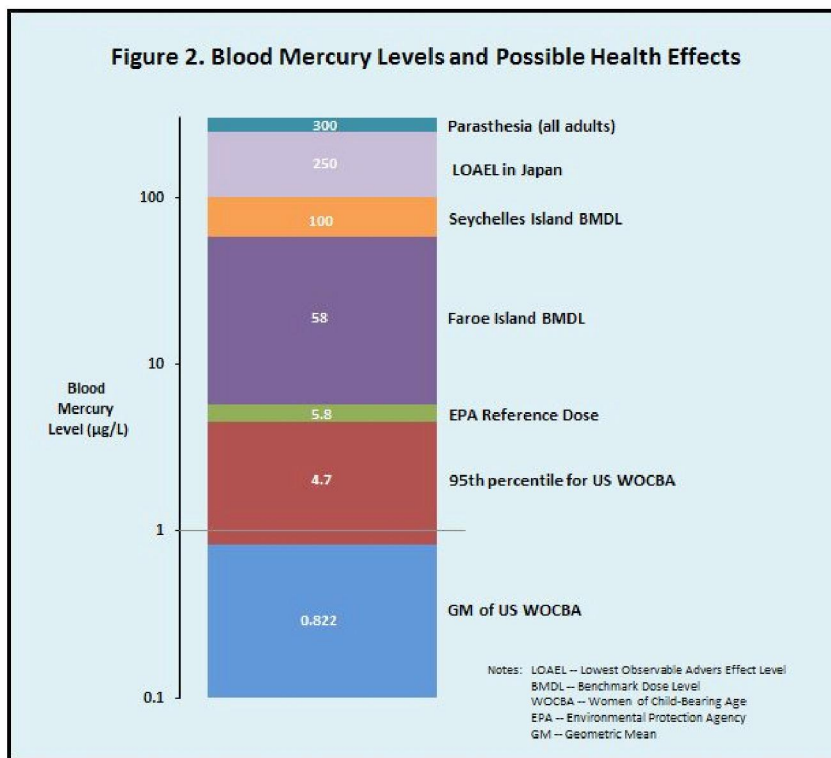
Perhaps the shift to primary prevention (similar to the risk management driven process recommended by NRC (2009) and the precautionary principle described in Section 1.0) to manage lead risks is appropriate since there is very little margin of safety between where toxicity is believed to occur and the blood lead levels (a biomarker for lead toxicity) measured in the US population, and because lead has been shown to present an environmental risk that affects disease burden in developing countries (WHO, 2006). As a scientist, however, it is difficult to reconcile how shifting the burden of proof away from sound science to regulating to “background” levels can be a step forward.

2.2.2 Mercury

Mercury is ubiquitous in the environment even in the absence of local or regional point sources. The general population is exposed to mercury (as methyl mercury) through the diet, especially from fish (ATSDR, 1999). Levels of mercury are generally much higher in fish and marine mammals than in other food items or drinking water. Typically, it has been shown that mercury bioaccumulates in older organisms and those higher up in the food web (i.e., predators). Extensive fish monitoring by EPA and other state agencies in lakes across the US has shown that most carnivorous fish have measureable levels of mercury in their tissue (EPA, 2009). The number of states issuing fish advisories and warnings for mercury has increased dramatically in the last decade. The reason for this increase is not due to rising levels of mercury in fish but rather EPA’s lowering of the mercury reference dose in 1999 and increased fish testing. A review of the limited historical mercury data in fish suggest that mercury concentrations in fish have not increased with time (Kraepiel et al, 2003).

Biomonitoring data such as blood mercury measurements provides a good indication of a person’s overall exposure to the compound from multiple sources. This information can then be compared to levels of toxicity or protective benchmark values. Figure 2 provides a summary of several notable metrics for mercury. In general, these data show that the 95th percentile of all measured women of child-bearing age (the most sensitive endpoint for methyl mercury toxicity) (CDC, 2009 and Caldwell et al, 2009) is below a conservative level of hypothetical concern (EPA’s reference dose) and far below levels where neurodevelopmental toxicity *may* be seen. This suggests that there is no indication of exposure or

likelihood of adverse effect in the US population, which is great news! It is important to note that there is considerable scientific debate about true risks from mercury exposure via fish consumption, and recent evaluations show that the overall health benefits of eating fish outweigh the potential risks from mercury in fish (FAO/WHO, 2010 and FDA, 2009).



Since scientifically robust data indicate that Americans experience no harmful effects from mercury in the environment and there is a fairly large margin of safety between biomonitoring data and exposure levels of concern, it is difficult to understand why so much legislative and regulatory activity are focused on further reducing mercury emissions. Given the minimal contribution to the global pool of mercury from manmade sources in the US, the lack of evidence to suggest that reducing US emissions of mercury would result in a reduction in fish concentrations (freshwater or marine), and the fairly large margin of safety between measured exposure levels and benchmarks of toxicity, the scientific weight of evidence would suggest additional efforts reduce mercury emissions are not necessary.

3.0 RISK COMMUNICATION

Risk perception is a critical interface between scientific facts, opinions, intellect, instinct, and values while risk communication *should* be the interactive exchange of information and opinions related to potential or perceived risks. The majority of people rely on intuitive risk judgments and their perceptions are generally formed from the news media. Most Americans believe that we face more risk today than in the past. This perception and the opposition to technology have led numerous observers to argue that the American public's apparent pursuit of a "zero-risk society" threatens the nation's political and economic stability (Slovic, 1987). California's Proposition 65 is a good example of this ideology in action when voters approved an initiative in 1986 to address their concerns about exposure to toxic chemicals. Since then, CalEPA requires the State to publish a list of chemicals that are known to cause cancer, birth defects

or other reproductive harm (this list includes over 800 compounds!). In turn, businesses are required to notify Californians if significant amounts of these chemicals are in consumer products, in the home and workplace. CalEPA believes that, by providing this information, they are enabling people can make informed decisions about protecting themselves from exposure to these chemicals.

It is interesting to see how the media, either through an apparent lack of understanding of the science, poor journalism, or in pursuit of attention, can distort science. Unfortunately, this misinformation or distorted science is usually the message the public hears and retains. For example, the media often, when describing fish consumption advisories, mercury regulations, or mercury in general, cites the statistic that 630,000 babies are born in the US every year with elevated levels of mercury in their blood and associated neurological impairment from mercury exposure in utero. However, what is never included in that message is that this calculation was based on EPA's conservative "safe" level (the reference dose) and does not represent a true risk (i.e., the discussion of what the reference dose represents and its inherent uncertainty was not attached to the "safe" level). In fact, the *maximum* blood mercury concentration measured in any person in the US is well below a level of concern (Caldwell et al, 2009) and EPA's "safe" dose is the lowest "safe" dose used or recommended by any regulatory agency in the world.

Environmental risks can be communicated to the public through a variety of channels such as open houses and public meetings; these communication efforts can be frustrating for both the risk communicators and for the intended recipients (Cohrssen and Covello, 1989). Like any communication, it works best if you understand and know your audience or fellow communicator. Often risk managers do not want to communicate and draw attention to a "non-issue" for fear of making it an "issue", but credibility and trust are increased when there is an open compassionate dialogue while silence can lead to suspicion (Peters et al., 1997). Credibility, empathy and trust have been shown to be as important as expertise and competence when communicating technical issues to lay audiences. In general and based on our experience, proactive risk communication may not avoid all conflict but it can constructively help work through public concerns regarding potential risk issues.

4.0 THE IMPORTANCE OF "GETTING IT RIGHT" (or how to strike a balance between science, judgment, and risk assessment)

Most paradigms of risk assessment generally recommend or include a tiered approach. This type of paradigm moves from a relatively simplistic model (i.e., a screening level assessment) that uses many default assumptions to a more sophisticated evaluation that is designed to simulate a particular exposure scenario with fewer default assumptions, a more detailed chemical-specific evaluation, and less uncertainty. It is often iterative as the screening-level evaluation gets refined and improved as more data become available. As the process gets more complicated, the resources needed to conduct the evaluation increase accordingly. In general, the amount of effort and data required in assessing risks can vary widely but it should be relatively proportionate to the priority and complexity of the specific situation.

A complaint about traditional risk assessment is that it can take many, many years to finalize an evaluation (i.e., it has taken over ten years for EPA to finalize their risk assessment for trichloroethylene). Perhaps this is appropriate if an evaluation is unusually complex and more data are necessary to "get it right". Obviously, for the naphthalene example provided previously, a discussion with the regulator was worth the small investment to investigate the origins of the screening level and assumptions and toxicity factors used to derive it. Likewise, the costs associated with a lengthy evaluation such as that for trichloroethylene is likely commiserate with the uncertainty reduced, the scientific precision and understanding gained, and the magnitude and difficulty of "getting it right".

Since environmental regulations began relying on the risk assessment process, the process and scientific research have shown to be valuable and effective for protecting public health. In fact, The World Health Organization (WHO) notes that, in high income countries such as the US, the risk estimates predict no deaths from climate change or lead exposure, very few from unsafe water, sanitation, and hygiene, and indoor smoke, and several from urban outdoor air pollution but considers these conservative estimates since there is no evidence for these diseases in developed countries (WHO, 2006). Again, it is important to be adequately protective yet reasonable in the margin of safety necessary to be conservative. When risk management decisions are made in the absence of objective sound science, precautionary or preventative actions can be easily manipulated, policy decisions changed, issues can become politicized, and any ability to independently evaluate priorities and relative levels of concern, and/or focus resources can become very difficult.

5.0 CONCLUSIONS

The risk assessment process can be a real “wild card” for many projects and, given the considerable resources that may be required, it is very important that the balance between sound science, judgment, and risk assessment is appropriate. Where sound science is available, a heavier weighting or emphasis should be given when making risk management decisions. In the absence of a scientific basis, reasonable judgment should be used and the uncertainty documented so that risk managers can get on with the job of making suitable decisions for the project.

The importance of risk communication cannot be emphasized enough. If risk assessment is the true “wild card”, risk communication might be the “trump card” and a game changer. Because of the public’s general reliance on media to obtain information, it can sometimes be difficult for risk communicators to change the “social amplification” of risk or the risk perception momentum. But, an effective risk management and risk communication strategy can greatly influence the outcome of a project, positively when done well or negatively when neglected or deficient. Projects are much more likely to be successful when: (1) communication occurs prior to a crisis (real or perceived); (2) the risk assessment expert as well as the public are actively involved; (3) and the risk communicator recognizes that risk perception is not necessarily a rational process.

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Short Biography
Thomas O. McGarity

Thomas O. McGarity holds the Joe R. and Teresa Lozano Long Endowed Chair in Administrative Law at the University of Texas School of Law. He has taught Environmental Law, Administrative Law and Torts at UT Law school since 1980. Prior to that he taught at the University of Kansas School of Law.

After clerking for Judge William E. Doyle of the Federal Court of Appeals for the Tenth Circuit in Denver, Colorado, Professor McGarity served as an attorney-advisor in the Office of General Counsel of the Environmental Protection Agency in Washington, D.C.

Professor McGarity has written widely in the areas of Environmental Law and Administrative Law. His book *Bending Science: How Special Interests Corrupt Public Health Research* (co-authored with his University of Texas colleague Wendy Wagner) was published in May 2008 by Harvard University Press. The Yale University Press published his most recent book, *The Preemption War: When Federal Bureaucracies Trump Local Juries* in October 2008.

Professor McGarity is immediate past president and a member of the Board of Directors of the Center for Progressive Reform, a nonprofit organization consisting of scholars who are committed to developing and sharing knowledge and information, with the ultimate aim of preserving the fundamental value of the life and health of human beings and the natural environment.

Professor McGarity lives in Austin with his wife Cathleen.

The Role of Risk in Regulatory Decisionmaking
Thomas O. McGarity
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Introduction.

Risk assessment is a familiar and useful concept in many fields of human endeavor, ranging from financial planning to health and safety regulation. According to the “Red Book,” a short volume prepared by a committee appointed by the National Research Council of the National Academy of Sciences that represented the first systematic effort to regularize the government’s approach to regulating toxic substances in the environment, risk assessment consists of “the characterization of the potential adverse health effects of human exposures to environmental hazards.”² As traditionally defined, risk assessment consists of four discrete analytical exercises: hazard assessment, exposure assessment, dose-response assessment, and risk characterization, which includes a characterization of the scientific uncertainties inherent in the exercise.³ When the available information and modeling techniques are adequate to support numerical estimates of risk, the assessment can be characterized quantitatively, but it is also useful on some occasions to express risk qualitatively when the available science will not support quantitative risk assessment.⁴ The Red Book also draws an important distinction between risk assessment and “risk management, which consists of the actions individuals and regulatory agencies take to reduce or eliminate the risks human beings encounter,” a process that “requires the use of value judgments on such issues as the acceptability of risk and the reasonableness of the costs of control.”⁵

I want to make four points about risk assessment. First, risk assessment, as employed in regulatory decisionmaking, is evolving into a process that ranges far beyond the quantitative carcinogen risk assessment that EPA has employed for more than three decades and with which most of us are fairly familiar. Second, the approach to risk assessment that a regulatory agency takes will depend on the nature of information that is available to the agency and the quality of that information. Third, the approach to risk assessment that a regulatory agency takes will also depend on the nature of the legal regime that requires the risk management decision for which the risk assessment is employed. Finally, as the Red Book long ago observed, policy plays a role in risk assessment. I will explore these four themes in the following discussion of the use of three rather different approaches to risk assessment in several regulatory programs.

¹ © Thomas O. McGarity 2012.

² National Research Council, National Academy of Sciences, *Risk Assessment in the Federal Government: Managing the Process* (1983), at 18

³ *Id.*, at 3, 18. See generally Thomas O. McGarity, *On the Prospect of “Daubertizing” Judicial Review of Risk Assessment*, 66 *L. & Contemp. Prob.* 155 (2003), at 157.

⁴ *Id.*, at 18

⁵ *Id.*, at 18-19

Quantitative Dose-Response Risk Assessment

Scientists developed the tools for quantitative dose-response risk assessment during the 1970s to assess the risks presented by human exposures to environmental carcinogens in pesticides, hazardous air contaminants in workplaces, and ambient air. By far the most familiar form of risk assessment to lay people, quantitative dose-response risk assessment relies on sophisticated mathematical models that typically express risks in terms of the probability that an individual will contract cancer during a lifetime of exposure or in terms of the number of cancers that are likely to occur in the exposed population annually under various exposure scenarios. Over the years, the linear nonthreshold risk assessment model has competed with the log-probit and various multi-stage models for dominance in the decisionmaking process.⁶ EPA has on occasion employed a combination of models to produce a result that reflects the probability that each model is the correct one.

The Legal Regimes.

FIFRA/TSCA.

Quantitative dose-response risk assessment first emerged at EPA in the context of its regulation of pesticides. It provided a useful function in that regime, because section 3 of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires EPA to register a pesticide upon a finding that it “will not generally cause unreasonable adverse effects on the environment,” and section 6 requires the agency to cancel the registration of a pesticide that “generally causes unreasonable adverse effects on the environment.”⁷ The statute defines the term “unreasonable adverse effects on the environment” to require EPA to balance the risks posed by the pesticide against its benefits.⁸ The agency relies on risk assessment to facilitate the comparison of the risks presented by the pesticide as projected by the dose-response model to the benefits that would be lost if the pesticide were not registered (or cancelled) to determine whether the pesticide would present (or presented) unreasonable risk to human health and the environment. Quantitative dose-response risk assessment plays an identical role under section 6 of the Toxic Substances Control Act, under which EPA engages in a similar balancing of risks against benefits in determining whether to pursue one of a number of regulatory options with respect to a chemical substance that presents “an unreasonable risk of injury to health or the environment.”⁹

EPA requires pesticide registrants to produce a basic set of core animal testing studies and environmental fate studies prior to marketing their products. The agency then relies on these studies in conducting its quantitative risk assessments. In 1991, the agency published “Guidelines for Developmental Toxicity Risk Assessment” and five

⁶ The following description is derived from Thomas O. McGarity, On the Prospect of “Daubertizing” Judicial Review of Risk Assessment, 66 L. & Contemp. Prob. 155 (2003), at 157-65.

⁷ 7 U.S.C. §§ 136a(C)(3)(5)(D); 136(d)(b).

⁸ 7 U.S.C. §§ 136(bb).

⁹ 15 U.S.C. § 2605(a).

years later, it published “Guidelines for Reproductive Toxicity Risk Assessment.”¹⁰ Under TSCA, EPA may promulgate testing rules for chemical substances that require the manufacturers to conduct such testing as the agency deems necessary to fill gaps in the information available about those substances.¹¹ EPA has also developed a number of dose-response risk assessment models that it employs on the risk side of the risk-benefit balance for registering pesticides and for determining whether action under section 6 of TSCA is necessary.

Safe Drinking Water Act.

Quantitative dose-response risk assessment plays a slightly less prominent a role in standard setting under the SDWA than it does under FIFRA and TSCA. The starting point for establishing a “primary drinking water regulation” is a “maximum contaminant level goal” (MCLG), which is defined as “the level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety.”¹² This absolutist health-based goal is aspirational only, and it is frequently below the level at which the EPA establishes the legally binding “maximum contaminant level” (MCL). The next step is to specify an MCL as close to the MCLG as is “feasible.”¹³ In 1996, Congress amended the statute to permit the Administrator to establish an MCL at a level other than the feasible level if the treatment needed to meet a feasible MCL would increase the risk from other contaminants or if the technology would interfere with the treatment of other contaminants.¹⁴ In addition, if benefits at the feasible level do not justify the costs, EPA may propose and promulgate an MCL “that maximizes health risk reduction benefits at a cost that is justified by the benefits.”¹⁵ EPA employs quantitative risk assessment for the purpose of determining the health benefits of reducing exposures to feasible levels for use in the cost-benefit analysis and for comparing to the risks of other contaminants for the risk-risk analysis.

Non-threshold Risks under the Food Quality Protection Act .

The FQPA, as enacted, employs a new standard for establishing pesticide tolerances. The new statute provides that EPA “may establish or leave in effect a tolerance for a pesticide chemical residue in or on a food only if the Administrator determines that the tolerance is safe,” and it goes on to define “safe” to mean “that there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.” The House Report on the statute recognizes that in the case of carcinogens, it may not be possible to establish a level at which there will be

¹⁰ Guidelines for Reproductive Toxicity Risk Assessment, 61 Fed. Reg. 56,274 (1996); Guidelines for Developmental Toxicity Risk Assessment, 56 Fed. Reg. 63,798 (Dec. 5, 1991)

¹¹ 15 U.S.C. § 2603.

¹² 42 U.S.C. § 300-g(1)(b)(4)(A).

¹³ 42 U.S.C. § 300-g(1)(b)(4)(B).

¹⁴ 42 U.S.C. § 300-g(1)(b)(5).

¹⁵ 42 U.S.C. § 300-g(1)(b)(6).

“no harm.” It therefore invites EPA to establish the tolerance at a level that is “no greater than negligible,” where that term is defined to mean a lifetime risk of one in one million.¹⁶ EPA employs quantitative risk assessment models in determining whether a carcinogenic pesticide will present a greater than negligible risk at the proposed tolerance level.

Non-threshold Risks in the Workplace.

Quantitative dose-response models also became a practical necessity in setting workplace health standards for nonthreshold pollutants under the Occupational Safety and Health Administration after the Supreme Court’s 1980 opinion in the *Benzene* case.¹⁷ In reviewing OSHA’s regulation reducing the permissible exposure limit benzene from 10 parts per million to 1 part per million, Justice Stevens wrote that the agency had skipped an analytical step when it determined that exposure to carcinogens in the workplace should automatically be reduced to the lowest “feasible” level. Implicit in the word “safe” in OSHA’s statute was a requirement that the agency make a threshold determination that existing employee exposures to a toxic chemical present a “significant risk” of harm. Although this was news to OSHA, the Court provided very little guidance on how the agency should go about making this “significant risk” threshold finding. The Court merely suggested that risk assessment models were available to the agency without explicitly requiring the agency to develop or use such models. OSHA has, of course, accepted that suggestion and now employs quantitative dose-response models on those rare occasions when it promulgates an occupational health standard for a carcinogen.

National Emissions Standards for Hazardous Air Pollutants under the Clean Air Act.

The 1990 Amendments to the Clean Air Act adopted the technology-based approach to setting National Emissions Standards for Hazardous Air Pollutants (NESHAPS), and it required the agency to set the standard at the level of the maximum achievable control technology (MACT).¹⁸ At the same time, Congress adopted an acceptable risk approach for regulating the residual risks remaining after installing the maximum achievable control technology. For “known, probable, or possible human carcinogens,” the agency must promulgate additional emissions limitations beyond MACT if the residual risk is greater than one in one million to the maximally exposed individual.¹⁹ In addition, EPA may “de-list categories of sources if it finds that “no source in the category ... emits such hazardous air pollutants in quantities which may cause a lifetime risk of cancer greater than one in one million to the individual in the population who is most exposed to emissions of such pollutants from the source.”²⁰ Both of these exercises clearly require quantitative dose-response risk assessment.

¹⁶ H.R. Rep. No. 104-669, pt. 2, at 41 (1996).

¹⁷ *Industrial Union Dept., AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607 (1980).

¹⁸ 42 U.S.C. § 7412(d)(2).

¹⁹ 42 U.S.C. § 7412(f)(2).

²⁰ 42 U.S.C. § 7412(c)(9)(B)(i).

The Nature of the Data.

The data available for assessing the risks posed by carcinogens in the workplace or the environment consist primarily of epidemiological studies and laboratory animal experiments in which animals are exposed to various levels of the relevant chemical under carefully controlled conditions over their lifetimes. As an initial matter, the regulatory agency must decide whether to use an available study in the risk assessment. This involves an assessment of the quality of the study, a function that has been regularized somewhat under the Information Quality Act, which required OMB to promulgate “policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by Federal agencies.” Among other things, the OMB Guidelines require the information that EPA uses for decisionmaking to be (1) objective and (2) useful for the purpose for which it was intended.²¹ Things to look for in evaluating the quality of scientific studies include “overall robustness, the scope of coverage, spatial and temporal representativeness, and the quality-control and quality-assurance protocols implemented during data collection.”²²

Epidemiological Studies.

An epidemiological study consists of a statistical comparison of human beings who have received a higher-than-normal exposure to a particular agent with others who have received little or none. The determinant of cause and effect in epidemiology is the concept of relative risk. The epidemiologist compares the frequency of the disease in the heavier exposed population with the frequency in the lesser-exposed population to determine whether relative frequency is increased by exposure. If the data can be arranged so that it is possible to observe groups with varying degrees of exposure, then the existence of a dose-response relationship increases the epidemiologist’s confidence in the results and the usefulness of the study for risk assessment purposes.

Laboratory Animal Studies.

Because human testing is often inappropriate for ethical reasons or otherwise impracticable, quantitative dose-response risk assessments rely heavily upon laboratory animal tests to evaluate the toxicity of chemicals. Agency reliance on animal studies always raises the issue of inter-species extrapolation. Human beings do not always metabolize toxic agents in the same way laboratory animals do, and human organs and reproductive systems are not identical to those of mice and rats. The dose an animal receives in a standard feeding experiment can be difficult to compare to real-world human exposure, though pharmacokinetic studies on the animals and human beings can

²¹ 67 Fed. Reg. 8452 (Feb. 22, 2002)

²² National Academy of Sciences, National Research Council, Science and Judgment in Risk Assessment (1994), at 106

facilitate such comparisons. Most agencies rely upon the default assumption that “positive effects in animal cancer studies indicate that the agent under study can have carcinogenic potential in humans.” Positive results in two or more animal species are strong evidence of human carcinogenicity. Likewise, two or more negative animal tests lend support the conclusion that an agent does not cause cancer in humans in the absence of human data to the contrary.

Exposure Assessment.

The extent of human exposure to an environmental contaminant is another critical component of the quantitative dose-response risk assessment. A properly conducted exposure assessment identifies the exposed human populations, characterizes their composition and size, and estimates the magnitudes, frequencies, and durations of those exposures.” An acceptable exposure assessment for most chemical substances includes an assessment of dietary, dermal, and inhalation exposures to the agent. The exposure component of a risk assessment can come from direct personal monitors, stationary monitors located in populated areas, and, quite often, modeling exercises. These modeling exercises always require the assessor to make assumptions and approximations to address the inevitable uncertainties that arise in the exposure data.

Dose Response Models.

The exposure levels in the upper range of animal studies are, for practical reasons, considerably higher than expected human exposures, and frequently include the maximum dose tolerated by the test species. This yields information that is not necessarily useful in assessing the risks to members of a different species (humans) who are exposed to much lower levels of the chemical in their diets or environment. Epidemiological studies that focus on highly exposed cohorts are obviously of greater relevance to human exposures, but still present the issue of the magnitude of the risk at lower exposure levels.

Experts have developed a variety of dose-response risk assessment models that attempt to extrapolate from the results of the animal tests (or epidemiological studies focusing on highly exposed human populations) to the risks faced by humans at lower exposure levels. The models are based upon critical assumptions about the interactions between chemicals and the human body. As scientists have learned more about interactions between chemicals and DNA, carcinogenesis dose-response models have been modified to reflect new scientific understandings, but the results are still clouded in uncertainty and are highly dependent upon the assumptions that go into them.

The “Weight of the Evidence” Approach to Risk Assessment.

In the final analysis, the health risks posed by toxic agents cannot be determined with a high degree of certainty. Epidemiological proof is ephemeral in nature and therefore subject to much disagreement; there is no perfect epidemiological study. In the

real world of physical constraints and economic limitations, identifying confounding factors and other sources of bias is an easy task. Thus, in evaluating epidemiological proof, “what we should seek is not a criterion of proof, but rather aides de judgment—guides to assist weighing study evidence and reaching informed opinion.”²³

EPA has joined most agencies in adopting a weight-of-the-evidence approach to assessing human health risks. Under this approach, the agency considers all proffered studies and determines the weight to be afforded each on the basis of identified strengths and weaknesses. Many studies, otherwise flawed in one or more respects, may nonetheless be appropriately considered to the extent they add to or detract from conclusions based upon more reliable studies. Animal studies are properly considered under the weight-of-the-evidence approach, as are meta-analyses of epidemiological studies that might be flawed to some extent.

Margin of Safety.

When EPA attempted to adapt dose-response risk assess models to the program for regulating emissions of hazardous air pollutants under the Clean Air Act Amendments of 1970, it ran into a problem with the nature of the legal regime. The statute at the time required the agency to promulgate a standard that protected public health with an “ample margin of safety,” but the agency had long taken the position that there was no way to determine a “safe” level of exposure to a carcinogen.²⁴ EPA therefore adopted the rather odd position that the statute allowed it to promulgate a standard containing an emissions limitation that reflected not a safe level of exposure, but the level achievable by the best available control technology when that level was anywhere below the level of “demonstrated harm” and the cost of setting a lower level was grossly disproportionate to the benefits of removing the remaining risk.

The Natural Resources Defense Council challenged this interpretation, arguing that the agency was obliged to promulgate a standard requiring zero emissions.²⁵ In what can charitably be characterized as a confusing opinion, the D.C. Circuit held that when uncertainties cloud the assessment of the risk posed by a chemical at low levels, the administrator has discretion to set the standard at the lowest level that is technologically feasible.²⁶ In discussing the use of risk assessment in the context of a statute that employs a “margin of safety” approach to risk management, the court made the following observation:

In determining what is an ample margin of safety, the Administrator may, and perhaps must, take into account the inherent limitations of risk assessment and the limited scientific knowledge of the effects of exposure to carcinogens at various levels, and may therefore decide to set the level below that previously determined to be “safe.” This is especially true when a straight-line extrapolation from known risks is used to estimate risks to health at levels of exposure for which no data is available. This method, which is based upon the results of

²³ James J. Schlesselman, *Proof of Cause and Effect in Epidemiologic Studies: Criteria for Judgment*, 16 *PREVENTIVE MED.* 195, 197 (1987), at 199.

²⁴ *Natural Resources Defense Council, Inc. v. EPA*, 824 F.2d 1146 (D.C. Cir. 1978), at 1148.

²⁵ *Id.*, at 1149.

²⁶ *Id.*, at 1165.

exposure at fairly high levels of the hazardous pollutants, will show some risk at every level because of the rules of arithmetic rather than because of any knowledge. In fact the risk at a certain point on the extrapolated line may have no relationship to reality; there is no particular reason to think that the actual line of the incidence of harm is represented by a straight line. Thus, by its nature the finding of risk is uncertain and the Administrator must use his discretion to meet the statutory mandate.²⁷

Not long thereafter EPA established a NESHAP for benzene at a level that, according to EPA's risk assessment, presented a risk of one in ten thousand to the maximally exposed individual.²⁸

According to EPA and the D.C. Circuit, the margin of safety requirement "was intended to address uncertainties associated with inconclusive scientific and technical information available at the time of standard setting, as well as to provide a reasonable degree of protection against hazards that research has not yet identified."²⁹ The margin of safety concept thus looks like an approach to risk management and would therefore appear to have no relevance at all to risk assessment. As with many things that EPA does, however, the margin of safety concept is more complicated than it appears at first glance. At least one aspect of the margin of safety concept has direct application to the risk assessment process.

In practice, EPA has applied the margin of safety in at least two different ways, depending on the nature of the scientific evidence that is before it. In the case of pollutants for which the agency can identify a threshold for the relevant adverse health effect, the agency can set the standard at a level sufficiently lower than the threshold to account for the unknowns and uncertainties inherent in the determination of the threshold and for the variability in human responses to the pollutant. The Supreme Court in *American Trucking Association v. Whitman* appeared to adopt this view when it stated that the margin of safety requirement required the agency "to identify the maximum airborne concentration of a pollutant that the public health can tolerate, decrease the concentration to provide an 'adequate' margin of safety, and set the standard at that level."³⁰

For pollutants for which thresholds do not clearly exist, however, EPA has taken the position that the margin of safety approach requires it to "take into account margin of safety considerations throughout the process as long as such considerations are fully explained and supported by the record."³¹ For example, the agency may employ conservative assumptions in interpreting the health effects data, in drawing inferences from the available scientific information, in estimating human exposures, and in determining the appropriate dose-response models for assessing health risks.³²

²⁷ *Id.*, at 1165

²⁸ Joseph M. Feller, Non-Threshold Pollutants and Air Quality Standards, 24 *Envl. L.* 821 (1994), at 837

²⁹ Environmental Protection Agency, National Ambient Air Quality Standards for Ozone: Final Rule, 62 *Fed. Reg.* 38,836 (1997), at 38,857.

³⁰ *American Trucking Ass'n v. Whitman*, 531 U.S. 457 (2001), at 465

³¹ *American Trucking Ass'n v. EPA*, 283 F.3d 355 (D.C. Cir. 2002), at 368 (quoting Particulate Matter NAAQS, 62 *Fed. Reg.* at 38,688).

³² *Lead Industries Ass'n v. EPA*, 647 F.2d 1130, 1155 (D.C. Cir. 1980)

The Reference Dose Approach to Chemicals with Thresholds.

Although the Food Quality Protection Act, discussed above, adapted the “reasonable certainty of no harm” standard to carcinogens, its primary focus was on the reproductive and developmental risks that pesticides posed to fetuses, infants and children. It appears at this juncture that in the case of many pesticides, there are fairly clear thresholds below which exposures pose very little or no risk of adverse reproductive or developmental toxicity to fetuses, infants and children.³³ EPA has therefore adopted a very different approach to risk assessment than the quantitative dose-response approach that it employs for carcinogens and other nonthreshold pollutants.

The Legal Regime.

Infants and children receive special statutory protections under the FQPA. In establishing tolerances, EPA must assess risks to infants and children on the basis of “available information” concerning (1) consumption patterns among infants and children, (2) special susceptibility of infants and children, and (3) cumulative effects of exposures to infants and children.³⁴ More importantly, in the case of threshold effects, the agency must apply an additional “tenfold margin of safety” to take into account “potential pre- and post-natal toxicity and completeness of the data with respect to exposure and toxicity to infants and children.”³⁵ The agency may use a different additional margin of safety, but “only if, on the basis of reliable data, such margin will be safe for infants and children.”³⁶

The new law also broadens significantly the focus of the agency's tolerance-setting inquiry. In the past, EPA had largely confined its analysis to dietary exposures through consumption of the products containing the pesticide and had not examined aggregate exposures to the pesticide from other sources, such as residential uses and drift from aerial applications. The FQPA's reasonable certainty of no harm inquiry now extends to “all anticipated dietary exposures and all other exposures for which there is reliable information.”³⁷ Presumably, if other routes of exposure are not easily controlled, EPA must ensure a reasonable certainty of no harm by reducing dietary exposure through the tolerance-setting exercise. The statute clarifies EPA's authority to consider “available data” on actual and anticipated residues as an alternative to assuming that they are present at the maximum level permitted by the tolerance.³⁸ Similarly, instead of assuming that farmers treat all crops for which a tolerance exists, EPA may rely upon available information on the percentage of the crop actually treated in calculating total human

³³ According to EPA, “threshold effects” are “those considered to have exposure doses at some identifiable level which are likely to be without appreciable risk of deleterious consequences.” Office of Pesticide Programs, EPA, The Office of Pesticide Programs' Policy on Determination of the Appropriate FQPA Safety Factor(s) for Use in the Tolerance-Setting Process 11 (1999)

³⁴ 21 U.S.C. § 346(a)(b)(2)(C).

³⁵ 21 U.S.C. § 346(a)(b)(2)(C)(i)(II)

³⁶ 21 U.S.C. § 346(a)(b)(2)(C)(i)(II).

³⁷ 21 U.S.C. § 346(a)(b)(2)(A)(ii).

³⁸ 21 U.S.C. § 346(a)(b)(2)(E).

exposure.³⁹

The Data.

EPA relies primarily on animal studies in setting pesticide tolerances. Human testing on fetuses, infants and children is generally unethical, good epidemiological studies of reproductive toxicity are very rare, and epidemiological studies of developmental toxicity are even rarer. EPA also encounters the problem of data scarcity in assessing exposures to pesticides by fetuses, infants and children.

Reference Doses.

When the EPA staff undertakes a hazard assessment for a substance that exhibits threshold toxicity, the goal is to specify a “reference dose” (RfD) that will meet the reasonable certainty of no harm criterion. Sometimes called an “acceptable daily intake,” the RfD is “an estimate of a daily exposure to the human population that is assumed to be without appreciable risk of deleterious” reproductive or developmental effects.⁴⁰ In the context of reproductive and developmental toxicity, this exercise of “science/policy judgment” has at least four components.⁴¹

First, the staff must determine whether a sufficient range of scientific studies exists to assess the reproductive and developmental toxicity of the pesticide at issue. Deciding whether the marginal additional information that another study may yield is worth the additional time and expense requires a scientific assessment of the robustness of the existing studies and the likelihood that a new study will yield valuable information. At the same time, deciding whether to fill possible “data gaps” requires a policy judgment regarding the use limited financial and scientific resources that ultimately depend upon the extent to which the decisionmaker is risk averse with respect to the potential developmental and reproductive risks posed by the pesticide.

Second, the staff must determine whether the existing reproductive and developmental toxicity data are sufficient and reliable. This involves a scientific consideration of the appropriateness of the design of the existing tests, the effectiveness of their execution, and the adequacy of any statistical analyses of the raw data. Although the “sufficiency” analysis is necessarily chemical-specific, generic criteria exist for evaluating toxicological studies. The presence of an observable dose-response relationship in the data, for example, greatly enhances the credibility of “positive” results, because it suggests that the results at any given dose level are not attributable merely to chance. Similarly, a larger database is generally required to support a conclusion that an agent does not cause adverse reproductive or developmental effects than to support a conclusion that it does cause such effects.

Third, the staff must extrapolate the results of the existing studies to likely human

³⁹ 21 U.S.C. § 346(a)(b)(2)(F)(i).

⁴⁰ Reproductive Toxicity Guidelines, at 56,305; Developmental Toxicity Guidelines, at 63,817.

⁴¹ The description of reference doses is taken from Thomas O. McGarity, *Politics by Other Means: Law, Science, and Policy in EPA's Implementation of the Food Quality Protection Act*, 53 Ad. L. Rev. 103 (2001), at 121-29.

exposures. In assessing both reproductive and developmental toxicity the agency assumes that the dose-response function exhibits a threshold below which exposure causes no appreciable risk. For each of the relevant studies that the agency staff deems “sufficient” for a particular reproductive or developmental endpoint, the staff determines the lowest level at which the exposure to the pesticide caused observable adverse effects in the animals, or the “Lowest Observed Adverse Effects Level” (LOAEL). At the same time, the staff attempts to ascertain the dose at which it caused no observable adverse effects, or the “No Observed Adverse Effects Level” (NOAEL). Since toxicity tests employing a limited number of animals are capable of detecting only relatively high incidences of disease, the NOAEL is not necessarily a threshold below which exposure was incapable of causing damage to the test animals. Moreover, the NOAEL is limited to adverse effects, and attempts to characterize particular effects as “adverse” are often subjective and sometimes quite controversial.

Finally, the staff identifies a “critical effect” for the chemical, which is “the most sensitive adverse effect from the animal study with the lowest NOAEL or LOAEL (in the case of studies without a well-defined NOAEL), and applies two or more 10-fold “uncertainty factors” to the NOAEL or LOAEL for the critical effect. The uncertainty factors are meant to account for “database” uncertainties stemming from the deficiencies in the scope and quality of the existing data and to account for general uncertainties due to imperfect scientific understanding of the complex relationship between exposure to chemicals and risks to human health. The staff typically employs a 10-fold uncertainty factor to account for “intraspecies variability” (i.e., frequently observed differences in susceptibility among human beings to the adverse effects of exposure to toxic substances). The 10-fold magnitude of this uncertainty factor is based upon the “default” assumption that an acceptably small number of individuals will suffer adverse effects when exposed to one-tenth the dose that caused no observable adverse effects in the scientific studies. When the staff lacks definitive human testing or epidemiological data, it applies an additional “interspecies” uncertainty factor of up to 10-fold to account for the possibility that humans are more sensitive than the test species.

In addition to the traditional 100-fold safety margin to account for intra- and inter-species variability, EPA has occasionally applied an extra safety margin of 3- to 10-fold to reflect other “database uncertainties.” For example, the staff typically applies an extra “database uncertainty factor” when the available database lacks certain crucial studies or when the study producing “critical effect” is determined not to have yielded a definitive NOAEL. The precise width of this extra “database” safety margin depends upon “scientific judgment,” but it also reflects the extent to which the agency adopts a risk averse approach to pesticide risks. As previously discussed, Congress adopted a risk averse policy with respect to pesticide risks to infants and children when it required the agency to apply an extra 10-fold “margin of safety” for pesticides that cause adverse reproductive and developmental effects unless the agency determines, on the basis of sound scientific information, that a smaller additional margin of safety is appropriate.

Exposure Assessment.

Human beings may be exposed to a pesticide for which EPA has established a tolerance from sources other than the particular crop to which that particular tolerance

applies.⁴² A person might consume more than one food for which tolerances for the pesticide exist, or a person may become exposed to the pesticide through drinking water or numerous non-dietary exposure routes. Prior to the FQPA's enactment, however, EPA had focused exclusively upon the dietary risks posed by the particular uses of the pesticide that were the subject of the tolerance petition.

The FQPA explicitly changed this focus by requiring EPA to examine “all anticipated dietary exposures and all other exposures for which there is reliable information.”⁴³ This statutory command required the agency to broaden its exposure assessment to include “aggregate exposure” to the pesticide from drinking water, from other water exposures (e.g., swimming), and from dermal and inhalation exposures in homes, lawns, gardens and recreational areas. Indeed, the agency arguably had to include exposures from nonpesticide uses of the same chemicals, such as pharmaceuticals, and even from improper disposal of the chemicals. The FQPA also required the agency to focus particularly on exposures to sensitive subgroups, such as infants, children and women of childbearing age.⁴⁴ In short, post-FQPA exposure assessments must determine aggregate exposures of several sensitive subpopulations from multiple pathways, an extraordinarily complex and resource-intensive exercise.

Although EPA has gone to great lengths to provide dozens of suggested toxicity testing protocols, it has not gone to equivalent lengths to provide exposure assessment protocols. For many years, the agency has required pesticide registrants to conduct “field tests” to analyze the environmental fate of pesticides applied pursuant to their labels. These field tests provide accurate measurements of residues that remain on crops “at the farm gate” after specified harvest intervals. The agency does not, however, require registrants to monitor the food supply for actual pesticide residues “on the dinner plate.”

As part of its enforcement obligations, the Food and Drug Administration (FDA) frequently tests for pesticide residues on crops before they enter primary markets, but that enforcement monitoring program does not test for residues on the dinner plate, where people actually consume the raw and processed foods. The federal government does conduct periodic surveys of pesticide residues in foods, but these programs are of limited scope, duration and geographical range. Moreover, most residue monitoring programs do not take into account the fact that some subpopulations consume some foods in much larger quantities than the average adult American consumer. Because EPA lacks comprehensive information on actual pesticide exposures, it typically bases its exposure assessments on models employing broad default assumptions and/or hypothetical exposure scenarios.

Exposure assessment for reproductive and developmental toxicity endpoints can be even more complex. Exposure to parents prior to conception and maternal exposures between conception and birth are relevant to both reproductive and developmental toxicity. Babies consume commercially purchased infant formulas and processed baby food, but they also consume breast milk, which is much harder to monitor. The diets of very young children are usually much higher than adult diets in some kinds of foods, like

⁴² The description of pesticide exposure is taken from Thomas O. McGarity, *Politics by Other Means: Law, Science, and Policy in EPA's Implementation of the Food Quality Protection Act*, 53 *Ad. L. Rev.* 103 (2001), at 130-33; 165-71.

⁴³ 21 U.S.C. § 346(a)(b)(2)(ii).

⁴⁴ 21 U.S.C. § 346(a)(b)(2)(C).

apple juice and grape juice. Moreover, children under five eat about three times more food than adults on a weight-adjusted basis. The volume of air consumption is also higher for children than adults on a weight-adjusted basis. Similar differences in skin surface versus body weight require adjustment of dermal exposure factors for infants and children. Finally, infants and children can become exposed through unusual routes not ordinarily encountered by adults, such as ingestion of turf and soils outside the house and dust on floors and toys inside. Since such intermittent exposures can be critical to fetal or infant development, time-weighted averages may be inappropriate for assessing reproductive and developmental risks.

Unfortunately, pesticide residue data are virtually never available in the kind of detail needed to support quantitative calculations of exposure to fetuses, infants, and children through all routes at all critical junctures. To fill the resulting information gaps, the EPA must therefore rely upon policy-dominated default assumptions about pesticide application rates, deposition rates, and degradation rates and about the varied and complex routes for pesticide uptake in fetuses, infants, and children. Yet, in stark contrast to its approach to hazard assessment, the EPA has not historically applied an additional uncertainty factor to account for the considerable uncertainties that surround the exposure database for fetuses, infants, and children.

EPA recognized at the outset that its existing exposure database and its exposure models were not up to its new statutory responsibilities. It also understood that “as the number of sources of exposure rises, the prediction of total exposure will be less accurate.” The agency therefore faced an unattractive choice between leaving the statute's aggregate exposure requirements unimplemented while it collected more data and developed more sophisticated models or proceeding ahead on the basis of its woefully inadequate existing exposure database and crude nondietary exposure models based on broad and frequently inaccurate “default assumptions.”

The agency hoped to achieve a workable middle-of-the-road solution by focusing upon the potential exposure to a single chemical by multiple routes. To accomplish this, the agency hoped to combine oral exposures (from food, drinking water and residential pathway scenarios) and inhalation and dermal exposures (from residential pathway scenarios). The starting point, in most cases, would be dietary exposures, for which the agency hoped to arrive at more “realistic” assessments through a new technique called “probabilistic exposure estimates.” The agency staff would then superimpose other nondietary exposures upon the background level of dietary exposure using, to the extent feasible, probabilistic techniques.

Risk Characterization.

A risk characterization can portray risk in a number of ways. First, the agency can identify a level of exposure that is “of concern,” such as the RfD, and estimate the number of individuals who are likely to be exposed to greater levels. A second approach characterizes risk through exposure scenarios, asking what are the human health consequences of setting the RfD at a particular level in each scenario. Third, the agency can calculate a “margin of exposure” (MOE), which is “the ratio of the NOAEL from the most appropriate or sensitive species to the estimated human exposure level from all potential sources,” and ask whether the MOE is acceptable. Fourth, the agency can focus

upon the most heavily exposed individuals and ask what the consequences of regulatory action would be for those individuals. Fifth, the agency can identify especially sensitive or susceptible groups of individuals (such as pregnant or lactating women) and explain the health consequences of exposure for those groups.

Margin of Safety.

Although Congress drew on a rich legal background underlying the margin of safety concept in enacting the FQPA, it also added a unique twist for threshold risks to infants and children. The thresholds that scientists presume for reproductive and developmental toxins are by-and-large statistical constructs that are not based upon any detailed understanding of the mechanisms through which such toxins operate. The application of an intraspecies “uncertainty factor,” for example, may ensure that most of the exposed population will not suffer adverse effects, but only an exceedingly large uncertainty factor will ensure that the most sensitive individual in the exposed population will escape harm. The “uncertainty factors” that EPA employs in determining the RfD typically represent a “margin of safety” only for the average member of the exposed population. The “width” of the margin reflects a scientific judgment about the quality and completeness of the relevant toxicity data, but it also represents a policy judgment about the acceptability of the risk to sensitive human beings that remains after the pesticide is released into the environment.

The margin of safety concept also plays a role in exposure assessment. Large uncertainties hamper attempts to determine actual dietary exposures to pesticide-treated foods and to pesticide-contaminated drinking water. Still larger uncertainties permeate exposure assessments for inhalation, dermal and oral exposures to infants and children in homes and on lawns. Although actual monitoring data are occasionally available, exposure assessments for infants and children nearly always employ exposure models that may deviate substantially from reality. Whether EPA should employ an extra margin of safety in addition to “conservative” assumptions to account for uncertainties in exposure information is a question of policy.

Finally, Congress meant for the FQPA “margin of safety” to perform a third function, not ordinarily performed by “uncertainty factors,” of providing additional protection to infants and children from any adverse effects that reproductive and developmental toxicity studies reveal. This special protection for infants and children goes beyond EPA's traditional concern for uncertainties stemming from incomplete data. As discussed above, the statute demands that EPA employ an “additional tenfold margin of safety” for infants and children “to take into account potential pre- and post-natal toxicity and completeness of the data with respect to exposure and toxicity to infants and children.” Congress was concerned not only about knowledge gaps (“completeness of the data”) but also about the special sensitivity of infants and children to environmental toxins (“potential pre- and post-natal toxicity”).

The Exposures of Concern Approach to Disease Endpoints that Are Not Amenable to Quantitative Models.

In promulgating national ambient air quality standards (NAAQS) to protect public health and the environment from ubiquitous air pollutants, EPA is working within the confines of a legal regime that is “cost-oblivious,” in the sense that it does not permit EPA to consider the economic and technological feasibility of attaining the standards when promulgating them. The science upon which EPA relies in setting NAAQS is somewhat more robust than the science available for the regulatory programs described above because ethical considerations thus far have not prevented EPA and others from conducting controlled human (clinical) studies. EPA relies heavily on these studies, which are obviously more relevant to actual human exposures than epidemiological or animal studies, but it relies on the latter studies as well. Even the controlled human studies, however, do not eliminate uncertainty. Because expense limits the number of subjects available for such studies, they are able to observe only fairly powerful effects. Thus, large uncertainties attend the risk assessor’s attempts to draw conclusions about the effect of the pollutant at low exposure levels from a mix of controlled human studies, epidemiological studies and animal studies.

Nature of the Legal Regime.

The Clean Air Act establishes a comprehensive program for promulgating, attaining and maintaining the NAAQS. Under the statute, EPA must promulgate and periodically revise national primary and secondary ambient air quality standards for pollutants that may reasonably be anticipated to endanger public health or welfare and that derive from numerous or diverse mobile or stationary sources.⁴⁵ The agency must first prepare a document called an Integrated Science Assessment that “accurately reflect[s] the latest scientific knowledge” on the health and welfare effects of the pollutant.⁴⁶ It then establishes primary NAAQS for these “criteria” pollutants at a level that is “requisite to protect the public health” while “allowing an adequate margin of safety.”⁴⁷ The legislative history of the statute makes it clear that the goal of the primary standards is to ensure “an absence of adverse effects on the health of a statistically related sample of persons in sensitive groups” such as “bronchial asthmatics and emphysemics who in the normal course of daily activity are exposed to the ambient environment.”⁴⁸ EPA must set the secondary standards at a level that is “requisite” to protect “public welfare from any known or anticipated adverse effects associated with the presence” of the pollutant in the ambient air.⁴⁹

In setting and revising the NAAQS, EPA has in recent years drawn on three broad categories of considerations, each of which in turn draws on both scientific expertise and policy judgment. “Evidence-based” considerations derive from expert assessments,

⁴⁵ 42 U.S.C. § 7408(a).

⁴⁶ 42 U.S.C. § 7408(a)(2).

⁴⁷ 42 U.S.C. § 7409(b)(1).

⁴⁸ S. Rep. No. 91-1196 (1970), at 10. See also *American Lung Ass’n v. EPA*, 134 F.3d 388 (D.C. Cir. 1998), at 389; *Lead Indus. Ass’n v. EPA*, 647 F.2d 1130, 1153 (D.C. Cir. 1980)

⁴⁹ 42 U.S.C. § 7409(b)(2).

sometimes referred to as “hazard assessments,” of the scientific studies on the existence, or lack thereof, of a cause-effect relationship between exposure to the pollutant at issue and various adverse health or environmental endpoints at various exposure levels.⁵⁰ “Exposure-based” considerations derive from assessments of the extent to which human populations and environmental entities of concern (e.g., crops, vegetation, endangered species) are exposed to the pollutant at issue under various real-world conditions.⁵¹ “Risk-based” considerations derive from assessments, usually referred to as “risk-assessments,” of the degree to which human populations and environmental entities of concern are being or will be harmed at various levels of exposure to the pollutant in the future.⁵²

Evidence-Based Considerations (Hazard Assessment).

Evidence-based considerations in promulgating NAAQS “include the assessment of evidence from controlled human exposure, toxicological and epidemiological studies evaluating short- or long-term exposures to” the relevant pollutant “with supporting evidence related to dosimetry and potential mode of action, as well as the integration of evidence across each of these disciplines.”⁵³ Evidence-based considerations are the primary subject matter of the integrated science assessments that the statute requires EPA to prepare in connection with the promulgation of each new or revised ambient air quality standard.⁵⁴ The evidence that the agency considers typically comes in three primary categories: controlled human studies, epidemiological studies and animal studies.

Controlled Human Studies.

In setting NAAQS for some of the criteria pollutants EPA has relied extensively on laboratory studies of human subjects who are exposed to carefully controlled concentrations of the pollutant in an isolation chamber while engaged in varying levels of physical exertion.⁵⁵ The studies compare the incidence of various potentially adverse effects in the subjects who were exposed to the pollutant to the incidence in subjects engaged in the same activities but breath filtered air that is effectively free of the pollutant.⁵⁶

⁵⁰ Environmental Protection Agency, National Ambient Air Quality Standards for Carbon Monoxide, 76 Fed. Reg. 8158 (2011), at 8172

⁵¹ Environmental Protection Agency, Review of the National Ambient Air Quality Standards for Ozone: Policy Assessment of Scientific and Technical Information (January 2007), at ch. 4, § 7.5.

⁵² *Id.*, at ch. 5, § 7.6.

⁵³ Environmental Protection Agency, National Ambient Air Quality Standards for Carbon Monoxide, 76 Fed. Reg. 8158 (2011), at 8172.

⁵⁴ See, e.g., 1 United States Environmental Protection Agency, Air Quality Criteria for Ozone and Related Photochemical Oxidants (February 2006).

⁵⁵ See Edward L. Avoi, et al, A Movable Laboratory for Controlled Clinical Studies of Air Pollution Exposure, 29 J. Air Pol. Control Ass’n 743 (1979) (describing movable isolation chamber).

⁵⁶ T. Sandstrom, Respiratory Effects of Air Pollutants: Experimental Studies in Humans, 8 Eur. Respir. J. 976 (1995), at 976; 1 United States Environmental Protection Agency, Air Quality Criteria for Ozone and Related Photochemical Oxidants (February 2006), at 6-1

EPA believes that controlled human studies (sometimes called clinical studies) provide “the most directly applicable information for determining causality,” because they are conducted “under closely monitored conditions” and can therefore provide direct evidence of “exposure-response relationships” in human beings and other entities that can be affected by exposure to the pollutant at issue.⁵⁷

Although controlled human exposure studies provide the evidence-based information “with the highest level of confidence,”⁵⁸ there are obvious limitations on the use of human beings in controlled experiments. Ethical considerations limit the concentrations that can be employed to levels not much greater than what the most heavily exposed humans (usually workers) experience in the real world. Such considerations also limit the extent to which they can be employed to explore severe health endpoints like cancer and premature mortality and in testing the effects of pollutants on sensitive and vulnerable subpopulations like children and persons suffering from asthma or chronic obstructive lung disorder. Finally, controlled human studies are impractical for testing the effects on humans of chronic exposure to low-levels of the pollutant, because few subjects are willing to be monitored for long periods of time.⁵⁹

Epidemiological Studies.

The next-best evidence for establishing the existence or lack thereof of cause-effect relationship between exposure to a chemical and an adverse health endpoint comes from epidemiological studies.⁶⁰ Epidemiological studies are very difficult to undertake, and they invariably yield imperfect information. In the case of ubiquitous air pollutants like the criteria pollutants, it is difficult for investigators to identify a “control” population of individuals who have experienced far lower exposures to the relevant pollutant.⁶¹ Accurate quantitative information on the magnitude and duration of exposure is frequently unavailable.⁶² For example, the typical source of air quality information used in epidemiological studies is the fixed monitors that state and local governments have installed at various locations in urban areas to measure pollutant levels for the purpose of determining whether those areas attain the NAAQS. Such measurements are only a very rough surrogate for the actual exposures of individuals who are located at various distances from the monitors and spend varying proportions of their days outdoors.

⁵⁷ Environmental Protection Agency, National Ambient Air Quality Standards for Ozone; Proposed Rule, 72 Fed. Reg. 37818 (2007), at 37823.

⁵⁸ Environmental Protection Agency, National Ambient Air Quality Standards for Ozone; Proposed Rule, 72 Fed. Reg. 37818 (2007), at 37823. See also EPA, Guidelines for Reproductive Toxicity Risk Assessment, 61 Fed. Reg. 56,274, 56,278-79, 56,309 (1996); EPA, Guidelines for Developmental Toxicity Risk Assessment, 56 Fed. Reg. 63,798, 63,809 (1991).

⁵⁹ National Research Council, National Academy of Sciences, Risk Assessment in the Federal Government: Managing the Process (1983), at 12

⁶⁰ Kenneth J. Rothman & Sander Greenland, Modern Epidemiology (2d ed. 1998); EPA, Guidelines for Reproductive Toxicity Risk Assessment, 61 Fed. Reg. 56,274 (1996), at 56297

⁶¹ National Academy of Sciences, National Research Council, Science and Judgment in Risk Assessment (1994), at 57

⁶² *Id.*, at 57

Animal Studies.

In addition to adding biological plausibility to epidemiological studies, animal studies in some contexts provide sufficient evidence of cause-effect relationships to support regulatory action.⁶³ However, the uncertainties surrounding the relevance of laboratory animal studies to humans are so great that EPA tends not to rely heavily upon them in setting NAAQS.⁶⁴

Exposure-Based Considerations.

In the context of NAAQS standard-setting, EPA addresses exposure-based considerations in a rather unique way that combines the by-now familiar exercise of exposure assessment with an aspect of risk assessment that employs the results of the exposure assessment with a risk-based consideration that the agency refers to as “exposures of concern.”⁶⁵

Exposure Assessment.

Exposures can be assessed through direct measurement (e.g., with personal monitors), through less direct measures (e.g., fixed monitors located at various places throughout an urban community), or through modeling exercises.⁶⁶ Modeling exercises invariably involve assumptions about how air contaminants disperse in the environment and are transported from place to place.⁶⁷ The exposure assessment also attempt to estimate the exposures experienced by sensitive and vulnerable subpopulations, such as children with asthma, persons suffering from chronic obstructive pulmonary disease, and the elderly.⁶⁸

EPA typically employs a highly complex model called the Air Pollutants Exposure (APEX) model to estimate population exposure to criteria pollutants. The APEX model is “a probabilistic model designed to account for the numerous sources of variability that affect people’s exposures.”⁶⁹ It simulates the movement of individuals through time and space and estimates their exposure to pollutants in indoor, outdoor and in-vehicle environments. The model relies heavily on the 2000 census data and

⁶³ Id., at 22

⁶⁴ Id., at 22.

⁶⁵ Environmental Protection Agency, Review of the National Ambient Air Quality Standards for Ozone: Policy Assessment of Scientific and Technical Information (January 2007), at § 4.7

⁶⁶ National Research Council, National Academy of Sciences, Risk Assessment in the Federal Government: Managing the Process (1983), at 27; Robert R. Kuehn, The Environmental Justice Implications Of Quantitative Risk Assessment, 1996 U. Ill. L. Rev. 103, at 114

⁶⁷ Valerie Watnick, Risk Assessment: Obfuscation of Policy Decisions in Pesticide Regulation and the EPA's Dismantling of the Food Quality Protection Act's Safeguards for Children, 31 Ariz. St. L.J. 1315 (1999), at 1335.

⁶⁸ National Research Council, National Academy of Sciences, Risk Assessment in the Federal Government: Managing the Process (1983), at 28

⁶⁹ Environmental Protection Agency, Review of the National Ambient Air Quality Standards for Ozone: Policy Assessment of Scientific and Technical Information (January 2007), at 4-6.

information gleaned from detailed diaries of about 20,000 individuals compiled in the Consolidated Human Activity Database, which contains information on “an individuals’ age, gender, race, employment status, occupation, day-of-week, daily maximum hourly average temperature, the location, start time, duration, and type of each activity performed.”⁷⁰ The APEX model calculates “the concentration in the microenvironment associated with each event in an individual’s activity pattern” and sums the “event-specific exposures within each hour to obtain a continuous series of hourly exposures spanning the time period of interest.”⁷¹ The model is flexible enough to allow the user to define microenvironments and their characteristics, down to diurnal, weekly, or seasonal patterns for various microenvironments.⁷² The model then calculates “a time series of exposure concentrations that a simulated individual experiences during the modeled time period.”⁷³ The model calculates two general types of exposure estimates: counts of the estimated number of people exposed to specified “benchmark” concentration levels (exposure of concern) and the number of times those people will be exposed to the benchmark level (expressed as occurrence-days) during any given ozone season (typically April through October). It then tabulates the results for three population groups (all ages and activity levels, children at all activity levels, and asthmatic children) at three levels of exertion (all exertion levels, moderate exertion levels, heavy exertion levels).⁷⁴

Evaluation of “Exposures of Concern.”

For health endpoints that are not amenable to quantitative risk assessment (for various reasons involving the nature and quality of the clinical and epidemiological studies), the agency staff identifies a range of “benchmark” exposures for which policymakers might be concerned, given the available health effects information. The staff then estimates the number and percentage of the relevant population or subpopulation that would be exposed to each benchmark level. The selection of discrete benchmark levels is meant to provide “some perspective on the public health impacts” of the health endpoints identified in the available studies that could not be captured in the quantitative risk assessment. In addition, the estimates of the number of individuals in the various categories exposed to ozone at greater than the selected benchmark levels at various alternatives for the primary standard gives upper level policymakers a sense of the extent to which the alternative standards have the potential to reduce the identified health impacts.⁷⁵

If the dose-response relationship between the pollutant and the adverse health or welfare endpoint at issue clearly fits the threshold model, then the “exposure of concern”

⁷⁰ *Id.*, at 4-7

⁷¹ Environmental Protection Agency, National Ambient Air Quality Standards for Ozone; Proposed Rule, 72 Fed. Reg. 37818 (2007), at 37851; Environmental Protection Agency, Review of the National Ambient Air Quality Standards for Ozone: Policy Assessment of Scientific and Technical Information (January 2007), at 4-7.

⁷² Environmental Protection Agency, Review of the National Ambient Air Quality Standards for Ozone: Policy Assessment of Scientific and Technical Information (January 2007), at 4-11

⁷³ *Id.*, at 4-12

⁷⁴ *Id.*, at 4-13

⁷⁵ Environmental Protection Agency, National Ambient Air Quality Standards for Ozone; Proposed Rule, 72 Fed. Reg. 37818 (2007), at 37853

is typically the threshold level sufficiently far below the level at which no adverse effects are likely to occur to reflect an adequate margin of safety. In the health context, the exposure of concern concept requires a degree of policy judgment about the extent of the margin of safety. With respect to health effects for which the scientific studies do not yield thresholds, the exposure of concern concept becomes even murkier, because it incorporates an element of policy judgment in “balancing concerns about the potential for health effects and their severity with the increasing uncertainty associated with our understanding of the likelihood of such effects at lower . . . levels.”⁷⁶

Risk-Based Considerations.

Risk-based considerations in the NAAQS standard-setting process derive from the efforts of the staff to estimate and characterize the harm to human health or the environment that will be caused by alternative levels of exposure to a pollutant. In the lexicon of the Red Book, this exercise involves a combination of both dose-response assessment and risk characterization.

As discussed above, dose-response assessment usually involves a modeling exercise to extrapolate from the data presented in epidemiological or animal studies to the population of interest. In the case of epidemiological studies, the extrapolation need not be great, especially in the context of air pollutants where the data are taken from a large number of U.S. cities and where the exposures are not likely to vary over even a single order of magnitude. Nevertheless, uncertainties creep into the extrapolation with respect to the sensitive and vulnerable subpopulations that often suffer more serious adverse effects or suffer the same adverse effects at lower exposure levels.⁷⁷

Risk characterization is “the process of estimating the incidence of a health effect under the various conditions of human exposure described in exposure assessment.”⁷⁸ Ordinarily, risk characterization involves combining the exposure and dose-response assessments to yield predictions of the numbers of individuals who are likely to suffer the disease of interest at various levels of exposure to the pollutant of interest. Since risk characterization involves a combination of two modeling exercises that are themselves laden with uncertainties, an adequate characterization of risk must include a summary of the uncertainties involved in the entire exercise.⁷⁹

Risk-based considerations necessarily incorporate evidence-based considerations and exposure-based considerations. Because risk assessment necessarily employs mathematical modeling exercises that in turn depend upon the underlying assumptions about the nature of the interaction between pollutants and adverse health or environmental endpoints, the resulting risk characterizations involve a greater degree of uncertainty than the more straightforward descriptions of scientific studies involved in evidence-based considerations. Exposure assessments also involve modeling exercises, which result in uncertainties that are retained, or even magnified, when exposure assessments are incorporated into risk assessments.

⁷⁶ Id., at 37853

⁷⁷ National Research Council, National Academy of Sciences, *Risk Assessment in the Federal Government: Managing the Process* (1983), at 23

⁷⁸ Id., at 18

⁷⁹ Id., at 28

Policymaking in Risk Assessment.

The Red Book observes that the “dominant analytic difficulty [in risk assessment] is pervasive uncertainty.”⁸⁰ Uncertainties pervade the exposure and dose-response models, which are dominated by the assumptions that drive their algorithms, and the input data that the models use to derive their predictions. Risk estimates can vary by orders of magnitude, depending upon the assumptions that the modelers imbed in the algorithms.⁸¹ This is not a problem that can be eliminated by more research or better computers. There are no obvious solutions, and there is no consensus on how scientists should go about resolving them. Fortunately, specialists in risk assessment have developed techniques for assessing and displaying the uncertainties as well.⁸²

When the risk assessor encounters scientific uncertainty in the data, he or she has to choose among several scientifically plausible options that the NAS Red Book labels “inference options.”⁸³ These choices turn on a mixture of scientific judgment, policy considerations, intuition, and even the personal values of the risk assessor.⁸⁴ Although the policies underlying the statute that the agency is administering should play a dominant role in exercising inference options and choosing the assumptions that drive exposure and risk assessment models, they are so deeply embedded in the science of the risk assessment that it is often very difficult for the public, the reviewing courts and even the agency leadership to determine whether the proper policy dictated the choices

Policy in Assessing the Reliability and Relevance of Scientific Evidence.

The first point at which policy considerations can enter the picture is when the staff chooses the studies for inclusion in the risk assessment. The OMB Guidelines implementing the Information Quality Act require EPA to ensure that the information it uses for standard setting must be (1) objective and (2) useful for the purpose for which it was intended.⁸⁵ As we have seen, the studies vary in quality. To meet the objectivity requirement, the risk assessor must decide as in initial matter whether a particular study is of sufficiently high quality that it warrants inclusion in the risk assessment. Since few studies are perfect, however, the determination of what is “good enough for government work” is necessarily influenced by policy judgments about the usefulness of processes that produce the pollutant, the risks posed by the pollutant, and the value of consuming limited time and resources on producing better studies.

⁸⁰ *Id.*, at 11

⁸¹ Mark E. Shere, *The Myth of Meaningful Environmental Risk Assessment*, 19 *Harv. Envtl. L. Rev.* 409 (1995), at 413-414

⁸² Committee on Risk Characterization, National Research Council, National Academy of Sciences, *Understanding Risk: Informing Decisions in a Democratic Society* (1996), at 105-16.

⁸³ National Research Council, National Academy of Sciences, *Risk Assessment in the Federal Government: Managing the Process* (1983), at 28

⁸⁴ *Id.*, at 36

⁸⁵ 67 Fed. Reg. 8452 (Feb. 22, 2002) (Office of Management and Budget (“OMB”) guidelines for IQA)

The relevance determination is clearly a mixed question of science and policy. The classic illustration is the question whether and to what extent laboratory animal experiments are relevant to assessing the risks that a pollutant poses to human beings. But it can also involve subtler issues like those concerning the relevance of a particular epidemiological study for purpose of assessing a particular health risk or for purposes of bolstering conclusions reached on the basis of other epidemiological studies.

In *American Farm Bureau Federation v. EPA*, for example, several states challenged the 1997 revision of the particulate matter standards on the ground that EPA unreasonably concluded that the available morbidity studies did not provide an adequate basis for setting the annual primary standard.⁸⁶ They argued that the agency rejected one epidemiological study in particular, authored by W. James Gauderman, that provided strong support for an annual standard below 15 µg/m³. That study concluded that PM_{2.5} levels at 13 µg/m³ caused decrease in the normal growth of lung function in children over time. The states noted that the agency's own staff had concluded that the Gauderman study should be given "appreciable weight" and that it supported an annual standard of 13 µg/m³. The Administrator concluded that further studies would be necessary to increase the agency's confidence in the reality of the reported associations to the point at which it was willing to rely on its conclusions in setting the primary NAAQS.⁸⁷ The state petitioners argued that another study, called the 24-cities study, demonstrating decreased lung function in children was just the sort of study that provided additional confidence that the Gauderman results were reliable. EPA, however, distinguished the 24-cities study on the ground that it measured a decrease in lung function at a single point in time, whereas the Gauderman study found a decrease in the *growth* of lung function over a period of time. It was also true that the association between PM_{2.5} exposure and lung function decrement in the 24-cities study at levels below 15 µg/m³ was not statistically significant.

The court agreed with the states that EPA's failure to rely on the Gauderman Study was unreasonable in light of the special need under the statute to protect sensitive subpopulations, including asthmatic children. The court concluded that EPA had "imputed undue significance" to a single difference between the Gauderman and the 24-cities study and unreasonably ignored "many similarities."⁸⁸ The court noted that the 24-cities study predicted that the subjects of that study might "continue on [a] track [of reduced] ... growth of their lung function, as suggested by previous studies."⁸⁹ Adopting a "weight of the evidence" approach, the court observed that the studies were "far from conclusive" when viewed in isolation. But when viewed "together in the context of the studies the EPA considered when deciding whether to revise the standard for PM_{2.5}, they "indicate[d] a significant public health risk."⁹⁰ The court concluded that the agency "too hastily discounted the Gauderman and 24-Cities studies as lacking in significance."⁹¹

⁸⁶ *American Farm Bureau Federation v. EPA*, 559 F.3d 512 (D.C. Cir. 2009), at 524-25

⁸⁷ *American Farm Bureau Federation v. EPA*, 559 F.3d 512 (D.C. Cir. 2009), at 524

⁸⁸ *Id.*, at 525

⁸⁹ *Id.*, at 525 (quoting 24-cities study)).

⁹⁰ *Id.*, at 525

⁹¹ *Id.*, at 525.

Policy in Interpreting and Drawing Inferences from the Data.

Policy can subtly enter into the agency staff's interpretation of the relevant scientific studies and into how the agency goes about drawing inferences.⁹² Interpreting the data produced in scientific studies is not always a simple matter; it requires the exercise of scientific judgment. The fact that subjective considerations often play a role in the exercise of scientific judgment in this context leaves open the possibility of disagreements among scientists over the proper interpretation of studies. In such cases, policy may properly play a role in the agency's choice among conflicting interpretations.⁹³ Similarly, scientists often disagree about the proper inferences to be drawn from a single scientific study. When the study is relevant to standard setting, the agency may also rely on policy considerations in deciding which inferences to use.⁹⁴

Policy in Assessing Exposure and Risk.

Because the information on exposure to environmental contaminants is relatively sparse, scientists encounter large uncertainties in assessing exposure to those pollutants. Exposure assessments typically employ modeling exercises that rely on various assumptions to address the numerous sources of uncertainty in the available information. The assumptions that go into such exposure models mostly reflect the modelers' best judgment as to how pollutants and people interact in the real world, but they can also reflect policy judgments about whether to err on the side of over- or under-prediction of exposure.

The same is true for risk assessment models.⁹⁵ Because the real-world data are typically sparse, the risk assessors fill in scientific gaps with assumptions, "taking into account external social and economic factors, political considerations, and their own personal value judgments when making risk assessments."⁹⁶ Since scientists disagree about the assumptions that should drive these predictive models, different models can yield vastly different predictions. In choosing from the available models, the agency staff is making still another policy judgment about the extent to which the agency should err on the side of safety by choosing a model that may over-predict risk or err on the side of the status quo by choosing a model that may under-predict risk.⁹⁷

Policy plays an especially important role when risk assessment is employed to yield "best estimates" of risk.⁹⁸ Indeed the whole point of the "best estimate" exercise is

⁹² Thomas O. McGarity, *Substantive and Procedural Discretion in Administrative Resolution of Science Policy Questions: Regulating Carcinogens in EPA and OSHA*, 67 Geo. L. J. 729 (1979), at 740-47.

⁹³ *Id.*, at 741-42.

⁹⁴ *Id.*, at 743-47.

⁹⁵ Wendy E. Wagner, *The Science Charade In Toxic Risk Regulation*, 95 Colum. L. Rev. 1613 (1995), at 1620-22.

⁹⁶ Valerie Watnick, *Risk Assessment: Obfuscation of Policy Decisions in Pesticide Regulation and the EPA's Dismantling of the Food Quality Protection Act's Safeguards for Children*, 31 Ariz. St. L.J. 1315 (1999), at 1334.

⁹⁷ Howard Latin, *Good Science, Bad Regulation, and Toxic Risk Assessment*, 5 Yale J. on Reg. 89 (1988), at 92 ("social consequences and political values must play an integral role in determining which speculative risk estimates are adopted").

⁹⁸ Thomas O. McGarity, Sidney A. Shapiro & David Bollier, *Sophisticated Sabotage* (2004), at 80-86,

to avoid what proponents of that approach believe to be the undue conservatism of risk assessment when it is employed to probe “worst case” scenarios.⁹⁹ Best estimates tend to be expressed as point estimates that give a false impression of objectivity accuracy. Yet, because they yield a quantitative expression of risk that can be compared to other quantitative measures, they are often irresistible to policymakers.¹⁰⁰

Conclusion.

The foregoing description of risk assessment in three broad regulatory contexts demonstrates that risk assessment is a versatile tool for informing regulatory policymakers about the risks that chemicals pose to human health. This insight into the health implications of various alternative strategies for reducing risk can likewise be valuable to decisionmakers who often face tough choices. But decisionmakers and the public should be aware of the fact that policy choices are already imbedded in risk assessments in the interpretations, inferences, assumptions, and choices of models that the risk assessors employ to deal with the large uncertainties that they encounter in the data and in their understandings of the physical world. If policymakers need useful guidance in setting priorities and weighing the advantages of measures designed to protect the environment against the disadvantages, a properly prepared risk assessment can be a useful addition to the decisionmaking process. If point estimates and precision are the goal, risk assessment is simply the wrong tool.

⁹⁹ Stephen Breyer, *Breaking the Vicious Circle* 47 (1993); John D. Graham, et al., *In Search of Safety* (360 (1988).

¹⁰⁰ Thomas O. McGarity, *A Cost-Benefit State*, 50 *Ad. L. Rev.* 7 (1998), at 24.

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Managing Environmental Risks in Transactions

By

Mary Simmons Mendoza

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Managing Environmental Risk in Transactions – The Professionals

By

Mary Simmons Mendoza¹

Environmental laws regulate a wide range of business activities. The obligations and liabilities they create affect not only ongoing businesses, but also business transactions, including real estate transactions, stock transactions, financings and leases. This paper seeks to provide a broad understanding of environmental concerns and some ideas on how to address them, using a hypothetical stock purchase transaction. Similar principles apply, however, to other types of business transactions. This paper uses provisions from the ABA's Model Stock Purchase Agreement (with various revisions) as the starting point for discussion.

There is no single correct or perfect provision. The structure of the deal, the business considerations and the particular factual circumstances of each transaction must be taken into account in drafting appropriate provisions. The provisions below are not suggested to serve as "form" provisions. Instead, these provisions are used as examples that serve as a good starting point for a discussion of common issues.

I. OVERVIEW OF ENVIRONMENTAL PROGRAMS

A. Types of Environmental Laws

Environmental laws regulate business activities because of the effects or potential effects of those activities on the environment or on² human health via the environment. Environmental statutes generally fall into three categories.

The first category of environmental statutes comprises those that deal with wastes and their disposition. These so-called pollution statutes include the Clean Water Act ("CWA"),³ the Clean Air Act ("CAA"),⁴ the Resource Conservation and Recovery Act ("RCRA"),⁵ the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA" or "Superfund"),⁶ and the Underground Injection Control ("UIC") Program of the Safe Drinking Water Act ("SDWA").⁷ Each of these statutes is administered by the United States Environmental Protection Agency ("EPA") and, with the exception of CERCLA, by its state counterparts. Because of its impact on business transactions, CERCLA is discussed separately below.

¹ This paper borrows heavily from a prior paper co-authored by Jeff Civins and Mary Mendoza, "Drafting Real Estate Contracts to Address Environmental Concerns" which was presented at the 23rd Annual Advanced Real Estate Drafting Course, Texas Bar CLE, March 1-2, 2012.

² Our discussion focuses on federal programs, but many of these programs have state counterparts, which may contain substantive differences. States may also have unique programs with no federal counterpart, e.g. New Jersey's Industrial Site Recovery Act. State programs should be considered in evaluating environmental concerns and drafting provisions to address them.

³ 33 U.S.C. § 1251 et seq.

⁴ 42 U.S.C. § 7401 et seq.

⁵ 42 U.S.C. § 6901 et seq.

⁶ 42 U.S.C. § 9601 et seq.

⁷ 42 U.S.C. § 300h et seq.

A second category of environmental statutes comprises those that deal with the use of raw materials and the manufacture, importation, and distribution of products, *e.g.*, the Toxic Substances Control Act (“TSCA”),⁸ the Federal Insecticide, Fungicide and Rodenticide Act (“FIFRA”),⁹ the Emergency Planning and Community Right-to-Know Act (“EPCRA”) of Superfund, as amended by the Superfund Amendments and Reauthorization Act (“SARA”),¹⁰ and the drinking water program of the SDWA.¹¹ The Occupational Safety and Health Act (“OSHA”)¹² sometimes is included in this category.

The third category of environmental statutes -- so-called conservation statutes -- requires review and possibly mitigation of effects of proposed activities based on their potential impact on the environment or various segments of it, including animals and plants. Examples include the National Environmental Policy Act (“NEPA”),¹³ the Endangered Species Act,¹⁴ the Wild and Scenic Rivers Act,¹⁵ and the National Historic Preservation Act.¹⁶

Environmental statutes generally prescribe standards -- by statute, rule, permit, or order. The federal pollution statutes, for example, provide for the establishment of technology-based limits on pollutant-emitting activities and for further ratcheting down of those limits if necessary to protect the environment. They also prescribe administrative requirements, such as permitting, monitoring, recordkeeping, and the reporting of routine and emergency releases.

States may assume responsibility for various federal pollution programs, and Texas, through the Texas Commission on Environmental Quality (“TCEQ”), generally has.¹⁷ States may also have their own independent programs that parallel or supplement federal programs; for example, Texas regulates the management of industrial wastes, in addition to hazardous solid wastes regulated under the delegated federal program. As a consequence, parties to transactions must be knowledgeable about state as well as federal law.

Environmental statutes contain substantial sanctions for non-compliance. These sanctions may take the form of administrative, civil, and criminal penalties. Many environmental statutes specifically authorize citizens, as well as governmental agencies, to bring suit to enforce compliance and, in some instances, to abate imminent threats to public health or the environment.

⁸ 15 U.S.C. § 2601 et seq.

⁹ 7 U.S.C. § 136 et seq.

¹⁰ 42 U.S.C. § 11001 et seq.

¹¹ 42 U.S.C. § 300f et seq.

¹² 29 U.S.C. § 651 et seq.

¹³ 42 U.S.C. § 4321 et seq.

¹⁴ 16 U.S.C. § 1531 et seq.

¹⁵ 16 U.S.C. § 1271 et seq.

¹⁶ 16 U.S.C. § 470 et seq.

¹⁷ There are a few notable exceptions. For example, Texas has not assumed responsibility for the greenhouse gas permitting program under the federal Clean Air Act. The TCEQ does not regulate wastes from the exploration for and production of oil and gas.

B. Superfund

Because the federal pollution statutes generally were prescriptive in nature and did not deal with problems of the past,¹⁸ Congress enacted Superfund in 1980. Superfund imposes on so-called potentially responsible parties, or PRPs, strict and generally joint and several liability for the cost of investigation and remediation of sites that contain “hazardous substances,” as well as for natural resource damages.¹⁹ The term “hazardous substance” is broadly defined to include a range of materials regulated under other environmental statutes, but expressly excludes petroleum, which is addressed by other statutory programs.²⁰

PRPs include present owners and operators and certain past owners and operators (*i.e.*, those who owned or operated at the time of disposal) of contaminated properties, as well as those who arranged for disposal of their wastes at such properties and transporters who selected those properties for disposal.²¹ Because liability is strict, the fact that a PRP acted in compliance with the law is not a defense. There are Superfund defenses, but they are limited and do not protect against liability under other statutes and the common law.

When Superfund was enacted, it contained three defenses -- act of god, act of war, and act of a third party. Subsequent amendments added others -- innocent land owner -- in 1986, and bona fide prospective purchaser and contiguous land owner -- in 2002. These three defenses require pre-acquisition “all appropriate inquiry,” post-acquisition caretaking by complying with specified continuing obligations, and “no affiliation” with a PRP. They apply only to purchasers (or lessees) of real estate and not to those who acquire stock.

Many states have their own version of CERCLA but the state version may differ in significant ways. For example, the Texas superfund-equivalent statute is broader than its federal counterpart; it applies to solid waste rather than hazardous substances, but it does not contain all the defenses as are found in CERCLA .

C. Practical Effects of Environmental Laws on Transactions

As noted, the presence of hazardous substances on real property may give rise to substantial liabilities under Superfund. The presence of hazardous substances, asbestos, lead paint, underground storage tanks or USTs, and/or PCBs also may give rise to liability under various environmental regulatory programs. OSHA also creates obligations for employers to create working conditions that prevent exposure of employees to hazardous substances, including special requirements relating to asbestos.

The presence of regulated substances, together with radon and indoor air pollution including the presence of mold,²² may give rise to liability under contract and tort theories. Common law actions may involve third parties, such as toxic tort litigation -- brought by adjacent residents or

¹⁸ Exceptions include sections 7002 and 7003 of RCRA that authorize suits to address imminent hazards.

¹⁹ 42 U.S.C. § 9607(a).

²⁰ 42 U.S.C. §9601(14).

²¹ 42 U.S.C. § 9607(a).

²² Radon and indoor air pollution, though subject to study, currently are not subject to environmental regulation. These substances, however, may be subject to regulation under OSHA.

property owners, invitees, or employees -- or property damage or diminution in value claims -- brought by adjacent or possibly successive landowners.

Environmental regulatory programs may result in land use restrictions relating either to property that is a part of a stock transaction or the operations of the company that is involved in the transaction. Some of these programs directly restrict land use, e.g., section 404 of the CWA, which requires permitting as a prerequisite to the placement of dredged or fill materials in waters of the United States, and the ESA, which may prohibit development that adversely affects endangered species. Other programs may indirectly restrict land use or directly restrict operations. Under the CAA, for example, certain types of construction of new sources or the modification of existing sources of air contaminants may be restricted or made more difficult based on the air quality of the region in which the property is located. Similarly, under the CWA, discharges into watercourses may be restricted because of water quality limitations.

Superfund and other programs relating to on-site conditions may also create legal and practical restrictions on land use or operations, e.g., prohibitions on the use of ground water or continuing obligations to monitor its quality. In addition, federal and many state Superfund programs empower the government to impose a lien on remediated sites to secure payment of governmental costs in dealing with the site.

Environmental liabilities created by environmental statutes and the common law take a number of forms. They include, for example, costs of compliance, such as capital and operating expenses for required pollution control equipment and the time and expense for acquiring necessary permits, and costs of non-compliance, *i.e.*, administrative, civil, and criminal sanctions, which include fines, injunctive relief, (e.g., to compel compliance or prohibit non-compliant operations), and, for criminal violations, imprisonment. They also include costs of investigation and remediation and natural resource damages under Superfund and state analogs, which often are substantial. Under the common law, liabilities include those arising from toxic tort, for damages to people, and from property damage as well as those attributable to contract claims involving contaminated property.

In any transaction involving real property, environmental concerns relate to potential land use restrictions and liabilities attributable to on-site conditions, which are predicated on a party's ownership or other involvement with property. For those intending new uses of property, additional concerns relate to the costs of attaining and maintaining environmental compliance for those kinds of uses.

In a transaction involving an on-going business, concerns include liabilities for prior activities that contributed to an off-site environmental or public health threat or that were in violation of an applicable environmental law. Superfund imposes liability not only on owners of property for on-site conditions, but also, for those acquiring ongoing businesses or responsibility for former businesses, liability for contamination at formerly owned or operated sites or at third party sites to which wastes were sent for treatment, storage, or disposal. Whether liabilities for prior activities are transferred as a result of a transaction turns on whether that transaction involves the transfer of assets, or of company ownership, as in a merger (including one that may be judicially inferred) or some other transaction that creates the potential for successor liability.

II. DRAFTING ENVIRONMENTAL PROVISIONS FOR STOCK PURCHASE TRANSACTIONS.

The environmental provisions of a stock purchase transaction should be guided by the specifics of the actual transaction. Pertinent considerations include: the type of business – is it heavily regulated (such as a refinery) or fairly unlikely to have environmental concerns (such as a software company); the types of properties involved – owned or leased, developed or to be developed; and the amount of due diligence that is available or will be performed.

The discussion below focuses on selected common environmental provisions; the provisions presented below are drawn from ABA Model Stock Purchase Agreement, and are for discussion purposes only. Particular provisions may not be appropriate for a specific situation or transaction.

A. Definitions

The definitions are a critical part of the agreement. The definitions may be too narrow, making subsequent terms of little practical value, or may be so expansive and overly broad as to make the environmental terms almost impossible to understand in terms of what is being agreed to and what liabilities are being allocated. The goal should be to draft terms in clear and concise language.

Most agreements will define Environmental Law. Below is the ABA definition:

“Environmental Law”—any Legal Requirement that provides for or relates to:

(a) advising appropriate authorities, employees, or the public with respect to the use of any Hazardous Material, the Release or Threat of Release of Hazardous Material, violation of discharge or emission limits or other prohibitions, or any Hazardous Activity or any activity, such as resource extraction or construction, that could have a significant effect on the Environment;

(b) preventing or reducing to acceptable levels the Release of Hazardous Material into the Environment;

(c) reducing the quantities, or minimizing or controlling the hazardous characteristics, of Hazardous Material that are generated;

(d) assuring that products are designed, formulated, packaged, and used so that they do not present an unreasonable risk to human health or the Environment when used or disposed of;

- (e) *protecting the Environment;*
- (f) *reducing the risks involved in the transportation of Hazardous Material;*
- (g) *the cleanup of Hazardous Material that has been Released, preventing its Release, or addressing the Threat of Release, or paying the costs of such actions; or*
- (h) *making a Person compensate any other Person for damage done to its health or property or the Environment or permitting self-appointed representatives of the public interest to recover for injuries done to public assets or resources.*

The ABA definition set forth above falls on the side of an overly lengthy and complicated definition, with multiple cross references to other defined terms. In general, it is preferable to have the environmental definitions be somewhat self contained, so that, as other changes to the document are made, the environmental definitions remain unchanged.

A key consideration is whether to include common law in the definition of Environmental Law. The ABA definition does so through the reference to “Legal Requirement,” but it can be problematic for sellers in the context of making representations regarding compliance with Environmental Laws. Another consideration is whether indoor air quality considerations will be included in the definition. The ABA form does so by defining “Environment” to include indoor air. A separate negotiating point is whether OSHA/worker safety considerations are included in the definition; that determination is often handled as a point of negotiation based on the coverage of other non-environmental portions of the agreement.

One common issue is the breadth of the definition when concepts of human health are introduced into the definition. In the example above, concepts of human health are introduced in several places. In clause (h), for example, the definition of Environmental Law now would cover any common law obligation to make a person pay for damage to another person’s health. Clearly, this definition reaches far beyond the likely intent of the drafters. While the concept of protecting public health is often a key underpinning for environmental laws, when drafting, this issue is often addressed by specifying that the protection of human health relates to exposure to hazardous materials or other similarly defined items.

The ABA model suggests a definition of Hazardous Material:

“Hazardous Material”—any substance, material, or waste that is or will foreseeably be regulated by any Governmental Body, including any material, substance, or waste that is defined or classified as a “hazardous waste,” “hazardous material,” “hazardous substance,” “extremely hazardous waste,” “pollutant,” “restricted hazardous waste,” “contaminant,” “toxic waste,” “pollutant,” or “toxic substance” under any provision of Environmental

Law, including petroleum, petroleum products, asbestos, presumed asbestos-containing material or asbestos-containing material, urea formaldehyde, or polychlorinated biphenyls.

A common concern is that the definition of Hazardous Materials and Environmental Laws are circular: Environmental Laws references the definition of Hazardous Materials that in turn is defined with reference to Environmental Law. We often see that in a well crafted definition of Hazardous Material, the more general definition of Legal Requirement or Law can be substituted to cure the issue of circular definitions.

The example provision, when read literally, is extremely broad: Hazardous Material is, in essence, any material regulated by any Governmental Body. Clearly this reaches well beyond what most environmental practitioners would intend to be included in the universe of hazardous materials. Often, similar definitions will reference Environmental Law or the concept that it is a material regulated because of its effects on human health through environmental exposure. The example provision also raises issues about clarity when it incorporates materials “foreseeably” regulated. This aspect introduces ambiguity into the definition. However, it is a valid consideration regarding materials that are on the cusp of regulation. Counsel familiar with environmental laws and pending developments can evaluate a particular transaction and can include specific terms to address pending developments.

Another area where the definition should be tailored is to account for variability in state law. For example, Texas regulates “solid waste,” a term which is not included in the laundry list of the example. Other states may define their universe of regulated materials with reference to different terms.

B. Representations and Warranties

In most stock purchase agreements, the key liability allocation terms are the representations and warranties. Indemnities are often tied to breaches of the representations. In drafting representations, it is critical that the drafter understand how the representations will play into other liability transfer provisions, which may be more general in nature.

1. Common issues

Representations present some common issues that are not unique to a single environmental representation.

Schedules. Scheduling is commonly provided for in the agreement. The scheduling provisions may be found specifically in the environmental representation section or in a more general section. Often the language providing for schedules or for exceptions to the representation may be very general, such as “except as disclosed in the reports provided to Purchaser.” Purchasers will generally want more specific information so that carve outs are clearly identified. Drafters need to understand how scheduled exceptions impact, for instance, indemnifications. Scheduled items may need to be specifically addressed in the transaction,

perhaps through purchase price reductions, specific post-closing obligations or specific indemnification obligations.

Knowledge. Knowledge qualifiers on representations are often another area of contention and are usually highly negotiated. If a knowledge qualifier is to be used, it is important to understand whether it is confined to particular individuals and whether those individuals have involvement in the businesses environmental operations. It is also important to understand how a knowledge-qualified representation impacts the risk transfer contemplated by an indemnity for breaches of representations.

Materiality. In general, sellers will find it beneficial to qualify representations to items that are material. However, the drafter needs to understand how a materiality limitation will impact indemnification obligations as well as any threshold or “basket” limitations on the indemnity.

Overlapping Provisions. Many of the environmental representations may overlap with other representations in the agreement. For example, a representation about environmental compliance will likely overlap with the more general compliance representations. The provisions are often reconciled by specifically excluding environmental matters from other more general representations or by including a provision indicating that the environmental representation section is the sole representation on environmental matters. However, such exclusions should be used with caution as they could result in environmental matters inadvertently being excluded from representations where they should be included.

2. Compliance

Most agreements will contain some compliance representation:

Each Acquired Company has at all times complied with all Environmental Laws.

From the perspective of the purchaser, a compliance representation is a key point. Purchasers are interested not only in current compliance but also in past compliance, especially where the possibility of repetition exists. Past compliance is a much more significant issue in a stock transaction, where liabilities for past non-compliance remain with the target company. Sellers often push to limit the representation to a particular time frame or place materiality limits on the representation.

Agreements often contain separate representations about permits required under environmental laws. Although a representation on compliance will encompass a representation about having and being in compliance with all required permits, it may be useful to break out environmental permits or to have a schedule of environmental permits. Additionally, consideration should be given to including representations about pending modifications or renewals. Stock purchasers may also seek representations that the permits will not need to be transferred as a result of the transaction. If seller is making a representation on permit transfers, an experienced environmental practitioner should review the requirements to transfer permits to assure that the transaction structure does not trigger a transfer requirement.

Further, it is worth noting that Superfund liability is not premised upon a violation of environmental law; rather, it arises from the release of a hazardous substance. As a consequence, the compliance representation does not cover Superfund-type liabilities.

3. Superfund-type liabilities

Agreements will generally have some representation regarding the condition of any real property association with the transaction:

There is no Hazardous Material present on or under the Facilities or, to the Knowledge of Sellers, any geographically, geologically, hydraulically or hydro-geologically adjoining property ("Adjoining Property").

Many agreements will use the term "release" of Hazardous Materials, rather than the mere presence of Hazardous Materials. It is possible, however, for Hazardous Materials to be present without a release, *e.g.*, naturally occurring radon and asbestos in buildings, so the addition of the term "present" may be worthwhile to be sure those circumstances are covered.

Of particular importance is the scope of which property – i.e., the Facilities – will be covered by the representation. If the potential exists for acquiring the liabilities of the seller, as would be the case in a stock purchase or merger, the purchaser would want to obtain a representation concerning conditions at both currently and formerly owned or operated properties as well as releases at facilities used to manage wastes generated from present or formerly owned or operated properties. As noted, generators of hazardous substances that have disposed of their wastes off-site may have liability under Superfund if the off-site disposal facility poses a threat to human health through the environment.

Sellers, in giving this representation, would want to be cautious about the representations they are making about nearby facilities, and about facilities with which they have no current involvement. Sellers often attempt to limit representations about former facilities and off site disposal to whether they have received notices of releases or contamination.

4. Notice of Environmental Liability

Agreements will usually address pending claims and notices:

No Seller or Acquired Company or any other Person for whose conduct any of them is or could be held responsible has received any Order, notice, or other communication (written or oral) relating to any actual, alleged, or potential violation of or failure to comply with any Environmental Law, or any actual or potential claim of liability under Environmental Law.

There are no pending or, to the Knowledge of Sellers, threatened claims arising under or pursuant to any

Environmental Law, with respect to or affecting any of the Facilities or any other asset owned or used by any Acquired Company or in which it has or had an interest.

From the perspective of the purchaser, it is useful to have a representation stating that there are no pending claims or litigation. The representation might go further and assert that seller is not aware of any facts that could give rise to a claim or litigation. Sellers would need to be mindful of limitations on their ability to determine if they have received “oral” communications; many sellers will want to qualify any representation about oral communications to seller’s knowledge.

As noted above, the definition of Environmental Law may or may not include the common law. However that definition may be drafted, it would be important from a purchaser’s perspective that a representation about notices or pending matters encompass common law causes of action associated with Hazardous Materials.

C. Remedies

Most agreements will include provisions, usually indemnity provisions, allocating responsibility for environmental liabilities, whether those are known or unknown. Generally, this allocation is made in the context of the general indemnities. In appropriate cases, environmental matters may be dealt with specifically in the general indemnity or with a stand alone environmental indemnity. Risk allocation provisions are often the most heavily negotiated provisions in a transaction and are very transaction specific. Below are two different versions of indemnity – a general indemnity and a specific environmental indemnity – followed by a discussion of key points in the indemnities.

Sellers, jointly and severally, shall indemnify and hold harmless Buyer, the Acquired Companies, and their respective Representatives, shareholders, Subsidiaries, and Related Persons (collectively, the “Buyer Indemnified Persons”) from, and shall pay to Buyer Indemnified Persons the amount of, or reimburse Buyer Indemnified Persons for, any Loss that Buyer Indemnified Persons or any of them may suffer, sustain, or become subject to, as a result of, in connection with, or relating to:
(a) any Breach of any representation or warranty made by Sellers in this Agreement;

....

An alternative:

Sellers, jointly and severally, shall indemnify and hold harmless Buyer Indemnified Persons from, and shall pay to Buyer Indemnified Persons the amount of, or reimburse Buyer Indemnified Persons for, any Loss (including costs of any Cleanup) that Buyer Indemnified Persons or any of

them may suffer, sustain, or become subject to, as a result of, in connection with, or relating to:

(a) any liability under Environmental Law arising out of or relating to:

(i) (A) the ownership, operation, or condition at any time on or prior to the Closing Date of the Facilities, or (B) any Hazardous Material that was present on or at the Facilities at any time on or prior to the Closing Date; or

(ii) any Hazardous Material, wherever located, that was generated, transported, stored, treated, Released, or otherwise handled by any Acquired Company at any time on or prior to the Closing Date; or

(b) any bodily injury, property damage, or other damage of or to any Person, in any way arising from or allegedly arising from any activity related to Hazardous Materials conducted with respect to the Facilities or the operation of the Acquired Companies on or prior to the Closing Date or from Hazardous Material that was:

(i) present on or prior to the Closing Date on or at the Facilities, or

(ii) Released by Sellers or any Acquired Company or any other Person for whose conduct they are or may be held responsible, at any time on or prior to the Closing Date.

In analyzing any indemnity, there are three key components: the trigger, the scope and the resulting indemnity obligation. For example, in both examples, the trigger is a loss by the Buyer. Some indemnities will try to limit the trigger to a third party claim. When the limitation of indemnity to third party claims is generally a business point, but we often see some form of third party trigger when there is a known condition that the parties have been unable to quantify but for that they are not terminating the transaction.

In terms of scope of the indemnity, many factors discussed elsewhere in the paper come back into play. In the first alternative, only a breach of a representation, with whatever limitations may have been negotiated, will be covered. It is important to note, however, that many agreements will contain provisions in the indemnity provisions that eliminate various limitations in the representations purely for the purposes of the indemnity provisions. Thus, while the compliance representation may have been materiality qualified, the indemnity provisions may allow the indemnified party to claim an indemnity for noncompliance even if immaterial.

In the second alternative, for example, the scope is broad, covering all types of claims, and an array of environmental related liabilities. But this second alternative may also cover former facilities, off site disposal, and common law claims associated with Hazardous Materials. The second example is clearly broader in terms of scope and reflects a different approach to

indemnity. One item to note about the second example is that it is independent of the representations, making limits (such as knowledge and materiality) on those representations or items scheduled against the representations of lesser importance to a purchaser because they would not be carried over into the exclusions or limitations on the indemnity.

The resulting indemnity obligation is also subject to significant negotiation. Most indemnities will include obligations to indemnify and defend the indemnified party, not only for damages but also for other expenses such as attorney fees. It is also important to identify who receives the benefit of the indemnity. If the indemnified party is a corporation, the parties should consider if the indemnification should extend to directors, officers, managers, and shareholders. Equally important is the entity giving the indemnification; the indemnified parties should consider whether the indemnifying party is sufficiently viable to make the indemnity.

1. Knowledge of Indemnified Party

The right to indemnification, payment, reimbursement, or other remedy based upon any such representation, warranty, covenant, or obligation will not be affected by any investigation (including any environmental investigation or assessment) conducted or any Knowledge acquired at any time, whether before or after the execution and delivery of this Agreement or the Closing Date, with respect to the accuracy or inaccuracy of, or compliance with, such representation, warranty, covenant, or obligation.

The parties should consider whether the knowledge of the Purchaser impacts the purchaser's right to an indemnity claim. In cases where the purchaser has conducted extensive due diligence, the purchaser may have knowledge of items that would form the bases of an indemnity claim. The example provision is a purchaser friendly provision, and does not penalize purchaser for items it may discover during due diligence. Sellers would likely want the exact opposite provision, thus forcing purchasers to come forward with any information prior to closing so that the parties can negotiate a resolution.

2. Other limitations

Survival. Most agreements will contain some specific time limit addressing the survival of representations or survival of indemnity obligations. Often those survival provisions reference the statute of limitations. In the context of environmental matters, there are many types of matters that have no effective statute of limitations. For example, some remediation statutes have no statute of limitations; others will delay the commencement of the running of limitations until a condition is discovered or until a remediation begins or is completed. Thus, for sellers seeking a definite time frame to the indemnity obligations, the wording of the survival provisions must be carefully considered.

Cleanup standard. When an indemnity will cover remediation of contamination, the parties need to consider whether the agreement should specify a standard for the remediation. In many remediation programs, the remediation programs are risk-based programs, providing for a range of potential cleanup standards depending upon the restrictions, both physical and institutional, that a party is willing to place on the property being remediated. Sellers will often want to limit the indemnity to the least stringent standard permitted under law and consistent with the use of the property as of the closing.

Control. Similarly, many sellers will want to maintain control of a remediation that is covered by an indemnity. For buyers, allowing the seller to control a remediation raises issues about access to the buyer's facility and interference with Buyer's ongoing operations.

3. Exclusive Remedies

At the end of a transaction, it is likely that after the pricing terms, the indemnity obligation and limitations have received the most time and attention. Seller's intent usually is that if there is a problem post-closing, the buyer's remedy is found within the transaction documents. Most agreements will have a general clause saying in essence that the buyer's sole remedy for matters arising from the transaction is the indemnity. In the context of environmental law, this type of general provision does not clearly limit the buyer to the indemnity in the agreement. For many types of remediation claims, environmental law provides a statutory cause of action, which would be independent of "matters arising from the transaction." Sellers should consider sole remedy language that specifically addresses (and waives claims for) environmental matters.

4. Express Negligence

Texas is an "express negligence" state. The Texas courts have held that:

[T]he express negligence doctrine provides that parties seeking to indemnify the indemnitee from the consequences of its own negligence must express that intent in specific terms. Under the doctrine of express negligence, the intent of the parties must be specifically stated within the four corners of the contract.²³

This holding has been extended to the allocation of strict liability of a indemnified party.²⁴ Thus, parties should consider language specifying that the indemnity is allocating this type of liability. Texas is not unique in its express negligence doctrine.

²³ *Ethyl Corp. v. Daniel Construction Co.*, 725 S.W.2d 705 (Tex. 1987).

²⁴ *Fina Ins. v. Arco*, 200 F.3d 266 (5th Cir. 2000).

D. Other terms

1. Access

Where Purchasers are performing due diligence, access will need to be addressed.

Prior to the Closing Date, and upon reasonable notice from Buyer, each Seller shall, and shall cause each Acquired Company to, (a) afford Buyer and its Representatives and prospective lenders and their Representatives (collectively, "Buyer Group") full and free access, during regular business hours, to each Acquired Company's personnel, assets, Contracts, and Records, . . . In addition, Buyer shall have the right to have the Real Property and the tangible personal property of each Acquired Company inspected by Buyer Group, at Buyer's sole cost and expense, including the performance of subsurface or other intrusive testing.

The ability to conduct wide ranging due diligence is critical for a purchaser to be able to identify potential liabilities. And obviously the parties need to be able to take the results of the investigation into account, as discussed above. Key considerations in drafting is whether intrusive sampling will be freely allowed or whether seller must consent to the sampling, what conditions will be placed on access, how will damages caused during access (including exacerbation of existing conditions) be handled, and how will wastes generated from the investigation (soil cuttings, purge water) be handled.

2. Post-closing cooperation

The buyer will likely want to include some provision in the agreement addressing seller's post closing cooperation with the seller. For example, the buyer may need to have seller's cooperation in transferring permits after closing or in making required filings.

III. CONCLUSION

Environmental laws are complex, far-reaching and potentially very significant to many types of business transactions. Those drafting environmental provisions in transaction documents should be able to both identify the particular environmental risks applicable to the transaction and to address those risks in the transaction documents.



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Earlier this year, Tim successfully represented Energy Transfer in obtaining for a major new south Texas gas processing facility the first greenhouse gas PSD permit issued by U.S. EPA Region 6 for a greenfield facility.

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“The Professionals”:
Environmental Transition Issues in Corporate Acquisitions
2012 Texas Environmental Superconference

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Some of the trickiest issues in the practice of transactional environmental law relate not to up-front due diligence or to the negotiation of a purchase agreement’s terms and conditions but instead to the difficult logistics of transitioning environmental issues management, responsibility, and authorizations from the seller to the buyer in connection with a merger or acquisition. Quite often, companies first confront these tricky issues long after the transactional legal team has packed its bags and moved on to its next deal. This brief article highlights some important lessons learned about transitioning environmental matters from seller to buyer and what counsel involved in the transaction can do early on to help smooth that process. This article also discusses an increasingly common approach to handling environmental issues in transactions – the use of a contractual “environmental defect process” – that often complicates the seller-to-buyer transition but, fundamentally, turns the transition stage into the central feature of the environmental risk allocation between the parties.

Environmental Transition Issues Arising from Acquisitions Generally

Transitioning a facility or a company from seller to buyer inevitably gives rise to surprises and to conflict over environmental issues. No matter how careful a buyer’s environmental due diligence or how thorough a seller’s disclosure, those efforts are not a substitute for a buyer figuratively walking the mile in seller’s shoes after taking over control and a buyer’s fresh eyes and different perspective will almost always uncover questions and gaps in seller’s environmental issues management and reveal differences between buyer and seller on

factual understandings and regulatory interpretations, even where a seller has tried to be open about the target's environmental issues.

Several issues frequently arise in transactional contexts as important issues for transition:

- **Permit Transfer**

One issue that very often arises in connection with transactions involving regulated facilities and entities is the requirement to transfer environmental permits from seller to buyer. Under Texas law, the principal permit transfer requirements are found at 30 T.A.C. § 116.110(e) (Texas new source review air permits) and at 30 T.A.C. § 305.64 (pretty much everything else, including wastewater and waste permits). Unfortunately for TCEQ, its permit transfer rules are complicated by the inconsistency of the terms of permit transfer authorized by the disparate federal rules under which the agency implements delegated authorities - - as well as by inconsistent in the patchwork of different environmental laws adopted by the Texas Legislature.

Under the permit transfer rule for air permits, the owner or operator needs within thirty days after a permitted facility changes ownership to notify TCEQ of the date ownership changed, key contact information for the new owner, an agreement by the new owner to be bound by the permit, any amendments thereto, and the representations in past permit applications, as well as commitment that there will be no change in the type of pollutants emitted and no increase in their quantity. TCEQ has provided a form that arguably simplifies and standardizes this process. See <http://www.tceq.texas.gov/assets/public/permitting/air/Forms/20405.pdf>. As these types of rules go, the TCEQ regulation on NSR air permit transfer is fairly simple, straightforward, and easy to satisfy from a practical perspective.

That said, changes of ownership in the air permitting context get significantly less straightforward when you consider that there are several additional types of air permits managed by TCEQ. For permits-by-rule (PBRs), TCEQ proposed a revision to 30 T.A.C. § 106.4 in 2005 suggesting that all facilities authorized using a permit-by-rule would need to notify TCEQ of any change in ownership. Such a requirement that makes little sense in the context of those PBRs not requiring registration with TCEQ since the facility can simply keep “claiming” a non-registered PBR without any communication with TCEQ and not have any need to somehow “transfer” that authorization. Nonetheless, although that proposed revision to the PBR rules was never adopted, it has taken life in the TCEQ form and instructions for air permit transfers wherein such notice must be given in the event of a change of ownership, at least as to facilities

that have TCEQ-registered PBRs. For Title V facilities, the rules are also murkier. The TCEQ guidance and forms make clear that site-specific permit holders are to submit a permit revision application to change the identity of the owner and/or operator of the facility and include an agreement with the date on which permit authority and responsibility change hands. For holders of Title V “general operating permits,” however, TCEQ’s guidance says that the new owner is required before the change occurs to submit a new application for coverage under the relevant GOP, appending a comparable written agreement.

The “everything else” permit transfer rule in Section 305.64 provides that permits are issued in personam and are transferable only upon approval by the Commission. Similar to the air side, TCEQ has prepared a form to use for most transfers of wastewater and CAFO permits. <http://www.tceq.texas.gov/assets/public/permitting/waterquality/forms/20031.pdf>. The permit transfer process involves submission of a form listing the date of the proposed transfer, a discussion of any required financial assurance, a \$100 fee, and a sworn statement that the existing permittee consents to the transfer, along (typically) with an agreement whereunder the transferee accepts responsibility for the permit’s obligations on a specific date. Unlike the application for transferring an air permit, these transfer applications are to be submitted thirty days *prior* to the transaction’s close.¹ Unsurprisingly, permits for RCRA treatment, storage, and disposal facilities have heightened permit transfer standards.

Oddly, however, Section 305.64 does not clearly spell out the circumstances in which a transfer is actually required. The rule does list one scenario when a permit transfer is expressly *not* required: “No transfer is required for a corporate name change, as long as the secretary of state can verify that a change in name alone has occurred.” 30 T.A.C. § 305.64(a). Additionally, under 30 T.A.C. § 305.64(f), there is one scenario where a permit transfer is expressly required in connection with a “change in ownership or operational control” – transfer of “standard permits” – and in that scenario, the rule directs the parties how to proceed: “For standard

¹ This requirement seems to be pulled from analogous federal rules; that said, this seems like a very poor idea. In the transactional world, deals are often kept confidential for important business reasons until they close, sometimes conditions to a deal closing go unsatisfied, resulting in an executed deal never being concluded, and sometimes the closing date triggers off events or conditions that aren’t certain in advance. The upshot is that providing thirty day advance application for a permit transfer is sometimes extremely problematic for the parties, sometimes results in the agency processing a transfer that never happens, and sometimes misses the thirty day window for reasons beyond the parties’ control. Indeed, in some states I have been told by agency personnel that, despite thirty day advance notice requirements being on the books, they do not want to receive permit transfer requests until the transaction actually closes for precisely these reasons.

permits, changes in the ownership or operational control of a facility may be made as a Class 1 modification to the standard permit with prior approval from the executive director in accordance with §305.69(l)(a)(7) of this title.”

In other transactional scenarios – an outright asset sale of a facility and its operations, the engagement of a contractor who assumes operational control of a facility, or a stock acquisition involving a change in the majority ownership of the entity owning the facility or a stock acquisition further up the corporate chain – the applicability of the permit transfer requirement is not perfectly clear. It appears obvious in a simple asset purchase of a permitted facility – where Company A owns and operates the facility under a TPDES permit today, and sells the facility lock, stock and barrel to Company B that will own and operate the facility under a TPDES permit tomorrow – that Company B will need to hold that permit in its own name to be properly authorized to discharge as the new “owner and operator” and, therefore, that a permit transfer will be required.

But where Project Company, a wholly-owned subsidiary of Seller Company, owns and operates a facility under a TPDES permit today and Acquiror Company acquires all of the stock of Project Company from Seller Company, Project Company remains the owner and operator of the facility and the permittee under the same TPDES permit. There is no change in the identity or the permit obligations of the permittee. The permittee just has a new ultimate corporate master. Under the “change in ownership and operational control” formulation used in some permit transfer rules, the ordinary corporate meaning of “change of control” would likely include a change of majority ownership in the stock of a permittee and, accordingly, a stock purchase transaction could arguably trigger a permit transfer requirement. To the extent that the purpose of environmental permit transfer rules is to assure that the permittee remains bound to the obligations of the permit, however, a change in who owns the permittee’s stock doesn’t in any way alter the permittee’s legal obligations under the permit. The absence of this “change in ownership and operational control” language as a trigger – except for RCRA permits and standard permits subject to Chapter 305 – arguably suggests that there is no Texas requirement to seek a permit transfer in a stock acquisition context so long as the entity that actually owns and operates the facility remains itself unchanged.

The intricacies of permit transfer across the multitude of different environmental programs are eye-glazing indeed, but getting this right is important for a variety of reasons. Of

great importance to the buyer, under the “everything else” transfer rule, until a transfer is approved by TCEQ, “[i]f a person attempting to acquire a permit causes or allows operation of the facility before approval is given, such person shall be considered to be operating without a permit.” 30 T.A.C. § 305.64(e). While there hasn’t been a rash of major TCEQ enforcement actions against facilities operating under a former owner’s permit – indeed, in my experience, this happens often and TCEQ has never to my knowledge taken such an enforcement action – this plain language should persuade a buyer of a Texas facility to promptly address permitting, especially since TCEQ’s Enforcement Initiation Criteria would arguably compel the agency to take action in circumstances where a person is “considered to be operating without a permit.” On the other hand, it is also very much in seller’s interest to move the permits since a buyer’s violation of the permit post-transaction might well be viewed as the legal responsibility of the seller since the seller might remain the responsible permittee in the agency’s eyes until it is transferred. One would certainly imagine that the seller should want those permits and the compliance responsibilities thereunder formally transferred to the buyer as quickly as possible upon closing.

While most purchase agreements include a generic “further assurances” clause intended to commit both parties to cooperate on unanticipated or latent issues that are important to facilitating a smooth transition of ownership and operation, differences can arise in the context of environmental permits over when transfer is required, who should go to the trouble of preparing and submitting paperwork or electronic updates to the relevant agencies, as well as what written agreements (if any) are necessary to effectuate the transfer. A brief but carefully written permit transfer provision can clarify the needed actions as well as the respective roles and responsibilities up front and reduce confusion, omissions, and disputes.

- **Regulatory changes and “change of law risk”**

Other transition issues can be very important as a practical matter and as a matter of how purchase agreements are constructed including circumstances where regulatory changes pending or occurring near the time of execution, in between execution and closing, or in the period shortly after closing. Although the idea of a “rollback” in environmental protections seems to be a theme occasionally picked up and pushed by environmental groups and media outlets, virtually any practitioner of environmental law would agree that the complexity and stringency of

environmental regulation has been growing significantly over time. And the last several years have included a significant number of landmark regulatory changes including first-time regulation under the Clean Air Act of greenhouse gas emissions.

Companies that acquire regulated facilities on a warranted promise of past compliance and an absence of past claims are likely to nonetheless face facilities that soon will be out of compliance with newer, more stringent requirements. Accordingly, financial and staffing models built on “business as usual” assumptions will likely yield some disappointing surprises for buyers. Awareness of and sensitivity to pending changes of law can help buyers better understand value and any regulatory complications that their acquisition is likely to face. But certain contractual definitions and terms can be profoundly affected by changes in law. By way of example, a seller that warrants compliance with environmental laws today may have provided adequately for allowances and controls under the Clean Air Interstate Rule (“CAIR”), which remains in effect (despite being previously invalidated by decision of the D.C. Circuit Court of Appeals) during the pendency of legal challenges to the more stringent Cross-State Air Pollution Rule (“CSAPR”) which is the “law on the books” but which has been stayed by the D.C. Circuit pending an ongoing challenge to that rule. If the D.C. Circuit were to uphold CSAPR, the buyer of a CSAPR-regulated facility might suddenly be subject to a new suite of costly requirements without the seller having breached any warranty of compliance with environmental laws. Given the stepwise and sometimes extended timing of many transactions, an agreement could hypothetically be executed today while a facility is subject to the requirements of CAIR but close while the facility is subject to CSAPR. Obviously any scenario where Congress, the agencies, or the courts can change the law has the potential to create this kind of “timing” problem. Accordingly, clarifying whether “Laws” or “Environmental Laws” are the laws in effect on the date of execution or the date of closing can be incredibly important in times of significant regulatory change.

In addition, it can be very helpful to clarify whether environmental conditions, omissions, or other issues that may be indemnified need only be addressed to the extent required by law in effect at the time of the agreement’s execution or closing or, whether any remedy for such an issue once triggered needs to satisfy the law in effect when the remedy is complete. Envision a pre-closing release of chlorinated solvents to groundwater at a facility for which the seller agrees to indemnify the buyer. Does the seller have to pay for a cleanup to the TRRP standards in effect

at the time of the execution or closing of the deal? Or, should the seller's obligation to fund that cleanup – which may take many years – extend to, for example, new and more stringent requirements to address “vapor intrusion” in a law or regulation that might be adopted well after the transaction's closing but before the cleanup is completed. One could imagine that question being a source of significant dispute or even litigation between seller and buyer. Careful forethought as to the timing language in the agreement can help align everyone's expectations and avoid later disputes.

- **Injunctive relief and other future commitments resulting from pre-closing violations**

Another transition-related difficulty can arise where a facility is subject to a pending enforcement action that may contain injunctive components like, for example, an EPA New Source Review action. In those actions, civil penalties are commonly sought but the larger component of relief in those cases – often larger by orders of magnitude – tends to involve the agreed installation of costly new controls and the adoption of costly and complicating procedures. Acquiring a facility subject to an enforcement action based on pre-closing violations, even where penalties are indemnified, may put a seller in the position of facing an expectation of new controls or procedures. Precisely that sort of scenario led to a very public litigation dispute between Dupont and Invista involving claims for hundreds of millions of dollars. Reportedly, that litigation was recently resolved in a confidential settlement. Recognizing those potential enforcement risks and issues up front and providing contractual language with a clear path for how such issues are to be handled can help set expectations and avoid disagreements – as well as potentially extraordinary litigation costs.

- **Information/timing of annual, semiannual, quarterly, monthly reports**

Another tough transactional transition issue arises from the fact that environmental law imposes a significant number of periodic requirements – annual “tons per year” emissions limits, vintage emissions allowances, Title V compliance certifications, Tier II reports and Toxic Release Inventories and emissions inventories, semiannual deviation reports, quarterly or monthly discharge monitoring reports, and the like – which periods may be bisected by the closing of a transaction. Understanding the nature and timing of these requirements relative to

the timing of the transaction and ensuring that there is agreement and readiness regarding which of the parties is responsible for which filings, which information, and the like can be critical to ensuring that no required action falls between the cracks. In an asset purchase, there would appear to be a clear time divide in terms of which party is responsible for which filing – reports for periods prior to closing would be the responsibility of seller, while reports for periods after closing would be buyer’s obligation. But assuming, for example, a Title V annual compliance certification covering a period from August 15, 2011 to August 14, 2012 and an asset purchase of the covered facility effective on August 1, 2012, even if the certification is due “on buyer’s watch” on September 14, 2012, it’s fairly clear that the buyer shouldn’t be in the business of certifying compliance or reporting deviations for the entire one-year period. It’s equally clear that a buyer wouldn’t necessarily have all of the information that the seller had in order to accurately prepare those forms with knowledge meeting the standards specified in the certifications required to accompany those reports. Since there is no bar on filing more than one certification or more than two deviation reports for a given period, the rational approach is for the seller to submit the certifications and deviation reports a bit early, wrapping into those reports all of the issues occurring during its period of ownership and for the buyer to be responsible only for the post-closing period. Without a prior discussion of that division and some contractual or other understanding of that approach, however, one can certainly imagine a seller telling the buyer that since they don’t own the facility anymore, it’s not their responsibility, creating a possible noncompliance scenario for both parties.

- **Allowances and annual emissions limits**

In my experience, annual emissions limits and annual vintage emissions allowances also create very real opportunities for disagreement between sellers and buyers. Where a facility is limited to a certain amount of annual runtime or annual emissions and a seller consumes more than the pro rata share of those hours or emissions prior to the transaction, it can hamstring a buyer’s operation of the acquired facility for the post-closing portion of the year. This is the type of issue that wouldn’t show up in a typical environmental representation and warranty and would not constitute a violation of law as to the seller. But when a buyer acquires a facility at great expense and can’t continue to operate it in the manner it was being operated by the seller – indeed, in the manner upon which buyer developed revenue projections to justify the purchase

price – because it runs out of hours or tons or allowances before the end of the year, that can constitute a surprise that harms the buyer significantly while not constituting any kind of covered breach on the seller’s part. Careful attention to these issues and agreement on how periodic emissions authorities and allowances will be shared and divided between the parties can avoid surprises and serious disputes.

Similarly, in many organizations, emissions allowances are shared across entire fleets or packages of assets. In the electric power context, for example, sometimes gas-fired and coal-fired facilities share allowances on a company-wide basis, allowing the coal-fired facilities to emit more than the allowances allocated to those facilities by the relevant agencies while the gas-fired facilities emit less and the company uses those excess allowances to cover the coal fleet’s extra emissions. Although this has less to do with timing and more to do with a facility’s needs versus its base allowance allocations, a buyer of one or more facilities that are part of a fleet that operates in this manner may be surprised when the annual governmental allocation of allowances to that facility doesn’t meet the facility’s actual needs. Awareness of how allowances are used and shared across a fleet of facilities is essential to understanding what package of allowances or allowance streams needs to be acquired along with a subset of the relevant assets, as well as what controls or operating limits will need to be adopted (or what additional allowances will need to be purchased in the market) if a full complement of allowances is not forthcoming as part of the transaction.

- **Transition of Financial Assurance**

Under many of the nation’s environmental regulatory programs, regulated entities are required to provide financial assurance as security for the satisfaction of relevant environmental obligations - - underground storage tanks and RCRA closures are just a couple of examples. Financial assurance for these often significant obligations can sometimes be provided in the form of an insurance policy, self-insurance after satisfying a financial test, a guarantee, a letter of credit, or some other financial instrument. Where a transaction involves an asset or entity subject to such an obligation, the buyer will need to immediately be in compliance with those obligations upon closing. Indeed, 30 T.A.C. § 305.64(d) specifically provides that TCEQ will not transfer a permit or authorization to operate unless and until the agency is satisfied that financial assurance requirements will be met. Additionally, there are strong legal compliance

reasons for promptly addressing the transition of financial assurance, especially where the transaction has the effect of invalidating the existing coverage (*e.g.*, a financial guarantee from the seller's parent company or a letter of credit directed only to the buyer). Buyers will need to understand how covered units and activities maintain their required financial assurance and will need to discuss with their sellers and others how that financial assurance can best continue uninterrupted through the transition or be timely replaced.

- **Practical and “Institutional Memory” issues**

Perhaps most important of all the transition issues is the practical knowledge and institutional memory about a facility or entity's environmental issues that may not transfer with the facility or entity at the time a transaction closes. Because a seller can have continuing responsibility via indemnity or by operation of law for pre-closing conduct and because a buyer can blunder into serious environmental legal trouble by not knowing “where the bodies are buried” or how different environmental issues have been managed prior to a transaction, providing for ongoing cooperation and dialogue – broadly, not just around the completion of required paperwork as part of “further assurances” – can be tremendously valuable to both parties and should be carefully considered as part of transactional agreements and arrangements. While in many circumstances, the staff and managers with the relevant institutional memory will follow the facility or entity after a sale, it is all too common for key personnel to either be kept by the sellers or for those personnel to not want to adapt to a new corporate environment and either retire or move on. Providing for ongoing exchange opportunities, consulting arrangements, or other mechanics for retaining and transmitting knowledge can help both parties protect themselves from the loss of information during these transitions.

Increasingly Common Alternative Approach to Traditional Warranty/Breach/Indemnity Allocation of Responsibility: the “Environmental Defect” Process

In most corporate acquisitions, the allocation of environmental risks is built around a set of representations and warranties offered by the seller as to the environmental compliance, condition, and claims affecting the assets or entity being sold. Those warranties are typically backed by an indemnity against any breach of those warranties. Sometimes, in the course of

buyer's "due diligence" of the target assets or entity, potential environmental concerns are also identified that can be the subject of an additional, specific indemnity above and beyond the indemnity for breached warranties.

It is increasingly common, especially in upstream energy industry transactions, however, for the seller to make environmental warranties that are heavily caveated for knowledge and materiality, to tightly limit indemnities for the breach thereof, and to push the buyer to assume default responsibility for all environmental compliance, conditions, and claims subject to a post-execution "environmental defect" process. In this approach, most actual environmental due diligence is conducted by the buyer in the form of an environmental defect assessment performed within a prescribed period following the execution of a purchase agreement and ordinarily prior to the closing of the transaction. The purchase agreement provides for this opportunity to assess and further provides that if certain "defects" are discovered – violations of the law or conditions requiring remediation, for example – the buyer can then assert the existence of an "environmental defect" that seller would have several contractual options for addressing including (i) curing/correcting the defect, (ii) agreeing to retain responsibility or indemnify buyer for it, (iii) reducing the purchase price by the cost attributable to the defect, or (iv) excluding the impacted asset from the transaction and reducing the purchase price by the value of that asset. With that high-level summary of what an environmental defect process *is*, what issues should counsel be looking for in designing and contracting for such a process?

What Happens Outside the Defect Process? First and foremost, counsel should attend to what's happening in the background to environmental warranties, indemnities, and assumption/retention of liabilities. In some instances, the environmental warranties and indemnities continue to protect buyer from truly major concerns and the assumption of liabilities is subject to some limits and exclusions (discussed further below); in other agreements, the assumption of environmental liabilities by the buyer is nearly total and the traditional warranty/breach/indemnity protections are completely eviscerated.

The Assessment. Second, counsel should be mindful of the elements and scope of the defect assessment – who gets to choose the consultant, how long do we have to conduct the assessment (and is that enough time to do a credible diligence given the "use it or lose it" consequences?), and what is the authorized scope (*e.g.*, Phase I only? Compliance assessment? No intrusive sampling? Access to operated and non-operated properties? Adequacy of access to

staff and documents?). Closely related to this issue of assessment scope is the importance of carefully discussing purpose and work product with the consultant – a standard Phase I or consultant’s “environmental diligence” report commonly will not include all of the information one needs in order to assert a qualified defect - - among other information, a buyer will commonly need to demonstrate not only that there is a condition but that the condition violates some environmental law and to provide a defensible and documented estimate of the cost to correct the issue. If the consultant isn’t well-briefed on the buyer’s “evidentiary” needs, the assessment isn’t likely to help the buyer properly assert environmental defects.

What is a Qualifying Defect? Third, to so advise the consultant and to prepare an environmental defect notice, counsel needs to first understand what qualifies as a “defect” and ensure that such a definition is consistent with the client’s business expectations. In some proposed agreements, I have seen “defects” limited to contamination issues that constitute violations of environmental law. That obviously excludes from the universe of covered defects contamination that is not necessarily a violation of law (*e.g.*, certain historic contamination), as well as violations that are not contamination-related (*e.g.*, permits, plans, pollution controls, containment, inspections, training, etc.). A buyer seeking reasonable protection through a defect process will want to be sure that qualified defects include all of the major categories of environmental exposures operations of this type might be expected to face, not just cleanup/remediation issues. A seller may want that definition narrowed. Additionally, agreements using a defect process will also often limit qualified defects by excluding “nickel and dime” issues, preventing the buyer from asserting any defect that does not individually exceed a certain dollar threshold – commonly \$50,000 or \$100,000.

How are Qualifying “Defect Costs” (Costs of Corrective Action) Calculated? Fourth, counsel need to be attentive to how eligible corrective action costs are to be developed and how they might be constrained by the agreement’s language. This issue is similar in many ways to the “mitigation of damages” or “Chevy versus Cadillac” concept in more traditional indemnification scenarios. Often proposed defect processes allow correction costs to include only the “lowest cost response,” which commonly means the cheapest solution permitted by the environmental laws. Obviously a seller providing protection to a buyer wants to contain its costs and, for example, would not want to pay for a costly “pump-and-treat” groundwater remedy when a cheaper “monitored natural attenuation” remedy would satisfy the agencies. A buyer, on

the other hand, might well want to return acquired properties to pristine conditions on the seller's nickel. That's a stark example, however, and there are many more nuanced questions surrounding the contractual definition of qualifying environmental defect costs: if the cheapest remedy interferes with future operations, is it still the only option? What about a remedy that's effective under minimum standards of environmental law but violates OSHA standards or industry standards? What costs – consulting fees, staff time, attorneys fees – count toward the corrective cost? Are there ordinary “course of business” costs that an operator would bear anyway that should be excluded from the calculation? Careful attention to language surrounding these issues is important to understanding the scope of buyer's protection and of seller's obligation.

What Happens to Properly Asserted Defects? Fifth, counsel should carefully consider what “remedies” the agreement should allow the seller upon the proper assertion of a defect. If the seller disputes the defect or the estimated cost of the defect, how does that disagreement get resolved? What is the process for arbitrating or otherwise managing that dispute? Presuming a defect is found (by agreement or by arbitration) to have been properly asserted and costed, what options will the agreement provide to the seller and what limits can the buyer place on those options? As noted above, environmental defect process agreements commonly provide sellers options including (i) curing/correcting the defect, (ii) agreeing to retain responsibility or indemnify buyer for it, (iii) reducing the purchase price by the cost attributable to the defect, or (iv) excluding the impacted asset from the transaction and reducing the purchase price by the value of that asset. Is the seller completely free to choose among these options? And if the seller opts to cure, how long does the seller have to perform? What are the terms on access and interference with buyer's operations? To what standard and to whose satisfaction (minimum legal standards? the consultant's recommendation? an agency's “no further action” letter? buyer's sole approval or buyer's approval not to be unreasonably withheld?) must that cure be performed? If seller opts instead to retain responsibility for that issue and to indemnify the buyer, what are the terms of that indemnity? If seller opts to reduce the purchase price by the agreed or arbitrated cost of correction, what are the mechanics for doing that? If seller opts to exclude the affected property from the deal and reduce the purchase price, how is that property priced for calculating the purchase price reduction and what are the mechanics of that reverter?

There are obviously many questions to be asked and answered on the remedy side of the defect process.

What Happens to Any Undiscovered or Unasserted Defects? Sixth, as mentioned above, in agreements where it is used, the environmental defect process largely supplants the traditional warranty/breach/indemnity protections for buyer. Commonly that reality is documented with language indicating that where an environmental defect isn't properly and timely asserted by the buyer, it is waived and such unasserted defects are assumed by and become the responsibility of the buyer. Importantly, counsel should take care to evaluate whether such assumptions include responsibility for correction only or whether that assumption extends to, for example, penalties or tort liability for pre-closing violations or damages and off-site disposal/arranger liability. While a buyer might reasonably agree to take a set of assets "warts and all," there is no buyer I can imagine who would feel good about paying for the latter categories of liability that do not relate to the purchased assets' current condition.

In short, with little to no protection from heavily-caveated warranties and a broad assumption of liability for unasserted defects by the buyer, the defect process has the potential to create almost a "walkaway" opportunity for a seller – subject to third party liability under background law that the buyer can't satisfy, properly asserted defects, and "unfair" items like penalties, torts, and arranger liability that may or may not be excluded from buyer's assumption. For buyers, however, this process really constitutes a "use it or lose it" opportunity to catch and correct or avoid material environmental conditions or violations. If both the agreement and the assessment/assertion process are well-designed and executed, however, a defect process can actually provide a buyer more protection than is found under many traditional warranty/breach/indemnity agreements.

* * * * *

To summarize, the transition period running from execution to closing to the first months post-closing is an incredibly important time for addressing environmental issues that are surfaced in the wake of merger and acquisition transactions. The risk of disagreements and complications seems heightened, however, if some of the trickier transition issues are not well thought through and provided for in the purchase agreement or via other side agreements or discussions. A

generic “further assurances” clause can create some legal obligation on the participants to perform necessary tasks for the transition; but having a contractual obligation in place doesn’t mean that all concerned will see the obligations the same way or, absent specific commitments, feel compelled to cooperate. If the actual environmental transition logistics aren’t carefully considered and agreeable to both sides, the transition period can be fraught with complications and lead to disputes or even litigation.

Notably, the transition period takes on an even greater focus in merger and acquisition transactions that, especially in upstream energy transactions, increasingly resort to an environmental defect process in lieu of the more traditional warranty/breach/indemnity formulation. That process involves numerous potential business points that environmental counsel should carefully consider to either help their seller clients enhance their walkaway opportunity or help their buyer clients maximize their protection against significant environmental defects and avoid unwarranted or accidental assumption of inappropriate categories of liability.

Bio – Suzanne Beaudette Murray, Regional Counsel, EPA Region 6

Suzanne Murray is the Regional Counsel for EPA Region 6 in Dallas, Texas. As Regional Counsel she manages an office of 75 attorneys and counsels the Regional Administrator, the Program Offices and EPA HQ on a wide array of legal issues impacting the South Central United States, a region which covers 44% of the emission sources in the country. Her responsibilities include: interpreting and implementing all the environmental programs EPA administers, leading the prosecution of environmental enforcement, providing legal support for regulatory, permitting, emergency response and community outreach activities. Ms. Murray previously served as the Deputy Regional Counsel for Enforcement in Region 6 and had a robust practice with the Agency focusing on the Clean Air Act.

Before joining EPA she was in private practice in New York City where she was in-house counsel for the AIG Environmental Claims Group and was an Associate with the law firm of Rosenman and Colin (now Katten, Muchen, Rosenman & Zavis) in the Environmental Law and Litigation groups.

Ms. Murray graduated from Trinity University in San Antonio with a BA in Political Science and Minor in Spanish. She received her law degree from the University of New Mexico where she was the Editor of the Natural Resource Law Journal.

She lives in Dallas with her husband and three daughters. She enjoys travelling, cooking and learning languages.

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Working out of Sidley's Houston office, Chris has practiced environmental law for 25 years, representing clients in civil and criminal enforcement and investigations, private litigation, and compliance counseling under all of the major environmental programs, including the Clean Air Act, RCRA, Clean Water Act, chemicals (TSCA and FIFRA), and environmental remediation (CERCLA and RCRA). He advises clients on the environmental issues associated with domestic and international transactions, and represents clients in legislative and regulatory advocacy (including writing comments on proposed rules and appellate challenges to final rules). He works on international issues, including climate change and product regulation/stewardship (e.g., the EU's REACH and CLP Regulations and ROHS and WEEE Directives and their equivalents in other regions), transnational movement of chemicals and waste (e.g., the Basel Convention, and the IMDG/IMSBC and ICAO/IATA transportation requirements), trade and the environment, and sustainable development. He evaluates and implements environmental management systems (including ISO 14001) around the world, as well as codes of conduct and compliance and ethics programs under the U.S. Sentencing Guidelines.

He works with companies on complex Clean Air Act and Clean Water Act permitting matters, including helping facilities obtain or amend permits, defending permits in administrative proceedings, developing compliance systems and procedures, and defending companies in enforcement actions (civil and criminal) and citizen suits alleging violations of permits.

He has worked with many industrial sectors, including oil and gas, chemicals, electricity generation and distribution, transportation (including automotive, aviation and shipping), pharmaceuticals, mining, defense, electronics, communications, real estate and construction, consumer products, forestry and wood products, and general manufacturing. He works extensively with technical experts on toxicology, risk assessment, and environmental modeling issues, and on high-technology matters such as nanotechnology.

Mr. Bell has been listed for several years by *Chambers USA America's Leading Lawyers for Business*, *PLC Cross-Border Handbook on The Law* and *Leading Lawyers Worldwide*, *Legal 500* and *The International Who's Who of Business Lawyers*. Mr. Bell had several years of manufacturing experience before he started practicing law, and was a member of the Society of Manufacturing Engineers and a certified Manufacturing Technician. He obtained his law degree from the University of Michigan in 1985 (*magna cum laude*), clerked for a Federal District Court Judge for two years, and is licensed to practice law in Texas and Washington, D.C.



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Managing Your Global Supply Chain For Profit, Reputation and Compliance

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The Global Value Chain



Global Value Chain

- Regardless of where you manufacture, assemble or sell, you are connected to the global value chain
 - Raw materials, components, finished products, services
 - Far-flung markets
 - Few organizations get everything they need, or sell everything they make, in their home market
 - Your customers' (and increasingly your suppliers') problems are often your problems

What are the Challenges?



Identifying
pressure
points and
opportunities

Some Key Pressure Points

Climate Change/Energy



- Energy policy affects entire chain: CO₂ regulation = energy regulation = economic regulation
- Energy sources: hydrocarbons and alternatives
- Energy efficiency of entire chain (e.g., is energy use being “outsourced”? What is the contribution of logistics?)

Reputation



- Supplier conduct (environmental, labor, etc.)
- Affects consumer, governmental and corporate purchasing decisions
- Social media “wildfire effect”: information, true or not, spreads fast
- Increased pressure for more public disclosure (e.g., California Transparency In Supply Chains Act of 2010, Global Reporting Initiative)

Some Key Pressure Points



Products and Packaging

- Content (e.g., TSCA in U.S., REACH/CLP/ROHS in EU, increasing number of counterparts in Asia)
- Performance (e.g., energy and water efficiency)
- “Green marketing” claims
- Public and private procurement criteria
- Producer responsibility for products at “end-of-life” (e.g., take-back schemes for electronics and packaging)



Other sustainability issues

- Natural resource depletion and renewables
- Human rights (e.g., conflict minerals)
- Labor
- Social/economic inequity

Looking For Opportunities



Positive reputational impact:
company and product
differentiation for customers and
investors



Gain competitive edge by adding
value to the business and
customers:

- Meet customer needs, new markets, lines of business, products, services, etc.
- Reduce waste, save energy, reduce water consumption, etc.

Previous item from Issue 39



Energy Democratized
by Tyler Hamilton

The Magazine for Clean Capitalism

Corporate Knights

FROM: Issue 39

Heroes and Zeroes Vol. 4

7 June, 2012

BASF sets ambitious targets for energy efficiency, while Asia Pulp & Paper faces public outrage over destruction of Indonesian peatlands

Written by **Jeremy Runnalls**, Managing Editor



Benefits to
Active Value
Chain
Management

Damaging Value

Chicago Tribune
Publishes
Investigative Series
On Brominated Fire
Retardants in May
2012



Managing Reputation in the Value Chain



In China, Human Costs Are Built Into an iPad

New York Times, January 25, 2012

Chinese Labor Practices Sour Apple Consumers

NPR, February 7, 2012

"When will workers share in Apple's wealth?"

CNN February 17, 2012

"Electronic Giant Vowing Reforms in China Plants" New York Times 3/29/12

"Responding to a critical investigation of its factories, the manufacturing giant Foxconn has pledged to sharply curtail working hours and significantly increase wages inside Chinese plants making electronic products for Apple and others. The move could improve working conditions across China."

"Apple's Chief Puts Stamp on Labor Issues" New York Times, 4/1/12

"Since Mr. Cook became chief executive in August, shortly before the death of Mr. Jobs, Apple has taken a number of significant steps to address concerns about how Apple products are made."

"Apple to Audit Supplier's Pollution Management" Wall Street Journal 4/16/12

Leapfrogging Feds, Wal-Mart Bans Controversial Flame Retardant

- The New York Times, March 7, 2011



Examples of market de-selection

"IKEA is continually working with chemicals and is trying to phase-out the use of questionable substances. Some examples; IKEA has set an early voluntary ban on PVC (decided 1991) except in cables, an early ban of all organic brominated flame retardants in furniture (effective from 2000) and a ban on formaldehyde emitting paints and lacquers on all products (effective from 1993)."

- From IKEA website



Managing The Value Chain

Resin Shortage Won't Disrupt Factories

“Big automotive suppliers are ruling out significant plant shutdowns due to a shortage of a key resin due to a factory explosion as more alternative materials continue to be found and are quickly substituted.”

Wall Street Journal, 4/24/12

Unilever Takes Palm Oil in Hand

“Unilever PLC is negotiating to build a \$100 million palm-oil processing plant in Indonesia, an attempt to accelerate its commitment to sourcing the oil in ways that don't destroy the environment.”

Wall Street Journal, 4/24/12

Microsoft to Require Annual Sustainability Reporting by Vendors

“Microsoft is taking this step in response to a shareholder proposal received from New York City Comptroller John C. Liu on behalf of the New York City Pension Funds.”

Microsoft Press Release, 10/13/11

Examples of Specific Legal Actions

- Advise on compliance with product and packaging content, transportation and product end-of-life/take-back requirements
- Verify that chemical uses are legal in current and planned markets
- Review “green marketing” strategy and claims
- Apply international trade law to supply chain constraints (e.g., WTO implications of China’s restrictions on rare earth minerals)

Regulatory



Examples of Specific Legal Actions

- Counseling on implications of international, Federal and State energy policies on corporate strategy, investments and acquisitions/divestitures
- Value chain as part of due diligence; *e.g.*, compliance status of materials from suppliers, continued viability of markets for products sold by acquisition target

Transactions



Examples of Specific Legal Actions

- Supply side: reviewing contractual provisions regarding environmental and related requirements
- Customer side: setting up compliance systems to establish and enforce environmental and sustainability criteria
- Risk management: insurance, indemnities, responsibility for supply interruptions, etc.

Contracts



Examples of Specific Legal Actions

- Respond to shareholder resolutions and public relations pressure on environmental and sustainability issues
- Advise on inclusion of environmental, sustainability and related issues in public filings
- Lawyer as counselor on risk management: one negative event can have significant consequences for businesses based on “just-in-time” manufacturing and complex global value chains (chain is as strong as the weakest link)

Governance



Examples of Specific Legal Actions

- Legislative and regulatory advocacy needs to take a broader view to consider entire chain (e.g., “TSCA reform” and EPA’s aggressive strategy for existing chemicals encompass everything from chemical manufacture to consumer use)
- Advocates sometimes look for vulnerabilities in the chain (e.g., some opponents of “hydrocarbon economy” might attack chemical uses and water discharges associated with hydraulic fracturing to further fundamental goal of discouraging expansion of natural gas sector)
- Develop and execute international advocacy strategies to address product-related legal issues in multiple markets

Advocacy



Examples of Specific Legal Actions

- Investigate reports of company or supplier misconduct (e.g., from internal “hotlines” or whistleblowers)
- Respond to inquiries from regulatory and enforcement authorities
- Litigation (e.g., contractual disputes with suppliers or customers, defending toxic tort claims and enforcement actions)

Investigations and Disputes



The Global Value Chain

What You Should Do

KNOW

- Your Value Chain

- What is the business' core strategy and objectives (i.e., the point of the value chain)?
- Who is in it . . . upstream and downstream?
- Where are they?
- What do they do/supply/demand?
- What are the applicable legal requirements?
- What are your requirements?



The Global Value Chain

What You Should Do

EVALUATE

- Your Value Chain
 - What are the upstream/downstream risks? Opportunities?
 - What are the business-critical links? What are the weak links?
 - What is your system to manage the risks and capture the opportunities?



The Global Value Chain

What You Should Do

MANAGE

- Your Value Chain

- Systematically build processes and “checks” into operations
 - Product design, incl. materials selection
 - Purchasing – supplier selection
 - Marketing – market selection and claims
 - Distribution
- Audit and verify
- Advocate



The Global Value Chain

What You Should Do

COMMUNICATE

- Internally – successful value chain management requires buy-in from R&D, design engineers, EHS managers, sourcing, marketing, legal, top management, etc.
- With suppliers and customers
- With your trade associations
- With the public
 - But be sure you “walk your talk”



The Global Value Chain

What **Not** to DO



Ignore
your supply
chain



Play the
blame
game



Rely too
much on
contracts



Conclusions

- Be creative: value chain is “boundary-free” internally and geographically
- Be aware of the scope of risks: regulators, customers, NGOs and the public are increasingly willing to attach responsibility for value chain to individual companies
- Prevent business disruptions, non-compliance and reputational harm by systematically identifying, managing and communicating about value chain risks
- Identify opportunities to add value to your business and that of your customers by decreasing the “environmental footprint” of your operations, products and services
- Don’t ignore it: the value chain has lots of moving parts and never sleeps . . . so it demands active attention!

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Federal Register

**Thursday,
December 23, 2010**

Part III

Securities and Exchange Commission

**17 CFR Parts 229 and 249
Conflict Minerals; Proposed Rule**

SECURITIES AND EXCHANGE COMMISSION

17 CFR Parts 229 and 249

[Release No. 34-63547; File No. S7-40-10]

RIN 3235-AK84

Conflict Minerals

AGENCY: Securities and Exchange Commission.

ACTION: Proposed rule.

SUMMARY: We are proposing changes to the annual reporting requirements of issuers that file reports pursuant to Sections 13(a) or 15(d) of the Securities Exchange Act of 1934 to implement Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. The proposed rules would require any issuer for which conflict minerals are necessary to the functionality or production of a product manufactured, or contracted to be manufactured, by that issuer to disclose in the body of its annual report whether its conflict minerals originated in the Democratic Republic of the Congo or an adjoining country. If so, that issuer would be required to furnish a separate report as an exhibit to its annual report that includes, among other matters, a description of the measures taken by the issuer to exercise due diligence on the source and chain of custody of its conflict minerals. These due diligence measures would include, but would not be limited to, an independent private sector audit of the issuer's report conducted in accordance with standards established by the Comptroller General of the United States. Further, any issuer furnishing such a report would be required, in that report, to certify that it obtained an independent private sector audit of its report, provide the audit report, and make its reports available to the public on its Internet Web site.

DATES: Comments should be received on or before January 31, 2011.

ADDRESSES: Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/proposed.shtml>);
- Send an e-mail to rule-comments@sec.gov. Please include File Number S7-40-10 on the subject line; or
- Use the Federal Rulemaking Portal (<http://www.regulations.gov>). Follow the instructions for submitting comments.

Paper Comments

- Send paper comments in triplicate to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, 100 F Street, NE., Washington, DC 20549-1090.

All submissions should refer to File Number S7-40-10. This file number should be included on the subject line if e-mail is used. To help us process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/proposed.shtml>). Comments are also available for Web site viewing and copying in the Commission's Public Reference Room 100 F Street, NE., Washington, DC 20549-1090, on official business days between the hours of 10 a.m. and 3 p.m. All comments received will be posted without change; we do not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly.

FOR FURTHER INFORMATION CONTACT: John Fieldsend, Special Counsel in the Office of Rulemaking, Division of Corporation Finance, at (202) 551-3430, 100 F Street, NE., Washington, DC 20549-3628.

SUPPLEMENTARY INFORMATION: The Commission is proposing to add a new Item 104 to Regulation S-K,¹ revise Item 601 of Regulation S-K,² and amend Form 20-F,³ Form 40-F,⁴ and Form 10-K⁵ under the Securities Exchange Act of 1934 (the "Exchange Act").⁶

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¹ 17 CFR 229.10 *et seq.*

² 17 CFR 229.601.

³ 17 CFR 249.220f.

⁴ 17 CFR 249.240f.

⁵ 17 CFR 249.310.

⁶ 15 U.S.C. 78a *et seq.*

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I. Background and Summary

A. Statutory Requirements

Section 1502 (the "Conflict Minerals Provision") of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Act")⁷ amends the Exchange Act by adding new Section 13(p).⁸ The Commission is required pursuant to new Section 13(p) to issue final rules implementing Section 13(p) no later than 270 days after the date of enactment, or April 15, 2011.⁹ Section 13(p) requires the Commission to promulgate disclosure and reporting regulations regarding the use of conflict minerals from the Democratic Republic

⁷ Public Law 111-203, 124 Stat. 1376 (July 21, 2010).

⁸ 15 U.S.C. 78m(p).

⁹ See Exchange Act Section 13(p)(1)(A).

of the Congo (the “DRC”) and adjoining countries (together the “DRC countries”).¹⁰ Section 1502(a) of the Conflict Minerals Provision, which is titled “Sense of the Congress on Exploitation and Trade of Conflict Minerals Originating in the Democratic Republic of the Congo,” sets forth the background for this provision. In Section 1502(a), Congress provides that: “It is the sense of the Congress that the exploitation and trade of conflict minerals originating in the Democratic Republic of the Congo is helping to finance conflict characterized by extreme levels of violence in the eastern Democratic Republic of the Congo, particularly sexual- and gender-based violence, and contributing to an emergency humanitarian situation therein, warranting the provisions of section 13(p) of the Securities Exchange Act of 1934, as added by subsection (b).”¹¹

Section 13(p) mandates that the Commission promulgate regulations requiring that a “person described”¹² disclose annually whether any “conflict minerals”¹³ that are “necessary to the functionality or production of a product manufactured by such person”¹⁴ originated in the DRC countries,¹⁵ and make that disclosure publicly available on the issuer’s Internet Web site.¹⁶ If a person’s conflict minerals originated in the DRC countries, that person must submit a report (the “Conflict Minerals Report”) to the Commission that includes a description of the measures taken by the person to exercise due diligence on the minerals’ source and chain of custody.¹⁷ In general, undertaking due diligence involves

performing the investigative measures that a reasonably prudent person would perform in the management of his or her own property. Under Section 13(p), the measures that must be taken to exercise due diligence “shall include an independent private sector audit” of the Conflict Minerals Report that is conducted according to standards established by the Comptroller General of the United States, in accordance with the Commission’s promulgated rules, in consultation with the Secretary of State.¹⁸ The person submitting the Conflict Minerals Report must also identify the independent private sector auditor¹⁹ and certify the independent private sector audit.²⁰

Further, the Conflict Minerals Report must include a description of the products manufactured or contracted to be manufactured that are not “DRC conflict free,” the facilities used to process the conflict minerals, the country of origin of the conflict minerals, and “the efforts to determine the mine or location of origin with the greatest possible specificity.”²¹ The term “DRC Conflict Free” is defined in Exchange Act Section 13(p)(1)(A)(ii) and Exchange Act Section 13(p)(1)(D) as products that do not contain conflict minerals that “directly or indirectly finance or benefit armed groups” in the DRC countries.²² Each person must make their Conflict Minerals Report available to the public on that person’s Internet Web site.²³

B. Overview of Proposed Rules

Our proposed rules would apply to issuers who file reports with the Commission under Exchange Act Sections 13(a)²⁴ or 15(d)²⁵ and for

which conflict minerals are “necessary to the functionality or production of a product manufactured” or contracted to be manufactured by such issuer.²⁶ These issuers would be required to disclose, based on their reasonable country of origin inquiry, in the body of their annual reports whether their conflict minerals originated in the DRC countries. If an issuer concludes that its conflict minerals did not originate in the DRC countries, the issuer would disclose this determination and the reasonable country of origin inquiry process it used in reaching this determination in the body of its annual report. Also, the issuer would be required to provide on its Internet Web site its determination that its conflict minerals did not originate in the DRC countries, disclose that this information is available on its Web site and the Internet address of that site in the body of its annual report, and maintain records demonstrating that its conflict minerals did not originate in the DRC countries. If the issuer concludes that its conflict minerals did originate in the DRC countries, or is unable to conclude that its conflict minerals did not originate in the DRC countries, the issuer would similarly disclose this conclusion, note that the Conflict Minerals Report is furnished as an exhibit to the annual report, furnish the Conflict Minerals Report, make available the Conflict Minerals Report on its Internet Web site, disclose that the Conflict Minerals Report is posted on its Internet Web site, and provide the Internet address of that site.

As required by Section 13(p), our proposed rules would require that an issuer provide, in its Conflict Minerals Report, a description of the measures it had taken to exercise due diligence on the source and chain of custody of its conflict minerals, which would have to include a certified independent private sector audit of the Conflict Minerals Report that identifies the auditor and is furnished as part of the Conflict Minerals Report. Further, the issuer would be required to include in the Conflict Minerals Report a description of its products manufactured or contracted to be manufactured containing conflict minerals that are not “DRC conflict free,”²⁷ the facilities used to process those conflict minerals, those conflict minerals’ country of origin, and the efforts to determine the mine or location of origin with the greatest

¹⁰ The term “adjoining country” is defined in Section 1502(e)(1) of the Act as a country that shares an internationally recognized border with the DRC.

¹¹ Section 1502(a) of the Act.

¹² The term “person described” is defined in Exchange Act Section 13(p)(2) as one (1) who is required to file reports under Sections 13(p)(1)(A), and (2) the conflict minerals are necessary to the functionality or production of a product manufactured by such person. Section 13(p)(1)(A) does not provide a definition but refers back to Section 13(p)(2).

¹³ The term “conflict mineral” is defined in Section 1502(e)(4) of the Act as (A) columbite-tantalite, also known as coltan (the metal ore from which tantalum is extracted); cassiterite (the metal ore from which tin is extracted); gold; wolframite (the metal ore from which tungsten is extracted); or their derivatives; or (B) any other mineral or its derivatives determined by the Secretary of State to be financing conflict in the DRC countries.

¹⁴ Exchange Act Section 13(p)(2)(B).

¹⁵ Exchange Act Section 13(p)(1)(A).

¹⁶ See Exchange Act Section 13(p)(1)(E) (stating that each issuer “shall make available to the public on the Internet Web site of such [issuer] the information disclosed under” Exchange Act Section 13(p)(1)(A)).

¹⁷ See Exchange Act Section 13(p)(1)(A)(i).

¹⁸ See *id.* (requiring in the Conflict Minerals Report “a description of the measures taken by the person to exercise due diligence on the source and chain of custody of such [conflict] minerals, which measures shall include an independent private sector audit of such report”). The Conflict Minerals Provision assigns certain responsibilities to other federal agencies. In developing our proposed rules, our staff has consulted with the staff of these other agencies, including the Government Accountability Office (the “GAO”), which is headed by the Comptroller General, and the State Department.

¹⁹ See Exchange Act Section 13(p)(1)(A)(ii) (stating that the issuer must provide a description of the “entity that conducted the independent private sector audit in accordance with” Exchange Act Section 13(p)(1)(A)(i)).

²⁰ As noted in Exchange Act Section 13(p)(1)(B), if an issuer is required to provide a Conflict Minerals Report that includes an independent private sector audit, that issuer “shall certify the audit” and that certified audit “shall constitute a critical component of due diligence in establishing the source and chain of custody of such minerals.”

²¹ See Exchange Act Section 13(p)(1)(A)(ii).

²² *Id.*; Exchange Act Section 13(p)(1)(D).

²³ Exchange Act Section 13(p)(1)(E).

²⁴ 15 U.S.C. 78m(a).

²⁵ 15 U.S.C. 78o(d).

²⁶ Exchange Act Section 13(p)(2)(B).

²⁷ The definition of the term “DRC conflict free” in our proposed rules would be identical to the definition in Exchange Act Sections 13(p)(1)(A)(ii) and 13(p)(1)(D).

possible specificity. The issuer would be required to exercise due diligence in making these determinations in the Conflict Minerals Report.

II. Discussion

The Conflict Minerals Provision establishes, and we are likewise proposing, a disclosure requirement for conflict minerals that is divided into three steps. The first step required by Section 1502 is for the issuer to determine whether it is subject to the Conflict Minerals Provision. An issuer is only subject to the Conflict Minerals Provision if it is a “person described,” which the Conflict Minerals Provision defines as one for whom “conflict minerals are necessary to the functionality or production of a product manufactured by such person.”²⁸ If an issuer does not meet this definition, the issuer would not be required to take any action, make any disclosures, or submit any reports. If, however, an issuer meets this definition, that issuer would move to the second step.

The second step would require the issuer to determine after a reasonable country of origin inquiry whether its conflict minerals originated in the DRC countries. If the issuer determines that its conflict minerals did not originate in the DRC countries, the issuer would disclose this determination and the reasonable country of origin inquiry it used in reaching this determination in the body of its annual report.²⁹ If, however, the issuer determines that its conflict minerals did originate in the DRC countries, or if it is unable to conclude that its conflict minerals did not originate in the DRC countries, the issuer would disclose this conclusion in its annual report and move to the third step.³⁰

Finally, the third step under the Conflict Minerals Provision would require an issuer with conflict minerals that originated in the DRC countries, or an issuer that is unable to conclude that its conflict minerals did not originate in the DRC countries, to furnish a Conflict Minerals Report as described in greater detail below. As required by Section

13(p)(1)(A)(ii), in the Conflict Minerals Report, the issuer would be required to provide, among other information, a description of any of its products that contain conflict minerals that it is unable to determine did not “directly or indirectly finance or benefit armed groups” in the DRC countries.³¹ The issuer would identify such products by describing them as not “DRC conflict free.” If any of its products contain conflict minerals that do not “directly or indirectly finance or benefit” these armed groups, the issuer may describe such products as “DRC conflict free,” whether or not the minerals originated in the DRC countries.

A. Conflict Minerals

The Conflict Minerals Provision defines the term “conflict mineral” as cassiterite, columbite-tantalite, gold, wolframite, or their derivatives, or any other minerals or their derivatives determined by the Secretary of State to be financing conflict in the DRC countries.³² Cassiterite is the metal ore that is most commonly used to produce tin, which is used in alloys, tin plating, and solders for joining pipes and electronic circuits.³³ Columbite-tantalite is the metal ore from which tantalum is extracted. Tantalum is used in electronic components, including mobile telephones, computers, videogame consoles, and digital cameras, and as an alloy for making carbide tools and jet engine components.³⁴ Gold is used for making jewelry and, due to its superior electric conductivity and corrosion resistance, is also used in electronic, communications, and aerospace equipment.³⁵ Finally, wolframite is the metal ore that is used to produce tungsten, which is used for metal wires, electrodes, and contacts in lighting, electronic, electrical, heating, and welding applications.³⁶ Based on the many uses of these minerals, we expect

the Conflict Minerals Provision to apply to many companies and industries.

B. Step One—Determining Issuers Covered by the Conflict Mineral Provision

1. Issuers That File Reports Under the Exchange Act

Our proposed rules would apply to any issuer that files reports with the Commission under the Exchange Act, provided that the issuer is a “person described” under the Conflict Minerals Provision. The Conflict Minerals Provision defines a “person described” as one for whom conflict minerals are “necessary to the functionality or production of a product manufactured by such person.”³⁷ We note that the provision could be read to apply to any company, including companies that are not subject to Commission reporting requirements, or individuals, so long as conflict minerals are necessary to the functionality or production of a product manufactured by that entity or individual. Such a broad reading of the provision, however, does not appear warranted given the provision’s background and its location in the section of the Exchange Act dealing with reporting issuers.³⁸ Conversely, the Conflict Minerals Provision does not limit its disclosure or reporting obligations to issuers of any particular size. Again, the only limiting factor appears to be whether conflict minerals are “necessary to the functionality or production” of an issuer’s products.³⁹ Based on these considerations, we are not proposing to include an exemption for smaller reporting companies, although we request comment below on whether that would be appropriate.

We have received letters and other communications with a variety of recommendations regarding the Conflict

³⁷ See *supra* note 12.

³⁸ H.R. Rep. No. 111–517, Joint Explanatory Statement of the Committee of Conference, Title XV, “Conflict Minerals,” at 879 (Conf. Rep.) (June 29, 2010) (“The conference report requires disclosure to the SEC by all persons otherwise required to file with the SEC for whom minerals originating in the Democratic Republic of Congo and adjoining countries are necessary to the functionality or production of a product manufactured by such person.”); 156 Cong. Rec. S3978 (daily ed. May 19, 2010) (statement of Sen. Feingold) (stating that the “Brownback amendment was narrowly crafted” and, in discussing the provision, referring only to “companies on the U.S. stock exchanges”); 156 Cong. Rec. S3865–66 (daily ed. May 18, 2010) (stating that the Conflict Minerals Provision “is a narrow SEC reporting requirement” and referring only to “SEC reporting requirements” in discussing the provision); and 156 Cong. Rec. S3816–17 (daily ed. May 17, 2010) (statement of Sen. Durbin) (stating that the provision “would require companies listed on the New York Stock Exchange to disclose in their SEC filings”).

³⁹ Exchange Act Section 13(p)(2)(B).

²⁸ Exchange Act Section 13(p)(2).

²⁹ The issuer also would be required to make available this disclosure on its Internet Web site, disclose in its annual report that the disclosure is posted on its Internet Web site, and disclose the Internet address on which this disclosure is posted. Such an issuer, however, would not have any further disclosure or reporting obligations with regard to its conflict minerals.

³⁰ The issuer also would be required make its Conflict Minerals Report available to the public on its Internet Web site, disclose in its annual report that the Conflict Minerals Report is posted on its Internet Web site, and disclose the Internet address on which the Conflict Minerals Report is posted.

³¹ See Exchange Act Section 13(p)(1)(A)(ii).

³² Section 1502(e)(4) of the Act. Presently, the Secretary of State has not designated any other mineral as a conflict mineral. Therefore, the conflict minerals include only cassiterite, columbite-tantalite, gold, wolframite, or their derivatives.

³³ Tin Statistics and Information, U.S. Geological Survey, available at, <http://minerals.usgs.gov/minerals/pubs/commodity/tin/>.

³⁴ Niobium (Columbium) and Tantalum Statistics and Information, U.S. Geological Survey, available at, <http://minerals.usgs.gov/minerals/pubs/commodity/niobium/>.

³⁵ Gold Statistics and Information, U.S. Geological Survey, available at, <http://minerals.usgs.gov/minerals/pubs/commodity/gold/>.

³⁶ Tungsten Statistics and Information, U.S. Geological Survey, available at, <http://minerals.usgs.gov/minerals/pubs/commodity/tungsten/>.

Minerals Provision and our rulemaking,⁴⁰ including those that discussed what the provision's definition of a "person described" should be construed to mean. Specifically, one industry group representative stated that the term was intended to apply solely to persons who file periodic reports under Section 13(a)(2) of the Exchange Act, although that representative indicates that the provision is unclear as written.⁴¹ A separate individual who submitted a letter to us stated that the provision's definition of the term is broad and appears to cover more than only reporting issuers.⁴² Finally, another issuer that submitted a letter to us indicated our rules should define a "person described" in the broadest possible sense so that it includes non-reporting companies.⁴³ This issuer stated that, because the provision's intent is to limit the exploitation and trade of conflict minerals so as to prevent human rights abuses, and the provision is not necessarily intended to protect investors, the scope of the provision should include more than just reporting issuers. Further, the issuer stated that applying our proposed rules only to reporting issuers would unfairly burden reporting issuers and damage their competitive position.

We recognize there is some ambiguity as to whom the Conflict Minerals Provision applies given that the Conflict Minerals Provision states that the Commission shall promulgate regulations for any "person described,"⁴⁴ and the provision states that a "person is described" if "conflict minerals are necessary to the functionality or production of a product manufactured by such person."⁴⁵ Therefore, the Conflict Minerals Provision could be interpreted to apply to a wide range of private companies not previously subject to our disclosure and reporting rules. However, given the provision's legislative background, its statutory location, and the absence of Congressional direction to apply these provisions to companies not previously

subject to those rules,⁴⁶ we do not propose to extend the rules beyond reporting companies. Also, even if we were to interpret the provision in this manner, it is uncertain how the Commission could administer such a program. Therefore, our proposed rules would apply only to issuers that file reports with the Commission under Section 13(a) or Section 15(d) of the Exchange Act, although we request comment on this question below.⁴⁷ Consistent with the statutory language, our rules would apply to domestic companies, foreign private issuers, and smaller reporting companies. The statutory language does not suggest an exemption for foreign private issuers or smaller reporting companies and our proposal, therefore, would cover those issuers, although we request comment on this question below.

Request for Comment

1. Should our reporting standards, as proposed, apply to all conflict minerals equally?⁴⁸

2. Should our rules, as proposed, apply to all issuers that file reports under Sections 13(a) and 15(d) of the Exchange Act? If not, to what issuers or other persons should our rules apply? Should we require an issuer that has a class of securities exempt from Exchange Act registration pursuant to Exchange Act Rule 12g3-2(b)⁴⁹ to

⁴⁶ See H.R. Rep. No. 111-517, Joint Explanatory Statement of the Committee of Conference, Title XV, "Conflict Minerals," at 879 (Conf. Rep.) (June 29, 2010) ("The conference report requires disclosure to the SEC by all persons otherwise required to file with the SEC for whom minerals originating in the Democratic Republic of Congo and adjoining countries are necessary to the functionality or production of a product manufactured by such person.")

⁴⁷ Section 13(a) requires issuers with classes of securities registered under Section 12 of the Exchange Act to file periodic and other reports. 15 U.S.C. 78l. Section 15(d) requires issuers with effective registration statements under the Securities Act of 1933 (the "Securities Act") to file reports similar to Section 13(a) for the fiscal year within which such registration statement became effective. 15 U.S.C. 77a *et seq.* Therefore, if our proposed rules did not include issuers required to file reports under Section 15(d), some issuers who file annual reports may not otherwise be required to comply with our proposed conflict minerals rules.

⁴⁸ See the petition attached to the memorandum of the November 18, 2010 meeting with Chairman Mary L. Schapiro and with John Prendergast and Darren Fenwick of The Enough Project, Sasha Lezhnev of Grassroots Reconciliation Group, and Deborah R. Meshulam of DLA Piper (calling on the Commission to promulgate rules that would require equal reporting standards for all the conflict minerals), available at, <http://www.sec.gov/comments/df-title-xv/specialized-disclosures/specializeddisclosures-80.pdf>.

⁴⁹ 17 CFR 240.12g3-2(b). A foreign private issuer may claim that exemption as long as it meets a foreign listing requirement, publishes its material home country documents in English on its Internet

provide the disclosure and reporting requirements in its home country annual report or in a report on EDGAR? Would such an approach be consistent with the Act?⁵⁰

3. Should we have an alternative interpretation of a "person described?"

4. Should our rules apply to foreign private issuers, as proposed? Should we exempt such issuers and, if so, why and on what basis? Should the rules otherwise be adjusted in some fashion for foreign private issuers?

5. Would our proposed rules present undue costs to smaller reporting companies? If so, how could we mitigate those costs? Also, if our proposed rules present undue costs to smaller reporting companies, do the benefits of making their conflict minerals information publicly available justify these costs? Should our rules provide an exemption for smaller reporting companies? Alternatively, should our rules provide more limited disclosure and reporting obligations for smaller reporting companies? If so, what should these limited requirements entail? For example, should our rules require smaller reporting companies to disclose, if true, that conflict minerals are necessary to the functionality or production of their products but not require those issuers to disclose whether those conflict minerals originated in the DRC countries or to furnish a Conflict Minerals Report? Should our rules provide for a delayed implementation date for smaller reporting companies in order to provide them additional time to prepare for the requirement and the benefit of observing how larger companies comply?

6. Should we require that all individuals and entities, regardless of whether they are reporting issuers, private companies, or individuals who manufacture products for which conflict minerals are necessary to the functionality or production of the products, provide the conflict minerals

Web site or through another electronic information delivery system that is generally available to the public in its primary trading market, and otherwise is not required to file Exchange Act reports. A foreign private issuer typically relies on the Rule 12g3-2(b) exemption in order to establish an unlisted American Depositary Receipt ("ADR") facility for the issuance and trading of ADRs through the over-the-counter market.

⁵⁰ The Commission has not considered Rule 12g3-2(b)-exempt companies to be subject to Exchange Act reporting and filing requirements. Prior to the amendment to Rule 12g3-2(b) in 2008, we required issuers claiming the Rule 12g3-2(b) exemption to furnish paper copies of their material home country documents to the Commission. The documents were deemed furnished and not filed under the Exchange Act because they were subject to their home country, and not Exchange Act, disclosure rules.

⁴⁰ To facilitate public input on the Act, the Commission has provided a series of e-mail links, organized by topic, on its Web site at <http://www.sec.gov/spotlight/regreformcomments.shtml>. The public comments we have received on the topic of the Conflict Minerals Provision are available on our Web site at <http://www.sec.gov/comments/df-title-xv/specialized-disclosures/specializeddisclosures-8.pdf>.

⁴¹ See letter from Jewelers Vigilance Committee.

⁴² See letter from Stuart P. Seidel, Esq. (stating that a person described is "not the usual SEC 'issuer' requirement and appears much broader").

⁴³ See letter from Tiffany & Co.

⁴⁴ See Exchange Act Section 13(p)(1)(A).

⁴⁵ See *supra* note 12.

disclosure and, if necessary, a Conflict Minerals Report? If so, how would we oversee such a broad reporting system?

7. Would requiring compliance with our proposed rules only by issuers filing reports under the Exchange Act unfairly burden those issuers and place them at a significant competitive disadvantage compared to companies that do not file reports with us? If so, how can we lessen that impact?

8. General Instruction I to Form 10-K contains special provisions for the omission of certain information by wholly-owned subsidiaries. General Instruction J to Form 10-K contains special provisions for the omission of certain information by asset-backed issuers. Should either or both of these types of registrants be permitted to omit the proposed conflict minerals disclosure in the annual reports on Form 10-K?

2. "Manufacture" and "Contract To Manufacture" Products

The Conflict Minerals Provision applies to any person for whom conflict minerals are necessary to the functionality or production of a product manufactured by that person.⁵¹ It appears, therefore, that the Conflict Minerals Provision was not intended to apply to all issuers, but was intended to apply only to issuers that manufacture products. In this regard, our proposed rules would likewise apply to reporting issuers that manufacture products.

We do not propose to define the term "manufacture" in our rules, since we believe it is generally understood.⁵² We note that some of those submitting letters in advance of this rulemaking have suggested our proposed rules should define the term "manufacturing" with greater specificity and have provided their views on this matter. One non-governmental organization ("NGO") stated that the term "manufactured" should be defined as the "production, preparation, assembling, combination, compounding, or processing of ingredients, materials, and/or processes such that the final product has a name, character, and use, distinct from the original ingredients, materials, and/or processes."⁵³ An industry group indicated that the term manufacture should exempt issuers involved in the "mining, processing, refining, alloying, fabricating, importing, exporting or sale" of gold and those engaged in "jewelry

repairs or refurbishment, * * * setting or re-setting diamonds or gemstones into mountings or * * * [the] manufactur[ing of] individual custom jewelry pieces."⁵⁴ We are not proposing to define the term, but we request comment on that point below.

One section of the Conflict Minerals Provision defines a "person described" as one for which conflict minerals are "necessary to the functionality or production of a product manufactured by such a person,"⁵⁵ while another section of the provision requires issuers to describe "the products manufactured or *contracted to be manufactured* that are not DRC conflict free" [emphasis added] in their Conflict Mineral Reports.⁵⁶ The absence of the phrase "contract to manufacture" from the "person described" definition raises some question as to whether the requirements apply equally to those who manufacture products themselves and those who contract to have their products manufactured by others. Based on the totality of the provision, however, it appears that the legislative intent was for the provision to apply both to issuers that directly manufacture products and to issuers that contract the manufacturing of their products for which conflict minerals are necessary to the functionality or production of those products. Our proposed rules, therefore, would apply equally to issuers that manufacture products and to issuers that "contract to manufacture" their products. We believe that this approach would allow the "contracted to be manufactured" language to have effect in the Conflict Minerals Report.

With regard to what it means to "contract to manufacture a product," an industry group expressed concern that our rules could include retailing issuers' private label goods.⁵⁷ Two of the Congressmen who sponsored Section 1502 have stated in a letter submitted to us that rules implementing the provision should "exempt pure retailers" from any reporting requirements.⁵⁸ In this regard, they suggested that the rules should clarify that retailers who sell "pure 'white label' products," products over which retailers have no influence regarding their manufacture, would not be required to provide information regarding any conflict minerals in those products. Also, they indicated that the rules should include products that a retailer

"contracts to be manufactured or for which the retailer issues unique product requirements."⁵⁹

We intend that our proposed rules would apply to issuers that contract for the manufacturing of products over which they have any influence regarding the manufacturing of those products. They also would apply to issuers selling generic products under their own brand name or a separate brand name that they have established, regardless of whether those issuers have any influence over the manufacturing specifications of those products, as long as an issuer has contracted with another party to have the product manufactured specifically for that issuer. We do not, however, propose that our rules would apply to retail issuers that sell only the products of third parties if those retailers have no contract or other involvement regarding the manufacturing of those products, or if those retailers do not sell those products under their brand name or a separate brand they have established and do not have those products manufactured specifically for them.

Request for Comment

9. Should we define the term "manufacture?" If so, how should we define the term?

10. Should our rules, as proposed, apply both to issuers that manufacture and issuers that contract to manufacture products in which conflict minerals are necessary to the functionality or production of those products?

11. Should we require a minimum level of influence, involvement, or control over the manufacturing process before an issuer must comply with our proposed rules? If so, how should we articulate the minimum amount? Should we require issuers to have nominal, minimal, substantial, total, or another level of control over the manufacturing process before those issuers become subject to our rules? How would those amounts be measured? Should we require that issuers must, at minimum, mandate that the product be manufactured according to particular specifications?

12. Is it appropriate to consider issuers who sell generic products under their own labels or labels that they establish to be contracting the manufacture of those products as long as those issuers have contracted with other parties to have the products manufactured specifically for them? If not, what would be a more appropriate approach?

⁵¹ See Exchange Act Section 13(p)(2)(B).

⁵² For example, the Second Edition of the Random House Webster's Dictionary defines the term to include the "making goods or wares by hand or machinery, esp. on a large scale." Random House Webster's Dictionary 403(2d ed. 1996).

⁵³ See letter from The Enough Project.

⁵⁴ See letter from Jewelers Vigilance Committee.

⁵⁵ Exchange Act Section 13(p)(2)(B).

⁵⁶ Exchange Act Section 13(p)(1)(A)(ii).

⁵⁷ See letter from National Retail Federation.

⁵⁸ Letter from Senator Richard J. Durbin and Representative Jim McDermott, United States Congress.

⁵⁹ *Id.*

3. Mining Issuers as “Manufacturing” Issuers

As a separate but related issue, our proposed rules would consider issuers that mine conflict minerals, including issuers that mine gold, to be manufacturing those minerals, and issuers contracting for the mining of conflict minerals to be contracting the manufacturing of those minerals. In this regard, we have received input that our proposed rules should not consider a gold mining issuer as manufacturing or contracting to manufacture gold.⁶⁰ Conversely, another view expressed to us by an NGO was that our proposed rules should consider mining commensurate with manufacturing or contracting to manufacture.⁶¹ This NGO cited to and quoted from the United States Controlled Substances Act,⁶² which includes mining under the definition of manufacturing. We are proposing in an instruction to our proposed rules⁶³ that mining issuers should be considered to be manufacturing conflict minerals when they extract those minerals.⁶⁴ We do, however, request comment on this point below.

Request for Comment

13. Is it appropriate for our rules, as proposed, to consider reporting issuers that are mining companies as “persons described” under Section 1502? Does the extraction of conflict minerals from a mine constitute “manufacturing” or “contracting to manufacture” a “product” such that mining issuers should be subject to our rules?

14. Alternatively, should a mining issuer not be viewed as manufacturing a product under our rules unless it engages in additional processes to refine and concentrate the extracted minerals into salable commodities or otherwise changes the basic composition of the extracted minerals?

15. If so, what transformative processes, if any, should mining issuers

be permitted to perform on conflict minerals before our proposed rules should consider them to be manufacturing products to which conflict minerals are necessary?

4. When Conflict Minerals are “Necessary” to a Product

The Conflict Minerals Provision requires the Commission to promulgate regulations requiring that any “person described” disclose annually whether conflict minerals that are “necessary” originated in the DRC countries and, if so, submit to the Commission a Conflict Minerals Report.⁶⁵ The provision further states that a “person is described” if “conflict minerals are necessary to the functionality or production of a product manufactured by such person.”⁶⁶ The provision, however, provides no additional explanation or guidance as to the meaning of this phrase. Likewise, we do not propose to define when a conflict mineral is necessary to the functionality or production of a product. We are, however, requesting comment on whether our rules should define this phrase and, if so, how.

We have received differing input as to when a conflict mineral should be considered necessary to the functionality or production of a product for purposes of the Conflict Minerals Provision. One NGO stated that the term “necessary” should be interpreted broadly and, at a minimum, include conflict minerals that are “intentionally added,” “closely related,” or “directly essential” to the production of a product.⁶⁷ That NGO indicated also that a conflict mineral is necessary when it is “required for the financial success or marketability of the product.”⁶⁸ Further, the NGO affirmed that it believes that our proposed rules should exempt any product that contains naturally occurring trace amount of conflict minerals.⁶⁹ Two of the Congressional sponsors of Section 1502 indicated that “it is the policy of Section 1502 to require transparency of all sourcing of conflict minerals” from the DRC countries, so they believe the provision was intended “to include all uses of conflict minerals coming from DRC—except those that are ‘naturally occurring’ or ‘unintentionally included’ in the product.”⁷⁰

While we are not proposing to define “necessary to the functionality or production,” we note that if a mineral is necessary, the product is covered without regard to the amount of the mineral involved.⁷¹ Further, we intend our proposed rules to include products if the conflict mineral is intentionally included in a product’s production process and is necessary to that process, even if that conflict mineral is not ultimately included anywhere in the final product.⁷² On the other hand, conflict minerals necessary to the functionality or production of a physical tool or machine used to produce a product would not be considered necessary to the production of the product even if that tool or machine is necessary to producing the product. For example, if an automobile containing no conflict minerals is produced using a wrench that contains conflict minerals necessary to the functionality or production of that wrench, we would not consider the conflict minerals in that wrench necessary to the production of the automobile.

Request for Comment

16. Should our rules define the phrase “necessary to the functionality or production of a product,” or is that phrase sufficiently clear without a definition? If our rules should define the phrase, how should it be defined?

17. If we were to define this phrase, should we delineate it to mean that a conflict mineral would be necessary to a product’s functionality only if the conflict mineral is necessary to the product’s basic function? If so, should we define the term “basic function” and, if so, how should we define that term? Should we define the term to include components of a product if those components are necessary to the product’s basic function such that a conflict mineral would be considered necessary to the functionality of a product if the conflict mineral is necessary to the functionality of any of the product’s components that are required for that product’s basic function? For example, if the only conflict minerals in an automobile are contained in the automobile’s radio, should our proposed rules consider those conflict minerals necessary to the automobile’s functionality even if the

⁶⁰ See letter from Jewelers Vigilance Committee (stating that our proposed “rules should make clear that the mining, processing, refining, alloying, fabricating, importing, exporting or sale of gold does not constitute ‘manufacture’”).

⁶¹ See letter from The Enough Project.

⁶² 21 U.S.C.A. 802(15), the United States Controlled Substances Act, which defines the term “manufacture” as the production, preparation, propagation, compounding, or processing of a drug or other substance, either directly or indirectly or by extraction from substances of natural origin”).

⁶³ New Item 4(a) of Form 10-K (through new Instruction 1 to Item 104 of Regulation S-K), new Instruction 2 to Item 16 of Form 20-F, and new Instruction 2 to General Instruction B(16) of Form 40-F.

⁶⁴ See Industry Guide 7 [17 CFR 229.802(g)] (implying that companies may “produce” minerals from a mining reserve).

⁶⁵ Exchange Act Section 13(p)(1)(A).

⁶⁶ Exchange Act Section 13(p)(2)(B).

⁶⁷ Letter from The Enough Project.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ Letter from Senator Richard J. Durbin and Representative Jim McDermott, United States Congress.

⁷¹ See discussion *infra* Part II.F.1.

⁷² See letter from Senator Richard J. Durbin and Representative Jim McDermott, United States Congress (“All users of conflict minerals that originate from the Democratic Republic of the Congo an adjoining countries that are not naturally occurring * * * or are a purely unintentional byproduct * * * need to be subject to reporting and transparency.”).

automobile's basic function is for transportation? If that radio is marketed and sold with the automobile, should our proposed rules consider the conflict minerals that are isolated in the radio necessary to the functionality of the automobile? Alternatively, should such a definition consider only conflict minerals isolated in an automobile component required specifically for the automobile's basic function as necessary for the functionality of the automobile?

18. If we were to define the phrase "necessary to the functionality," should we delineate it to mean that a conflict mineral would be necessary to a product's functionality if the conflict mineral is included in a product for any reason because that conflict mineral would be contributing to the product's economic utility? Does the fact that, if a conflict mineral is not "necessary" it, axiomatically, could be excluded from the product or the manufacturing process support such a broad reading?

19. Should we define the phrase to indicate that, as one letter suggested, a conflict mineral should be considered necessary when "[t]he conflict mineral is intentionally added to the product; or [t]he conflict mineral is used by the [issuer] for the production of a product and such mineral is purchased in mineral form by the [issuer] and used by the [issuer] in the production of the final product but does not appear in the final product; and [t]he conflict mineral is essential to the product's use or purpose; or [t]he conflict mineral is required for the marketability of the product?"⁷³

20. Should we delineate the phrase "necessary to the production" to mean that a conflict mineral would be necessary to a product's production only if the conflict mineral is intentionally included in a product's production process even if that conflict mineral is not ultimately included in the final product because it was removed or washed away prior to the completion of the production process? Should we consider conflict minerals necessary to the production of a product if they are not contained in the product but they are necessary to the functionality or production of a physical tool or machine used to produce a product? Should we consider such conflict minerals necessary to the production of a product if the tool or machine used to produce the product was manufactured for the purpose of producing the product? Would such an

approach cover too broad a group of tools or machines? Should we limit such an approach to certain kinds of tools or machines, and if so, which ones? Should we be more specific and provide, as a letter recommended, that a conflict mineral is necessary to a product's production only if it is "used by [an issuer] for the production of a product and such mineral is purchased in mineral form by the [issuer] and used by the [issuer] in the production of the final product but does not appear in the final product?"⁷⁴

21. Should we delineate the phrase "necessary to the production" so that our rules would not consider conflict minerals occurring naturally in a product or conflict minerals that are purely an unintentional byproduct of the product as necessary to the production of that product?

C. Step Two—Determining Whether Conflict Minerals Originated in the DRC Countries and the Resulting Disclosure

If conflict minerals are necessary to the functionality or production of a product manufactured by that issuer, the Conflict Minerals Provision requires an issuer to disclose whether those conflict minerals originated in the DRC countries.⁷⁵ If they did not originate in the DRC countries, the statute requires the issuer to make available that disclosure on its Internet Web site, but does not require the issuer to submit anything further to the Commission. If, however, any of the issuer's conflict minerals originated in the DRC countries, the provision requires the issuer to submit to the Commission a Conflict Minerals Report for the portion of its conflict minerals that originated in the DRC countries, and make that report available on its Internet Web site.

The rules we are proposing would require an issuer to disclose whether its conflict minerals originated in the DRC countries. Under our proposed rules, an issuer would be required to make a reasonable country of origin inquiry as to whether its conflict minerals originated in the DRC countries, but our proposed rules would not set forth what constitutes a reasonable country of origin inquiry. If, after a reasonable country of origin inquiry, an issuer concludes that any of its conflict minerals did not originate in the DRC countries, the issuer would be required to disclose this in the body of the annual report and on its Internet Web site.⁷⁶ Also, the issuer would be

required to disclose in the body of the annual report the Internet address on which the disclosure is posted and retain the information on the Web site at least until the issuer's subsequent annual report is filed with the Commission. Further, the issuer would be required to disclose in the body of its annual report the reasonable country of origin inquiry it undertook to determine that its conflict minerals did not originate in the DRC countries and maintain reviewable business records to support its determination.⁷⁷ The issuer, however, would not be required to make any other disclosures with regard to its conflict minerals that did not originate in the DRC countries.

Under our proposed rules, if an issuer determines through its reasonable country of origin inquiry that any of its conflict minerals originated in the DRC countries, or if the issuer is unable to determine after a reasonable country of origin inquiry that any such conflict minerals did not originate in the DRC countries, our proposed rules would require the issuer to disclose this in the body of the annual report and disclose that the Conflict Minerals Report is furnished as an exhibit to the annual report. Additionally, the issuer would be required to make available its Conflict Minerals Report on its Internet Web site, disclose in the body of its annual report that the Conflict Minerals Report is posted online, and disclose in the body of its annual report the Internet address on which the Conflict Minerals Report is located.⁷⁸ We note, however, that under our proposal such an issuer would only have to post the Conflict Minerals Report on its Internet Web site and would not have to post any of the disclosures it provides in the body of its annual report.⁷⁹

on its Internet Web site until it filed its subsequent annual report.

⁷⁷ See Multi-Stakeholder Group Letter (suggesting that entities subject to the Conflict Minerals Provision be required to maintain reviewable business records to support a negative determination).

⁷⁸ See Exchange Act Section 13(p)(1)(E).

⁷⁹ We recognize that there may be instances in which an issuer determines that its products contain a mixed assortment of conflict minerals, such that some did not originate in the DRC countries, some originated in the DRC countries, some have minerals that the issuer cannot determine did not originate in the DRC countries, or any combination thereof. If an issuer can determine which conflict minerals did not originate in the DRC countries, it would not have to provide a Conflict Minerals Report regarding those minerals. However, the issuer would still be required to file a Conflict Minerals Report for the minerals that originated in the DRC countries or that the issuer was unable to determine did not originate in the DRC countries.

⁷³ See letter submitted by Patricia Jurewicz on November 18, 2010 (the "Multi-Stakeholder Group Letter") (representing a consortium of NGOs, large issuers, and socially responsible institutional investors).

⁷⁴ See *id.*

⁷⁵ Exchange Act Section 13(p)(1)(A).

⁷⁶ See Exchange Act Section 13(p)(1)(E). The issuer would be required to keep this information

1. Location of Disclosure

Our proposed rules would require disclosure about conflict minerals in an issuer's annual report on Form 10-K for a domestic issuer, Form 20-F for a foreign private issuer, and Form 40-F for an eligible Canadian issuer. Section 1502 requires issuers to disclose information about their conflict minerals annually, but does not otherwise specify where this disclosure must be located, either in terms of which form or in terms of where within a particular form. Our proposed rules would require this disclosure in the existing Form 10-K, Form 20-F, or Form 40-F annual report because issuers are already required to file these reports so this approach should be less burdensome than requiring a separate annual report to be filed. Further, to facilitate locating the conflict minerals disclosure within the annual report without over-burdening investors with extensive information about conflict minerals in the body of the report, our proposed rules would require issuers to include brief conflict minerals disclosure under a separate heading entitled, "Conflict Minerals Disclosure," and the more extensive, information in a separate exhibit to the annual report, if required.

To implement Section 1502 of the Act, we are proposing to add new Item 4(a) of Form 10-K (which references new Item 104(a) of Regulation S-K), new Item 16(a) of Form 20-F, and a new General Instruction B(16)(a) of Form 40-F. These rules would require that an issuer disclose in its annual report under a separate heading, entitled "Conflict Minerals Disclosure," its determination as to whether any of its conflict minerals originated in the DRC countries, based on its reasonable country of origin inquiry, and, for its conflict minerals that do not originate in the DRC countries, a brief description of the reasonable country of origin inquiry it conducted in making such a determination. Our proposed rules would not require an issuer who determines that its conflict minerals did not originate in the DRC countries, based on its reasonable country of origin inquiry, to provide any further disclosures.

We are also proposing that an issuer include brief additional disclosure in the body of the annual report if the issuer's conflict minerals originated in the DRC countries or if the issuer cannot determine that its conflict minerals did not originate in the DRC countries, based on its reasonable country of origin inquiry. We propose to add new Item 4(a) of Form 10-K, new Item 104(b)(2)

of Regulation S-K, new Item 16(b)(2) of Form 20-F, and new General Instruction B(16)(b)(2) and Form 40-F to implement this additional disclosure. These proposed requirements would require an issuer to disclose that its conflict minerals originated in the DRC countries, or that it is unable to conclude that its conflict minerals did not originate in the DRC countries, that its Conflict Minerals Report has been furnished as an exhibit to the annual report, that the Conflict Minerals Report, including the certified independent private sector audit, is publicly available on the issuer's Internet Web site, and the issuer's Internet address on which the Conflict Minerals Report and audit report are located. As noted above, we are proposing this approach to facilitate access to the conflict minerals information by placing it outside the body of the annual report.

The Conflict Minerals Provision requires that each issuer make its Conflict Minerals Report available to the public on the issuer's Internet Web site.⁸⁰ Consistent with the statute, we are proposing that new Item 104(b)(3) of Regulation S-K, new Item 16(b)(3) of Form 20-F, and new General Instruction B(16)(b)(3) of Form 40-F require an issuer to make such a report, including the certified audit report, available to the public by posting the text of the report on its Internet Web site. Our proposed rules would require that the text of the Conflict Minerals Report remain on the issuer's Web site at least until it files its subsequent annual report. Although we would require an issuer that furnishes a Conflict Minerals Report to provide some disclosures in the body of its annual report regarding that report, we would not require that issuer to post this disclosure on its Web site. We believe this is appropriate because any information disclosed in the body of the annual report would also be included in the Conflict Minerals Report, which would be required to be posted on the issuer's Internet Web site.

Request for Comment

22. Should we require issuers to provide the conflict minerals disclosure and reporting requirements mandated under Section 13(p) in its Exchange Act annual report, as proposed? Should we require, or permit, the conflict minerals disclosure to be included in a new,

⁸⁰ See Exchange Act Section 13(p)(1)(E), which is entitled "Information Available to the Public" and states that "[e]ach person described under paragraph (2) shall make available to the public on the Internet Web site of such person the information disclosed by such person under subparagraph (A)."

separate form furnished annually on EDGAR, rather than adding it to Form 10-K, Form 20-F, and Form 40-F? Would requiring issuers to disclose the information in a separate annual report be consistent with Section 13(p)? Should we develop a separate annual report to be filed on EDGAR that includes all of the specialized disclosures mandated by the Dodd-Frank Act?⁸¹ What would be the benefits or burdens of such a form for investors or issuers with necessary conflict minerals?

23. Should we require some brief disclosure in the body of the annual report, as proposed?

24. Should our rules provide that, rather than be included in the body of the annual report, all required information would be set forth in the Conflict Minerals Report that would be furnished as an exhibit to the annual report?

25. Instead, should all required information, including the Conflict Minerals Report, be included in the body of the annual report?

26. Should issuers with necessary conflict minerals that did not originate in the DRC countries be required to disclose any information other than as proposed? For example, should we require such an issuer to disclose the countries from which its conflict minerals originated?

27. Should we, as proposed, require issuers to describe the reasonable country of origin inquiry they used in making their determination that their conflict minerals did not originate in the DRC countries? Is a separately captioned section in the body of the annual report the appropriate place for this disclosure?

28. Should we require, as proposed, that an issuer maintain reviewable business records if it determines that its conflict minerals did not originate in the DRC countries? Are there other means of verifying an issuer's determination that its minerals did not originate in the DRC countries? Should we specify for how long issuers would be required to maintain these records? For example, should we require issuers to maintain records for one year, five years, 10 years, or another period of time?

29. Should we require the disclosure in an issuer's annual report to be provided in an interactive data format? Why or why not? Would investors find interactive data to be a useful tool to easily find the information provided? If so, what format would be most appropriate for providing standardized data disclosure? For example, should

⁸¹ Sections 1502, 1503, and 1504 of the Act.

the format be eXtensible Business Reporting Language (XBRL), as one letter recommended,⁸² or should the format be eXtensible Markup Language (XML)?

30. Should we require issuers to briefly disclose in the body of their annual reports the contents of the Conflict Minerals Report? If so, how much of the information in the Conflict Minerals Report should we require issuers to disclose?

31. Should we require an issuer to post its audit report on its Internet Web site, as proposed?

32. Should we require, as proposed, that an issuer post its Conflict Minerals Report and its audit report on its Internet Web site at least until it files its subsequent annual report? If not, how long should an issuer keep this information posted on its Internet Web site?

2. Standard for Disclosure

We are proposing rules that would require issuers to disclose, based on their reasonable country of origin inquiry, whether their necessary conflict minerals originated in the DRC countries or that they are unable to determine, after such a reasonable country of origin inquiry, that their conflict minerals did not originate in the DRC countries. Our proposed rules would not specify what constitutes a reasonable country of origin inquiry. Instead, the proposed rules would require an issuer that determined its conflict minerals did not originate in the DRC countries to disclose its reasonable country of origin inquiry in making its determination.

Under our proposal, the reliability of any inquiry would be based solely on whether the information used provides a reasonable basis for an issuer to be able to trace the origin of any particular conflict mineral it uses.⁸³ For example, it would not satisfy our proposed rules for an issuer to conclude that it is unreasonable for it to attempt to determine the origin of its conflict minerals solely because of the large amount of conflict minerals it uses in its products or the large number of its products that include conflict minerals. Instead, that issuer would be required to make a reasonable country of origin inquiry as to the origin of all of its conflict minerals that are necessary to the functionality or production of its products that it manufactures or contracts to be manufactured to

determine whether those conflict minerals originated in the DRC countries.

A multi-stakeholder group suggested a similar approach. This group recommended that our proposed rules require an issuer to make a reasonable inquiry into whether its conflict minerals originated in the DRC countries, provide a stated basis for any determination that the source and origin of the conflict minerals was not in the DRC countries, and maintain auditable business records to support a negative determination.⁸⁴ Similarly, in a separate submission, an NGO stated that our proposed rules should require issuers to conduct “a sufficient inquiry to enable them to have a reasonable basis to state whether necessary conflict minerals do or do not originate in the DRC or an adjoining country.”⁸⁵ In this regard, that NGO also indicated that our proposed rules should require that the issuer “disclose the basis for any determination that necessary conflict minerals did not originate in the DRC or an adjoining country.”⁸⁶

Others who submitted letters, however, have suggested different standards for determining whether an issuer’s conflict minerals originated in the DRC countries. A different NGO stated that our proposed rules should require issuers to “conduct sufficient due diligence to enable them to determine accurately whether conflict minerals do or do not originate from the DRC or an adjoining country.”⁸⁷ An industry group indicated that our proposed rules should require issuers to use due diligence in determining whether their conflict minerals originated in the DRC countries.⁸⁸ The letter from that industry group stated, however, that it is not possible for issuers in every instance to determine definitively the origins of certain conflict minerals,⁸⁹ so it suggested that our proposed rules “should thus create a mechanism by which entities can make a disclosure stating ‘no evidence of DRC or adjoining country origin.’”⁹⁰

We recognize the possibility that issuers who have conducted a reasonable country of origin inquiry may nonetheless not be able to determine with absolute accuracy the origins of their conflict minerals. We do not believe, however, that it is appropriate for our rules to permit

issuers to satisfy their country of origin disclosure requirement by concluding that there is “no evidence” that their conflict minerals originated in the DRC countries and, thereby, not be required to provide any further information regarding their conflict minerals. Such an allowance might encourage issuers to conduct poorly planned or executed inquiries. Therefore, under our proposed rules such an issuer would still be required to file a Conflict Minerals Report and, therefore, would be required to exercise a greater level of investigation into the source and chain of custody of its conflict minerals. As discussed in greater detail below, we would permit issuers who cannot determine the origins of their conflict minerals, based on their reasonable country of origin inquiry, to disclose that they are unable to determine that their conflict minerals did not originate in the DRC countries. This approach is similar to one recommended by a multi-stakeholder group, which indicated that, if an issuer “is unable to determine the origin of the minerals specified in the statute after making a reasonable country of origin inquiry, the [issuer] should be required to submit” a Conflict Minerals Report.⁹¹

We believe that conducting a reasonable country of origin inquiry before disclosing whether an issuer’s conflict minerals originated in the DRC countries is appropriate. However, our proposed rules would not state what that reasonable country of origin inquiry would entail because we believe that necessarily would depend on the issuer’s particular facts and circumstances. In this regard, we note that the reasonable country of origin inquiry requirement is not meant to suggest that issuers would have to determine with absolute certainty whether their conflict minerals originated in the DRC countries, as the Commission has often stated that a reasonableness standard is not the same as an absolute standard.⁹²

⁹¹ See Multi-Stakeholder Group Letter.

⁹² See Management’s Report on Internal Control Over Financial Reporting, Release No. 33–8762 (Dec. 20, 2006) [71 FR 77635] (stating that the “Commission has long held that ‘reasonableness’ is not an ‘absolute standard of exactitude for corporate records’” (citing to Foreign Corrupt Practices Act of 1977, Release No. 34–17500 (Jan. 20, 1981) [46 FR 11544]) and that “the terms ‘reasonable,’ ‘reasonably’ and ‘reasonableness’ in the context of Section 404 [of the Sarbanes-Oxley Act of 2002, 15 U.S.C. 7262] implementation do not imply a single conclusion or methodology, but encompass the full range of appropriate potential conduct, conclusions or methodologies upon which an issuer may reasonably base its decisions”). This release also cites to the Foreign Corrupt Practices Act (the “FCPA”), 15 U.S.C. 78m(b)(7) and Exchange Act Section 13(b)(7), which states that “the terms

⁸² See letter from the Social Investment Forum.

⁸³ This determination would not be based on whether an issuer considers it reasonable to undertake to determine the origin of all its conflict minerals as a whole.

⁸⁴ See Multi-Stakeholder Group Letter.

⁸⁵ See letter from The Enough Project.

⁸⁶ *Id.*

⁸⁷ Letter from Global Witness.

⁸⁸ Letter from Jewelers Vigilance Committee.

⁸⁹ We note that the comments submitted by the Jewelers Vigilance Committee refer only to gold.

⁹⁰ Letter from Jewelers Vigilance Committee.

We note that conducting the reasonable country of origin inquiry could be less exhaustive than the due diligence discussed below. We believe that this disparity in how the standards are characterized reflects the language in the Conflict Minerals Provision. Initially, the provision requires issuers to determine whether their conflict minerals originated in the DRC countries. After making this determination, only issuers with conflict minerals that originated in the DRC countries or issuers that cannot determine their minerals did not originate in the DRC countries must submit to the Commission the Conflict Minerals Report, which describes, among other matters, the issuer's due diligence exercised on the source and chain of custody of its conflict minerals. It appears, therefore, that the provision was not intended to require the same investigation for determining whether conflict minerals originated in the DRC countries and for determining the source and chain of custody of those conflict minerals that originate in the DRC countries.

We believe that the steps necessary to constitute a reasonable country of origin inquiry will depend on the available infrastructure at a given point in time. Presently, we do not believe there is any single or exclusive manner for issuers to conduct this inquiry. However, one way we would view an issuer as satisfying the reasonable country of origin inquiry standard is if it received reasonably reliable representations from the facility at which its conflict minerals were processed that those conflict minerals did or did not originate in the DRC countries. These representations could come either directly from that facility or indirectly through the issuer's suppliers, but the issuer would have to reasonably believe these representations to be true based upon the facts and circumstances. For example, one way that an issuer could reasonably rely on a facility's representations regarding the source of its conflict minerals is if the smelter was identified as one that processes only "DRC conflict free" minerals under recognized national or international standards after receiving an independent third party audit of the source and chain of custody of the

conflict minerals it processes. It is important to note, however, that although reliance on smelter certifications and supplier declarations may be sufficient now due to our understanding of the current information systems in place to discover conflict minerals' countries of origin, as these systems improve, the facts and circumstances surrounding what would be considered a reasonable country of origin inquiry may change. In other words, as systems improve, smelter certifications and supplier declarations may not satisfy a reasonable country of origin inquiry standard.

In this regard, we note a letter submitted to us by a multi-stakeholder group that discussed a similar approach, which referred to a "compliant smelter."⁹³ The multi-stakeholder group stated that it would prefer a "supplier declaration approach" to sourcing conflict minerals, which would "consist of having direct and component suppliers and others in the supply chain take reasonable means to assure that all the tin, tantalum, tungsten, and/or gold in their materials/products are sourced from a compliant smelter." The group stated further that a smelter would be "compliant" if it meets the requirements of an individual or industry wide audit process that stipulates the collection, disclosure, and efforts made to obtain certain information.⁹⁴

Request for Comment

33. Is a reasonable country of origin inquiry standard an appropriate standard for determining whether an issuer's conflict minerals originated in the DRC countries for purposes of our rules implementing the Conflict Minerals Provision? If not, what other standard would be appropriate? Rather than requiring a reasonable country of origin inquiry as proposed, should our rules mandate that the standard for making the supply chain determinations, as set forth in Exchange Act Sections 13(p)(1)(A)(i) and (ii) (and described below), also applies to the determination as to whether an issuer's conflict minerals originated in the DRC countries? Should we provide additional guidance about what would constitute a reasonable country of origin inquiry in determining whether conflict minerals originated in the DRC countries?

34. Should we not require any type of inquiry? For example, would it be appropriate and consistent with the Conflict Minerals Provision to permit an

issuer to make no inquiry, so long as it disclosed that fact?

35. Should issuers be able to rely on reasonably reliable representations from their processing facilities, either directly or indirectly through their suppliers, to satisfy the reasonable country of origin inquiry standard? If so, should we provide additional guidance regarding what would constitute reasonably reliable representations and what type of guidance should we provide? If not, what would be a more appropriate requirement?

36. Should any qualifying or explanatory language be allowed in addition to or instead of the reasonable country of origin inquiry standard, as proposed, regarding whether issuers' conflict minerals originated in the DRC countries? For example, should issuers be able to state that none of their conflict minerals originated in the DRC countries "to the best of their knowledge" or that "they are not aware" that any conflict minerals originated in the DRC countries?

D. Step Three—Conflict Minerals Report's Content and Supply Chain Due Diligence

The Conflict Minerals Provision requires any issuer determining that its necessary conflict minerals originated in the DRC countries to submit to the Commission a Conflict Minerals Report that includes, among other matters, a description of the measures taken by the issuer to exercise due diligence on the source and chain of custody of its conflict minerals, which measures "shall include an independent private sector audit" of the Conflict Minerals Report.⁹⁵ In this regard, the Conflict Minerals Provision states that the issuer submitting the Conflict Minerals Report "shall certify the audit * * * that is included in such report" and such a certified audit "shall constitute a critical component of due diligence in establishing the source and chain of custody of such minerals."⁹⁶

In order to implement these requirements, our proposed rules would require issuers that determined that their necessary conflict minerals originated in the DRC countries and those that are unable to determine that their conflict minerals did not originate in the DRC countries to exercise due diligence on the source and chain of custody of their conflict minerals and describe the due diligence they exercised. After exercising due diligence to make their Conflict Minerals Report determinations, issuers would be

⁹³ 'reasonable assurances' and 'reasonable detail' mean such level of detail and degree of assurance as would satisfy prudent officials in the conduct of their own affairs." The release further cites to the conference committee report on amendments to the FCPA, Cong. Rec. H2116 (daily ed. Apr. 20, 1988), which states the reasonableness "standard 'does not connote an unrealistic degree of exactitude or precision,'" but instead "contemplates the weighing of a number of relevant factors, including the cost of compliance."

⁹³ See Multi-Stakeholder Group Letter.

⁹⁴ *Id.*

⁹⁵ Exchange Act Section 13(p)(1)(A)(i).

⁹⁶ Exchange Act Section 13(p)(1)(B).

required to describe their products that are not “DRC conflict free,” the country of origin of those conflict minerals, the facilities used to process those conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity.⁹⁷ Additionally, our proposed rules would require all issuers furnishing a Conflict Minerals Report to certify that they obtained an independent private sector audit of the report and furnish as part of the Conflict Minerals Report the audit report of the independent private sector auditor.

1. Content of Conflict Minerals Report

As required by the Conflict Minerals Provision,⁹⁸ our proposed rules would require issuers to exercise due diligence on the source and chain of custody of their conflict minerals and to describe those due diligence measures in their Conflict Minerals Reports.⁹⁹ Moreover, consistent with the Conflict Minerals Provision,¹⁰⁰ we are proposing to require that the description of the measures taken by issuers to exercise due diligence on the source and chain of custody of their conflict minerals include a certified independent private sector audit conducted in accordance with the standards established by the Comptroller General of the United States.¹⁰¹ The proposed rules also state that the audit would constitute a critical component of due diligence.¹⁰² To

implement the Conflict Minerals Provision’s requirement that issuers “certify the audit,”¹⁰³ we are proposing that issuers be required to certify that they obtained an independent private sector audit of their Conflict Minerals Report,¹⁰⁴ and we are proposing that issuers provide this certification in that report.¹⁰⁵ Further, as required by the Conflict Minerals Provision,¹⁰⁶ we are proposing that our rules require descriptions, in the Conflict Minerals Report, of issuers’ products that are not “DRC conflict free,” the facilities used to process those conflict minerals, the country of origin of those conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity.¹⁰⁷

An issuer that is required to furnish a Conflict Minerals Report because it is unable to determine that its conflict minerals did not originate in the DRC countries must also provide this information. We recognize that such an issuer may not be able to determine with certainty whether any of its

products are or are not “DRC conflict free,” insofar as their initial efforts to determine the origin of the conflict minerals in those products under the reasonable country of origin inquiry was inconclusive and their subsequent due diligence on the source and chain of custody of such minerals was also inconclusive. Consistent with Section 13(p)(1)(A)(ii), we would require such an issuer to describe all of its products that contain such conflict minerals and to identify these products as not “DRC conflict free”¹⁰⁸ since the issuer would not be able to establish that the minerals did not directly or indirectly finance or benefit armed groups in the DRC countries. Also, such issuers would be required to describe, to the extent known after conducting due diligence, the facilities used to process those conflict minerals and the efforts to determine the mine or location of origin with the greatest possible specificity.¹⁰⁹ An issuer may provide additional disclosure explaining, for example, that although these products are labeled as not “DRC conflict free” in compliance with our rules implementing the Conflict Minerals Provision, the issuer has been unable to determine the source of the conflict minerals, including whether the conflict minerals in these products benefited or financed armed groups in the DRC countries.

An issuer’s description of any of its products that are not “DRC conflict free” should be based on its individual facts and circumstances so that the description sufficiently identifies the products or categories of products. For example, an issuer may disclose each model of a product containing conflict minerals that are not “DRC conflict free,” each category of a product containing conflict minerals that are not “DRC conflict free,” the specific products containing conflict minerals that are not “DRC conflict free” that were produced during a specific time period, that all its products contain conflict

⁹⁷ In this release, we refer to the issuer determinations required by Exchange Act Sections 13(p)(1)(A)(i) and (ii) regarding the source and chain of custody of the issuer’s conflict minerals, its products manufactured or contracted to be manufactured that are not DRC conflict free, its conflict minerals’ country of origin, the facilities used to process its conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity as the issuer’s “supply chain determinations.” We recognize, of course, that issuers that are unable to determine that their conflict minerals did not originate in the DRC countries would not know their minerals’ country of origin and may not know their minerals processing facility.

⁹⁸ See Exchange Act Section 13(p)(1)(A)(i).

⁹⁹ These rules would be included in proposed Item 104(b)(1)(i) of Regulation S-K, proposed Item 16(b)(1)(i) of Form 20-F, and proposed General Instruction B(16)(b)(1)(i) of Form 40-F.

¹⁰⁰ See Exchange Act Sections 13(p)(1)(A)(i) and 13(p)(1)(B).

¹⁰¹ See Exchange Act Section 13(p)(1)(A). We note that, under the Conflict Minerals Provision, the Comptroller General establishes the appropriate standards for the independent private sector audit. Staff of the GAO has informed our staff that they preliminarily believe no new standards need to be promulgated, but rather auditing standards that are part of the Government Auditing Standards, such as the standards for Attestation Engagements or the standards for Performance Audits will be applicable. See GAO-07-731G. The GAO staff has not indicated whether and, if so, what evaluation criteria are required for an Attestation Engagement.

¹⁰² See new Item 4(a) of Form 10-K (referring to new Item 104(b)(1)(i) of Regulation S-K), new Item

16(b)(1)(i) of Form 20-F, and new General Instruction B(16)(b)(1)(i) of Form 40-F. Exchange Act Section 13(p)(1)(A)(i) states that a Conflict Minerals Report must include “a description of the measures taken by the person to exercise due diligence on the source and chain of custody of such minerals, which measures shall include an independent private sector audit of such report submitted through the Commission that is conducted in accordance with standards established by the Comptroller General of the United States, in accordance with the rules promulgated by the Commission, in consultation with the Secretary of State.” Exchange Act Section 13(p)(1)(B) defines the term “Certification” as follows: “The person submitting a report under subparagraph (A) shall certify the audit described in clause (i) of such subparagraph that is included in such report. Such a certified audit shall constitute a critical component of due diligence in establishing the source and chain of custody of such minerals.”

¹⁰³ Exchange Act Section 13(p)(1)(B).

¹⁰⁴ Alternatively, one could interpret this language to mean that an issuer must ensure that the audit it obtained is accurate, but such an interpretation would appear to mean that an issuer must review the audit of its Conflict Minerals Report, which the issuer created originally. We are not proposing this approach since it appears redundant.

¹⁰⁵ These rules would be included under proposed Item 104(b)(1)(ii) of Regulation S-K, proposed Item 16(b)(1)(ii) of Form 20-F, and proposed General Instruction B(16)(b)(1)(ii) of Form 40-F.

¹⁰⁶ See Exchange Act Section 13(p)(1)(A)(ii), which states that a Conflict Minerals Report must include, among other matters, “a description of the products manufactured or contracted to be manufactured that are not DRC conflict free * * *, the facilities used to process the conflict minerals, the country of origin of the conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity.”

¹⁰⁷ These rules would be included under proposed Item 104(b)(1)(iii) of Regulation S-K, proposed Item 16(b)(1)(iii) of Form 20-F, and proposed General Instruction B(16)(b)(1)(iii) of Form 40-F.

¹⁰⁸ If any products contain conflict minerals that did not originate in the DRC countries and conflict minerals that the issuer is unable to determine did not originate in the DRC countries, the issuer would be required to classify those products as not “DRC conflict free.” Similarly, if any of an issuer’s products contain conflict minerals that did not originate in the DRC countries, that the issuer is unable to determine did not originate in the DRC countries, or that originated in the DRC countries but did not directly or indirectly finance or benefit armed groups in the DRC countries, and also contain conflict minerals that originated in the DRC countries and that directly or indirectly financed or benefited armed groups in the DRC countries, the issuer must classify those products as not “DRC conflict free.”

¹⁰⁹ We recognize that such issuers would not be able to provide the country of origin of those minerals.

minerals that are not “DRC conflict free,” or another such description depending on the issuer’s facts and circumstances.

The Conflict Minerals Provision uses the phrase “facilities used to process the conflict minerals,” which would appear to refer to the smelter or refinery through which the issuer’s minerals passed. We note also that the Conflict Minerals Provision states that products are “DRC conflict free” when those products do not contain conflict minerals that directly or indirectly finance or benefit armed groups.¹¹⁰ Section 1502(e)(3) of the Act defines the term “armed group” as “an armed group that is identified as perpetrators of serious human rights abuses in the annual Country Reports on Human Rights Practices under sections 116(d) and 502B(b) of the Foreign Assistance Act of 1961,”¹¹¹ as it relates to the DRC countries.¹¹² Our proposed rule includes a cross reference to that definition to provide guidance to issuers.

Our proposed rules would require issuers to furnish, as part of their Conflict Minerals Report, the audit report prepared by the independent private sector auditor and to specifically identify that auditor.¹¹³ While one might read the statutory language to suggest that only the issuer’s certification of the audit, and not the audit report itself, is required to be submitted, we preliminarily believe that approach is not the better reading of the Conflict Minerals Provision. As noted above, the Conflict Minerals Provision emphasizes that the independent audit is a “critical component of due diligence.” In light of the importance of this audit report to our new reporting requirements and the statutory language, we are proposing to require that the audit report be furnished with the Conflict Minerals Report.

Although we are proposing that the audit report be furnished with the Conflict Minerals Report, new Item 4(a) of Form 10-K (referring to new Instruction 2 to Item 104 of Regulation S-K), new Instruction 3 to Item 16 of

Form 20-F, and new Instruction 3 to General Instruction B(16) of Form 40-F would state that the Conflict Minerals Report, which would include the audit report, would not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the issuer specifically incorporates it by reference. For example, if an issuer incorporates by reference its annual report into a Securities Act registration statement, that issuer would not be automatically incorporating the Conflict Minerals Report into the Securities Act document. Therefore, in such a situation, the independent private sector auditor would not assume expert liability and the issuer would not,¹¹⁴ therefore, have to file a consent from that auditor unless the issuer specifically incorporates by reference the Conflict Minerals Report into the Securities Act registration statement.

Request for Comment

37. Should our rules, as proposed, require issuers that are unable to determine the origin of their conflict minerals to label their products that contain such minerals as not “DRC conflict free”? Is this approach consistent with the Conflict Minerals Provision? Would it be more appropriate to allow such issuers to label such products differently, such as “May Not Be DRC Conflict Free”? Would having a separate category for products that contain such unknown origin minerals be consistent with the Conflict Minerals Provision? Would the proposed approach be confusing for readers, or can issuers sufficiently address any confusion by including supplemental disclosure for those products that contain minerals of unknown origin?

38. Should our rules, as proposed, permit issuers to describe their products that contain conflict minerals that do not qualify as being DRC conflict free or that may not qualify as being DRC conflict free based on their individual facts and circumstances? If not, how should we require issuers to describe their products that contain conflict minerals that do not qualify as being DRC conflict free? If an issuer had hundreds or thousands of products that were not DRC conflict free, would the report provide overwhelming information? Would it be unduly expensive to produce?

39. Should our rules, as proposed, require issuers to disclose the facilities, countries of origin, and efforts to find

the mine or location of origin only for its conflict minerals that do not qualify as DRC conflict free, and not for all of its conflict minerals? Alternatively, should we require issuers to disclose the facilities, countries of origin, and efforts to find the mine or location of origin for all of its conflict minerals regardless of whether those conflict minerals do not qualify as DRC conflict free?

40. Should our rules require issuers to disclose the mine or location of origin of their conflict minerals with the greatest possible specificity in addition to requiring issuers, as proposed, to describe the efforts to determine the mine or location of origin with the greatest possible specificity? If so, how should we prescribe how the location is described?

41. As suggested in a submission,¹¹⁵ should our rules require issuers to include information on the capacity of each mine they source from along with the weights and dates of individual mineral shipments?

42. We are proposing that an issuer “certify the audit” by certifying that it obtained such an audit. Should we further specify the nature of the certification? We are not proposing that anyone sign this certification. Should our rules require issuers to have the audit’s certification signed? If so, who should be required to sign the certification? Also, if we revise our proposal to require an individual to sign, should the individual who signs the certification sign it in his or her capacity within the company or on behalf of the company? What liability should our rules assign to the individual who signs the certification?

43. Should our rules, as proposed, require an issuer to furnish its independent private sector audit report as part of its Conflict Minerals Report? Are there other ways to give effect to the Conflict Minerals Provision’s requirement of Section 13(p)(1)(B) that the issuer “certify the audit * * * *that is included in*” [emphasis added] the Conflict Minerals Report? Would investors find the audit report useful? How would the potential liability for a furnished audit report affect the cost and availability of such audit services?

44. Should our rules provide that, as proposed, the independent private sector audit report furnished as an

¹¹⁰ See Exchange Act Sections 13(p)(1)(A)(ii) and 13(p)(1)(D).

¹¹¹ 22 U.S.C. 2151n(d) and 2304(b).

¹¹² Section 1502(e)(3) of the Act.

¹¹³ These rules would be included in proposed Item 4(a) of Form 10-K (through Item 104(b)(1)(iv) of Regulation S-K), proposed Item 16(b)(1)(iv) of Form 20-F, and proposed General Instruction B(16)(b)(1)(iv) of Form 40-F. Having our proposed rules require the issuer to identify the certified independent private sector auditor would satisfy Exchange Act Section 13(p)(1)(A)(ii), which states that the issuer must provide a description of “the entity that conducted the independent private sector audit in accordance with clause (i).”

¹¹⁴ See Rule 436 of Regulation C [17 CFR 230.436].

¹¹⁵ See the petition attached to the memorandum of the November 18, 2010 meeting with Chairman Mary L. Schapiro and with John Prendergast and Darren Fenwick of The Enough Project, Sasha Lezhnev of Grassroots Reconciliation Group, and Deborah R. Meshulam of DLA Piper, available at, <http://www.sec.gov/comments/dj-title-xv/specialized-disclosures/specializeddisclosures-80.pdf>.

exhibit to an issuer's annual report not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the issuer specifically incorporates it by reference? Is this audit report qualitatively different from other experts' reports for which consent is required under our rules?

45. Are there other ways we should treat the audit report under our rules to balance the interests of receiving a high quality audit and not unnecessarily increasing potential liability and costs?

2. Location and Furnishing of Conflict Minerals Report

As noted above, we are proposing rules that require a Conflict Minerals Report to be furnished as an exhibit to an issuer's annual report on Form 10-K, Form 20-F, or Form 40-F, as applicable.¹¹⁶ By requiring issuers to furnish their Conflict Minerals Report as an exhibit to the annual report, our proposed rules would enable anyone accessing the Commission's Electronic Data Gathering, Analysis, and Retrieval system (the "EDGAR" system)¹¹⁷ to determine quickly whether an issuer furnished a Conflict Minerals Report with its annual report. Specifically, proposed Item 4(a) of Form 10-K (through Item 104 to Regulation S-K), Item 16 to Form 20-F, and General Instruction B(16) to Form 40-F would require an issuer to furnish its Conflict Minerals Report as an exhibit to its annual report. Also, our proposed rules would further revise Regulation S-K and Form 20-F to include a new Paragraph (96) of Item 601(b) and a new Paragraph 16 to the "Instructions as to Exhibits" section of Form 20-F to provide additional instructions specifically for their exhibits under Item 601 and Paragraph 16, respectively. The text of Item 601(b)(96) and Paragraph 16 would be substantially similar and only would reference Item 104 and Item 16, respectively.¹¹⁸

Under our proposed rules, an issuer's Conflict Minerals Report, which would include the independent private sector

audit report, would not be "filed" for purposes of Section 18 of the Exchange Act and would, thus, not be subject to the liability of that section of the Exchange Act unless the issuer states explicitly that the Conflict Minerals Report and the independent private sector audit report are filed under the Exchange Act. Instead, these documents would only be furnished to the Commission. These documents, therefore, would be treated in the same manner as other furnished disclosures, such as the certifications required to be submitted as exhibit 32¹¹⁹ to Exchange Act documents under Rule 13a-14(b)¹²⁰ or Rule 15d-14(b)¹²¹ and Section 1350 of Chapter 63 of Title 18 of the United States Code,¹²² the Audit Committee Report required by Item 407(d) of Regulation S-K,¹²³ and the Compensation Committee Report required by Item 407(e)(5) of Regulation S-K.¹²⁴ Similarly, our proposed rules would not consider the Conflict Minerals Report and the independent private sector audit report incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the issuer specifically incorporates them by reference into the documents.

We believe this approach is not inconsistent with the Conflict Minerals Provision, which provides that an issuer must "submit" the Conflict Minerals Report, and does not otherwise mandate that the information be filed with the Commission.¹²⁵ Further, we preliminarily believe this approach is appropriate in light of the nature and purpose of this disclosure as set forth in Section 1502(a) of the Act.¹²⁶ It appears that the nature and purpose of the Conflict Minerals Provision is for the disclosure of certain information to help end the emergency humanitarian situation in the eastern DRC that is financed by the exploitation and trade of conflict minerals originating in the

DRC countries,¹²⁷ which is qualitatively different from the nature and purpose of the disclosure of information that has been required under the periodic reporting provisions of the Exchange Act.¹²⁸ Finally, we note that we have received input indicating that our proposed rules should allow issuers to furnish their conflict minerals disclosures and Conflict Minerals Reports, as applicable.¹²⁹

Although the Conflict Minerals Report would not be subject to Section 18 liability,¹³⁰ we note that under Exchange Act Section 13(p)(1)(C), failure to comply with the Conflict Minerals Provision would deem the issuer's due diligence process "unreliable" and, therefore, the Conflict Minerals Report "shall not satisfy" our proposed rules.¹³¹ In this regard, issuers that fail to comply with our proposed rules would be subject to liability for violations of Exchange Act Sections 13(a) or 15(d), as applicable.¹³²

Request for Comment

46. Should we, as proposed, require the Conflict Minerals Report to be furnished as an exhibit to the issuer's annual report? If not, how should it be provided?

47. Should we require the Conflict Minerals Report to be filed as an exhibit, rather than furnished, which would affect issuers' liability under the Exchange Act or under the Securities Act (if any such issuer incorporates by reference its annual report into a Securities Act registration statement)?

48. Under Exchange Act Section 18, "Any person who shall make or cause to be made any statement in any application, report, or document filed pursuant to [the Exchange Act] or any rule or regulation thereunder or any undertaking contained in a registration statement as provided in subsection (d) of section 15, which statement was at the time and in the light of the circumstances under which it was made false or misleading with respect to any material fact, shall be liable to any person (not knowing that such statement was false or misleading) who, in reliance upon such statement, shall have purchased or sold a security at a price which was affected by such statement, for damages caused by such reliance, unless the person sued shall prove that he acted in good faith and had no knowledge that such statement

¹¹⁶ Our proposed rules would require that issuers furnish their Conflict Minerals Report as Exhibit 96 to their annual reports.

¹¹⁷ See the Securities and Exchange Commission's Internet Web site, "Researching Public Companies Through EDGAR: A Guide for Investors," available at: <http://www.sec.gov/investor/pubs/edgarguide.htm>.

¹¹⁸ Item 601(96) of Regulation S-K would state, "The report required by Item 104(b) of Regulation S-K, if applicable." Also, Paragraph 16 in the "Instructions as to Exhibits" section to Form 20-F would state, "The Conflict Minerals Report required by Item 16 of this Form, if applicable." Further, our proposed rules would revise the Exhibit Table in Item 601 of Regulation S-K.

¹¹⁹ Item 601(32)(ii) of Regulation S-K [17 CFR 229.601(b)(32)].

¹²⁰ 17 CFR 240.13a-14(b).

¹²¹ 17 CFR 240.15d-14(b).

¹²² 18 U.S.C. 1350.

¹²³ 17 CFR 229.407(d).

¹²⁴ 17 CFR 229.407(e)(5).

¹²⁵ See Exchange Act Section 13(p)(1)(A).

¹²⁶ See *supra* note 11. A co-sponsor of the Conflict Minerals Provision stated that the disclosure of an issuer's conflict minerals information would help investors make a more informed decision. See 156 Cong. Rec. S3865-66 (statement of Sen. Feingold) (daily ed. May 18, 2010) (stating that "[c]reating these mechanisms to enhance transparency will help the United States and our allies more effectively deal with these complex problems, at the same time that they will also help American consumers and investors make more informed decisions.")

¹²⁷ *Id.*

¹²⁸ 15 U.S.C. 78b.

¹²⁹ See letter from the American Bar Association.

¹³⁰ 15 U.S.C. 78r.

¹³¹ See Exchange Act Section 13(p)(1)(C).

¹³² 15 U.S.C. 78m(a) and 15 U.S.C. 78o(d).

was false or misleading.”¹³³ Is it appropriate not to have the Conflict Minerals Report subject to the Section 18 liability even if the elements of Section 18 liability can be established? Should we require the Conflict Minerals Report to be filed for purposes of Exchange Act Section 18, but permit an issuer to elect not to incorporate it into Securities Act filings?

49. Should the Conflict Minerals Report be furnished annually on Form 8–K.¹³⁴ Would that approach be consistent with Exchange Act Section 13(p)(1)(A)? If so, should foreign private issuers, which do not file Forms 8–K, be permitted to submit the Conflict Minerals Report either in their Form 20–F or 40–F as applicable, or annually on Form 6–K, at their election?

3. Due Diligence Standard in the Conflict Minerals Report

Our proposed rules would require issuers to use due diligence regarding the supply chain determinations in their Conflict Minerals Report.¹³⁵ Our proposed rules would not, however, dictate the standard for, or otherwise provide guidance concerning, due diligence that issuers must use in making their supply chain determinations. Instead, our proposed rules would require issuers to disclose the due diligence they used in making their determinations, such as whether they used any nationally or internationally recognized standards or guidance of supply chain due diligence.

The Conflict Minerals Provision requires issuers to conduct due diligence based on the provision’s requirement that issuers describe their due diligence on the source and chain of custody of their conflict minerals.¹³⁶ Also, the provision states that issuers shall include an independent private sector audit of the Conflict Minerals Report as a critical component of due diligence.¹³⁷ Further, under Exchange Act Section 13(p)(1)(C), the Commission may determine an issuer’s independent private sector audit or other due diligence processes to be unreliable and, under the terms of the Conflict Minerals Provision, any Conflict Minerals Report that relies on such an unreliable due diligence process would not satisfy our proposed rules.¹³⁸ In light of these

statutory provisions, our proposed rules provide that an issuer’s Conflict Minerals Report must include reliable due diligence processes, and that due diligence is required in making the supply chain determinations in the Conflict Minerals Report.

We note that we have received suggestions that due diligence is required in making the supply chain determinations. One letter received stated that a due diligence obligation “needs to be extended to the supply chain.”¹³⁹ Two of the Congressional sponsors of Section 1502 of the Act have indicated their belief that the due diligence requirement should not be limited to determining whether the smelter uses due diligence.¹⁴⁰ An NGO submitted to us a description of its model supply chain due diligence processes, which would require issuers to perform due diligence on all aspects of their supply chain, including the supply chain determinations in their Conflict Minerals Reports.¹⁴¹ In addition, an industry group from the precious metals industry indicated that it would not be opposed to conducting due diligence of its supply chains and, in fact, that due diligence is already part of its current business practice.¹⁴² We note, however, that another industry group submitted a letter to us expressing concern about the feasibility of implementing a due diligence requirement, particularly with regard to gold.¹⁴³ This industry group pointed out that applying due diligence requirements to the gold supply chain would be especially challenging because the supply chain often begins with a bullion produced by a refiner that incorporates both newly mined and recycled gold.¹⁴⁴

We believe that the statutory provision contemplates that issuers must use due diligence in their supply chain determinations. We do not believe, however, that it would be appropriate to prescribe any particular guidance for conducting due diligence because the conduct undertaken by a reasonably prudent person may vary

and evolve over time.¹⁴⁵ Although we are not proposing to establish any particular conduct requirements, we believe that due diligence must be performed and information about what conduct an issuer performed in its due diligence regarding its supply chain determinations is relevant. Our proposed rules, therefore, would require issuers to describe the due diligence used in making these determinations. In particular, we expect that an issuer whose conduct conformed to a nationally or internationally recognized set of standards of, or guidance for, due diligence regarding conflict minerals supply chains¹⁴⁶ would provide evidence that the issuer used due diligence in making its supply chain determinations.

If an issuer is unable to determine, after a reasonable country of origin inquiry, that its conflict minerals did not originate in the DRC countries, that issuer still would be required to submit a Conflict Minerals Report and obtain an independent private sector audit of that Conflict Minerals Report. We note that in such instances an issuer may not be able to provide all the information required by the Conflict Minerals Report, such as its conflict minerals’ country of origin. We would, however, expect such an issuer to provide as much of the required information as possible, such as a description of the measures it took to exercise due diligence on the source and chain of custody of its conflict minerals.

In this regard, if an issuer is unable to determine after a reasonable country of origin inquiry that its conflict minerals did not originate in the DRC countries, the issuer would be required to exercise due diligence in making its supply chain determinations. Therefore, such an issuer would be required to describe its due diligence efforts regarding the facilities used to process the conflict

¹⁴⁵ For instance, the Organisation for Economic Cooperation and Development (the “OECD”) is developing due diligence guidance for conflict mineral supply chains. See Organisation for Economic Cooperation and Development (the “OECD”), *Draft Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (2010), available at, <http://www.oecd.org/dataoecd/13/18/46068574.pdf>. Also, on November 30, 2009, the United Nations Security Council adopted Resolution 1896 that, among other matters, extended and expanded the mandate of the United Nations Group of Experts for the Democratic Republic of the Congo to create recommendations on due diligence guidelines for minerals originating in the DRC. See United Nations Security Council Resolution 1896 (2009) [S/RES/1896 (2009)].

¹⁴⁶ See, e.g., OECD, *Draft Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (2010), available at, <http://www.oecd.org/dataoecd/13/18/46068574.pdf>.

¹³³ Exchange Act Section 18(a).

¹³⁴ See, e.g., letter from American Bar Association.

¹³⁵ See new Item 4(a) of Form 10–K (as through new Item 104(b)(1) of Regulation S–K), new Item 16(b)(1) of Form 20–F, and a new General Instruction B(16)(b)(1) of Form 40–F.

¹³⁶ Exchange Act Section 13(p)(1)(A)(i).

¹³⁷ Exchange Act Section 13(p)(1)(B).

¹³⁸ Exchange Act Section 13(p)(1)(C).

¹³⁹ Letter from Howland Greene Consultants LLC.

¹⁴⁰ See letter from Senator Richard Durbin and Representative Jim McDermott.

¹⁴¹ See attached materials to the memorandum of the September 15, 2010 meeting of the staff of Division of Corporation Finance met with Corinna Gilfillan, Jonathan Grant, and Annie Dunnebacke of Global Witness, available at, <http://www.sec.gov/comments/df-title-xv/specialized-disclosures/specializeddisclosures-18.pdf>.

¹⁴² See letter from International Precious Metals Institute.

¹⁴³ See letter from Tiffany & Co.

¹⁴⁴ Letter from Jewelers Vigilance Committee.

minerals, the conflict minerals' country of origin, if it can be determined, and the efforts to determine the mine or location of origin with the greatest possible specificity.

Request for Comment

50. Should our rules, as proposed, require an issuer to use due diligence in its supply chain determinations and the other information required in a Conflict Minerals Report? If so, should those rules prescribe the type of due diligence required and, if so, what due diligence measures should our rules prescribe? Alternatively, should we require only that persons *describe* whatever due diligence they used, if any, in making their supply chain determinations and their other conclusions in their Conflict Minerals Report?

51. Should different due diligence measures be prescribed for gold because of any unique characteristics of the gold supply chain? If so, what should those measures entail?

52. Should our rules state that an issuer is permitted to rely on the reasonable representations of its smelters or any other actor in the supply chain,¹⁴⁷ provided there is a reasonable basis to believe the representations of the smelters or other parties?

53. Is our approach to issuers that are unable to determine that their products did not originate in the DRC countries appropriate?

54. Should our rules prescribe any particular due diligence standards or guidance?

55. Should our rules require that an issuer use specific national or international due diligence standards or guidance, such as standards developed by the OECD, the United Nations Group of Experts for the DRC, or another such organization? If so, should our rules require the issuer to disclose which due diligence standard or guidance it used? Should we list acceptable national or international organizations that have developed due diligence standards or guidance on which an issuer may rely? Should our rules permit issuers to rely on standards from federal agencies if any such agencies develop applicable rules?

E. Time Periods

1. Furnishing of the Initial Disclosure and Conflict Minerals Report

The Conflict Minerals Provision requires issuers to provide their initial

conflict minerals disclosure and, if necessary, their initial Conflict Minerals Report after their first full fiscal year following the promulgation of our final rules.¹⁴⁸ Assuming we adopt rules in April 2011, as required by the statutory provision, a December 31 fiscal year-end issuer would first have to provide conflict minerals disclosure or a Conflict Minerals Report after the end of its December 31, 2012 fiscal year. An issuer with a May 31 fiscal year-end, however, would have to provide the conflict minerals disclosure or a Conflict Minerals Report in its annual report for the fiscal year that encompasses the period from June 1, 2011 through May 31, 2012.

Request for Comment

56. Should our rules, as proposed, require that a complete fiscal year begin and end before issuers are required to provide their initial disclosure or Conflict Minerals Report regarding their conflict minerals?

57. If we require issuers to provide their disclosure or reporting requirements in their Exchange Act annual reports, should we permit them to file an amendment to the annual report within a specified period of time subsequent to the due date of the annual report, similar to Article 12 schedules or financial statements provided in accordance with Regulation S-X Rule 3-09,¹⁴⁹ to provide the conflict minerals information?¹⁵⁰ If so, why and for which issuers should our rules permit such a delay? For example, should we allow this delay only for smaller reporting companies?

58. Should we phase in our rules and permit certain issuers, such as smaller reporting companies, to delay compliance with the Conflict Minerals Provision's disclosure and reporting obligations until a period after that which is provided in the Exchange Act Section 13(p)(1)(A)?

2. Time Period in Which Conflict Minerals Must Be Disclosed or Reported

The Conflict Minerals Provision requires issuers to disclose whether their necessary conflict minerals originated in the DRC countries "in the year for which such reporting is required."¹⁵¹ We believe the date that the issuer takes possession of a conflict mineral would determine which reporting year an issuer would have to

provide the required disclosure or Conflict Minerals Report for its conflict minerals. For example, if a December 31 fiscal year-end issuer takes possession of the conflict minerals, or product containing the conflict minerals, on December 31, the issuer would have to provide the required disclosure or a Conflict Minerals Report for the current year. However, if that same issuer did not take possession of the minerals until January 1, the issuer would not have to provide the disclosure or a report until the end of the year beginning that day and ending on the subsequent December 31.

In an instance in which an issuer contracts the manufacturing of a product in which a conflict mineral is necessary to the production of that product, but the conflict mineral is not included in the product, the issuer may use the date it takes possession of the product to determine which reporting year the issuer would have to provide the required disclosure or Conflict Minerals Report for the conflict mineral used to produce the product. For example, if a December 31 fiscal year-end issuer takes possession on December 31 of the product for which a conflict mineral was necessary to produce but that did not end up in the product, the issuer would have to provide the required disclosure or a Conflict Minerals Report for the year ended on that December 31. However, if that same issuer did not take possession of the product until the subsequent day, January 1, the issuer would not have to provide the disclosure or a report until the end of the year beginning that January 1 and ending on the subsequent December 31.

Request for Comment

59. Is "possession" the proper determining factor as to when issuers should provide the required disclosure or a Conflict Minerals Report regarding a necessary conflict mineral? If not, what would be a more appropriate test and why?

60. Should our rules allow individual issuers to establish their own criteria for determining which reporting period to include any required conflict minerals disclosure or Conflict Minerals Report, provided that the issuers are consistent and clear with their criteria from year-to-year?

61. We note it is possible issuers may have stockpiles of existing conflict minerals that they previously obtained. Do we adequately address issuers' disclosure and reporting obligations regarding their existing stockpiles of conflict minerals? If not, how can we address existing stockpiles of conflict

¹⁴⁷ In the industry, tantalite-columbite, cassiterite, and wolframite are "smelted" into their component metals whereas gold is "refined." Even so, both processes are substantially similar. When we refer to "smelting" those references are intended to include the "refining" of gold as well.

¹⁴⁸ See Exchange Act Section 13(p)(1)(A) (stating that an issuer must "disclose annually, beginning with the [issuer's] first full fiscal year that begins after the date of promulgation of [our] regulations").

¹⁴⁹ 17 CFR 210.3-09.

¹⁵⁰ See letter from the American Bar Association.

¹⁵¹ Exchange Act Section 13(p)(1)(A).

minerals? Should our rules permit a transition period so that issuers would not have to provide any conflict minerals disclosure or report regarding any conflict mineral extracted before the date on which our rules are adopted? Alternatively, would the reasonable country of origin inquiry standard for determining the origin of the conflict minerals and the due diligence standard or guidance for determining the source and chain of custody of the conflict minerals that originated in the DRC countries accomplish the same goal? For example, should issuers be required to inquire about the origin of their conflict minerals extracted before the date on which our rules are adopted? As another example, should issuers file a Conflict Minerals Report regarding conflict minerals that originated in the DRC countries before the date on which our rules are adopted?

F. Thresholds, Alternatives, Termination, Revisions, and Waivers

1. Materiality Threshold

As discussed above, the Conflict Minerals Provision's only limiting factor is that the conflict minerals must be "necessary to the functionality or production" of an issuer's products.¹⁵² The provision has no materiality thresholds for disclosure based on the amount of conflict minerals an issuer uses in its production processes. Therefore, we are not proposing to include a materiality threshold for the disclosure or reporting requirements in our proposed rules.

Request for Comment

62. Should there be a *de minimis* threshold in our rules based on the amount of conflict minerals used by issuers in a particular product or in their overall enterprise? If so, what would be a proper threshold amount? Would this be consistent with the Conflict Minerals Provision?¹⁵³

2. Recycled and Scrap Minerals

Our proposed rules would allow for different treatment of conflict minerals from recycled and scrap sources than from mined sources due to the difficulty of looking through the recycling or scrap process to determine the origin of the minerals. As suggested in a letter, we would consider conflict minerals "recycled" that are reclaimed end-user or post-consumer products, but we

would not consider those minerals "recycled" if they are partially processed, unprocessed, or a byproduct from another ore.¹⁵⁴ Given the difficulty of looking through the recycling or scrap process, we expect that issuers generally will not know the origins of their recycled or scrap conflict minerals, so we believe it would be appropriate for our proposed rules to require that issuers using recycled or scrap conflict minerals furnish a Conflict Minerals Report subject to special rules. Under our proposed rules,¹⁵⁵ if issuers obtain conflict minerals from a recycled or scrap source, they may consider those conflict minerals to be DRC conflict free.¹⁵⁶ We believe that including this alternative approach in our proposed rules is consistent with the Conflict Minerals Provision because issuers purchasing conflict minerals from recycled or scrap sources would not implicate the concerns of the provision.¹⁵⁷

Issuers whose conflict minerals originated from recycled or scrap sources would be required to disclose in their annual report, under the "Conflict Minerals Disclosure" heading, that their conflict minerals were obtained from recycled or scrap sources and that they furnished a Conflict Minerals Report regarding those recycled or scrap minerals. Under our proposed rules, issuers would state in their Conflict Minerals Report that their recycled or

scrap minerals are considered DRC conflict free. In addition, such issuers would describe the measures taken to exercise due diligence in determining that their conflict minerals were recycled or scrap. Again, however, our proposed rules would not specify the due diligence required of such issuers. Further, our proposed rules would not define when a conflict mineral is recycled or scrap. Instead, any issuer seeking to use this alternative approach would provide its reasons for believing that the conflict mineral is from recycled or scrap sources in its Conflict Minerals Report, which would include due diligence on the source of the mineral.

A number of those that have submitted letters indicated that our rules should allow conflict minerals from recycled or scrap sources to be considered as not originating in the DRC countries or as DRC conflict free.¹⁵⁸ A number of these letters primarily discussed recycled gold.¹⁵⁹ Other letters, however, stated that our proposed rules should exempt all recycled or reclaimed conflict metals.¹⁶⁰ Additionally, most of the letters that expressed a view on a recycled and scrap alternative approach indicated that the approach should include a certain level of due diligence in determining that the conflict minerals were derived from recycled or scrap sources.¹⁶¹

Our proposed rules regarding recycled and scrap conflict minerals would apply to all conflict minerals. If recycled or scrap minerals are mixed with new minerals, the recycled and scrap

¹⁵⁴ See Multi-Stakeholder Group Letter.

¹⁵⁵ See new Items 104(b)(2) and (c)(4) of Regulation S-K, new Items 16(b)(2) and (c)(4) of Form 20-F, and new General Instructions B(16)(b)(2) and (c)(4) of Form 40-F.

¹⁵⁶ Because our proposed rules would automatically classify recycled or scrap conflict minerals DRC conflict free, issuers with products containing such minerals would not need to provide in the Conflict Minerals Report a description of the recycled or scrap conflict minerals' processing facilities or country of origin, nor would they be required to describe their efforts to determine the mine or location of origin with the greatest possible specificity.

¹⁵⁷ See Section 1502(a) of the Act. See also, 156 Cong. Rec. S3816-17 (daily ed. May 17, 2010) (statement of Sen. Durbin) ("We can't begin to solve the problems of eastern Congo without addressing where the armed groups are receiving their funding, mainly from the mining of a number of key conflict minerals. We, as a nation of consumers as well as industry, have a responsibility to ensure that our economic activity does not support such violence. That is why I join with Senators Brownback and Feingold to support the Congo conflict minerals amendment, which is now pending on this bill."). One of the provision's sponsors, however, indicated that the Conflict Minerals Provision was intended, in part, to allow investors to make informed decisions. See 156 Cong. Rec. S3865-66 (statement of Sen. Feingold) (daily ed. May 18, 2010) (stating that the provision would "enhance transparency [and] will help the United States and our allies more effectively deal with these complex problems, at the same time that they will also help American consumers and investors make more informed decisions" [emphasis added]).

¹⁵⁸ See, e.g. letters from Jewelers Vigilance Committee, Howland Greene Consultants LLC, International Precious Metals Institute, and the National Association of Manufacturers.

¹⁵⁹ See letters from Jewelers Vigilance Committee (stating that recycled gold would be impossible to trace, making an exemption appropriate) and International Precious Metals Institute (stating that "[w]e also believe that recycled gold waste and scrap should be deemed to be a conflict-free source").

¹⁶⁰ See letters from Howland Greene Consultants LLC (stating that "[r]ecycling should be encouraged and recognized as a legitimate way to classify a listed metal as DRC Conflict Free") and the National Association of Manufacturers (stating that our proposed rules should exempt recycled or scrap minerals because it "is impossible to track" the source of these minerals "due to the various forms of recycling and thousands of consolidators, reclaimers, and scrap dealers both domestic and foreign" and because exempting recycled or scrap minerals "does not contradict the congressional intent" of the Conflict Minerals Provision).

¹⁶¹ See letters from Howland Greene Consultants LLC (stating that recycled minerals should be classified as DRC Conflict Free only "if specific criteria are met") and International Precious Metals Institute (stating that recycled gold waste and scrap should be deemed to be a conflict-free source only "in the absence of particular geographical risk or other red flags").

¹⁵² Exchange Act Section 13(p)(2)(B).

¹⁵³ See letter from Senator Richard J. Durbin and Representative Jim McDermott, United States Congress (stating that a *de minimis* rule would create an overly generous loop-hole because the weight of essential conflict minerals in many products is very small).

alternative approach would apply only to the portion of the minerals that are recycled or scrap and the issuer would be required to furnish a Conflict Minerals Report regarding at least the recycled or scrap minerals. If the issuer's new conflict minerals did not originate in the DRC countries, that Conflict Minerals Report would contain only information regarding the recycled or scrap minerals. If, however, the new conflict minerals originated in the DRC countries, or the issuer was unable to determine that its new conflict minerals did not originate in the DRC countries, the Conflict Minerals Report would include information regarding both the new conflict minerals and the recycled or scrap conflict minerals.

Request for Comment

63. Should our rules, as proposed, include an alternative approach for conflict minerals from recycled or scrap sources as proposed? If so, should that approach permit issuers with necessary conflict minerals to classify those minerals as DRC conflict free, as proposed? Should we require, as proposed, issuers using conflict minerals from recycled or scrap sources to furnish a Conflict Minerals Report, including a certified independent private sector audit, disclosing that their conflict minerals are from these sources? If not, why not?

64. Instead, should our rules require issuers with recycled or scrapped conflict minerals to undertake reasonable inquiry to determine they are recycled or scrapped and to disclose the basis for their belief that their minerals are, in fact, from these sources?

65. Should our rules, as proposed, require that issuers use due diligence in determining whether their conflict minerals are from recycled or scrap sources as proposed and file a Conflict Minerals Report including an independent private sector audit of that report? If so, should our rules prescribe the due diligence required? If our rules should not require due diligence, should our rules require any alternative standard or guidance? If so, what standard or guidance? Should our rules define what constitutes recycled or scrap conflict minerals? If so, what would be an appropriate definition?

66. Should this treatment be limited to gold, or should it apply to all conflict minerals, as proposed?

67. Is our alternative approach to recycled and scrap minerals appropriate? Is there a significant risk that conflict minerals that are not "DRC conflict free" may be inappropriately processed and "recycled" so as to take advantage of this alternate approach?

68. Should we allow exemptions to the information required by smaller reporting companies regarding their use of recycled or scrap minerals? For example, should we not require smaller reporting to furnish a Conflict Minerals Report regarding their recycled or scrap minerals? As another example, if we require smaller reporting companies to furnish a Conflict Minerals Report with respect to recycled or scrap minerals, should we not require those issuers to have such Conflict Minerals Reports audited?

3. Termination, Revisions, and Waivers

The Conflict Minerals Provision states that the Commission shall revise or temporarily waive its conflict minerals rules if the President transmits to the Commission a determination that a revision or waiver is in the national security interest of the United States and the President provides reasons for this determination.¹⁶² However, any exemption to the Conflict Minerals Provision may last no longer than two years from the date of the exemption's initial publication.¹⁶³ Also, the Conflict Minerals Provision's disclosure and reporting requirements shall terminate when the President determines and certifies to the appropriate congressional committees that "no armed groups continue to be directly involved and benefitting from commercial activity involving conflict minerals."¹⁶⁴ The Conflict Minerals Provision may not, however, terminate earlier than five years after the Act was enacted.¹⁶⁵ We plan to act in accordance with these provisions should any of the situations they describe occur. Our proposed rules, however, would not include these sections of the Conflict Minerals Provision because we do not believe that a rule to implement this section is necessary at this time.

Request for Comment

69. Should our rules address specifically the Conflict Minerals Provision's revision, waiver, or termination requirements? If so, how should our rules address this?

¹⁶² See Exchange Act Section 13(p)(3).

¹⁶³ *Id.*

¹⁶⁴ Section 1502(e)(4) of the Act defines the term "appropriate congressional committees" as the Committee on Appropriations, the Committee on Foreign Affairs, the Committee on Ways and Means, and the Committee on Financial Services of the House of Representatives and the Committee on Appropriations, the Committee on Foreign Relations, the Committee on Finance, and the Committee on Banking, Housing, and Urban Affairs of the Senate.

¹⁶⁵ See Exchange Act Section 13(p)(4).

G. General Request for Comment

We request and encourage any interested person to submit comments on any aspect of our proposals, other matters that might have an impact on the amendments, and any suggestions for additional changes. With respect to any comments, we note that they are of greatest assistance to our rulemaking initiative if accompanied by supporting data and analysis of the issues addressed in those comments and by alternatives to our proposals where appropriate.

III. Paperwork Reduction Act

A. Background

The proposed amendments contain "collection of information" requirements within the meaning of the Paperwork Reduction Act of 1995 (the "PRA").¹⁶⁶ We are submitting the proposed amendments to the Office of Management and Budget (the "OMB") for review in accordance with the PRA.¹⁶⁷ The title for the collection of information is:

(1) "Regulation S-K" (OMB Control No. 3235-0071);¹⁶⁸

(2) "Form 10-K" (OMB Control No. 3235-0063);

(3) "Form 20-F" (OMB Control No. 3235-0288); and

(4) "Form 40-F" (OMB Control No. 3235-0381).

The regulation and forms were adopted under the Securities Act and the Exchange Act. The regulation and forms set forth the disclosure requirements for periodic reports and registration statements filed by companies to help shareholders make informed investment and voting decisions. The hours and costs associated with preparing and filing the form constitute reporting and cost burdens imposed by each collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid control number.

The proposed rules and form amendments would implement Section 13(p) of the Exchange Act, which was added by Section 1502 of the Act. As discussed in detail above, the proposed rules and form amendments would require an issuer to provide statutorily-

¹⁶⁶ 44 U.S.C. 3501 *et seq.*

¹⁶⁷ 44 U.S.C. 3507(d) and 5 CFR 1320.11.

¹⁶⁸ The paperwork burden from Regulation S-K is imposed through the forms that are subject to the disclosures in Regulation S-K and is reflected in the analysis of those forms. To avoid a Paperwork Reduction Act inventory reflecting duplicative burdens, for administrative convenience we estimate the burdens imposed by Regulation S-K to be a total of one hour.

mandated information regarding conflict minerals that are necessary to the functionality or production of a product manufactured or contracted to be manufactured by such an issuer. In this regard, we are proposing to add new disclosure and reporting requirements to the above forms, which would be substantially the same in each form.¹⁶⁹ The same conflict minerals disclosure requirements would apply to U.S. and foreign issuers.

The proposed rules would require any issuer filing reports under the Exchange Act to disclose in its annual reports whether conflict minerals that are necessary to the functionality or production of a product manufactured or contracted to be manufactured by the issuer originated in the DRC countries. If so, the issuer would be required to furnish as an exhibit to its annual report a Conflict Minerals Report that includes a description of the measures taken by the issuer to exercise due diligence on the source and chain of custody of those minerals, which measures shall include an independent private sector audit of the Conflict Minerals Report that is certified by the issuer. Also, the Conflict Minerals Report would include a description of the issuer's products manufactured or contracted to be manufactured that are not DRC conflict free, the identity of the independent private sector auditor, the facilities used to process the conflict minerals, the country of origin of the conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity.

These proposed rules would increase the amount of information that certain issuers must compile and disclose in their forms and would increase the disclosure burden in annual reports for certain issuers. Issuers filing reports under the Exchange Act that do not have conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by those issuers would have no disclosure or reporting requirements under the rules, but they would have the burden of determining whether conflict minerals are necessary to the functionality or production of products they manufacture or contract to manufacture. Under our proposed rules implementing the Conflict Minerals Provision, issuers that have

conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by those issuers must determine whether those conflict minerals originated in the DRC countries. Our proposed rules would require issuers to conduct a reasonable country of origin inquiry in determining whether their conflict minerals originated in the DRC countries. This reasonable country of origin inquiry could vary among issuers, but we believe that issuers would generally have to conduct a relatively thorough investigation to meet this standard. Therefore, we believe that the burden on issuers to determine the origin of their conflict minerals could be significant. If an issuer determines, however, that its conflict minerals did not originate in the DRC countries, its subsequent disclosure burden would be relatively insignificant. Such an issuer would be required to disclose in its annual report and on its Web site only that its conflict minerals did not originate in the DRC countries and disclose in its annual report the reasonable country of origin inquiry it used to make this determination.

Issuers with conflict minerals that originated in the DRC countries, or issuers that were unable to determine that their conflict minerals did not originate in the DRC countries, would be required to furnish a Conflict Minerals Report and would be required to use due diligence in determining the information required in that Conflict Minerals Report. Our proposed rules would require issuers to disclose, in their Conflict Minerals Report, the measures they took to exercise due diligence on the source and chain of custody of their conflict minerals. Additionally, issuers would have to disclose, based on their due diligence, whether any of the products they manufactured or contracted to be manufactured are not DRC conflict free. Also, issuers would be required to disclose the facilities used to process their conflict minerals, the country from which their conflict minerals originated, and the efforts to determine the mine or location of origin with the greatest possible specificity. Further, issuers would have to obtain an independent private sector audit of their Conflict Minerals Report and include in the Conflict Minerals Report a certification that they obtained such an audit, the identity of the auditor, and the audit report. Finally, the issuer would be required to post the Conflict Minerals Report, including the audit report, on its Internet Web site.

The type of reasonable country of origin inquiry and the due diligence standard for determining this information could vary among issuers. Regardless, we expect that all issuers with conflict minerals that originated in the DRC countries, or issuers that were unable to determine that their conflict minerals did not originate in the DRC countries, would have to conduct a thorough investigation to meet the reasonable country of origin inquiry and due diligence standards, which could be another significant burden on these issuers. The burden would be greater on issuers whose products contained conflict minerals that were not "DRC conflict free" because these issuers would have to determine which of their products contain conflict minerals that are not "DRC conflict free," whereas issuers with only "DRC conflict free" minerals would not have made such a determination. Compliance with the proposed amendments by affected issuers would be mandatory. The disclosure and reports submitted by issuers would not be kept confidential and there would be no mandatory retention period for the information disclosed.

B. Burden and Cost Estimates Related to the Proposed Amendments

The proposed rules and form amendments would require, if adopted, additional disclosure for an annual report filed on Form 10-K, Form 20-F, or Form 40-F by an issuer with necessary conflict minerals, which would increase the burden hour and cost estimates for each of those forms. For purposes of the PRA, we estimate the total annual increase in the paperwork burden for all affected companies to comply with our proposed collection of information requirements to be approximately 153,864 of company personnel time and to be approximately \$71,243,000 for the services of outside professionals. These estimates include the time and cost of collecting the information, preparing and reviewing disclosure, filing documents, and retaining records.

In deriving our estimates, we recognize that the burdens will likely vary among individual companies based on a number of factors, including the size and complexity of their operations and the number of products they manufacture or contract to manufacture and the number of those products that contain conflict minerals. We believe that some issuers will experience costs in excess of this average in the first year of compliance with the proposals and

¹⁶⁹ New Item 4(a) in the Form 10-K would require issuers to furnish in the Form 10-K the information located in new Item 104 of Regulation S-K, which would set forth the new disclosure and reporting requirements to be included in the Form 10-K. For Forms 20-F and 40-F, the new disclosure and reporting requirements are contained within the form itself.

some issuers may experience less than these average costs.¹⁷⁰

We have based our estimates of the effect that the adopted rules and form amendments, if adopted, would have on those collections of information as a result of the required due diligence process and independent private sector audit of the Conflict Minerals Report primarily on information that we have obtained from various stakeholder groups.

We do not expect all issuers' conflict minerals to have originated in the DRC countries. The DRC accounts for approximately 15% to 20% of the world's tantalum, and for considerably smaller percentage of the other three conflict minerals.¹⁷¹ Therefore, for the purposes of the PRA, we assume that only 20% of the 5,994 affected issuers¹⁷² will have to furnish an audited Conflict Minerals Report, which would be 1,199 issuers.

Although no entity has yet conducted due diligence for its conflict minerals supply chain or obtained an audit of this due diligence, we obtained estimates from one entity that works with NGOs and one industry group of possible costs associated with conducting the due diligence and the audit based on the preliminary information they currently have. The entity that works with NGOs has estimated that the annual cost of conducting the due diligence for the four conflict minerals ranges between \$20 million and \$25 million. An industry group provided a much lower range of between \$8 million and \$10 million to set up a mineral source validation scheme. Although our rules do not require issuers to use an industry-wide due diligence process to comply with their due diligence obligations, we expect that most affected issuers will contribute to and rely on an industry wide due diligence process as part of their overall compliance.¹⁷³

¹⁷⁰ See letter from the National Association of Manufacturers (suggesting that any change to an issuer's supply chain computer systems "is likely to range from \$1 million to \$25 million" per issuer "depending on the size and complexity of the supply chain"). We expect that the internal collection burden will vary from company to company depending on each company's needs and circumstances.

¹⁷¹ See Jessica Holzer, *Retailers Fight to Escape 'Conflict Minerals' Law*, *The Wall Street Journal*, Dec. 2, 2010, at B1. The DRC also accounts for approximately 4% of the world's tin, *see id.*, and approximately 0.3% of global gold mine production, *see* letter from Jewelers Vigilance Committee (citing to GFMS Gold Survey 2010).

¹⁷² We estimate that approximately 5,551 Forms 10-K, 377 Forms 20-F, and 66 Forms 40-F will be affected by the proposed amendments.

¹⁷³ See Multi-Stakeholder Group Letter (stating that, although individual issuers are responsible for

Therefore, for purposes of the PRA, we have averaged the highest and the lowest estimates we received of the due diligence costs to obtain an aggregate estimate of \$16.5 million¹⁷⁴ for the 1,199 issuers estimated to be required to file Conflict Minerals Reports.

Issuers that are required to file Conflict Minerals Reports must also obtain and certify an audit of the Conflict Minerals Report. One industry group indicated that it preliminarily estimates that each independent private sector audit of the Conflict Minerals Report will cost approximately \$25,000 on average. We estimate that the 1,199 affected issuers' \$25,000 cost would result in to an industry wide audit of approximately \$29,975,000. Therefore, based on these figures, we estimate the PRA burden for the audit and due diligence requirements to the industry would be approximately \$46,475,000.¹⁷⁵ We expect that the rules' effect will be higher during the first year of their effectiveness, due to the initial costs of creating minerals tracking systems, and diminish in subsequent years.

We have derived the burden hour and cost estimates for preparing the required disclosure in the annual reports and for determining when a registrant has conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by the registrant by estimating the total amount of time it will take the company to prepare the disclosure and make the determination. We estimate that the disclosure preparation for all affected registrants will take 36 hours per Form 10-K (27 hours in-house personnel time and a cost of approximately \$3,600 for professional services). We estimate that for Forms 20-F and 40-F, the disclosure preparation will also take 36 hours (9 hours in-house personnel time and a cost of approximately \$10,800 for professional services).

We derived the above estimates by estimating the average number of hours it would take an issuer to prepare and review the proposed disclosure requirements. These estimates represent the average burden for all companies, both large and small.

When determining these estimates, we have assumed that:

- For Form 10-K, 75% of the burden of preparation is carried by the company internally and that 25% of the burden of the preparation is carried by outside

their own due diligence, an issuer "may rely on an industry wide process where applicable and appropriate").

¹⁷⁴ (\$25 million + \$8 million)/2 = \$16.5 million.

¹⁷⁵ \$16,500,000 + \$29,975,000 = \$46,475,000.

professionals retained by the company at an average cost of \$400 per hour; and

- For Forms 20-F and 40-F, 25% of the burden of preparation is carried by the company internally and that 75% of the burden of preparation is carried by outside professionals retained by the company at an average cost of \$400 per hour.

The portion of the burden carried by outside professionals is reflected as a cost, while the portion of the burden carried by the company internally is reflected in hours.

1. Form 10-K

For purposes of the PRA, we estimate that, of the 13,545 Form 10-Ks filed annually, approximately 5,551 are filed by companies that would be affected by the proposed rules and form amendments.¹⁷⁶ We further estimate that the annual incremental paperwork burden for the Forms 10-K as a result of the proposed rule and form amendments would be 27 burden hours per affected form associated with the company's preparation of the disclosure, and \$19,983,600¹⁷⁷ associated with the cost of hiring professionals to help prepare the disclosure. In addition, we estimate for these purposes that those issuers required to submit a Conflict Minerals Report would also expend a total of \$43,040,161¹⁷⁸ associated with the cost of hiring professionals to conduct the due diligence and the independent private sector audit of the Conflict Minerals Report.

2. Regulation S-K

While the proposed rule and form amendments would make revisions to Regulation S-K, the collection of information requirements for that regulation are reflected in the burden hours estimated for Form 10-K. The rules in Regulation S-K do not impose any separate burden. Consistent with historical practice, we are proposing to retain an estimate of one burden hour to Regulation S-K for administrative convenience.

3. Form 20-F

For purposes of the PRA, we estimate that, of the 942 Form 20-F annual reports, approximately 377 are filed

¹⁷⁶ We arrived at this number by estimating the number of issuers that fall under all the SIC codes that our staff believes most likely to manufacture or contract to manufacture products with conflict minerals necessary to the functionality or production of products manufactured or contracted to be manufactured by those issuers, and subtracted from that figure the number of issuers that file reports on Form 20-F and Form 40-F.

¹⁷⁷ \$3,600 × 5,551 = \$19,983,600.

¹⁷⁸ \$46,475,000 × (5551/5994) = \$43,040,161.

each year by companies that would be affected by the proposed rule and form amendments.¹⁷⁹ We estimate that the annual incremental paperwork burden for the Forms 20-F as a result of the proposed rule and form amendments would be nine burden hours per affected form associated with the company's preparation of the disclosure, and \$4,071,600¹⁸⁰ associated with the cost of hiring professionals to help prepare the disclosure. In addition, we estimate for these purposes that those issuers required to prepare a Conflict Minerals Reports would also expend a total of \$2,923,102¹⁸¹ associated with the cost of hiring professionals to conduct the due diligence and the independent private sector audit.

4. Form 40-F

For purposes of the PRA, we estimate that, of the 205 Form 40-F annual reports filed each year, approximately 66 are filed by companies that would be affected by the proposed rule and form amendments.¹⁸² We estimate that the annual incremental paperwork burden for the Forms 40-F as a result of the proposed rule and form amendments would be nine burden hours per affected form associated with the company's preparation of the disclosure, and \$712,800¹⁸³ associated with the cost of hiring professionals to help prepare the disclosure. In addition, we estimate for these purposes that those issuers required to prepare a Conflict Minerals Report would also expend a total of \$511,737¹⁸⁴ associated with the cost of hiring professionals to

conduct the due diligence and the independent private sector audit.

C. Summary of Proposed Changes to Annual Compliance Burden in Collection of Information

The following table illustrates the estimated changes in annual compliance burden in the collection of information in hours and costs for Exchange Act annual reports as a result of the proposed rule and form amendments.

TABLE 1

Form	Number of responses ¹⁸⁵	Incremental company	Incremental professional cost
10-K	5,551	149,877	\$63,023,761
20-F	377	3,393	6,994,702
40-F	66	594	1,224,537

TABLE 2

Form	Current annual response ¹⁸⁶	Current burden hours	Increase in burden hours	Proposed burden hours	Current professional costs	Increase in professional costs	Proposed professional costs
		(A)	(B)	(C)=(A)+(B)	(D)	(E)	(F)=(D)+(E)
10-K	13,545	21,363,548	149,877	21,513,425	\$2,848,473,000	\$63,023,761	\$2,911,496,761
20-F	942	622,907	3,393	626,300	743,089,980	6,994,702	750,084,682
40-F	205	21,884	594	22,478	26,260,500	1,224,537	27,485,037

D. Request for Comment

We request comment on the accuracy of our estimates. Pursuant to 44 U.S.C. 3506(c)(2)(B), the Commission solicits comments to: (i) Evaluate whether the proposed collections of information are necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (ii) evaluate the accuracy of the Commission's estimate of burden of the proposed collection of information; (iii) determine whether there are ways to enhance the quality, utility, and clarity of the information to be collected; (iv) evaluate whether there are ways to minimize the burden of the collection of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology; and (v) evaluate whether the proposed amendments will have any effects on any other collections of

information not previously identified in this section.

In particular, we request comment and supporting empirical data for purposes of the PRA on whether the proposed rule and form amendments:

- Will affect the burden hours and costs required to produce the annual reports on Forms 10-K, 20-F, and 40-F; and
- If so, whether the resulting change in the burden hours and costs required to produce those Exchange Act annual reports is the same as or different than the estimated incremental burden hours and costs proposed by the Commission.

Any member of the public may direct to us any comments concerning the accuracy of these burden estimates and any suggestions for reducing these burdens. Persons submitting comments on the collection of information requirements should direct the comments to the Office of Management and Budget, *Attention: Desk Officer for the Securities and Exchange*

Commission, Office of Information and Regulatory Affairs, Room 10102, New Executive Office Building, Washington, DC 20503, and should send a copy to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549-1090, with reference to File No. S7-40-10. Requests for materials submitted to OMB by the Commission with regard to these collections of information should be in writing, refer to File No. S7-40-10, and be submitted to the Securities and Exchange Commission, Office of Investor Education and Advocacy, 100 F Street NE., Washington, DC 20549-0213. OMB is required to make a decision concerning the collection of information between 30 and 60 days after publication of this release. Consequently, a comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication.

¹⁷⁹ We arrived at this estimate by determining the number of issuers that fall under all the SIC codes that our staff believes are most likely to manufacture or contract to manufacture products with conflict minerals necessary to the functionality or production of products manufactured or contracted to be manufactured by those issuers that file reports on Form 20-F.

¹⁸⁰ \$10,800 × 377 = \$4,071,600.

¹⁸¹ \$46,475,000 × (377/5994) = \$2,923,102.

¹⁸² We arrived at this estimate by determining the number of issuers that fall under all the SIC codes that our staff believes are most likely to manufacture or contract to manufacture products with conflict minerals necessary to the functionality or production of products manufactured or contracted to be manufactured by those issuers that file reports on Form 40-F.

¹⁸³ \$10,800 × 66 = \$712,800.

¹⁸⁴ \$46,475,000 × (66/5994) = \$511,737.

¹⁸⁵ This number corresponds to the estimated number of forms expected to be affected by the proposed rules and form amendments.

¹⁸⁶ The proposed rules and form amendments would not change the number of annual responses.

IV. Cost-Benefit Analysis

Section 1502 of the Act amends the Exchange Act by adding new Section 13(p),¹⁸⁷ which requires the Commission to promulgate disclosure and reporting regulations regarding the use of conflict minerals from the DRC countries. In response to the requirements of Exchange Act Section 13(p) as set forth in Section 1502 of the Act, the Commission is proposing new rules and form amendments that would provide for the disclosure and reporting of the use of conflict minerals from the DRC countries. The proposed rules and form amendments implement the requirements in Section 1502 of the Act and, as necessary or appropriate, require additional disclosure in a manner that we believe is consistent with Congress's intent.

First, Section 13(p)(1)(A) indicates that the Conflict Minerals Provision applies to a "person described," who is defined in Section 13(p)(2)(B) as one for whom conflict minerals are necessary to the functionality or production of a product manufactured by that person.¹⁸⁸ This provision could be read quite broadly to apply to any business, including individuals and companies that are not subject to SEC reporting, so long as conflict minerals are necessary to the functionality or production of a product manufactured by that entity or individual. We believe that such a broad reading of the provision is not warranted, however, given the provision's background and its location in the section of the Exchange Act that pertains to reporting issuers.¹⁸⁹ As a result, our proposed rules would apply only to issuers that file reports with the Commission under the Exchange Act, provided that conflict minerals are necessary to the functionality or production of a product manufactured by any such an issuer.

While our proposed amendments would not define specifically when a conflict mineral is "necessary to the functionality or production of a product," we intend our proposed rules to provide that a conflict mineral is "necessary to the production of a product" if a conflict mineral is intentionally included in a product's production process and the conflict mineral is necessary to that process, even if that conflict mineral is not ultimately included anywhere in the final product. Our proposed amendments would specify that, although a conflict mineral is necessary to the functionality or production of a

product manufactured or contracted to be manufactured by the issuer, if that conflict mineral was obtained from recycled or scrap minerals, that mineral would be considered DRC conflict free. This approach for recycled or scrap minerals is not included in the Conflict Minerals Provision, but we believe it is appropriate because such conflict minerals would not be implicating the concerns that prompted the enactment of this statutory provision.¹⁹⁰

Third, Section 13(p)(1)(A) indicates that issuers must disclose whether their necessary conflict minerals originated in the DRC countries.¹⁹¹ The Conflict Minerals Provision, however, is silent as to how issuers would determine whether their conflict minerals originated in the DRC countries. Our proposed amendments would indicate that an issuer's determination of whether or not any of its necessary conflict minerals originated in the DRC countries would be required to be based on a reasonable country of origin inquiry into the minerals' origins and, if the issuer determines its necessary conflict minerals did not originate in the DRC countries, that the issuer would have to disclose in the body of its annual report the reasonable country of origin inquiry it undertook to make its determination and would have to maintain reviewable business records to support this determination.

Fourth, our proposed amendments would specify where the Conflict Minerals report required by Section 13(p)(1)(A) of the Exchange Act should be provided.¹⁹² The statutory provision does not indicate how issuers should submit their Conflict Minerals Reports to the Commission. Our proposed amendments would require issuers with necessary conflict minerals that originated in the DRC countries to furnish their Conflict Minerals Reports as an exhibit to their annual report on Form 10-K, Form 20-F, or Form 40-F, as applicable. In addition, although the Conflict Minerals Provision indicates that the Conflict Minerals Report must include an independent private sector audit of such report submitted through the Commission, it is unclear what record of that independent private sector audit an issuer must submit to the Commission and how it must do so, if at all. Our proposed amendments would require issuers to furnish an audit report of the independent private sector audit as part of and in the same exhibit to the annual report as the issuer's Conflict Minerals Report. Our proposed

amendments also specify the required certification of the independent private sector audit. Our proposed amendments would require an issuer that furnishes a Conflict Minerals Report to include a statement in the body of its annual report that the Conflict Minerals Report is furnished as an exhibit to the annual report, that the Conflict Minerals Report and the certified audit report are available on its Internet Web site, and the Internet address of the Web site where the Conflict Minerals Report and audit report are located. Our proposed amendments would also require that the disclosure be posted on the issuer's Internet Web site at least until the issuer files its subsequent annual report.

Finally, our proposed amendments would require that the Conflict Minerals Report be furnished with the Commission, rather than filed. The Conflict Minerals Provision indicates that the report should be "submitted" to us,¹⁹³ but it does not indicate whether the report should be filed or furnished. Information that is furnished, rather than filed, with us is not subject to liability under Section 18 of the Exchange Act. By requiring the Conflict Minerals Report to be furnished with us, we are subjecting such reports to less liability than would exist if the reports were filed with us. However, under Exchange Act Section 13(p)(1)(C), failure to comply with the Conflict Minerals Provision would deem the issuer's due diligence process "unreliable" and, therefore, the Conflict Minerals Report "shall not satisfy" our proposed rules.¹⁹⁴ Also, issuers that fail to comply with our proposed rules would be subject to liability for violations of Exchange Act Sections 13(a) or 15(d), as applicable.¹⁹⁵

The Commission is sensitive to the costs and benefits imposed by the proposed rules and form amendments. The discussion below focuses on the costs and benefits of the proposals made by the Commission to implement the Act within its permitted discretion, rather than the costs and benefits of the Act itself.

A. Benefits

Overall, we expect that our proposed rules will have the benefit of furthering Congress's goal of deterring the financing of armed groups in the DRC countries through commercial activity in conflict minerals. The proposed rules, if adopted, would specify which companies are covered by the disclosure and reporting requirements in Section

¹⁸⁷ See Exchange Act Section 13(p).

¹⁸⁸ See *supra* note 12.

¹⁸⁹ See *supra* note 38.

¹⁹⁰ See *supra* note 157.

¹⁹¹ See Exchange Act Section 13(p)(1)(A).

¹⁹² *Id.*

¹⁹³ See Exchange Act Section 13(p)(1)(A).

¹⁹⁴ See Exchange Act Section 13(p)(1)(C).

¹⁹⁵ 15 U.S.C. 78m(a) and 15 U.S.C. 78o(d).

1502 of the Act and the alternative approach to disclosure for recycled or scrap minerals. The proposed rules would also specify the information that reporting companies with necessary conflict minerals would be required to disclose. This specification would benefit reporting companies by reducing uncertainty about their compliance with Commission rules.

Our proposal specifies the location of the initial disclosure of conflict minerals' origin and the location of the Conflict Minerals Report and should make it easier for interested parties to locate this information. In addition, our proposal to require reporting companies to furnish the independent private sector audit report would make the report easily accessible to interested parties. Thus, market participants and observers may benefit from the increased disclosure and improved reporting to the extent that they find information about conflict mineral use relevant to their decision making.

Additionally, our decision to require issuers to furnish with the Commission the independent private sector audit report instead of filing it would free the independent private sector auditors preparing these reports from assuming expert liability. Relative to the filing option that we could have proposed, this should decrease the cost to independent private sector auditors of providing such audits to conflict minerals-reporting companies. Depending on the state of competition in the market for independent private sector audits, the lower costs due to auditors not being required to assume expert liability could result in lower audit fees, which in turn should decrease conflict minerals-reporting companies' cost of compliance with the statute.

We are proposing that reporting companies covered by Section 1502 of the Act use a reasonable country of origin inquiry in determining whether their conflict minerals originated in the DRC countries and use due diligence in making their supply chain determinations. We have chosen not to provide guidance on what would constitute a "reasonable country of origin inquiry." Similarly, we have chosen not to propose a specific standard for due diligence. We believe that these decisions should benefit reporting issuers by allowing them the flexibility to use the reasonable country of origin inquiry and due diligence standards that are best suited to their circumstances. We believe that disclosure of the inquiry performed and the due diligence undertaken may

benefit market participants if they are interested in learning such information.

In addition, our proposed rules and form amendments would provide that conflict minerals obtained from recycled or scrap sources would be considered DRC conflict free. This should benefit issuers by providing an alternative approach for recycled or scrap minerals and reduce their compliance costs with the disclosure requirements in Section 1502 of the Act, particularly for recycled or scrap minerals, the origins of which are difficult to trace.

B. Costs

We anticipate that reporting companies would incur costs in meeting the additional disclosure required for their Exchange Act annual reports under Section 13(p) and the proposed rules and form amendments. The Commission's proposal to require an exhibit for the Conflict Minerals Report and that reporting companies furnish with the Commission the independent private sector audit report as an exhibit to their annual reports will result in costs related to the preparation of such exhibits. In addition, including manufacturing companies, companies contracting to manufacture products, companies contracting for the manufacture of products to sell under their own brand name or a separately established brand name, and mining companies as "persons described" would result in a larger number of companies incurring the disclosure compliance costs, compared to an interpretation that excluded some of these companies. Not requiring auditors to assume expert liability could increase the costs to market participants and other observers because auditors may not have as strong incentives to ensure their determinations are correct. Also, the Commission's proposal would require issuers that determine following a reasonable country of origin inquiry that their conflict minerals did not originate in the DRC countries must keep reviewable records, which will result in costs related to obtaining and maintaining these records. Further, such issuers would also incur costs in disclosing the reasonable country of origin inquiry in their annual reports. However, as described above, we believe these approaches are consistent with the Conflict Minerals Provision.

If a reporting company chose to incorporate by reference its independent private sector audit report into a Securities Act document, the independent private sector auditor would assume expert liability, if the auditor consented to the inclusion of its report. This would not be required

under our proposals but, if an issuer chose to do so, this might increase the cost to independent private sector auditors of providing such audits to issuers furnishing Conflict Minerals Reports. Depending on the state of competition in the market for independent private sector audits, the additional cost stemming from the assumption of expert liability could be passed on to issuers furnishing Conflict Minerals Reporting in the form of higher audit fees, which in turn would increase these companies' cost of compliance with the statute, although, as noted, issuers could avoid such costs by not incorporating the audit report into their Securities Act filings. In any event, since this audit market is still in its nascence, and issuers presumably would not choose to incorporate the report by reference, the above effects are difficult to assess but are likely insignificant.

C. Request for Comment

We request comment on the disclosures and accuracy of our estimates in this section.

V. Consideration of Burden on Competition and Promotion of Efficiency, Competition and Capital Formation

Section 3(f) of the Exchange Act requires the Commission, whenever it engages in rulemaking and is required to consider or determine if an action is necessary or appropriate in the public interest, also to consider whether the action will promote efficiency, competition, and capital formation.¹⁹⁶ Section 23(a)(2) of the Exchange Act also requires the Commission, when adopting rules under the Exchange Act, to consider the impact that any new rule would have on competition.¹⁹⁷ In addition, Section 23(a)(2) prohibits the Commission from adopting any rule that would impose a burden on competition not necessary or appropriate in furtherance of the purposes of the Exchange Act.¹⁹⁸

The Commission is proposing the new rules and form amendments discussed in this release to implement the requirements of Exchange Act Section 13(p) as set forth in Section 1502 of the Act. We believe that our proposed rulemaking would have a different impact on competition in different industries. In industries where most or all companies are subject to disclosure or reporting requirements under the statute, we believe anti-competitive

¹⁹⁶ 15 U.S.C. 78c(f).

¹⁹⁷ 15 U.S.C. 78w(a)(2).

¹⁹⁸ *Id.*

effects to be unlikely. In industries where not all or only a few companies are subject to the disclosure or reporting requirements, issuers that must provide disclosure or furnish Conflict Mineral Reports would incur competitive costs because of our disclosure and reporting requirements and clarifications.

Although the costs to perform the investigative work required and, if necessary, the independent private sector audit fees could increase the disclosure and reporting compliance costs for issuers that provide disclosure or furnish Conflict Minerals Reports versus companies who do not provide disclosure or furnish such reports, the net effect on competition would depend on how these costs compare to the benefits that companies obtain by using conflict minerals from the DRC countries, such as lower input costs.

Anti-competitive effects might be of larger magnitude in industries where the proportion of companies not covered by the Exchange Act Section 13(p) is larger. For instance, mining issuers might suffer a competitive disadvantage with respect to mining companies that are not required to provide disclosure or Conflict Minerals Reports but use DRC minerals, such as U.S. private mining companies or foreign mining companies, because the issuers would be required to incur investigative, disclosure, and reporting costs as a result of the statute and our rules.

We are proposing to require issuers to furnish the Conflict Minerals Report with the Commission instead of filing it and have it included in Exchange Act reports and Securities Act registration statements. This requirement may limit the costs to, and the potential negative impact on, capital formation. We are not currently aware of any effects on efficiency or capital formation, but we seek comment on whether there are any such effects.

Request for Comment

70. We request comment on whether the proposed rules, if adopted, would promote efficiency, competition, and capital formation or have an impact or burden on competition. Commentators are requested to provide empirical data and other factual support for their view, if possible.

VI. Initial Regulatory Flexibility Act Analysis

This Initial Regulatory Flexibility Act Analysis¹⁹⁹ relates to proposed rules and form amendments to implement

Section 13(p) of the Exchange Act, which concerns certain disclosure and reporting obligations of issuers with conflict minerals necessary to the functionality or production of any product manufactured or contracted to be manufactured by those issuers. As set forth by Section 13(p), an issuer with such necessary conflict minerals must disclose whether those minerals originated in the DRC countries and, if so, must submit to the Commission a Conflict Minerals Report.

A. Reasons for, and Objectives of, the Proposed Action

The proposed rule and form amendments are designed to implement the requirements of Section 1502 of the Act. Specifically, the proposed rules and form amendments would require all issuers with necessary conflict minerals to disclose in their annual reports whether those conflict minerals originated in the DRC countries. Issuers with necessary conflict minerals that originate in the DRC countries, or that are unable to determine that their necessary conflict minerals did not originate in the DRC countries, must provide the conflict minerals disclosure specified by our rules in their Exchange Act annual reports.

Any issuer with necessary conflict minerals that did originate in the DRC countries, or that is unable to determine that its necessary conflict minerals did not originate in DRC countries, also must furnish as an exhibit to its Exchange Act annual reports a Conflict Minerals Report, which requires the issuer to describe the measures it has taken to exercise due diligence on the source and chain of custody of such minerals, which measures shall include an certified independent private sector audit that shall constitute a critical component of due diligence. The Conflict Minerals Report must include a description of the products manufactured or contracted to be manufacture that are not DRC conflict free, the identification of the independent private sector auditor, and the disclosure of the facilities used to process the conflict minerals, the country of origin of the conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity. Also, issuers shall make available to the public on their Internet Web sites their Conflict Minerals Reports.

B. Legal Basis

We are proposing the rule and form amendments contained in this document under the authority set forth in Sections 6, 7, 10, and 19(a) of the

Securities Act, and Sections 12, 13, 15, and 23(a) of the Exchange Act.

C. Small Entities Subject to the Proposed Amendments

The proposals would affect small entities that file annual reports with the Commission under the Exchange Act, and that have conflict minerals necessary to the functionality or production of products they manufacture or contract to manufacture. Exchange Act Rule 0–10(a)²⁰⁰ defines an issuer to be a “small business” or “small organization” for purposes of the Regulatory Flexibility Act if it had total assets of \$5 million or less on the last day of its most recent fiscal year. We believe that the proposals would affect small entities with necessary conflict minerals as defined under Section 13(p). We estimate that there are approximately 793 companies to which conflict minerals are necessary and that may be considered small entities.

D. Reporting, Recordkeeping, and Other Compliance Requirements

The proposed rule and form amendments would add to the annual disclosure requirements of companies with necessary conflict minerals, including small entities, by requiring them to comply with the disclosure and reporting obligations under Section 13(p) and provide certain additional disclosure in their Exchange Act annual reports. Among other matters, that information must include, as applicable:

- Disclosure as to whether conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufacture by an issuer did originate in the DRC countries; and, if so,
- A Conflict Minerals Report furnished as an exhibit to the annual report, which includes a certified independent private sector audit report.
- Reviewable business records regarding any determination that an issuer's conflict minerals did not originate in the DRC countries.

The same disclosure and reporting requirements would apply to U.S. and foreign issuers. We are proposing to amend Form 10–K and Regulation S–K to require domestic issuers to provide the conflict minerals information. Because Regulation S–K does not directly apply to Forms 20–F and 40–F,²⁰¹ we propose to amend those forms to include the same disclosure

²⁰⁰ 17 CFR 240.0–10(a).

²⁰¹ While Form 20–F may be used by any foreign private issuer, Form 40–F is only available to a Canadian issuer that is eligible to participate in the U.S.–Canadian Multijurisdictional Disclosure System (“MJDS”).

¹⁹⁹ This analysis has been prepared in accordance with 5 U.S.C. 603.

requirements for issuers that are foreign private issuers.²⁰²

E. Duplicative, Overlapping, or Conflicting Federal Rules

We believe there are no federal rules that duplicate, overlap or conflict with the proposed rules.

F. Significant Alternatives

The Regulatory Flexibility Act directs us to consider significant alternatives that would accomplish the stated objectives, while minimizing any significant adverse impact on small entities. In connection with the proposals, we considered the following alternatives:

- (1) Establishing different compliance or reporting requirements which take into account the resources available to smaller entities;
- (2) Exempting smaller entities from coverage of the disclosure requirements, or any part thereof;
- (3) The clarification, consolidation, or simplification of disclosure for small entities; and
- (4) Use of performance standards rather than design standards.

We believe that separate disclosure requirements for small entities that would differ from the proposed reporting requirements, or exempting them from those requirements, would not achieve the disclosure objectives of Section 13(p). The proposed rules are designed to implement the conflict minerals disclosure and reporting requirements of Section 13(p). That statutory section applies to all issuers with necessary conflict minerals, regardless of size. However, the reasonable country of origin inquiry standard for determining whether conflict minerals originated in the DRC countries and the due diligence standard necessary for making the supply chain determinations in the Conflict Minerals Report are performance standards and would vary based on the facts and circumstances of each individual issuer. We have requested comment as to whether we should provide an exemption for smaller reporting companies and whether doing so would be consistent with the statute.

The proposed rules would require clear disclosure about the source and chain of custody of an issuer's necessary conflict minerals, which may result in increased transparency about the origin of those minerals. The proposed requirement to disclose the information

in the body of and as an exhibit to an issuer's Exchange Act annual report may simplify the process of submitting the proposed conflict minerals disclosure and Conflict Minerals Reports. In addition, furnishing the Conflict Minerals Reports and the audit reports as exhibits would simplify the search and retrieval of this information regarding issuers, including small entities, for investors and other interested persons.

We have otherwise used design rather than performance standards in connection with the proposed amendments because, based on our past experience, we believe the proposed amendments would be more useful if there were specific disclosure requirements. In addition, the specific disclosure requirements in the proposed amendments would promote consistent and comparable disclosure among all issuers with necessary conflict minerals.

G. Solicitation of Comment

We encourage the submission of comments with respect to any aspect of this Initial Regulatory Flexibility Analysis. In particular, we request comments regarding:

- How the proposed amendments can achieve their objective while lowering the burden on small entities;
- The number of small entity companies that may be affected by the proposed amendments;
- Whether small entity companies should be exempt from the rule;
- The existence or nature of the potential impact of the proposed amendments on small entity companies discussed in the analysis; and
- How to quantify the impact of the proposed amendments.

Respondents are asked to describe the nature of any impact and provide empirical data supporting the extent of the impact. Such comments will be considered in the preparation of the Final Regulatory Flexibility Analysis, if the proposed rule amendments are adopted, and will be placed in the same public file as comments on the proposed amendments themselves.

VII. Small Business Regulatory Enforcement Fairness Act

For purposes of the Small Business Regulatory Enforcement Fairness Act of 1996 ("SBREFA"),²⁰³ a rule is "major" if it has resulted, or is likely to result in:

- An annual effect on the economy of \$100 million or more;
- A major increase in costs or prices for consumers or individual industries; or

- Significant adverse effects on competition, investment or innovation.

Request for Comment

71. We request comment on whether our proposals would be a "major rule" for purposes of SBREFA. We solicit comment and empirical data on:

- The potential effect on the U.S. economy on an annual basis;
- Any potential increase in costs or prices for consumers or individual industries; and
- Any potential effect on competition, investment or innovation.

VIII. Statutory Authority and Text of The Proposed Amendments

The amendments described in this release are being proposed under the authority set forth in Sections 6, 7 10, 19(a), and 28 of the Securities Act, as amended, and Sections 12, 13, 15(d), 23(a), and 36 of the Exchange Act, as amended.

List of Subjects 17 CFR Parts 229 and 249

Reporting and recordkeeping requirements, Securities.

Text of The Proposed Amendments

For the reasons set out in the preamble, the Commission proposes to amend title 17, chapter II, of the Code of Federal Regulations as follows:

PART 229—STANDARD INSTRUCTIONS FOR FILING FORMS UNDER SECURITIES ACT OF 1933, SECURITIES EXCHANGE ACT OF 1934 AND ENERGY POLICY AND CONSERVATION ACT OF 1975—REGULATION S-K

1. The authority citation for part 229 continues to read in part as follows:

Authority: 15 U.S.C. 77e, 77f, 77g, 77h, 77j, 77k, 77s, 77z-2, 77z-3, 77aa(25), 77aa(26), 77ddd, 77eee, 77ggg, 77hhh, 77iii, 77jjj, 77nnn, 77sss, 78c, 78i, 78j, 78l, 78m, 78n, 78o, 78u-5, 78w, 78ll, 78mm, 80a-8, 80a-9, 80a-20, 80a-29, 80a-30, 80a-31(c), 80a-37, 80a-38(a), 80a-39, 80b-11, and 7201 *et seq.*; and 18 U.S.C. 1350, unless otherwise noted.

* * * * *

2. Add § 229.104 to read as follows:

§ 229.104 (Item 104) Conflict minerals disclosure.

(a) If any conflict minerals, as defined by paragraph (c)(3) of this section, are necessary to the functionality or production of a product manufactured or contracted to be manufactured by the registrant in the year covered by the annual report, the registrant must disclose in its annual report under a separate heading entitled "Conflict Minerals Disclosure" whether any of

²⁰² Proposed Item 16 under Part II of Form 20-F and proposed General Instruction B(16) of Form 40-F.

²⁰³ Public Law 104-121, Title II, 110 Stat. 857 (1996).

these conflict minerals originated in the Democratic Republic of the Congo or an adjoining country, as defined by paragraph (c)(1) of this section or that the registrant is not able to determine that its conflict minerals did not originate in the Democratic Republic of the Congo or an adjoining country. The registrant's determination of whether or not any of these conflict minerals originated in the Democratic Republic of the Congo or an adjoining country, or its inability to determine that these conflict minerals did not originate in the Democratic Republic of the Congo or an adjoining country, must be based on its reasonable country of origin inquiry. If the registrant determines that its conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by it did not originate in the Democratic Republic of the Congo or an adjoining country, the registrant must make that disclosure available on its Internet Web site and must also disclose this determination in its annual report under the separate "Conflict Minerals Disclosure" heading along with the reasonable country of origin inquiry it undertook to make its determination, that its disclosure is located on its Internet Web site, and the address of that Internet Web site. The disclosure must remain on the registrant's Internet Web site at least until the registrant files its subsequent annual report. Also, the registrant must maintain reviewable business records to support any such negative determination.

(b) If any conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by the registrant originated in the Democratic Republic of the Congo or an adjoining country, if the registrant is unable to determine that such conflict minerals did not originate in the Democratic Republic of the Congo or an adjoining country, or if such conflict minerals came from recycled or scrap sources, the registrant must:

(1) Furnish a Conflict Minerals Report as an exhibit to its annual report with the following information:

(i) A description of the measures taken by the registrant to exercise due diligence on the source and chain of custody of the conflict minerals or to exercise due diligence in determining that the conflict minerals came from recycled or scrap sources, which shall include but not be limited to a certified independent private sector audit of the Conflict Minerals Report, conducted in accordance with standards established by the Comptroller General of the

United States, that shall constitute a critical component of the registrant's due diligence in establishing the source and chain of custody of the conflict minerals or that the conflict minerals came from recycled or scrap sources;

(ii) A certification by the registrant that it obtained such an independent private sector audit;

(iii) A description of any of the registrant's products manufactured or contracted to be manufactured containing conflict minerals that are not "DRC conflict free," as defined in paragraph (c)(4) of this section, the facilities used to process those conflict minerals, the country of origin of those conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity; and

(iv) The audit report prepared by the independent private sector auditor, which identifies the entity that conducted the audit.

(2) In addition to the disclosures required by paragraph (a) of this section, disclose under the separate "Conflict Minerals Disclosure" heading in the annual report that the registrant has furnished a Conflict Minerals Report as an exhibit to the annual report; that the Conflict Minerals Report and the certified independent private sector audit report are available on its Internet Web site; and the Internet address of its Internet Web site where the Conflict Minerals Report and audit report are located.

(3) Make the Conflict Minerals Report, including the certified audit report, available to the public by posting the text of the report on its Internet Web site. The text of the Conflict Minerals Report must remain on the registrant's Internet Web site at least until the registrant files its subsequent annual report.

(c) For the purposes of this section, the following definitions apply:

(1) *Adjoining country*. The term *adjoining country* means a country that shares an internationally recognized border with the Democratic Republic of the Congo.

(2) *Armed group*. The term *armed group* means an armed group that is identified as a perpetrator of serious human rights abuses in the most recently issued annual Country Reports on Human Rights Practices under sections 116(d) and 502B(b) of the Foreign Assistance Act of 1961 (22 U.S.C. 2151n(d) and 2304(b)) relating to the Democratic Republic of the Congo or an adjoining country for the year the annual report is due.

(3) *Conflict mineral*. The term *conflict mineral* means:

(i) Columbite-tantalite (coltan), cassiterite, gold, wolframite, or their derivatives; or

(ii) Any other mineral or its derivatives determined by the Secretary of State to be financing conflict in the Democratic Republic of the Congo or an adjoining country.

(4) *DRC conflict free*. The term *DRC conflict free* means that a product does not contain conflict minerals that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo or an adjoining country. Conflict minerals that a registrant is unable to determine did not originate in the Democratic Republic of the Congo or an adjoining country are not "DRC conflict free." Conflict minerals that a registrant obtains from recycled or scrap sources are considered DRC conflict free.

Instructions to Item 104

(1) A registrant that files reports with the Commission under Sections 13(a) (15 U.S.C. 78m(a)) or 15(d) (15 U.S.C. 78o(d)) of the Exchange Act, for whom conflict minerals are necessary to the functionality or production of a product manufactured or contracted to be manufactured by that registrant, shall provide the information required by this item. A registrant that mines conflict minerals would be considered to be manufacturing those minerals for the purpose of this item.

(2) The information required by this Item shall not be deemed to be "filed" with the Commission or subject to the liabilities of section 18 of the Exchange Act (15 U.S.C. 78r), except to the extent that the registrant specifically incorporates the information by reference into a document filed under the Securities Act or the Exchange Act. The disclosure required by this Item need not be provided in any filings other than an annual report on Form 10-K (§ 249.310 of this chapter). Such information will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

3. Amend § 229.601 in the exhibit table to add entry (96) and add paragraph (b)(96) to read as follows:

§ 229.601 (Item 601) Exhibits.

(a) * * *

Exhibit Table * * *

EXHIBIT TABLE

		Securities Act Forms								Exchange Act Forms				
		S-1	S-3	S-4 ³	S-8	S-11	F-1	F-3	F-4 ³	10	8-K ⁵	10-D	10-Q	10-K

* * * * *

(b) * * *

Report on conflict minerals from the Democratic Republic of the Congo or an Adjoining Country. The report required by Item 104(b)(1) of Regulation S-K, if applicable.

* * * * *

PART 249—FORMS, SECURITIES EXCHANGE ACT OF 1934

4. The authority citation for part 249 continues to read in part as follows:

Authority: 15 U.S.C. 78a *et seq.* and 7201 *et seq.*; and 18 U.S.C. 1350, unless otherwise noted.

* * * * *

5. Amend Form 20-F (referenced in § 249.220f) by adding Item 16 and by adding paragraph 16 to the Instructions as to Exhibits.

The addition reads as follows:

Note: The text of Form 20-F does not, and this amendment will not, appear in the Code of Federal Regulations.

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 20-F

* * * * *

PART II

* * * * *

Item 16. Conflict Minerals Disclosure

(a) If any conflict minerals, as defined by paragraph (c)(3) of this Item, are necessary to the functionality or production of a product manufactured or contracted to be manufactured by the registrant in the year covered by the annual report, the registrant must disclose in its annual report under a separate heading entitled “Conflict Minerals Disclosure” whether any of these conflict minerals originated in the Democratic Republic of the Congo or an adjoining country, as defined by paragraph (c)(1) of this Item, or that the registrant is not able to determine that its conflict minerals did not originate in

the Democratic Republic of the Congo or an adjoining country. The registrant’s determination of whether or not any of these conflict minerals originated in the Democratic Republic of the Congo or an adjoining country, or its inability to determine that these conflict minerals did not originate in the Democratic Republic of the Congo or an adjoining country, must be based on its reasonable country of origin inquiry. If the registrant determines that its conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by it did not originate in the Democratic Republic of the Congo or an adjoining country, the registrant must make that disclosure available on its Internet Web site and must also disclose this determination in its annual report under the separate “Conflict Minerals Disclosure” heading along with the reasonable country of origin inquiry it undertook to make its determination, that its disclosure is located on its Internet Web site, and the address of that Internet Web site. The disclosure must remain on the registrant’s Internet Web site at least until the registrant files its subsequent annual report. Also, the registrant must maintain reviewable business records to support any such negative determination.

(b) If any conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by the registrant originated in the Democratic Republic of the Congo or an adjoining country, if the registrant is unable to determine that such conflict minerals did not originate in the Democratic Republic of the Congo or an adjoining country, or if such conflict minerals came from recycled or scrap sources, the registrant must:

(1) Furnish a Conflict Minerals Report as an exhibit to its annual report with the following information:

(i) A description of the measures taken by the registrant to exercise due diligence on the source and chain of custody of the conflict minerals or to exercise due diligence in determining that the conflict minerals came from

recycled or scrap sources, which shall include but not be limited to a certified independent private sector audit of the Conflict Minerals Report, conducted in accordance with standards established by the Comptroller General of the United States, that shall constitute a critical component of the registrant’s due diligence in establishing the source and chain of custody of the conflict minerals or that the conflict minerals came from recycled or scrap sources;

(ii) A certification by the registrant that it obtained such an independent private sector audit;

(iii) A description of any of the registrant’s products manufactured or contracted to be manufactured containing conflict minerals that are not “DRC conflict free,” as defined in paragraph (c)(4) of this Item, the facilities used to process those conflict minerals, the country of origin of those conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity; and

(iv) The audit report prepared by the independent private sector auditor, which identifies the entity that conducted the audit.

(2) In addition to the disclosures required by paragraph (a) of this Item, disclose under the separate “Conflict Minerals Disclosure” heading in the annual report that the registrant has furnished a Conflict Minerals Report as an exhibit to the annual report; that the Conflict Minerals Report and the certified independent private sector audit report are available on its Internet Web site; and the Internet address of its Internet Web site where the Conflict Minerals Report and audit report are located.

(3) Make the Conflict Minerals Report, including the certified audit report, available to the public by posting the text of the report on its Internet Web site. The text of the Conflict Minerals Report must remain on the registrant’s Internet Web site at least until the registrant files its subsequent annual report.

(c) For the purposes of this Item, the following definitions apply:

(1) *Adjoining country.* The term *adjoining country* means a country that shares an internationally recognized border with the Democratic Republic of the Congo.

(2) *Armed group.* The term *armed group* means an armed group that is identified as a perpetrator of serious human rights abuses in the most recently issued annual Country Reports on Human Rights Practices under sections 116(d) and 502B(b) of the Foreign Assistance Act of 1961 (22 U.S.C. 2151n(d) and 2304(b)) relating to the Democratic Republic of the Congo or an adjoining country for the year the annual report is due.

(3) *Conflict mineral.* The term *conflict mineral* means:

(i) columbite-tantalite (coltan), cassiterite, gold, wolframite, or their derivatives; or

(ii) any other mineral or its derivatives determined by the Secretary of State to be financing conflict in the Democratic Republic of the Congo or an adjoining country.

(4) *DRC conflict free.* The term *DRC conflict free* means that a product does not contain conflict minerals that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo or an adjoining country. Conflict minerals that a registrant is unable to determine did not originate in the Democratic Republic of the Congo or an adjoining country are not “DRC conflict free.” Conflict minerals that a registrant obtains from recycled or scrap sources are considered DRC conflict free.

Instructions to Item 16

(1) Item 16 applies only to annual reports, and does not apply to registration statements on Form 20-F. A registrant must provide the information required in Item 16 beginning with the annual report that it files for its first full fiscal year beginning after [April 15, 2011].

(2) A registrant that files reports with the Commission under Sections 13(a) (15 U.S.C. 78m(a)) or 15(d) (15 U.S.C. 78o(d)) of the Exchange Act, for whom conflict minerals are necessary to the functionality or production of a product manufactured or contracted to be manufactured by that registrant, shall provide the information required by this item. A registrant that mines conflict minerals would be considered to be manufacturing those minerals for the purpose of this item.

(3) The information required by this Item shall not be deemed to be “filed” with the Commission or subject to the liabilities of section 18 of the Exchange Act (15 U.S.C. 78r), except to the extent

that the registrant specifically incorporates the information by reference into a document filed under the Securities Act or the Exchange Act. The disclosure required by this Item need not be provided in any filings other than an annual report on Form 20-F (§ 249.220f of this chapter). Such information will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

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Instructions as to Exhibits

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16. The Conflict Minerals Report required by Item 16 of this Form, if applicable.

* * * * *

6. Amend Form 40-F (referenced in § 249.240f) by adding paragraph (16) to General Instruction B as follows:

Note: The text of Form 40-F does not, and this amendment will not, appear in the Code of Federal Regulations.

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 40-F

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GENERAL INSTRUCTIONS

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B. Information To Be Filed on This Form

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(16) Conflict Minerals Disclosure

(a) If any conflict minerals, as defined by paragraph (c)(3) of this Instruction, are necessary to the functionality or production of a product manufactured or contracted to be manufactured by the registrant in the year covered by the annual report, the registrant must disclose in its annual report under a separate heading entitled “Conflict Minerals Disclosure” whether any of these conflict minerals originated in the Democratic Republic of the Congo or an adjoining country, as defined by paragraph (c)(1) of this Instruction, or that the registrant is not able to determine that its conflict minerals did not originate in the Democratic Republic of the Congo or an adjoining country. The registrant’s determination of whether or not any of these conflict minerals originated in the Democratic Republic of the Congo or an adjoining country, or its inability to determine that these conflict minerals did not

originate in the Democratic Republic of the Congo or an adjoining country, must be based on its reasonable country of origin inquiry. If the registrant determines that its conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by it did not originate in the Democratic Republic of the Congo or an adjoining country, the registrant must make that disclosure available on its Internet Web site and must also disclose this determination in its annual report under the separate “Conflict Minerals Disclosure” heading along with the reasonable country of origin inquiry it undertook to make its determination, that its disclosure is located on its Internet Web site, and the address of that Internet Web site. The disclosure must remain on the registrant’s Internet Web site at least until the registrant files its subsequent annual report. Also, the registrant must maintain reviewable business records to support any such negative determination.

(b) If any conflict minerals necessary to the functionality or production of a product manufactured or contracted to be manufactured by the registrant originated in the Democratic Republic of the Congo or an adjoining country, if the registrant is unable to determine that such conflict minerals did not originate in the Democratic Republic of the Congo or an adjoining country, or if such conflict minerals came from recycled or scrap sources, the registrant must:

(1) Furnish a Conflict Minerals Report as an exhibit to its annual report with the following information:

(i) a description of the measures taken by the registrant to exercise due diligence on the source and chain of custody of the conflict minerals or to exercise due diligence in determining that the conflict minerals came from recycled or scrap sources, which shall include but not be limited to a certified independent private sector audit of the Conflict Minerals Report, conducted in accordance with standards established by the Comptroller General of the United States, that shall constitute a critical component of the registrant’s due diligence in establishing the source and chain of custody of the conflict minerals or that the conflict minerals came from recycled or scrap sources;

(ii) a certification by the registrant that it obtained such an independent private sector audit;

(iii) a description of any of the registrant’s products manufactured or contracted to be manufactured containing conflict minerals that are not “DRC conflict free,” as defined in paragraph (c)(4) of this Instruction, the

facilities used to process those conflict minerals, the country of origin of those conflict minerals, and the efforts to determine the mine or location of origin with the greatest possible specificity; and

(iv) the audit report prepared by the independent private sector auditor, which identifies the entity that conducted the audit.

(2) In addition to the disclosures required by paragraph (a) of this Instruction, disclose under the separate "Conflict Minerals Disclosure" heading in the annual report that the registrant has furnished a Conflict Minerals Report as an exhibit to the annual report; that the Conflict Minerals Report and the certified independent private sector audit report are available on its Internet Web site; and the Internet address of its Internet Web site where the Conflict Minerals Report and audit report are located.

(3) Make the Conflict Minerals Report, including the certified audit report, available to the public by posting the text of the report on its Internet Web site. The text of the Conflict Minerals Report must remain on the registrant's Internet Web site at least until the registrant files its subsequent annual report.

(c) For the purposes of this Instruction, the following definitions apply:

(1) *Adjoining country*. The term *adjoining country* means a country that shares an internationally recognized border with the Democratic Republic of the Congo.

(2) *Armed group*. The term *armed group* means an armed group that is identified as a perpetrator of serious human rights abuses in the most recently issued annual Country Reports on Human Rights Practices under sections 116(d) and 502B(b) of the Foreign Assistance Act of 1961 (22 U.S.C. 2151n(d) and 2304(b)) relating to the Democratic Republic of the Congo or an adjoining country for the year the annual report is due.

(3) *Conflict mineral*. The term *conflict mineral* means:

(i) columbite-tantalite (coltan), cassiterite, gold, wolframite, or their derivatives; or

(ii) any other mineral or its derivatives determined by the Secretary of State to be financing conflict in the Democratic Republic of the Congo or an adjoining country.

(4) *DRC conflict free*. The term *DRC conflict free* means that a product does not contain conflict minerals that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo or an adjoining country. Conflict minerals that a registrant is unable to determine did not originate in the Democratic Republic of the Congo or an adjoining country are not "DRC conflict free." Conflict minerals that a registrant obtains from recycled or scrap sources are considered DRC conflict free.

Notes to Paragraph (16) of General Instruction B

(1) Paragraph (16) of General Instruction B applies only to annual reports, and does not apply to registration statements on Form 40-F. A registrant must provide the information required in paragraph (16) beginning with the annual report that it files for its first full fiscal year beginning after [April 15, 2011].

(2) A registrant that files reports with the Commission under Sections 13(a) (15 U.S.C. 78m(a)) or 15(d) (15 U.S.C. 78o(d)) of the Exchange Act, for whom conflict minerals are necessary to the functionality or production of a product manufactured or contracted to be manufactured by that registrant, shall provide the information required by this Instruction. A registrant that mines conflict minerals would be considered to be manufacturing those minerals for the purpose of this Instruction.

(3) The information required by this Instruction shall not be deemed to be "filed" with the Commission or subject to the liabilities of section 18 of the Exchange Act (15 U.S.C. 78r), except to

the extent that the registrant specifically incorporates the information by reference into a document filed under the Securities Act or the Exchange Act. The disclosure required by this Instruction need not be provided in any filings other than an annual report on Form 40-F (§ 249.240f of this chapter). Such information will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

* * * * *

7. Amend Form 10-K (referenced in § 249.310) by adding Item 4(a) as follows:

Note: The text of Form 10-K does not, and this amendment will not, appear in the Code of Federal Regulations.

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 10-K

* * * * *

PART I

* * * * *

Item 4. Specialized Disclosures

(a) Furnish the information required by Item 104 of Regulation S-K (§ 229.104 of this chapter).

Instruction

A registrant must provide the information required in Item 4 beginning with the annual report that it files for its first full fiscal year beginning after [April 15, 2011].

* * * * *

By the Commission.

Dated: December 15, 2010.

Elizabeth M. Murphy,

Secretary.

[FR Doc. 2010-31940 Filed 12-22-10; 8:45 am]

BILLING CODE 8011-01-P

Senate Bill No. 657

CHAPTER 556

An act to add Section 1714.43 to the Civil Code, and to add Section 19547.5 to the Revenue and Taxation Code, relating to human trafficking.

[Approved by Governor September 30, 2010. Filed with
Secretary of State September 30, 2010.]

LEGISLATIVE COUNSEL'S DIGEST

SB 657, Steinberg. Human trafficking.

The federal Victims of Trafficking and Violence Protection Act of 2000 establishes an Interagency Task Force to Monitor and Combat Trafficking, as specified.

Existing state law makes human trafficking a crime. Existing state law also allows a victim of human trafficking to bring a civil action for actual damages, compensatory damages, punitive damages, injunctive relief, any combination of those, or any other appropriate relief.

Existing law generally regulates various business activities and practices, including those of retail sellers and manufacturers of products.

This bill would enact the California Transparency in Supply Chains Act of 2010, and would, beginning January 1, 2012, require retail sellers and manufacturers doing business in the state to disclose their efforts to eradicate slavery and human trafficking from their direct supply chains for tangible goods offered for sale, as specified. That provision would not apply to a retail seller or manufacturer having less than \$100,000,000 in annual worldwide gross receipts. The bill would also make a specified statement of legislative intent regarding slavery and human trafficking. The bill would also require the Franchise Tax Board to make available to the Attorney General a list of retail sellers and manufacturers required to disclose efforts to eradicate slavery and human trafficking pursuant to that provision, as specified.

The people of the State of California do enact as follows:

SECTION 1. This act shall be known, and may be cited, as the California Transparency in Supply Chains Act of 2010.

SEC. 2. The Legislature finds and declares the following:

(a) Slavery and human trafficking are crimes under state, federal, and international law.

(b) Slavery and human trafficking exist in every country, including the United States, and the State of California.

(c) As a result of the criminal natures of slavery and human trafficking, these crimes are often hidden from view and are difficult to uncover and track.

(d) In recent years, significant legislative efforts have been made to capture and punish the perpetrators of these crimes.

(e) Significant legislative efforts have also been made to ensure that victims are provided with necessary protections and rights.

(f) Legislative efforts to address the market for goods and products tainted by slavery and trafficking have been lacking, the market being a key impetus for these crimes.

(g) In September 2009, the United States Department of Labor released a report required by the Trafficking Victims Protection Reauthorization Acts of 2005 and 2008 which named 122 goods from 58 countries that are believed to be produced by forced labor or child labor in violation of international standards.

(h) Consumers and businesses are inadvertently promoting and sanctioning these crimes through the purchase of goods and products that have been tainted in the supply chain.

(i) Absent publicly available disclosures, consumers are at a disadvantage in being able to distinguish companies on the merits of their efforts to supply products free from the taint of slavery and trafficking. Consumers are at a disadvantage in being able to force the eradication of slavery and trafficking by way of their purchasing decisions.

(j) It is the policy of this state to ensure large retailers and manufacturers provide consumers with information regarding their efforts to eradicate slavery and human trafficking from their supply chains, to educate consumers on how to purchase goods produced by companies that responsibly manage their supply chains, and, thereby, to improve the lives of victims of slavery and human trafficking.

SEC. 3. Section 1714.43 is added to the Civil Code, to read:

1714.43. (a) (1) Every retail seller and manufacturer doing business in this state and having annual worldwide gross receipts that exceed one hundred million dollars (\$100,000,000) shall disclose, as set forth in subdivision (c), its efforts to eradicate slavery and human trafficking from its direct supply chain for tangible goods offered for sale.

(2) For the purposes of this section, the following definitions shall apply:

(A) “Doing business in this state” shall have the same meaning as set forth in Section 23101 of the Revenue and Taxation Code.

(B) “Gross receipts” shall have the same meaning as set forth in Section 25120 of the Revenue and Taxation Code.

(C) “Manufacturer” means a business entity with manufacturing as its principal business activity code, as reported on the entity’s tax return filed under Part 10.2 (commencing with Section 18401) of Division 2 of the Revenue and Taxation Code.

(D) “Retail seller” means a business entity with retail trade as its principal business activity code, as reported on the entity’s tax return filed under Part

10.2 (commencing with Section 18401) of Division 2 of the Revenue and Taxation Code.

(b) The disclosure described in subdivision (a) shall be posted on the retail seller's or manufacturer's Internet Web site with a conspicuous and easily understood link to the required information placed on the business' homepage. In the event the retail seller or manufacturer does not have an Internet Web site, consumers shall be provided the written disclosure within 30 days of receiving a written request for the disclosure from a consumer.

(c) The disclosure described in subdivision (a) shall, at a minimum, disclose to what extent, if any, that the retail seller or manufacturer does each of the following:

(1) Engages in verification of product supply chains to evaluate and address risks of human trafficking and slavery. The disclosure shall specify if the verification was not conducted by a third party.

(2) Conducts audits of suppliers to evaluate supplier compliance with company standards for trafficking and slavery in supply chains. The disclosure shall specify if the verification was not an independent, unannounced audit.

(3) Requires direct suppliers to certify that materials incorporated into the product comply with the laws regarding slavery and human trafficking of the country or countries in which they are doing business.

(4) Maintains internal accountability standards and procedures for employees or contractors failing to meet company standards regarding slavery and trafficking.

(5) Provides company employees and management, who have direct responsibility for supply chain management, training on human trafficking and slavery, particularly with respect to mitigating risks within the supply chains of products.

(d) The exclusive remedy for a violation of this section shall be an action brought by the Attorney General for injunctive relief. Nothing in this section shall limit remedies available for a violation of any other state or federal law.

(e) The provisions of this section shall take effect on January 1, 2012.

SEC. 4. Section 19547.5 is added to the Revenue and Taxation Code, to read:

19547.5. (a) (1) Notwithstanding any provision of law, the Franchise Tax Board shall make available to the Attorney General a list of retail sellers and manufacturers required to disclose efforts to eradicate slavery and human trafficking pursuant to Section 1714.43 of the Civil Code. The list shall be based on tax returns filed for taxable years beginning on or after January 1, 2011.

(2) Each list required by this section shall be submitted annually to the Attorney General by November 30, 2012, and each November 30 thereafter. The list shall be derived from original tax returns received by the Franchise Tax Board on or before December 31, 2011, and each December 31 thereafter.

(b) Each annual list required by this section shall include the following information for each retail seller or manufacturer:

- (1) Entity name.
- (2) California identification number.



HP Electronic Industry Code of Conduct

Version 4.01, June 12, 2012

The Electronic Industry Code of Conduct (EICC) establishes standards to ensure that working conditions in the electronics industry supply chain are safe, that workers are treated with respect and dignity, and that business operations are environmentally responsible. The HP Suppliers Code of Conduct is based on the EICC and is independently maintained and updated to reflect our HP standards and supplier operations.

This policy defines HP's social and environmental performance requirements for suppliers of goods and services to HP.

Scope

All suppliers involved in HP's manufacturing processes or in manufacturing HP's products, packaging, parts, components, subassemblies, and materials, or that provide services to or on behalf of HP, must comply with the HP Electronic Industry Code of Conduct (the Code).

Policy

While we recognize that there are different legal and cultural environments in which suppliers operate throughout the world, the HP Electronic Industry Code of Conduct (the Code) sets forth the minimum requirements that all suppliers must meet in doing business with HP. Additional requirements for suppliers of subassemblies, parts, materials, components, batteries, and packaging that are incorporated into HP brand products are contained in the *HP General Specification for the Environment*.

HP Electronic Industry Code of Conduct

Version 4.01 (June 2012)

The Electronic Industry Code of Conduct establishes standards to ensure that working conditions in the electronics industry supply chain are safe, that workers are treated with respect and dignity, and that business operations are environmentally responsible and conducted ethically.

Considered as part of the electronics industry for purposes of this Code are all organization that may design, market, manufacture or provide goods and services that are used to produce electronic goods. The Code may be voluntarily adopted by any business in the electronics sector and subsequently applied by that business to its supply chain and subcontractors, including providers of contract labor.

To adopt the Code and become a participant ("Participant"), a business shall declare its support for the Code and actively pursue conformance to the Code and its standards in accordance with a management system as herein.

Participants must regard the code as a total supply chain initiative. At a minimum, participants shall also require its next tier suppliers to acknowledge and implement the Code.

Fundamental to adopting the Code is the understanding that a business, in all of its activities, must operate in full compliance with the laws, rules and regulations of the countries in which

it operates.¹ The Code encourages Participants to go beyond legal compliance, drawing upon internationally recognized standards, in order to advance social and environmental responsibility, and business ethics.

The Electronic Industry Citizenship Coalition is committed to obtaining regular input from stakeholders in the continued development and implementation of the Electronic Industry Code of Conduct (EICC).

The Code is made up of five sections. Sections A, B, and C outline standards for Labor, Health and Safety, and the Environment, respectively. Section D adds standards relating to business ethics; Section E outlines the elements of an acceptable system to manage conformity to this Code.

A. LABOR

Participants are committed to uphold the human rights of workers, and to treat them with dignity and respect as understood by the international community. **This applies to all workers including temporary, migrant, student, contract, direct employees, and any other type of worker. The recognized standards, as set out in the annex, were used as references in preparing the Code and may be a useful source of additional information.**

The recognized standards, as set out in the annex, were used as references in preparing the Code and may be a useful source of additional information.

The labor standards are:

1) Freely Chosen Employment

Forced, bonded (including debt bonded) or indentured labor; involuntary prison labor; slavery or trafficking of persons shall not be used. This includes transporting, harboring, recruiting, transferring or receiving vulnerable persons by means of threat, force, coercion, abduction or fraud for the purposes of exploitation. All work must be voluntary, and workers shall be free to leave work at any time upon reasonable notice. Workers must not be required to surrender any government-issued identification, passports, or work permits as a condition of employment. Excessive fees are unacceptable and all fees charged to workers must be disclosed.

2) Child Labor Avoidance

Child labor is not to be used in any stage of manufacturing. The term “child” refers to any person under the age of 15 (or 14 where the law of the country permits), or under the age for completing compulsory education, or under the minimum age for employment in the country, whichever is greatest. The use of legitimate workplace apprenticeship programs, which comply with all laws and regulations, is supported. Workers under the age of 18 shall not perform work that is likely to jeopardize the health or safety of young workers.

3) Working Hours

Studies of business practices clearly link worker strain to reduced productivity, increased turnover and increased injury and illness. Workweeks are not to exceed the maximum set by local law. Further, a workweek should not be more than 60 hours per week, including overtime, except in emergency or unusual situations. Workers shall be allowed at least one day off per seven-day week.

4) Wages and Benefits

Compensation paid to workers shall comply with all applicable wage laws, including those relating to minimum wages, overtime hours and legally mandated benefits. In compliance with local laws, workers shall be compensated for overtime at pay rates greater than regular hourly rates. Deductions from wages as a disciplinary measure shall not be permitted. The basis on which workers are being paid is to be provided in a timely manner via pay stub or similar documentation.

¹ The Code is not intended to create new and additional third party rights, including for workers.

5) Humane Treatment

There is to be no harsh and inhumane treatment, including any sexual harassment, sexual abuse, corporal punishment, mental or physical coercion or verbal abuse of workers; nor is there to be the threat of any such treatment. Disciplinary policies and procedures in support of these requirements shall be clearly defined and communicated to workers.

6) Non-Discrimination

Participants should be committed to a workforce free of harassment and unlawful discrimination. Companies shall not engage in discrimination based on race, color, age, gender, sexual orientation, ethnicity, disability, pregnancy, religion, political affiliation, union membership or marital status in hiring and employment practices such as promotions, rewards, and access to training. In addition, workers or potential workers should not be subjected to medical tests that could be used in a discriminatory way.

7) Freedom of Association

Open communication and direct engagement between workers and management are the most effective ways to resolve workplace and compensation issues. The rights of workers to associate freely, join or not join labor unions, seek representation, and join workers' councils, and bargain collectively in accordance with local laws shall be respected. Workers shall be able to openly communicate and share grievances with management regarding working conditions and management practices without fear of reprisal, intimidation or harassment.

HP Additional Requirement

In saying that worker rights are to be respected as established or provided by local law, what HP means is that in countries that have legal systems that support those rights, they are to be understood in the context of the definitions, conditions and procedures that local law provides. However, basic worker rights to open communication, direct engagement and humane and equitable treatment must be respected even in countries where they are not given meaningful legal protection. Where worker representation and collective bargaining are restricted by law, participants are to facilitate open communication and direct engagement between workers and management as alternative ways of ensuring that workers' rights, needs and views are considered and acted upon appropriately and in good faith. Open communication and direct engagement between workers and management are the most effective ways to resolve workplace and compensation issues.

B. HEALTH and SAFETY

Participants recognize that in addition to minimizing the incidence of work-related injury and illness, a safe and healthy work environment enhances the quality of products and services, consistency of production and worker retention and morale. Participants also recognize that ongoing worker input and education is essential to identifying and solving health and safety issues in the workplace.

Recognized management systems such as OHSAS 18001 and ILO Guidelines on Occupational Safety and Health were used as references in preparing the Code and may be a useful source of additional information.

The health and safety standards are:

1) Occupational Safety

Worker exposure to potential safety hazards (e.g., electrical and other energy sources, fire, vehicles, and fall hazards) are to be controlled through proper design, engineering and administrative controls, preventative maintenance and safe work procedures (including lockout/tagout), and ongoing safety training. Where hazards cannot be adequately controlled by these means, workers are to be provided with appropriate, well-maintained, personal protective equipment. Workers shall not be disciplined for raising safety concerns.

2) Emergency Preparedness

Potential emergency situations and events are to be identified and assessed, and their impact minimized by implementing emergency plans and response procedures, including: emergency reporting, employee notification and evacuation procedures, worker training and drills, appropriate fire detection and suppression equipment, adequate exit facilities and recovery plans.

3) Occupational Injury and Illness

Procedures and systems are to be in place to prevent, manage, track and report occupational injury and illness, including provisions to: a) encourage worker reporting; b) classify and record injury and illness cases; c) provide necessary medical treatment; d) investigate cases and implement corrective actions to eliminate their causes; and e) facilitate return of workers to work.

4) Industrial Hygiene

Worker exposure to chemical, biological and physical agents is to be identified, evaluated, and controlled. Engineering or administrative controls must be used to control overexposures. When hazards cannot be adequately controlled by such means, worker health is to be protected by appropriate personal protective equipment programs.

5) Physically Demanding Work

Worker exposure to the hazards of physically demanding tasks, including manual material handling and heavy or repetitive lifting, prolonged standing and highly repetitive or forceful assembly tasks is to be identified, evaluated and controlled.

6) Machine Safeguarding

Production and other machinery shall be evaluated for safety hazards. Physical guards, interlocks and barriers are to be provided and properly maintained where machinery presents an injury hazard to workers.

7) Sanitation, Food, and Housing

Workers are to be provided with ready access to clean toilet facilities, potable water and sanitary food preparation, storage, and eating facilities. Worker dormitories provided by the Participant or a labor agent are to be maintained clean and safe, and provided with appropriate emergency egress, hot water for bathing and showering, and adequate heat and ventilation and reasonable personal space along with reasonable entry and exit privileges.

C. ENVIRONMENTAL

Participants recognize that environmental responsibility is integral to producing world class products. In manufacturing operations, adverse effects on the community, environment and natural resources are to be minimized while safeguarding the health and safety of the public.

Recognized management systems such as ISO 14001, the Eco Management and Audit System (EMAS) were used as references in preparing the Code and may be a useful source of additional information.

The environmental standards are:

1) Environmental Permits and Reporting

All required environmental permits (e.g. discharge monitoring), approvals and registrations are to be obtained, maintained and kept current and their operational and reporting requirements are to be followed.

2) Pollution Prevention and Resource Reduction

Waste of all types, including water and energy, are to be reduced or eliminated at the source or by practices such as modifying production, maintenance and facility processes, materials substitution, conservation, recycling and re-using materials.

3) Hazardous Substances

Chemical and other materials posing a hazard if released to the environment are to be identified and managed to ensure their safe handling, movement, storage, use, recycling or reuse and disposal.

4) Wastewater and Solid Waste

Wastewater and solid waste generated from operations, industrial processes and sanitation facilities are to be characterized, monitored, controlled and treated as required prior to discharge or disposal.

5) Air Emissions

Air emissions of volatile organic chemicals, aerosols, corrosives, particulates, ozone depleting chemicals and combustion by-products generated from operations are to be characterized, monitored, controlled and treated as required prior to discharge.

6) Product Content Restrictions

Participants are to adhere to all applicable laws, regulations and customer requirements regarding prohibition or restriction of specific substances, including labeling for recycling and disposal.

D. ETHICS

To meet social responsibilities and to achieve success in the marketplace, Participants and their agents are to uphold the highest standards of ethics including:

1) Business Integrity

The highest standards of integrity are to be upheld in all business interactions. Participants shall have a zero tolerance policy to prohibit any and all forms of bribery, corruption, extortion and embezzlement (covering promising, offering, giving or accepting any bribes). All business dealings should be transparently performed and accurately reflected on Participant's business book and records. Monitoring and enforcement procedures shall be implemented to ensure compliance with anti-corruption laws..

2) No Improper Advantage

Bribes or other means of obtaining undue or improper advantage are not to be offered or accepted.

3) Disclosure of Information

Information regarding business activities, structure, financial situation and performance is to be disclosed in accordance with applicable regulations and prevailing industry practices. Falsification of records or misrepresentation of conditions or practices in the supply chain are unacceptable.

4) Intellectual Property

Intellectual property rights are to be respected; transfer of technology and know-how is to be done in a manner that protects intellectual property rights.

5) Fair Business, Advertising and Competition

Standards of fair business, advertising and competition are to be upheld. Appropriate means to safeguard customer information must be available.

6) Protection of Identity

Programs that ensure the confidentiality and protection of supplier and employee whistleblower² are to be maintained.

7) Responsible Sourcing of Minerals

Participants shall have a policy to reasonably assure that the tantalum, tin, tungsten and gold in the products they manufacture does not directly or indirectly finance or

² Whistleblower definition: Any person who makes a disclosure about improper conduct by an employee or officer of a company, or by a public official or official body.

benefit armed groups that are perpetrators of serious human rights abuses in the Democratic Republic of the Congo or an adjoining country. Participants shall exercise due diligence on the source and chain of custody of these minerals and make their due diligence measures available to customers upon customer request.

8) Privacy

We are committed to protecting the reasonable privacy expectations of personal information of everyone we do business with, including suppliers, customers, consumers and employees. Comply with privacy and information security laws and regulatory requirements when personal information is collected, stored, processed, transmitted, and shared.

9) Non-Retaliation

Participants should have a communicated process for their personnel to be able to raise any concerns without fear of retaliation.

E. MANAGEMENT SYSTEM

Participants shall adopt or establish a management system whose scope is related to the content of this Code. The management system shall be designed to ensure (a) compliance with applicable laws, regulations and customer requirements related to the participant's operations and products; (b) conformance with this Code; and (c) identification and mitigation of operational risks related to this Code. It should also facilitate continual improvement.

The management system should contain the following elements:

1) Company Commitment

Corporate social and environmental responsibility policy statements affirming Participant's commitment to compliance and continual improvement, endorsed by executive management.

2) Management Accountability and Responsibility

The Participant clearly identifies company representative[s] responsible for ensuring implementation of the management systems and associated programs. Senior management reviews the status of the management system on a regular basis.

3) Legal and Customer Requirements

A process to identify, monitor and understand applicable laws, regulations and customer requirements, including the requirements of the Code.

4) Risk Assessment and Risk Management

Process to identify the environmental, health and safety³ and labor practice and ethics risks associated with Participant's operations. Determination of the relative significance for each risk and implementation of appropriate procedural and physical controls to control the identified risks and ensure regulatory compliance.

5) Improvement Objectives

Written performance objectives, targets and implementation plans to improve the Participant's social and environmental performance, including a periodic assessment of Participant's performance in achieving those objectives.

6) Training

Programs for training managers and workers to implement Participant's policies, procedures and improvement objectives and to meet applicable legal and regulatory requirements.

³ Areas to be included in a risk assessment for environmental health and safety are production areas, warehouse and storage facilities, plant/facilities support equipment, laboratories and test areas, sanitation facilities (bathrooms), kitchen/cafeteria and worker housing/dormitories.

- 7) **Communication**
Process for communicating clear and accurate information about Participant's policies, practices, expectations and performance to workers, suppliers and customers.
- 8) **Worker Feedback and Participation**
Ongoing processes to assess employees' understanding of and obtain feedback on practices and conditions covered by this Code and to foster continuous improvement.
- 9) **Audits and Assessments**
Periodic self-evaluations to ensure conformity to legal and regulatory requirements, the content of the Code and customer contractual requirements related to social and environmental responsibility.
- 10) **Corrective Action Process**
Process for timely correction of deficiencies identified by internal or external assessments, inspections, investigations and reviews.
- 11) **Documentation and Records**
Creation and maintenance of documents and records to ensure regulatory compliance and conformity to company requirements along with appropriate confidentiality to protect privacy.
- 12) **Supplier Responsibility** Process to communicate Code requirements to suppliers and to monitor supplier compliance to the Code.

REFERENCES

The following standards were used in preparing this Code and may be a useful source of additional information. The following standards may or may not be endorsed by each Participant.

ILO Code of Practice in Safety and Health

www.ilo.org/public/english/protection/safework/cops/english/download/e000013.pdf

National Fire Protection Association

http://www.nfpa.org/aboutthecodes/list_of_codes_and_standards.asp

ILO International Labor Standards

www.ilo.org/public/english/standards/norm/whatare/fundam/index.htm

OECD Guidelines for Multinational Enterprises

www.oecd.org

United Nations Convention Against Corruption

<http://www.unodc.org/unodc/>

United Nations Global Compact

www.unglobalcompact.org

Universal Declaration of Human Rights

www.un.org/Overview/rights.html

ISO 14001

www.iso.org

SA 8000

<http://www.sa-intl.org>

Ethical Trading Initiative

www.ethicaltrade.org/

OHSAS 18001

www.bsi-global.com/index.xalter

Eco Management & Audit System

www.quality.co.uk/emas.htm

OECD Due Diligence Guidance

http://www.oecd.org/document/36/0,3746,en_2649_34889_44307940_1_1_1_1,00.html

Dodd-Frank Wall Street Reform and Consumer Protection Act

<http://www.sec.gov/about/laws/wallstreetreform-cpa.pdf>

DOCUMENT HISTORY

Version 1.0 - Released October 2004.

Version 1.1 - Released May 2005. Converted document to EICC format, minor page layout revisions; no content changes.

Version 2.0 - Released October 2005 with revisions to multiple provisions.

Version 3.01 – Released June 2009 with revisions to multiple provisions. Renamed HP Electronic Industry Code of Conduct.

Version 4.01 Released June 2012 with updates for consistency with the EICC [version 4.0](#).

John Deere Supplier Code of Conduct



OVERVIEW

This code of conduct applies to all businesses that provide products or services for John Deere and its subsidiaries, joint ventures, divisions, or affiliates. John Deere requires suppliers and their employees to commit to this code of conduct as a condition of doing business.

KEY EXPECTATIONS

Labor and Human Rights

Child Labor

In the absence of local law, suppliers may not employ workers under the age of 14. Workers under the age of 18 may not perform work likely to jeopardize their health, safety, or education.

Forced Labor

Suppliers must not participate in human trafficking; use forced, involuntary, or slave labor; or purchase materials or services from companies using forced, involuntary, or slave labor. They must be able to certify that materials included in their products comply with the slavery and human trafficking laws of the country or countries in which they do business.

Hiring and Employment Practices

Suppliers' hiring practices must include verification of workers' legal right to work in the country and ensure that all mandatory documents, such as work permits, are available.

John Deere suppliers are expected to support diversity and equal opportunity in their workplaces. Suppliers must also prohibit discrimination based on race, color, gender, nationality, age, disability, union membership, maternity, sexual orientation, or marital status.

Harassment

John Deere suppliers must treat all workers with respect and dignity. They may not subject workers to corporal punishment, physical, sexual, psychological, or verbal harassment or abuse. Suppliers may not use monetary fines to discipline employees.

In addition, suppliers must provide an environment that allows employees to raise concerns without fear of retaliation. Where it is allowed by law, suppliers should have a system that allows employees to anonymously report their concerns.

John Deere suppliers must comply with the laws, rules, regulations, and John Deere policies of the countries and locations in which they operate. They are expected to be familiar with the business practices of their suppliers and subcontractors, and ensure they operate according to this code of conduct. John Deere may discontinue its relationship with suppliers who fail to comply with this code.



Compensation and Working Hours

Suppliers must comply with applicable wage and hour labor laws and regulations governing employee compensation and working hours. Suppliers should conduct operations in ways that limit overtime to a level that ensures a humane and productive work environment.

Health and Safety

Suppliers must provide workers with a safe and healthy work environment. They should take proactive measures that support accident prevention and minimize health risk exposure.

Environment

Suppliers are expected to conduct their operations in a way that minimizes the impact on natural resources and protects the environment, customers, and employees. They must ensure their operations comply with all laws related to air emissions, water discharges, toxic substances, and hazardous waste disposal. Suppliers' products must comply with the John Deere Restricted Materials List (for suppliers). They must maintain sufficient knowledge of input materials and components to ensure they were obtained from permissible sources, in compliance with laws and regulations. Suppliers may be required to validate this origin.

Ethics

Gifts and Gratuities

Suppliers must not offer gifts to John Deere employees. This includes gifts of nominal value. Although giving gifts is acceptable in some cultures, John Deere requests that suppliers respect its policy of not accepting gifts.

Improper Payments

Bribes, kickbacks, and similar payments are strictly prohibited. This ban applies even when local laws may permit such activity. Employees, suppliers, and agents acting on behalf of John Deere are strictly prohibited from accepting such considerations under any circumstances.

Confidential Information

Proper management of confidential information is critical to the success of both John Deere and suppliers. Suppliers must protect all John Deere information, electronic data, and intellectual property or Deere technologies with appropriate safeguards. Any transfer of confidential information must be executed in a way that secures and protects the intellectual property rights of John Deere and its suppliers. Suppliers may receive our confidential information only as authorized by a confidentiality or non-disclosure agreement and must comply with their obligations to not disclose the confidential information,

to not use the information except as permitted by the agreement, and to protect the information from misuse or unauthorized disclosure. Our suppliers can expect John Deere to similarly safeguard their confidential information when authorization is provided to John Deere. Suppliers may not use the John Deere trademark, images, or other materials to which John Deere owns the copyright, unless explicitly authorized.

Supplier Management System

Suppliers are expected to have a management system that ensures they comply with applicable laws, regulations, and John Deere policies; conform to this Supplier Code of Conduct; and identify and reduce operational risks related to this code. The system should also promote continuous improvement and compliance with changing laws and regulations. An environmental management system (EMS), such as ISO14001, is strongly recommended for environmental compliance.

Supply Chain Transparency

Supply chain transparency is required to confirm compliance to this code of conduct. To monitor this, John Deere will request documentation, conduct onsite audits, review and approve corrective action plans, and verify implementation of corrective action.

Communication

Suppliers are expected to assist John Deere in enforcing this Supplier Code of Conduct by communicating its principles to their supervisors, employees, and suppliers.



Contact Information



Any supplier may direct questions or comments about this code of conduct to his/her Supply Management representative or the Manager, Supply Chain Compliance.

NON-COMPLIANCE REPORTING

Violations of the John Deere Supplier Code of Conduct can be reported confidentially any of the following ways:

Telephone: 1-800-933-3731 (U.S. and Canada only)

Additional global Hotline phone numbers are posted on the John Deere Supply Network Compliance page.

Website: <https://www.compliance-helpline.com/johndeere.jsp>

Mail: Compliance Hotline Committee
Post Office Box 1192
Moline, Illinois, USA 61266-1192

ONLINE VERSION

The John Deere Supplier Code of Conduct is available in additional languages at: <http://www.deere.com/suppliercode/>.

John Deere's Support of Human Rights in Our Business Practices



On January 1, 2012, the California Transparency in Supply Chains Act of 2010 (SB 657) will go into effect in the state of California. The act seeks the elimination of slavery and human trafficking from product supply chains and requires that companies disclose their efforts to ensure that their supply chains are free from slavery and human trafficking.

John Deere is known for its commitment to social responsibility, both as an employer and in how we conduct our business. The Ethisphere Institute has included John Deere in its list of the world's most ethical businesses since 2007, when it first began recognizing social responsibility at a corporate level.

As a responsible corporate citizen, John Deere strives to ensure that human rights are upheld for our employees and all workers in our supply chain. We strive to ensure that slavery and human trafficking are absent from our supply chain through the following:

Supplier Code of Conduct:

- Our [Supplier Code of Conduct](#) clearly establishes guidelines for the standard of ethical behavior expected from our suppliers. It states that suppliers may not use child, slave or forced labor. The code of conduct was introduced in 2005, and communicated to employees and suppliers at, and since, that time. As new suppliers enter our supply base, it is our standard practice to review the code of conduct with them. The code of conduct is available to the public on JohnDeere.com and to employees and suppliers through our JD Supply Network supplier portal. In addition, the code of conduct has recently been revised. The updated version will be available in January 2012.
- Our employees regularly discuss the Supplier Code of Conduct with suppliers during supplier conferences, meetings and performance reviews.
- Many of our standard contract templates contain language incorporating the Supplier Code of Conduct.
- Our [purchasing terms and conditions](#), which are available on our supplier portal, state that the, "Seller shall comply with the John Deere Supplier Code of Conduct," with a link to the document.

Risk-based assessments and audits:

- Suppliers who want to enter our supply base must complete a supplier information survey. The survey, which is administered by John Deere employees, requires suppliers to verify and certify that they do not use child or slave labor, or engage in human trafficking.

- We periodically conduct “red flag” audits for potential suppliers, and current suppliers who provide less complex components. These audits use a short series of key questions from the Supplier Code of Conduct that verify and certify that suppliers do not use child or slave labor, or human trafficking.
- We conduct in-depth audits of all new suppliers against the John Deere Standard JDS-G223, the company’s supplier quality manual. The audit is derived from the manual, and contains questions that verify and certify that suppliers conduct their business according to the John Deere Supplier Code of Conduct.
- In addition, we audit current suppliers of critical components in order of importance and highest risk. These audits use the same JDS-G223 criteria.
- Both JDS-G223 audits and “red flag” audits are conducted by teams of John Deere employees. The employee auditors are trained and qualified to thoroughly conduct audits that identify risks and unethical behavior, including a supplier’s use of illegal employee practices.

Training for John Deere employees and leaders:

- Annually, all John Deere salaried employees are required to review our [Business Conduct Guidelines](#) and certify they comply with them. The guidelines state the company’s commitment to human rights, including that company, employees, representatives, licensees and agents are “expected to not use any form of forced or indentured labor or child labor in the production or manufacture of goods.”
- Salaried employees receive training on the Business Conduct Guidelines every two years. Additional training courses focus on individual pieces of the guidelines as needed.
- Supplier code of conduct training is available for all employees. In 2012, this training will be mandatory for all Supply Management & Logistics employees.
- During 2012, all Supply Management employees and salaried employees with managerial responsibilities will be required to complete web-based training on the topic of eliminating forced labor, slavery, and human trafficking from the supply chain.

Internal accountability and controls:

Any John Deere employee, supplier or concerned individual can anonymously report a potential ethical violation, including human trafficking by a John Deere supplier, through any of the following methods:

- Compliance hot line: 1-800-933-3731
- Compliance mailbox: 90SMCompliance@JohnDeere.com
- By mail
Compliance Hotline Committee
Post Office Box 1192
Moline, Illinois 61266-1192

All allegations are thoroughly investigated by an internal team that includes Supply Management representatives. Allegations that are found to be credible are dealt with as appropriate. Suppliers who are found in violation of the Supplier Code of Conduct may be eliminated from our supply base.

EXISTING CHEMICALS PROGRAM: Strategy

| Overview

The TSCA inventory of chemicals in commerce now exceeds 84,000 chemicals. Periodic TSCA chemical data reporting indicates that there are approximately 7,000 chemicals currently produced at volumes of 25,000 pounds or greater. Under TSCA, EPA is charged with the responsibility of assessing the safety of these commercial chemicals and to act upon those chemicals if there are significant risks to human health or the environment. A sustained and predictable approach is needed to effectively carry out this responsibility.

EPA believes that this significant and long-term challenge can best be met via legislative reform of TSCA to improve EPA's chemical management authorities¹. Until reform is achieved, however, EPA's responsibility to create a sustained and effective existing chemicals program must be carried out under current authorities. This strategy summarizes EPA's approach in 2012 and beyond, pending legislative reform.

Given the vast number of chemicals; the high cost to EPA of performing comprehensive risk assessments, and, if appropriate, risk management; and the Agency's responsibility to protect human health and the environment, EPA has developed the following multi-pronged approach for the Agency's existing chemicals management program:

- 1) Risk assessment and risk reduction
- 2) Data collection and screening
- 3) Public access to chemical data and information

In summary, the Agency will perform risk assessments and, if appropriate, risk management for those chemicals with well-characterized hazard concerns and which present the possibility of significant exposure. These are likely to be a relatively small number of chemicals, compared to the size of the universe of commercial chemicals. While risk assessments are being conducted for this small group of chemicals, EPA will be developing an approach to screen the thousands of other compounds to determine which ones warrant further attention, which could include comprehensive risk assessments, or additional data development, addressing either hazard or exposure. Many chemicals will likely be judged as being of lower concern. Finally, EPA will work toward making chemical information available. In particular, the Agency will work to ensure that hazard and exposure data are available to the public in a manner that is most useful to those in the public who will be using the information. Taking this approach to address multiple aspects of the chemicals management challenge simultaneously should allow the Agency to be more comprehensive in its efforts, despite the large number of high production chemicals.

¹ <http://www.epa.gov/oppt/existingchemicals/pubs/principles.html>

| Risk Assessment and Risk Reduction

At present, there are thousands of chemicals that have yet to be screened and assessed. There are, however, a number of chemicals for which there are well-characterized hazard concerns and which present the possibility of significant exposure. It is important that EPA identify and assess these chemicals, even as the Agency works to collect data and to screen the many other chemicals in commerce for future assessment.

In 2011, EPA sought stakeholder input on the criteria for identifying such chemicals for the risk assessment/risk reduction component of EPA's work plan. The Agency heard general agreement with the proposal to identify chemicals for assessment with well-characterized concerns for human health or environmental toxicity, which are persistent and bioaccumulative, are used in consumer or children's products, have dispersive uses, or have been detected in human or environmental biomonitoring. EPA also received stakeholder input on the use of a number of well-known, well-documented sources proposed to inform that process.²

EPA has used these criteria to identify a work plan of 83 chemicals for review. From this work plan list, EPA has identified an initial set of chemicals for which EPA has begun risk assessments in 2012. The Agency will complete some and initiate additional new assessments each succeeding year. The chemical assessments may also include evaluation of alternatives. If an assessment indicates significant risk, EPA will evaluate and pursue appropriate risk reduction actions. If an assessment indicates no significant risk, EPA will conclude its current work on that chemical. Over time, additional chemicals will be added to the work plan as more data are developed and more chemicals screened.

In 2012, the Agency will also continue to carry out work identified for chemicals in Action Plans, under other statutory requirements such as those for formaldehyde in pressed wood products, and other priority issues as they arise.

| Data Collection and Screening

For the thousands of chemicals for which toxicity or exposure data are less adequate to inform assessments, EPA must acquire and review data to support further screening and determine whether these chemicals are candidates for risk assessment and reduction, or whether they are of lower priority. Although, given current authorities and funding, it will take a number of years to work through the initial work plan of chemicals for assessment, EPA must begin now to build the pipeline of future assessment chemicals, as well as to identify chemicals of lower concern.

In 2011, EPA completed final amendments to the Chemical Data Reporting rule for the reporting of production and use information under that rule which will occur in 2012. The 2012 reporting will provide the first update on chemicals in commerce above the 25,000 pound threshold since 2006, and will provide use and exposure information on an expanded subset of chemicals. As information is being reported in 2012, EPA intends to engage with stakeholders to discuss how the CDR data might be used

² <http://www.epa.gov/oppt/existingchemicals/pubs/chempridiscguide.html>

to aid the screening of chemicals to refine data needs and identify candidate chemicals for risk assessment and reduction. EPA plans to begin releasing data from the CDR within months of the end of the reporting period and to conduct and release further analysis of the data by early 2013.

Also in 2011, the Agency finalized several test rules for high production volume chemicals and proposed the fourth and final test rule in that series. In the proposed test rule, EPA solicited comment on future testing approaches by asking, for example: whether production volume should continue to drive testing requirements or whether other exposure or hazard factors should be included; whether the Screening Information Data Set remains the best testing approach; and how computational toxicology should be incorporated into the testing program. In 2012, EPA plans to engage stakeholders in discussion about the future approach to the testing program, and will continue to work on how best to utilize a range of data sources, with particular focus on data collected by other national governments and by states, also engaging stakeholders in these issues.

The Agency's approach to screening chemicals has involved a resource-intensive process to review in vivo data, as well as making estimates of exposure, to determine which chemicals warrant further review and attention. After screening, the Agency may decide a more comprehensive risk assessment is appropriate. In 2012 and 2013, the Agency will explore the use of computational techniques as a potentially faster means to screen thousands of chemicals far more quickly and efficiently.

While the pace of this work will depend on funding levels, the work in 2012 will put the Agency in a position to begin work in 2013 to identify chemicals for additional data collection and analysis and to begin the creation of a pipeline of candidate chemicals for future risk assessment and reduction.

|Public Access to Chemical Data and Information

An important underpinning of a credible chemicals program is EPA's ability to make health and safety information available to the public, to the extent allowed by law. Since 2009, EPA has undertaken a number of specific efforts to increase the public's ability to access EPA's chemical information, e.g., the new Chemical Data Access Tool, free on-line access to the complete (non-confidential) TSCA Inventory, and including critical chemical information in Data.Gov. As part of a sustainable and predictable chemicals program, the Agency will continue to improve the accessibility and usability of its chemical data, including hazard and exposure information. This information will support the work of the Agency as well as informing other decision makers in the public and private sector.

Since 2009, EPA has made a priority the clearing of a large backlog of unchallenged CBI claims in health and safety studies, so that only justified CBI is withheld from the public. Industry has acknowledged that excessive claims of confidentiality have been made over the years of TSCA implementation, as EPA failed to require justification for such claims. In addition, outdated program systems have limited the ready accessibility of data to both Agency staff and the public. The Agency has also begun to digitize the TSCA data holdings and to create search tools that improve access.

In 2012, EPA will continue to work to address unsupported claims of confidentiality for chemicals in commerce, and to digitize and make public additional health and safety data from the TSCA data

holdings. The Agency will seek stakeholder input on tools and approaches for improving the accessibility and usefulness of these data for private and public sector decision-making.

Samuel Coleman, Acting Regional Administrator, Region 6 EPA



Samuel Coleman brings decades of EPA experience and leadership to the role of acting regional administrator, from leading hazardous waste clean-ups and emergency response missions to directing Region 6 enforcement activities.

He guided EPA's response to Hurricane Katrina as the agency's senior federal official in New Orleans, leading EPA's emergency response and recovery missions. For these efforts, Sam was awarded a Meritorious Presidential Rank Award in 2009.

Sam has provided extraordinary leadership in cleaning up contaminated sites, from massive, complex efforts such as Tar Creek in Picher, Oklahoma, which holds millions of cubic yards of hazardous mining waste, as well as dozens of brownfields redevelopment sites across Region 6. By working with local, state, and tribal partners to clean up hazardous waste, Sam and his teams have improved the quality of life and brought economic development to communities throughout Region 6.

Sam is a native of Shreveport, Louisiana, and graduated from Captain Shreve High School in 1974. He received his Bachelor of Science degree in Civil Engineering from Prairie View A & M University, and then had a decade-long career in the Army Corps of Engineers before joining EPA.



Bruce S. Gelber is a career Deputy Assistant Attorney General in the Environment and Natural Resources Division, United States Department of Justice. He is responsible for overseeing the work of the Division's

Environmental Enforcement and Environmental Defense Sections and the civil lawsuit brought by the Department against BP and others arising from the explosion and sinking of the Deepwater Horizon oil platform, and resulting oil spill, in April 2010. The Environmental Enforcement Section is one of the largest litigating sections in the Department of Justice and represents the United States in affirmative civil litigation under the federal pollution control and environmental protection statutes, including the Comprehensive Environmental Response, Compensation, and Liability Act, the Resource Conservation and Recovery Act, the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, and the Oil Pollution Act. The Environmental Defense Section represents the United States in complex civil litigation under a broad range of environmental statutes, including defending Environmental Protection Agency

regulations in federal court.

Before assuming his current position in September 2010, Mr. Gelber served as Chief of the Environmental Enforcement Section for eleven years. Before that, he served as an Assistant Chief and a Senior Lawyer in the Enforcement Section, as well as lead counsel for the government in the Love Canal Landfill litigation. Prior to joining the Department of Justice in 1985, Mr. Gelber was General Counsel of the National Committee Against Discrimination in Housing in Washington, D.C. Mr. Gelber received his B.A., summa cum laude, from Cornell University in 1972 and a J.D. from the Harvard Law School in 1975.



FRITZ, BYRNE, HEAD & HARRISON, PLLC

Attorneys at Law



PETER T. GREGG

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Email: PGregg@FBHH.com

Peter Gregg's 20-year legal career has been devoted to the practice of environmental law. His practice includes a focus on environmental issues involving waste management and contaminated properties, including state and federal CERCLA matters, RCRA corrective action and compliance counseling, transactions involving contaminated properties, and counseling on state and federal regulatory cleanup programs. He also represents clients on all manner of air, water, waste management, and water and wastewater utility regulatory issues (permitting, enforcement, and general compliance matters).

Mr. Gregg began his career at the Texas Commission on Environmental Quality (TCEQ), where he provided program development and legal/litigation support for various air, water quality, and industrial and hazardous waste programs. He also spent several years as in-house environmental counsel at an international energy company. During the course of his career, he has represented national and international clients within the chemical, petroleum refining, and natural gas production, processing and transportation industries, among others, as well as various local and regional manufacturing and utility interests.

Mr. Gregg is the immediate past Chair of the Texas Bar's Environmental and Natural Resources Law Section, and a former Chair of the Houston Bar Association's Environmental Law Section. He is listed in *The Best Lawyers in America* in the specialty of Environmental Law and has been distinguished as a "Super Lawyer" in Environmental/Land Use Law by *Texas Monthly* and *Law & Politics Magazine*. He is AV Peer Review Rated.



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Practice Areas/Industries

- Environment, Land Use & Natural Resources

Focus Teams

- Water Resources
- Climate Change & Sustainability
- Clean Technology

Mr. Raffle practices in the area of environmental law at our firm in an of counsel capacity. Mr. Raffle's practice covers a wide array of environmental regulatory matters, including air and water pollution control, wetlands regulation and regulations affecting the oil and gas industry.

Prior to joining Pillsbury, Mr. Raffle served as a founder and CEO of Conservation Capital, providing consulting services designed to elevate the economic value of properties with conservation assets, timber and other valuable natural resources and traditional conservation-compatible development potential.

Prior to founding Conservation Capital in 2006, Mr. Raffle was a partner within the environmental law section of Baker Botts L.L.P. where he focused primarily on air pollution control and land use issues. Prior to going into private practice, Mr. Raffle managed the Environmental Law Division of Conoco, Inc. in Houston, Texas.

Mr. Raffle has concentrated on environmental regulatory, land use and wetlands matters for a wide array of clients including oil and gas production and refining companies, timber companies, real estate developers and individual landowners. He has handled numerous land conservation transactions designed to enable landowners to reduce their tax burden, sell mitigation credits and resolve legal obligations. Mr. Raffle is a nationally recognized expert in environmental law, having been named among the top lawyers in the United States by several leading publications.

Mr. Raffle has been active in a wide array of civic affairs in Greater Houston. In the late 1980s, he was elected to a four year term on the Board of Trustees of the Houston Independent School District (HISD). Mr. Raffle currently serves on numerous local charitable boards, including the Advisory Board of the Houston Chapter of The Nature Conservancy.

Education

J.D., University of Miami School of Law, 1976



M.S., University of Florida, 1973

B.S., University of Florida, 1971

Admissions

State of Texas

State of Florida

State of Connecticut

Courts

U.S. District Court for the Southern District of Texas

Affiliations

ABA Natural Resources Law Section (former Vice Chairman, Air Quality)

Firm Publications

New Ruling Highlights Split on Strict Liability for Incidental 'Taking' of Migratory Birds, Authors: Anthony B. Cavender, Gerald F. George, Brad Raffle, Wayne M. Whitlock, 1/30/2012

Oil, Gas, and Hazardous Liquid Pipelines Face Many New Safety Requirements, Authors: Brad Raffle, Joseph R. Herbster, 1/25/2012

Texas Eminent Domain Laws Get a Makeover – A Primer on Senate Bill 18, Authors: Laura E. Hannusch, Brad Raffle, Joseph R. Herbster, 6/2/2011



GREEN INFRASTRUCTURE – MITIGATION STRATEGIES

*24th Annual Texas Environmental Superconference
August 3, 2012*

Brad Raffle

Pillsbury Winthrop Shaw Pittman LLP

Ecological Services, Green Infrastructure and Mitigation

- “Ecological Services” are functions provided by natural landscapes (e.g. water purification by wetlands) that are beneficial to mankind and have to be replicated by man-made structures if destroyed or degraded. The vital importance of these functions is now widely recognized and is becoming part of the fabric of U. S. environmental law.
- Many laws require parties to “mitigate” their adverse impacts to the ecological service functions of nature by minimizing the impact and/or compensating for those impacts.
- Public works programs are beginning to include the preservation or restoration of natural landscapes to provide “green infrastructure” functions (e.g. stormwater retention) that are normally provided with steel and concrete i.e. grey infrastructure.



What I Will Cover Today

- Discuss certain ecosystem services and their economic value
- Discuss current and evolving “markets” for ecosystem services, emphasizing the central role that economic incentives play in protecting and enhancing the ecosystems that provide these services
- Present ideas for landowners to capture the “enviro-economic” potential of land, including their own land.

2 | Green Infrastructure – Mitigation Strategies

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FLOOD CONTROL – Coastal and inland wetlands protect developed areas from storm-related flooding



3 | Green Infrastructure – Mitigation Strategies

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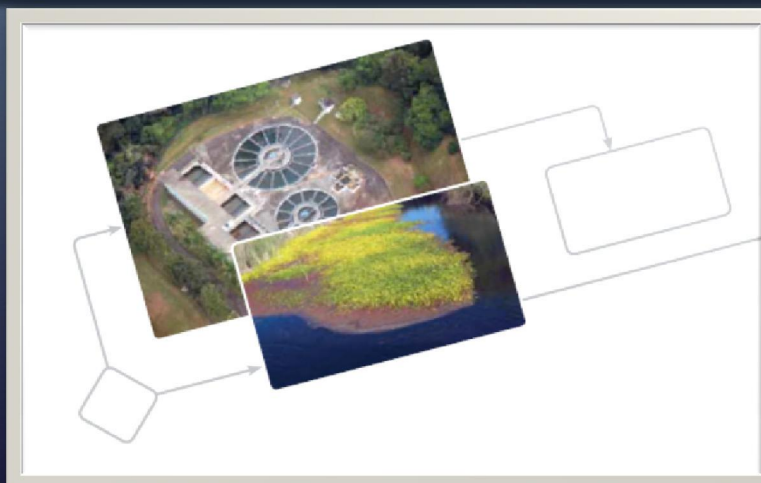
SEDIMENT CAPTURE – Wetlands capture sediment that would otherwise reduce the capacity of ports, navigation channels and reservoirs



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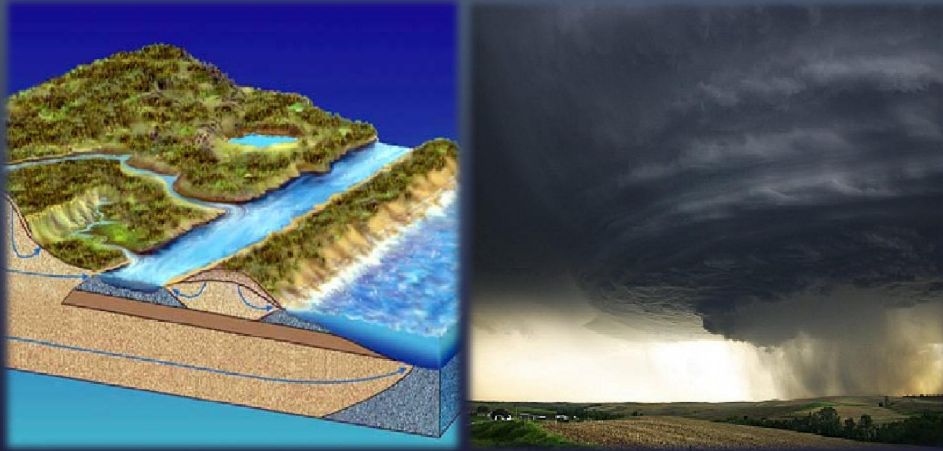
WATER QUALITY – Wetlands and riparian buffers purify lakes and streams



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GROUNDWATER RECHARGE – Grasslands and other natural landscapes in recharge areas replenish aquifers



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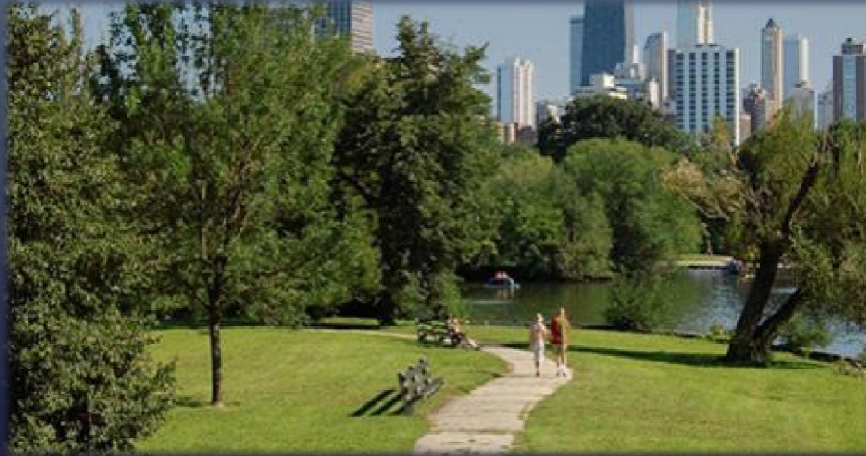
CARBON SEQUESTRATION – Terrestrial ecosystems, particularly forests and coastal estuaries, absorb CO₂ from the atmosphere



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AESTHETIC ENJOYMENT – Natural landscapes enhance quality of life and elevate property values



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What is the Economic Value of Ecological Services?



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REDUCING FLOOD DAMAGE

Economic losses from inland and coastal flooding has averaged approximately \$10 billion per year. The damages from Hurricane Andrew in 1997 topped \$60 billion and Hurricane Katrina topped \$80 billion. Losses, adjusted for inflation, have doubled each decade since the 1940's.

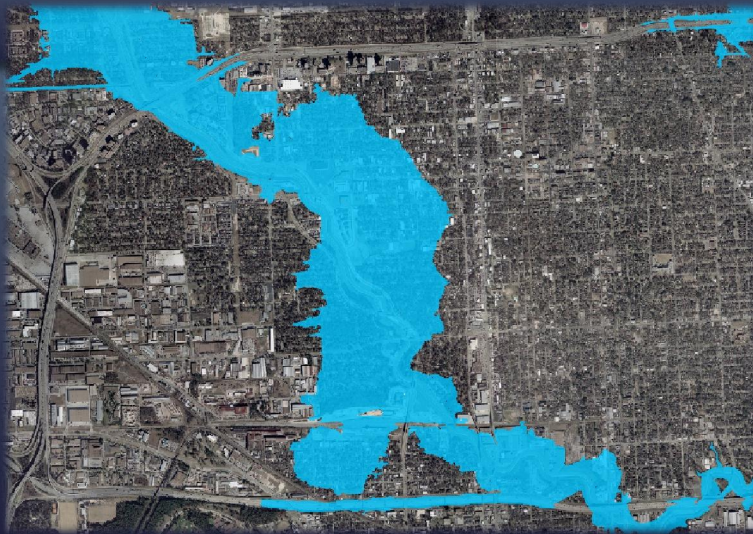
The U.S. Army Corps spends approximately \$5 billion per year to build and maintain flood control reservoirs, levees and other water management systems.

Targeted conservation of flood plains could reduce these losses and outlays.

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Houston's White Oak Bayou



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THANK
YOU

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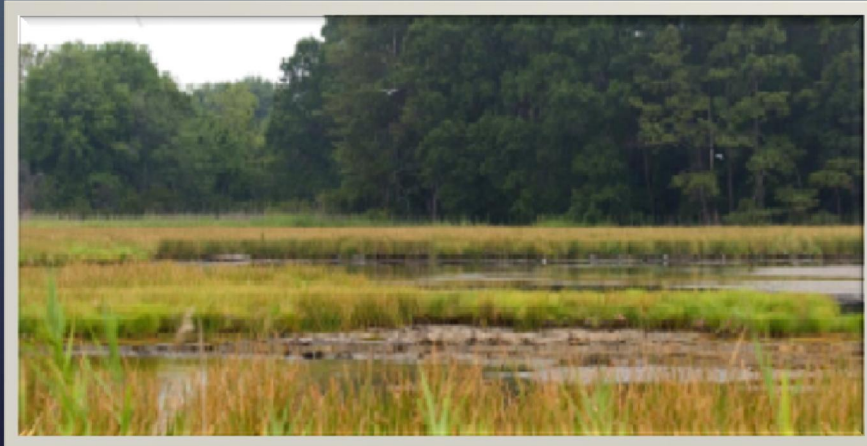
SEDIMENT CAPTURE

The U. S. has more than 2 million public and private water supply reservoirs. As they accumulate sediment from upstream erosion, new reservoirs must be constructed and dredging must be performed to maintain reservoir capacity. The cost to construct large new reservoirs ranges from \$300 - \$700 million each.

Annual federal sediment removal outlays for U.S. ports averages \$1billion.

Upstream erosion control and sediment capture through conservation of natural landscapes could reduce the cost of adding new reservoir capacity as well as costs for annual maintenance dredging and spoil disposal. Dredge spoils can be a resource for conservation projects.

Sediment Capture



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WATER QUALITY ENHANCEMENT

Annual capital expenditures in the U.S. for municipal and industrial wastewater treatment total approximately \$17 billion. Inland wetlands help to purify the water that runs through them.

Wastewater treatment outlays could be reduced if the water purification functions of wetlands and riparian buffer zones were enhanced, particularly in the nation's urban watersheds.

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Water Quality



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Natural systems are often more cost-effective than man-made systems in treating polluted water



- Power of DNA
- Wetland vegetation provides its own support structure and pollutants provide its nutrients
- Wetlands provide multiple benefits e.g. habitat, buffer zones...
- Industrial facilities can often use undevelopable land

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GROUNDWATER RECHARGE – Depletion of drinking water aquifers presents a major challenge in areas that rely heavily upon groundwater. Protection of recharge areas from impervious cover associated with development is an effective strategy for protecting these aquifers



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CARBON SEQUESTRATION

Approximately 20% of the world's greenhouse gas emissions come from the elimination of forests and coastal estuaries. Reducing the rate of forest and estuary loss (preservation) is a viable climate change mitigation strategy. Expanding these landscapes could go further by removing significant amounts of accumulated CO₂ from the atmosphere.

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GALLERY 



Evaluating the Noel Kempff Mercado Climate Action Project

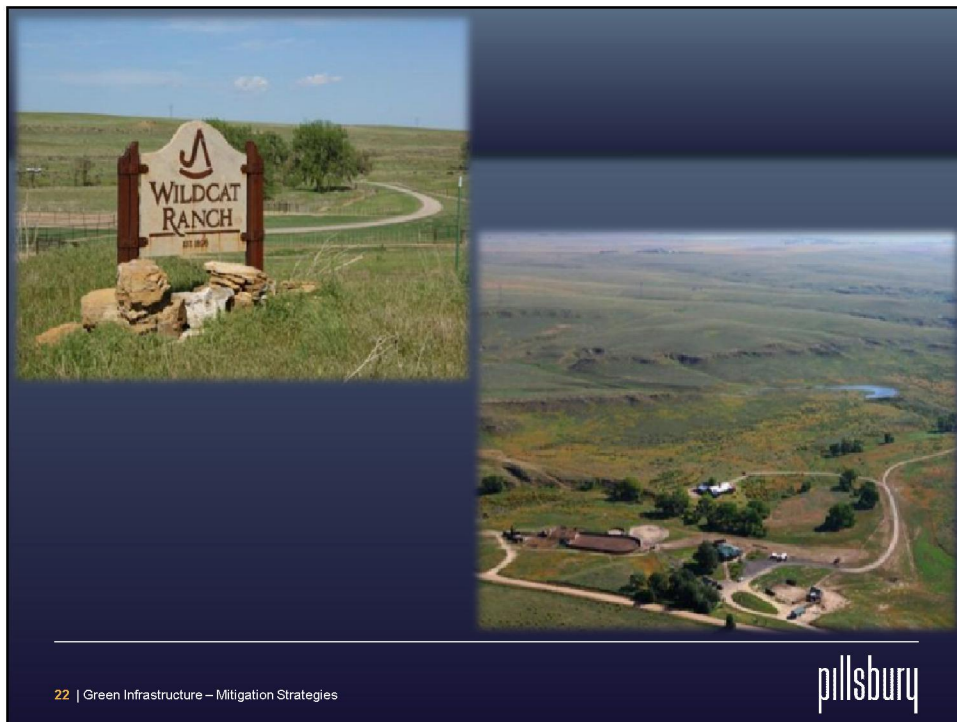
An experimental project in curbing climate change that began in 1997 is now being studied to see if lessons learned can contribute to shaping global climate policy.

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AESTHETIC ENJOYMENT

Studies have shown that attractive natural landscapes and views enhance quality of life for communities and elevate surrounding property values by 10-15%



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New York City's Central Park



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What and Where are the Threats to Ecological Services?

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AGRICULTURE IN SOME AREAS ELIMINATES VALUABLE ECOLOGICAL SERVICES. CHALLENGE IS MANAGEABLE



A constructed wetland on marginal cane land – helping to improve water quality and provide fish habitat while reducing farming costs.



Fencing out stock can markedly improve water quality and river health. Note the stock damage to the right of the fence and healthy vegetation to the left where cattle have been excluded.

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MODERN FORESTRY PRACTICES OFTEN ENHANCE ECOLOGICAL FUNCTIONS



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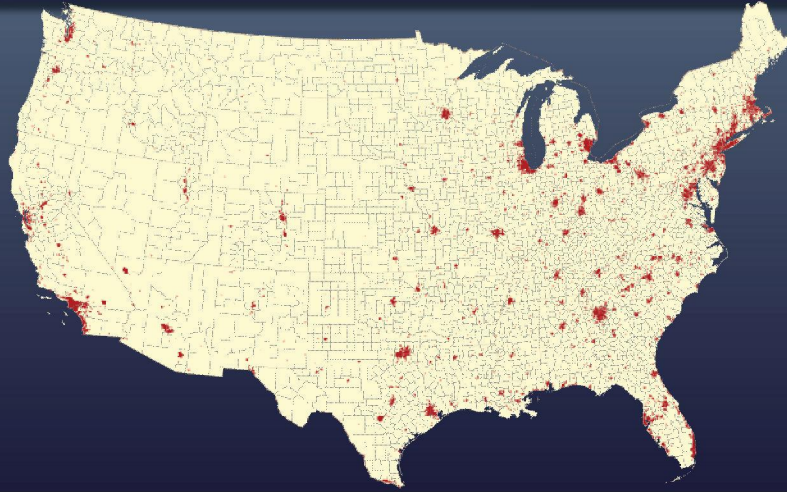
Most of the Nation's conservation dollars are focused on relatively remote federal lands or private lands devoted to agriculture



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Yet, the most difficult (i.e. expensive) conservation challenges in the US are in urban and suburban regions, covering less than 3% of the land base.



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LAND CONVERSION/FRAGMENTATION



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EROSION AND RUNOFF



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The Economic Potential of Land Conservation

If 5% of the land base of the nation's 125 major metropolitan areas were dedicated to protecting ecological services, the one-time cost would range from \$5 to \$8 billion. If these acquisitions achieved a 10% reduction in the \$35 billion spent annually to address flooding, sediment removal and wastewater treatment, the cost would be recovered in 2-3 years, even if all other benefits were ignored.

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Why can't society rely on traditional laws of supply and demand or regulations to provide required ecological services in developing urban areas?

- There are no easily demonstrable or straightforward market connections between service providers (landowners) and service users. The recoverable economic value of urban/suburban land lies in its development potential.
- The loss of ecosystem services often occurs gradually and unpredictably.
- There are inherent challenges in fashioning the public-private partnerships needed for large-scale conservation strategies. Most regions do not target specific ecosystems for conservation.
- Paradoxically, the "conservation community" benefits from low prices for pristine land and its ecological functions. Landowners cannot capture the value of the ecological services provided by their land. This is the "free rider" challenge.
- Zoning and environmental regulation are not designed to protect functioning ecosystems.

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Current tools for protecting ecosystem services

- Purchase and set aside key land areas with governmental and philanthropic funding
- Legally prohibit incompatible land uses
- Mandatory compensatory mitigation for land developers
- Economic incentives for conservation through tax deductions and agricultural support payments
- Green infrastructure incentives/mandates in public works projects

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Regulatory programs can create an indirect market for ecosystem services

- Compliance with permits and laws, e.g. wastewater treatment, wetland mitigation, storm water runoff controls
- Avoiding ambient constraints, e.g. avoiding species listings or TMDLs, facility buffers
- Resolving liability, e.g. NRDA claims and SEPs



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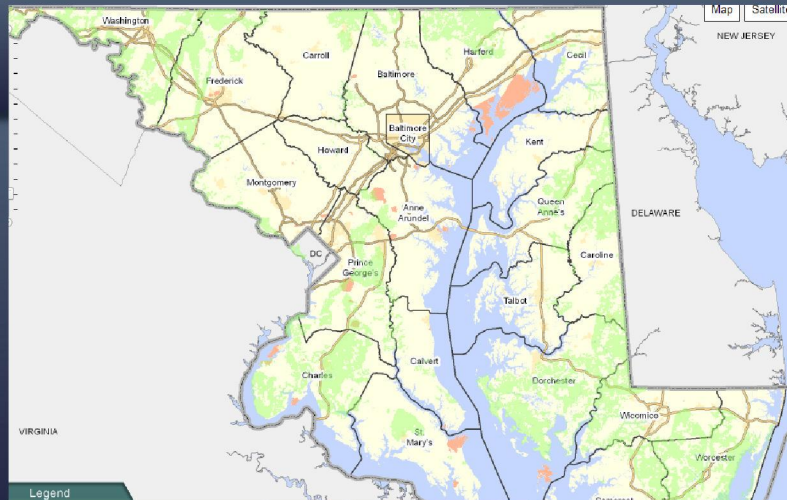
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THE BOTTOM LINE – Current laws and programs fall far short of their potential to achieve large-scale protection of ecological services, especially in rapidly developing areas

- Green infrastructure mandates in public works bills are weak
- Direct governmental outlays for conservation are limited
- Regulatory policies are biased against non-traditional compliance strategies that rely on natural systems to purify water
- Credit is often given for restoration of landscapes that face no realistic threat of development
- Credit is infrequently given for preservation of existing landscapes in developing urban and suburban areas
- The absence of politically supported regional conservation priorities hampers efforts at meaningful conservation

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Baltimore City GreenPrint Map
Prepared by Trust for Public Land

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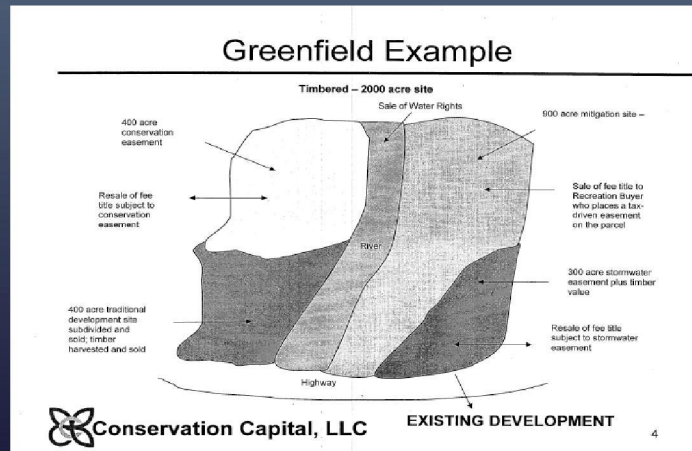
A new paradigm is needed that would let market forces operate to foster more protection of “ecological service areas”

- Parties must have a direct economic incentive for purchasing and owning ecologically valuable land for conservation purposes.
- This economic incentive must come through policies that facilitate the combination of government, philanthropic and private dollars to conserve (developable) environmentally valuable land. Land developers should be provided with a set of carrots and sticks that reward smart conservation and discourage destruction of valuable ecological services.
- Agencies must become more receptive to innovative conservation-oriented regulatory compliance strategies (e.g. water quality trading) that employ a holistic approach to land management.
- Agencies should make greater use of conditional exemptions that foster conservation, e.g. cluster strategies that encourage, rather than discourage development density. Preservation of threatened lands (including “protected wetlands”) should move from the bottom to the top of the mitigation hierarchy.
- A significant portion of governmental and philanthropic conservation dollars should shift from remote areas to urbanized areas.

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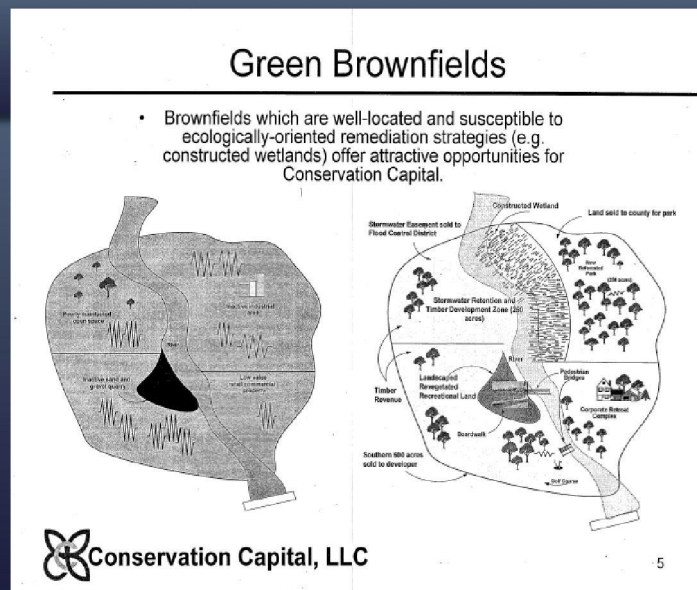
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Value Stacking/ Mixed Use Strategies and Regional Conservation Priorities are Essential to Successful Conservation in Rapidly Growing Areas



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A real world example of value stacking



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Landowners (Public and Private) Could Do More to Capture the “Enviro-Economic” Value of their Real Estate Holdings

- Creation of Buffer/Flood Protection Zones around Industrial Plants
- Brownfields as Alternative Energy Project Sites
- Direct Sales or Charitable Donations of Conservation Lands
- Protection of Mineral Rights in Coastal Areas by Protecting the Loss of Surface Wetlands
- Wastewater Treatment Wetlands e.g. Dow Chemical
- Internal Offsets or Credits, e.g. electric power line corridors for carbon mitigation opportunities
- External Offsets or Credits, e.g. collaboration with entrepreneurial mitigation bankers
- Corporate Sustainability Efforts and Government/Public Relations Opportunities

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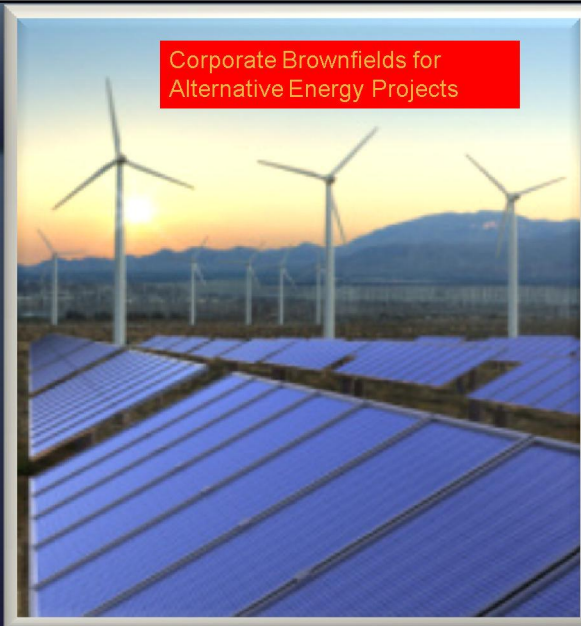
Industrial Facility Buffers



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Corporate Brownfields for Alternative Energy Projects



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Corporate Philanthropy

Shell Oil Partners with Nature Conservancy to Protect Bird Habitat



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Protecting Mineral Rights in Eroding Coastal Lands



Every year, a chunk of land almost the size of Manhattan turns into open water in Louisiana. After decades of ignoring warnings from scientist and environmentalists, the state's business leaders are taking notice because they say this could doom the state's economy and threaten vital American industries like seafood, gas, and oil. Louisiana is getting ready to go to Congress with a bold and expensive plan to unleash the Mississippi to restore the wetlands—and they want you to help pay for it.

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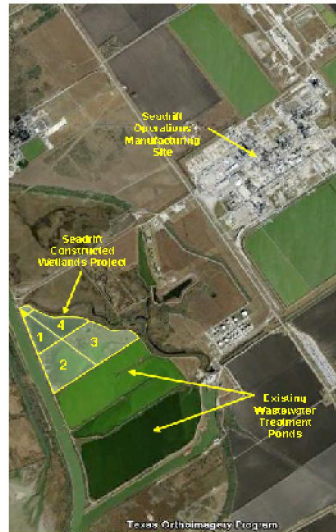
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DOW — A HISTORY OF **WORKING** WITH NATURE

Seadrift, TX – 1996

Tertiary Wastewater Treatment

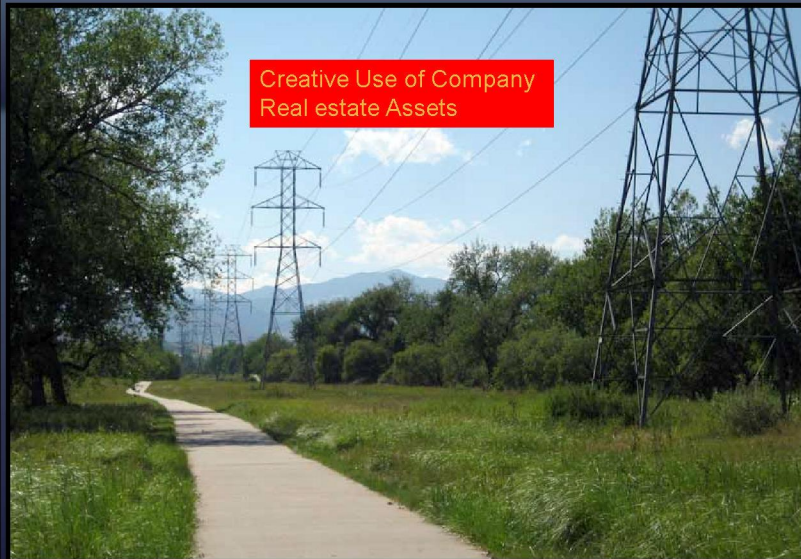
- ❖ 110 Acre Wetland, \$1.4 million
- ❖ Traditional treatment installation cost: \$40-44 million
- ❖ 5 million gallons per day
- ❖ Consistent, low TSS and BOD effluent (*single digit PPM*)
- ❖ Habitat for alligators, nutria, hogs, deer, bobcats and various birds
- ❖ Tours coordinated with local schools



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Creative Use of Company Real estate Assets



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Collaboration with Mitigation Banks

Compensating for Impacts to Wetlands and Streams

What is a Mitigation Bank?

A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored, established, enhanced, or (in certain circumstances) preserved for the purpose of providing compensation for unavoidable impacts to aquatic resources permitted under Section 404 or a similar state or local wetland regulation. A mitigation bank may be created when a government agency, corporation, nonprofit organization, or other entity undertakes these activities under a formal agreement with a regulatory agency.



Restored perennial and season marsh and riparian forest at Wildlands Mitigation Bank, Placer County, California

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Corporate Sustainability Policies



The issue

A new revenue stream

Weyerhaeuser is a forest products company with business segments including timberlands, wood products and cellulose fibers, also managing commercial forestland worldwide.

Owning wide areas of timberlands, Weyerhaeuser has identified new revenue streams in biodiversity linked with emerging markets such as mitigation banking. the company's objectives are to:

- Achieve an economic return on company-owned assets;
- Create offsets to compensate for unavoidable loss of wetlands; and
- Manage ecosystem health and provide ecosystem services to society.

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Summary

- The economic value of many ecosystems is substantial, but is not being captured by our market economy.
- Protecting and restoring these ecosystems could potentially save tens of billions of dollars while providing equally significant co – benefits.
- Landowners can do a great deal today with current legal tools to capture the value of their ecologically valuable land.
- Modest policy changes could significantly enhance the prospects for a market-based (i.e. win/win) approach to land conservation.

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Questions and Comments

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Houston
Pillsbury Winthrop Shaw Pittman

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DavidC.Schanbacher, P.E.

Texas Comptroller of Public Accounts Director, Natural Resources Policy Division

DavidC. Schanbacher serves as the director of the Natural Resources Policy Division within the Texas Comptroller of Public Accounts. This division tracks, analyzes, and advises the Comptroller on state and federal natural resource, environmental, energy, and endangered species initiatives with the potential to impact state revenues and the overall Texas economy.

Until July 1, 2009, David served as the Chief Engineer for the Texas Commission on Environmental Quality, providing oversight and guidance on engineering standards of the agency and coordinating major engineering initiatives and studies. He received certification as a registered professional engineer in the State of Texas. As Chief Engineer, David also served as Deputy Director of the Chief Engineer's Office, which consists of engineering and technical experts, the Toxicology Section, the Air Quality Division (responsible for the State Implementation Plans), and the Water Quality Planning Division (responsible for Total Maximum Daily Load, Watershed Protection Plans, Water Quality Standards, Surface Water Quality Monitoring, the Clean Rivers Program, Coastal Bend Bays and Estuaries Program, and the Galveston Bay Estuary Program).

Mr.Schanbacher has served as special assistant to the Office of Air Quality and the Office of the Executive Director at the TCEQ, and as a permit engineer in the New Source Review Program before becoming Chief Engineer. Mr.Schanbacher previously spent several years in various engineering positions in the chemical industry and the oil and gas industry before joining the Texas Air Control Board, a predecessor agency of the TCEQ, in 1992.

Mr.Schanbacher received a Bachelor of Science Degree in Chemical Engineering from the University of Missouri and a Master's Degree in Engineering from the University of Texas at Austin.

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Booker Harrison, Senior Attorney, Environmental Law Division, TCEQ

Booker has over 15 years of experience as in-house counsel for the TCEQ. He began work at the TCEQ in 1997 as a staff attorney in the Litigation Division representing the Executive Director in enforcement cases in all media, but concentrating on air and hazardous waste. Booker became a senior attorney in the Litigation Division in 2001. In 2005, Booker became the senior attorney in the Environmental Law Division, and he is responsible for managing the work of the Air Section of ELD. Booker participates in more complex rulemaking projects and has extensive experience with the contested case hearing process. In this capacity, Booker counsels agency staff on risks and opportunities in legal interpretations, policy development, and agency actions.

Booker received his B.A. in Economics from the University of Texas in 1991. He received his J.D. from the Texas Tech School of Law, and MBA from the Texas Tech Graduate School of Business, in December 1994.

Arnoldo Medina

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Arnoldo Medina is Senior Counsel with the Chevron Law Department, Environmental & Safety Law Group in the Houston, Texas. He advises clients on environmental law and regulatory compliance, permitting, remediation and enforcement on natural resources/Endangered Species Act/NEPA, air quality, water, and waste issues. Arnoldo primarily supports upstream exploration and production assets in the U.S. for onshore and offshore operations.

From 2003 to 2011, Arnoldo was a Senior Legal Counsel with Shell Oil Company where he advised a broad range of petroleum and chemical manufacturing, distribution, and alternative energy/fuels clients on multi-media environmental issues. Previously, he was a Senior Associate with Campbell, George, & Strong, LLP, and he represented corporate clients in environmental permitting, compliance and enforcement matters before the U.S. EPA and the TCEQ. Arnoldo began his environmental law career as a TCEQ staff attorney in the Office of Legal Services from 1997 to 2002. He worked in the areas of air quality, industrial and hazardous waste, and radioactive material regulation, permitting, and rulemaking. Arnoldo represented the Executive Director in complex legal matters before the Commission and in evidentiary contested case hearings before the State Office of Administrative Hearings.

Arnoldo earned his B.B.A. from Texas A&M University–Corpus Christi in 1992 and his J.D. from the University of Colorado School of Law in Boulder, Colorado in 1996. He graduated as the Colorado Hispanic Bar Association Outstanding Hispanic Law Graduate, the recipient of the Colorado Journal of International Environmental Law & Policy (“CJIELP”) James Corbridge Leadership Award, and the CJIELP Research and Writing Award for his article on NAFTA, environmental law and emergency response issues in the Gulf of Mexico. He currently serves on the Executive Committee of the State Bar of Texas Environmental & Natural Resources Law Section.



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Education and Honors

J.D. (*with honors*), The University of Texas School of Law, 1981

B.S. (*magna cum laude*), textile technology and textile chemistry, Texas Tech University, 1978
Outstanding Engineering Student
Engineering Student Council

The International Who's Who of Business Lawyers in environmental law, 2004, 2006, 2008, 2010 and 2011

Chambers USA: America's Leading Lawyers for Business in environmental law, 2003 - 2011

The Best Lawyers in America® in environmental, administrative, and water law, 1995 - 2012

Best Lawyers, "Lawyer of the Year" (Environmental - Austin), 2011

Legal Media Group's (Euromoney's) *Guide to the World's Leading Lawyers* - Best of the Best USA in environmental law, 2009

Legal 500 U.S. in environment litigation, 2007 - 2010

Who's Who Legal: Texas in environmental law, 2007 and 2008

Recognized in *Texas Super Lawyers*, 2003 - 2011

"Top 50 Central and West Region Super Lawyers," *Texas Monthly*, 2003

"Top 50 Women Super Lawyers," *Texas Monthly*, 2003

"Top Notch Lawyer" in environmental law, *Texas Lawyer's Go-To Guide*, 2002 and 2007

Court Admissions and Affiliations

Summary

Molly counsels clients on virtually every kind of environmental matter and represents them before various agencies and in federal and state courts. *Chambers USA* described her in their 2004 publication of *America's Leading Business Lawyers* as a "renaissance lawyer, a true litigator" who is especially praised for her "effectiveness" and "top notch negotiation skills."

In the enforcement area, she has litigated and negotiated settlements for clients under the Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, and their state analogs, as well as Superfund. Molly has counseled on audit issues, under both the state audit law and federal policy. She also has both resolved and tried disputes regarding water supply and utility issues.

Molly's other major area of practice is permitting work before the U.S. Environmental Protection Agency and Texas Commission on Environmental Quality (and its predecessor agencies), as well as the Texas Parks & Wildlife and Railroad Commission of Texas. With regard to air and solid waste, Molly has handled a variety of contested cases, including incinerator and BIF air and hazardous waste permitting. She represents clients in State Implementation Plan (SIP) issues as well. On both a state and federal level, Molly has assisted clients in rulemaking petitions and in preparing comments on agency rules. She also has assisted clients in bringing litigation to challenge environmental legislation and rules. Molly has testified before the United States and Texas Senates, and has served as a testifying expert on environmental issues in a number of cases.

Representative Engagements

Clean Air Act

- Secured first contested NSR/PSD permit in non-attainment area

State Bar of Texas

Member: Administrative and Public Law, and Environmental and Natural Resources Law Sections, State Bar of Texas; Board of Directors of the Texas Water Conservation Association, 1999

Served: Task Force 21, a regulatory negotiation committee for developing environmental rules and policies in Texas, at the request of the Texas Natural Resource Conservation Commission

Fellow, American College of Environmental Lawyers

(TCEQ decision upheld by district court)

- Counseled clients on impact of non-attainment designation on permitting issues
- Represented clients in work group to consider challenging EPA's eight-hour ozone non-attainment designation for counties determined to be "contributing to" non-attainment area
- Advised Dallas/Ft. Worth area client on 11 technical factors used by EPA in determining boundaries for eight-hour ozone non-attainment designations
- Evaluated emission credit contracts and transactions related to emission off-sets
- Reviewed and commented on various SIP issues associated with Houston, Galveston and Beaumont/Port Arthur ozone non-attainment areas
- Evaluated numerous computer modeling efforts and results in conjunction with various contested air permits
- Worked extensively with engineers, modelers and toxicologists in air modeling issues
- Advised client on viability of challenging TCEQ NO_x rules
- Counseled clients on various Title V compliance issues

Mining

- Counseled clients on rulemaking and interpretation of coal combustion byproducts
- Represented client in defeating an unsuitability petition
- Assisted in securing settlement in SCMRA contested case
- Worked with a team of lawyers to permit a lignite mine in Texas

Water/Wastewater

- Secured, defended and defeated water rights permits
- Secured groundwater permits in contested matters from the Edwards Aquifer Authority and other groundwater districts
- Represented client in securing contested wastewater permit for new lignite mine
- Counseled clients on Effluent Limitation Guidelines for various industry sections
- Represented clients in contested TPDES wastewater discharge matters
- Challenged special districts on authorization to supply services
- Defended action to compel water supply
- Advised clients regarding water rights and water contracts in various transactions
- Advises on clean water cases, including those dealing with raw

water supply

- Actively involved in Texas water planning efforts

Waste

- Permitted and renewed underground injection control
- Advised clients on various RCRA issues

Publications, Speeches and Presentations

- “11th Circuit Court of Appeals Weighs in on Army Corps’ Statutory Authority for Lake Lanier Operations,” August 2011 (co-author)
- Author of numerous environmental articles
- Lecturer of environmental courses



The Ethics of Privilege: New Developments and Practice Points

Molly Cagle

Scott Janoe

July 2012

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Overview

- **The Attorney Client Privilege**
- **Ethical Duty of Confidentiality**
- **Case Study: *United States v. Stevens***

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Attorney Client Privilege

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Attorney Client Privilege

- **Elements:**
 - A communication
 - Made between privileged persons
 - In confidence
 - For the purpose of seeking, obtaining, or providing legal assistance to the client
- **The privilege must be affirmatively raised and cannot have been waived**
- **The client is the holder of the privilege**

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Attorney Client Privilege *cont.*

- **Element: A Communication**

- Things that are not a "communication"
 - **Facts** conveyed to an attorney*
 - **Facts** observed by an attorney*
 - Client identity
 - Retention of an attorney
- Privilege as a two way street
 - Communications can be from an attorney to a client or from a client to an attorney

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Attorney Client Privilege *cont.*

- **Element: Made Between Privileged Persons**

- The Client
 - Corporate Officers
 - Corporate counsel represents the corporation, not employees as individuals
 - Former Employees
 - Communications that were privileged during the course of the former employee's employment remain privileged
 - No privilege for former employees after the termination of employment
 - Related Corporate Entities
 - Corporations that demonstrate sufficient interrelatedness can be treated as one entity for the purposes of privilege

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Attorney Client Privilege *cont.*

- **Element: Made Between Privileged Persons *cont.***

- Others
 - Joint defense parties
 - Non-expert Independent consultants
 - Only if hired to assist counsel in providing legal advice
 - *U.S v. Kovel*, 296 F.2d 918 (2d Cir. 1961)
 - Converting information; indispensable to attorney-client communications
 - *Occidental Chemical Corp. v OHM Remediation Services*, 175 F.R.D. 431 (W.D.N.Y. 1997)

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Attorney Client Privilege *cont.*

- **Element: In Confidence**

- Expectation of Confidentiality
 - The communication must be confidential when made
 - The client must expect that confidentiality will be maintained (*i.e.* that it will not be revealed to third parties)
- Common Issues
 - Information sent to an attorney with the intent that it will be incorporated into a tax return, filing with an agency, or other disclosure is not privileged
 - Initial drafts of documents that are eventually sent to third parties or publicly disclosed

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Attorney Client Privilege *cont.*

- **Element: Seeking or Obtaining Legal Assistance**
 - Primary Purpose of Communication
 - Must be seeking or obtaining legal advice or services
 - Not every communication with an attorney is privileged
 - How to Determine "Purpose"
 - What is the predominant purpose of the communication
 - Distinction between legal information and legal advice
 - Implicit request for legal assistance is sufficient
 - Common Issue
 - Attorneys with two roles, such as in-house counsel

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Attorney Client Privilege *cont.*

- **Exception to the Privilege**
 - The crime-fraud exception renders the privilege moot when communications between an attorney and client are themselves used to further a crime or fraud
 - Applies when:
 - An ongoing or contemplated action
 - Advice sought to help effectuate the crime or fraud
 - Attorney need not be aware that advice is being sought to help effectuate the crime or fraud
 - Prima facie showing that crime or fraud occurred/will occur must be made first

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Attorney Client Privilege *cont.*

▪ Practice Tips

- Separate communications by content
- Clearly identify purpose of communication
- Label your notes/edits on draft documents
- Include a "claw back" provision in case management orders to protect against inadvertent waiver
- Agreements with contractors/experts should explicitly state purpose is to assist attorney in rendering legal advice and that purpose should be adhered to

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Ethical Duty of Confidentiality

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The Basics

- Protects materials that are not protected by the attorney-client privilege
- Applies to all information relating to the representation, whatever its source
- Duty is given effect by the attorney-client privilege, the work product doctrine, and the rules of professional ethics

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What is Confidential Information?

- **Rule 105(a)**
 - Confidential information includes both privileged information and unprivileged client information
 - Privileged information refers to the information of a client protected by the lawyer-client privilege of Rule 5.03 of the Texas Rules of Evidence, or of Rule 5.03 of the Texas Rules of Criminal Evidence, or by the principles of attorney-client privilege governed by Rule 5.01 of the Federal Rules of Evidence for United States Courts and Magistrates
 - Unprivileged client information means all information relating to a client or furnished by the client, other than privileged information, acquired by the lawyer during the course of or by reason of the representation of the client

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How must lawyers treat confidential information?

- **Rule 105(b)**

- A lawyer shall not knowingly:
 - Reveal confidential information of a client or former client to a person the client tells the lawyer not to divulge the information to, or to anyone else except for the client, client representative, or the lawyer's legal staff
 - Use confidential information of a client to the disadvantage of the client without consent
 - Use confidential information of a former client to the disadvantage of the former client unless the client consents or the confidential information has become generally known
 - Use privileged information of a client for the advantage of the lawyer or of a third party

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When may lawyers reveal confidential information?

- **Rule 105(c)**

- When expressly authorized to carry out representation
- After consent with consultation
- To the client or representatives, or to others in law firm unless instructed otherwise
- When necessary to comply with a court order, disciplinary rule, or other law
- When and to the extent reasonably necessary to support a claim in a dispute between lawyer and client
- To establish a defense to a criminal charge, civil claim or disciplinary complaint against the lawyer based on conduct involving the client or the representation
- When necessary to prevent the client from committing a criminal or fraudulent act
- When and to the extent necessary to rectify the consequences of a client's criminal or fraudulent act in which the lawyer's services were used

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When may lawyers reveal non-privileged client information?

- **Rule 105(d)**
 - When impliedly authorized to do so in order to carry out the representation
 - When necessary to:
 - Carry out the representation
 - Defend the lawyer or employers against a claim of wrongful conduct
 - Respond to allegations in a proceeding concerning the lawyer's representation
 - Prove up the services and value thereof in a fee dispute

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When must lawyers reveal privileged client information?

- **Rule 1.05(e)**
 - When a lawyer has confidential information clearly establishing that a client is likely to commit a criminal or fraudulent act that is likely to result in death or substantial bodily harm to a person, the lawyer shall reveal confidential information to the extent revelation reasonably appears necessary to prevent the client from committing the criminal or fraudulent act
 - Candor to the Tribunal (Rules 3.03(a)(2) and (b))
 - Statements to Third Parties (Rule 4.01(b))

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Practice Tips

- **Practice Tips**
 - Before disclosure, first seek to persuade the client to take suitable action to obviate the need for disclosure
 - If required to turn over confidential information:
 - To the extent possible, limit the scope of the production
 - Seek a confidentiality order or agreement
 - Assert all privileges that may apply to the information
 - Take reasonable precautions to prevent the release of information to unintended recipients

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Case Study: ***United States v. Lauren Stevens***

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Case Study: Handling Investigations

- ***United States v. Lauren Stevens***

- Led response to broad FDA inquiry into wrongdoing by Stevens' employer, GlaxoSmithKline
- Charged with obstructing a federal investigation and making false statements to investigators
- Max penalties: 20 years for obstruction and 5 years for each alleged false statement
- Court rules that the case "never should have been prosecuted"

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Case Study: Handling Investigations *cont.*

- **Examples of conduct at issue in *Stevens***

- Failure to send the FDA certain responsive documents in response to a voluntary request letter
- Producing to the FDA a spreadsheet of speaker events that did not contain information on entertainment provided to speakers
- Making statement to the FDA that attendees at events were not compensated when defendant was aware GSK provided gifts and entertainment

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Case Study: Handling Investigations *cont.*

▪ Documentary Evidence

- Privileged documents obtained by the government under the crime fraud exception
- The documents allegedly showed that Stevens "chose to deceive the FDA and not follow through on her commitments to provide information covered by the FDA's requests"
- Court ruled that the documents showed "a studied, thoughtful analysis of an extremely broad request"

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Case Study: Handling Investigations *cont.*

▪ Conclusion by Court

- "...there [were] serious implications for the practice of law generated by this prosecution"
 - There is an enormous potential for abuse in allowing prosecution of an attorney for the giving of legal advice
 - A lawyer should never fear prosecution because of advice that he or she has given to a client
 - A client should never fear that its confidences will be divulged unless its purpose in consulting the lawyer was for purpose of committing a crime or fraud

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