

2009 Seminar on Reinsurance CS-7: Environmental Insurance



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Agenda

Opening Remarks	Introduction of Panelists
Section 1	Introduction and History
Section 2	Actuarial analysis of Environmental Insurance: How to analyze (the “science”) Other considerations (the "art“)
Section 3	Emerging Issues US / Canada / Europe / Asia-Pacific



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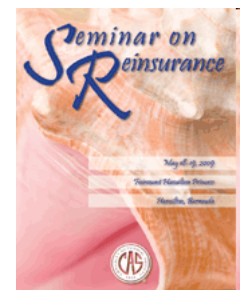
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Environmental Insurance

Section 1: Introduction

- Introduction to Environmental Coverages
- Brief History of Environmental Insurance
 - US
 - Canada
 - Europe



Environmental Lines of Business

- PLL – Pollution legal liability – also called EIL, or “sites”
 - Protection for costs that result from a pollution condition that can be preexisting (claims made coverage)
 - Protection for the costs of third party claims arising from a pollution condition (BI, PD, offsite remediation, BI)
 - Protection for first party cleanup costs and other expenses related to a pollution problem
 - Legal defense costs associated with the first two components
 - typically included in Policy Limit
- CPL – Contractors Pollution Liability, also called “services”
 - Protection for incident occurring as a result of a contractor's operations, either during remediation or development works
 - Can be project specific or cover all of a contractors’ work
 - Generally occurrence, but can be CM
- E&O – Errors & Omissions



Environmental Lines of Business

- RCC – Remediation Cost Cap
 - Stop loss coverage for remedial action plans and their expected costs
 - Once the expected costs plus a self-insured retention are exceeded, the insurer pays all additional costs up to the limits of the policy
 - Claims made coverage
- CPC – Closure / Post-Closure
 - Ensures that the owner / operator of a landfill will follow proper procedures to close the site at the end of its useful life, and will continue to monitor the site for emissions for the prescribed time period
 - Per site exposure may be small, but beware of accumulation of credit risk
 - XOL treaty may provide small or no protection if attachment is high relative to individual site limit
 - More similar to Financial Guarantee than Insurance
 - May include Prem/Ops type exposures as well
 - Exposures can be exacerbated by major weather events / shortage of materials
 - Insured can alternatively seek protection by means of a Surety Bond



Environmental Insurance: History

- Brief History of Environmental Insurance in the United States
- The environmental insurance marketplace in countries such as Canada, Europe and abroad has experienced a different evolution than what was witnessed in the US
 - Influenced more by First Party Asset Management and less by:
 - Regulatory Compliance or Financial Assurance Requirements;
 - Lender or contractual obligations;
 - Fear of Punitive awards or damages;
 - Political Agendas;
 - Coverage gaps in other property & casualty products.



Environmental Insurance

Section 2: Actuarial Analysis

- Complexities of Analysis of Environmental Insurance
- Practical Advice
- Other Considerations

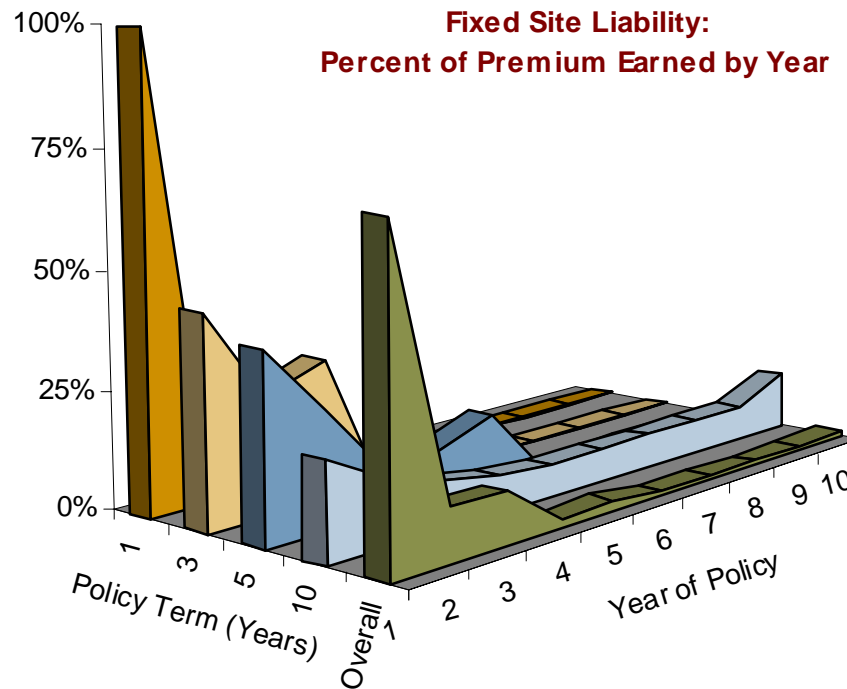


Challenges to Successful Actuarial Analysis

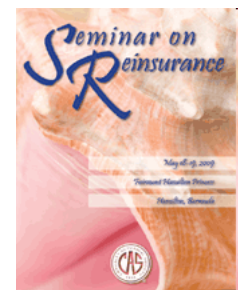
- Lack of Critical Mass of Data
- Low Frequency / High Severity
- Long Term Policies
- Little "generic" risk
- Immaturity of Results
- Changing Regulatory/Technical Standards



Multi-Year Nature of Environmental Policies



- ➔ Multi-Year policies present unique hurdles to completing an accurate experience analysis
- Where indicated, earning patterns must reflect variable loss frequency and severity over the policy term – will vary by product type
 - On-level factors must include the impact in shift of policy terms, if any, and must properly allocate rate level to Accident/Report Year
 - Claims development factors must reflect the correct policy trigger



Environmental Treaties: Complexities

- Can have extremely long tail
- Treaties frequently combine many types of environmental business that can combine elements of:
 - Claims-made and occurrence
 - Multi-year and single year policies
 - “plain vanilla” products combined with unique, highly specialized
- Little industry experience available
 - LDFs , loss trends, historical rate changes, ILFs are difficult to come by and can vary substantially by type of environmental business
 - Historical results vary dramatically by environmental LOB
- Line of business can be subject to highly correlated “cat” claims
 - Difficult to predict
 - Impacted by political and judicial landscape
 - Often related to unforeseen consequences of new technology



Environmental Treaties: Complexities

➤ Occurrence Trigger (CPL)

- Requires knowledge of when pollution leading to claim first occurred.
- Gradual pollution – policy in force at time of first exposure responds to all subsequent claims.

➤ Claims Made Trigger

- Claim first made that is result of pollution release.
- All subsequent claims arising from a pollution event covered by policy in force at time first claim is made.

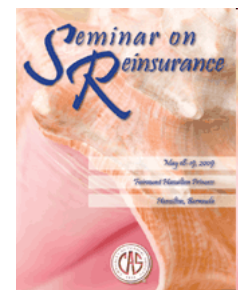
Examples:

➤ “Sudden”, generally above ground, release of pollution.

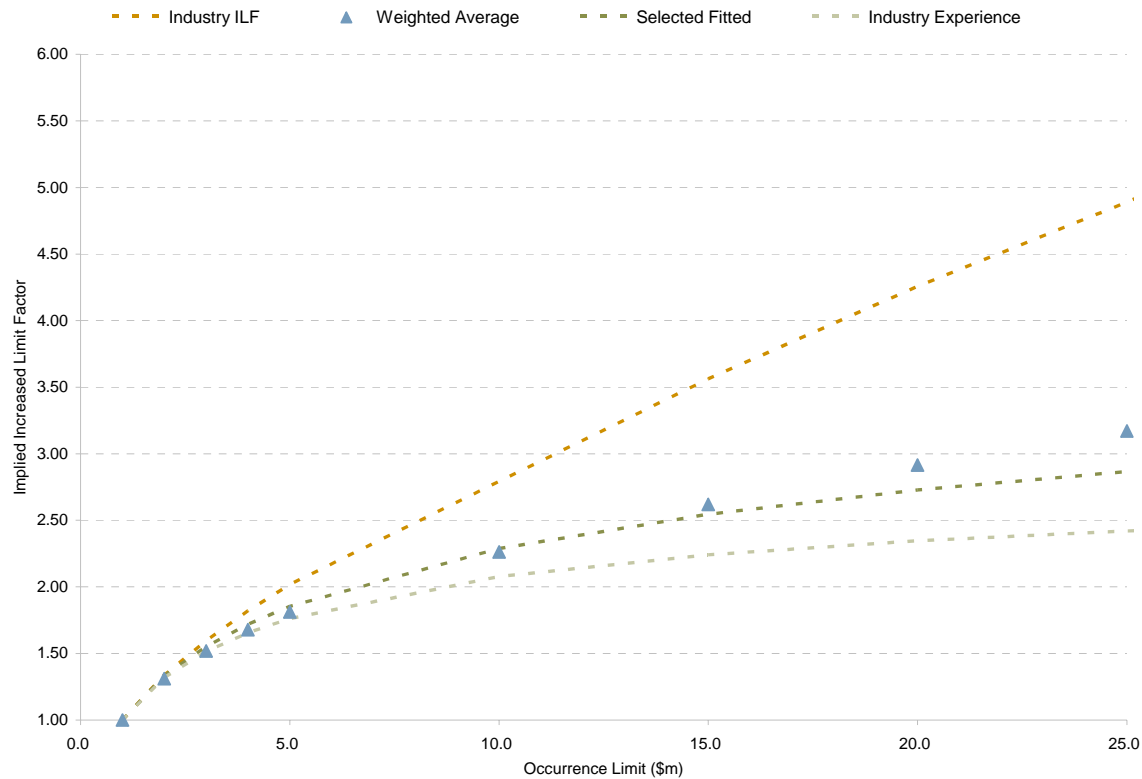
- Little difference between coverage triggers – policy in force should respond to claim

➤ “Hidden” pollution occurring gradually over time.

- Difficult to establish which policy to assign claim to
- Coverage litigation more likely



Historical Severity

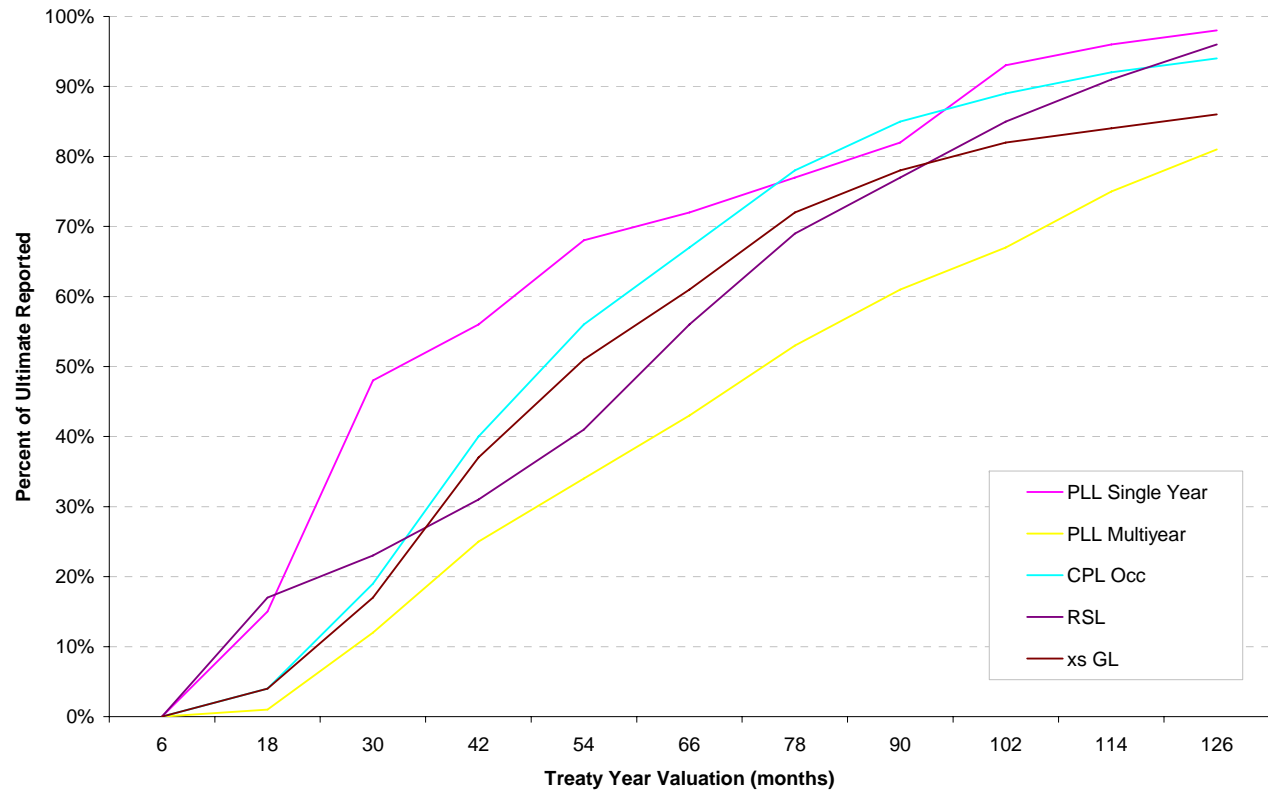


- Market ILFs universally imply a much higher severity than has been observed historically
- Two sets of theories:
 - Intelligence
 - Catastrophic potential due to change in:
 - » Scientifically accepted thresholds
 - » Legislative / Regulatory Doctrine
 - » Judicial Award Practices
 - Coincidence
 - Common Source
 - What the market will bear
 - Irrational fear of the product



Environmental Treaties: Practical Advice

Environmental % Reported Loss & ALAE by Type of Business



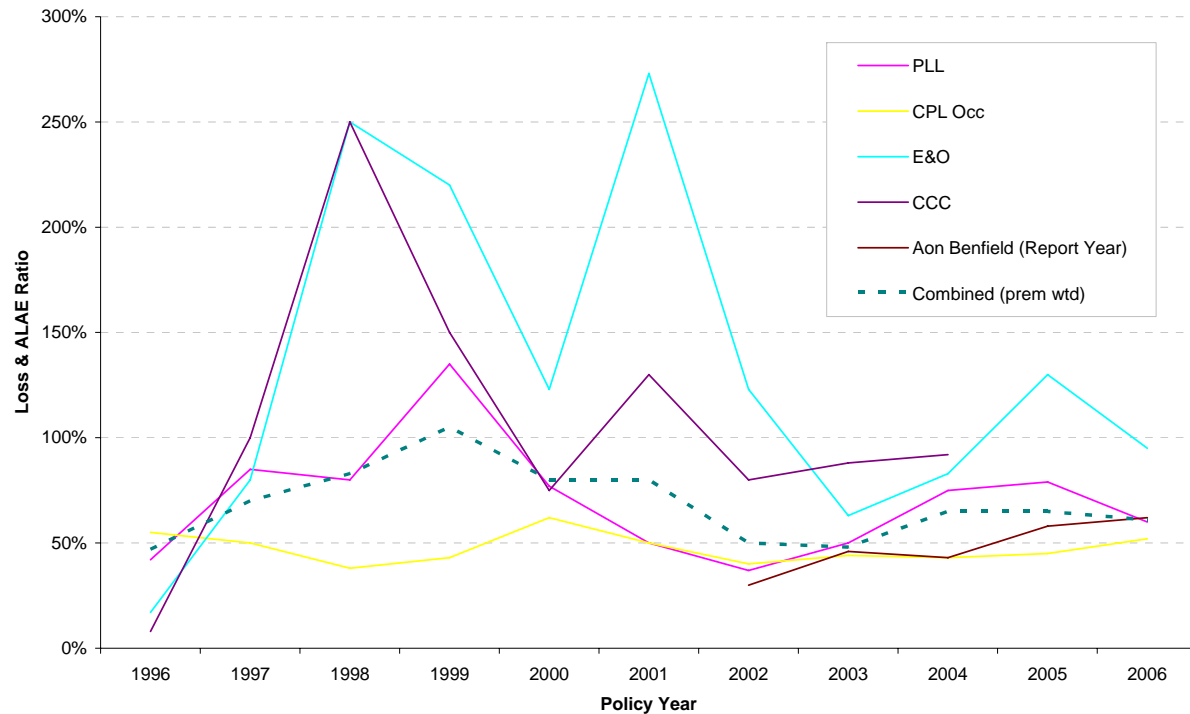
- Separate by Line of Business
- Analyze single year and multi-year separately if possible
- Look at data on a policy year basis

- Multi-year policies make earned premium very difficult to calculate
- Even so, may not accurately reflect exposure
- Generally policy premiums are paid up front, even for multi-year
- Look at the Distribution of Multi-year Policies over time
 - If changing, adjust loss development factors accordingly



Environmental Treaties: Practical Advice

Environmental Loss Ratios - Another View

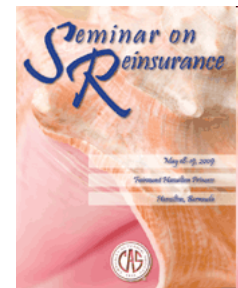
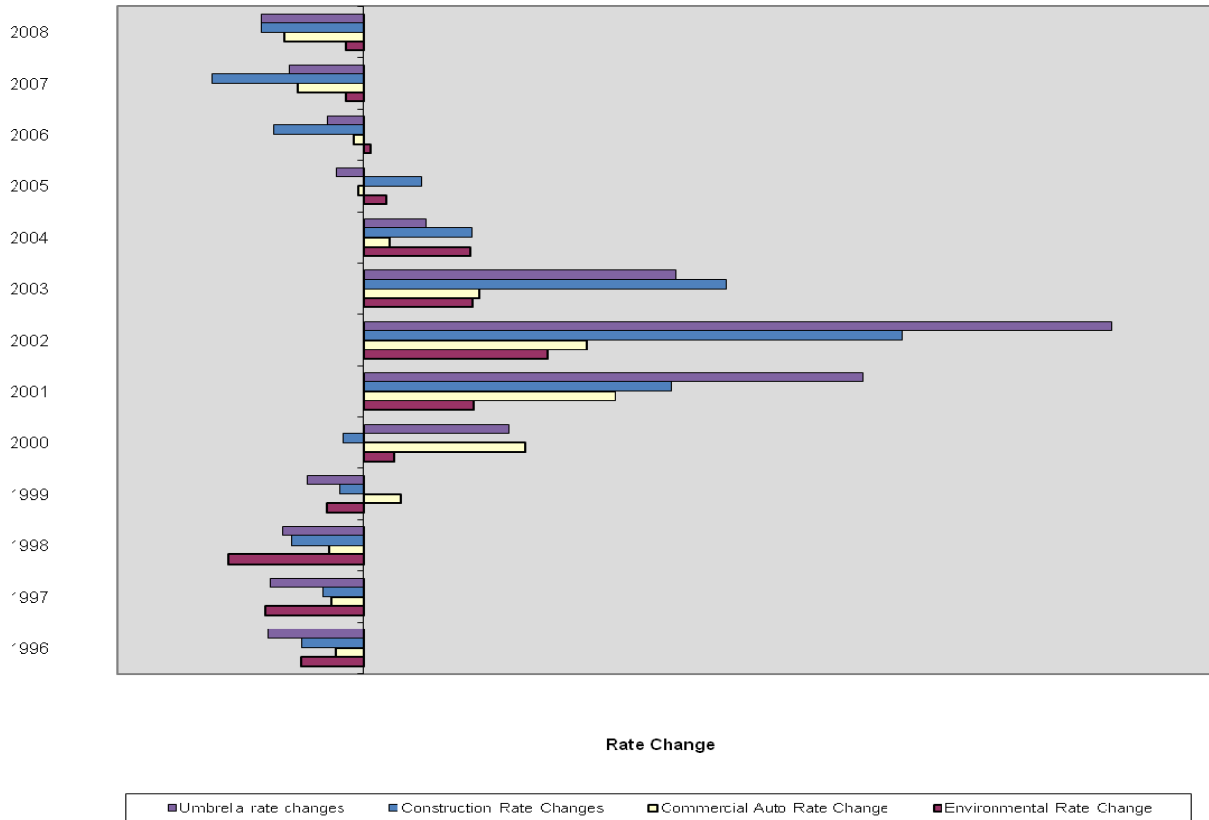


- Frequency and Severity Trends
 - Try to get claim count triangles by LOB
 - Policy count information
 - Rough historical assumptions



Historical Rate Changes

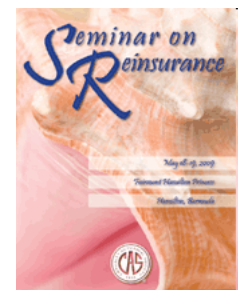
- On-level results
 - Rate Changes
 - Virtually impossible to calculate reliably
 - Rough historical assumptions
- Seem to change less than other casualty lines of business:



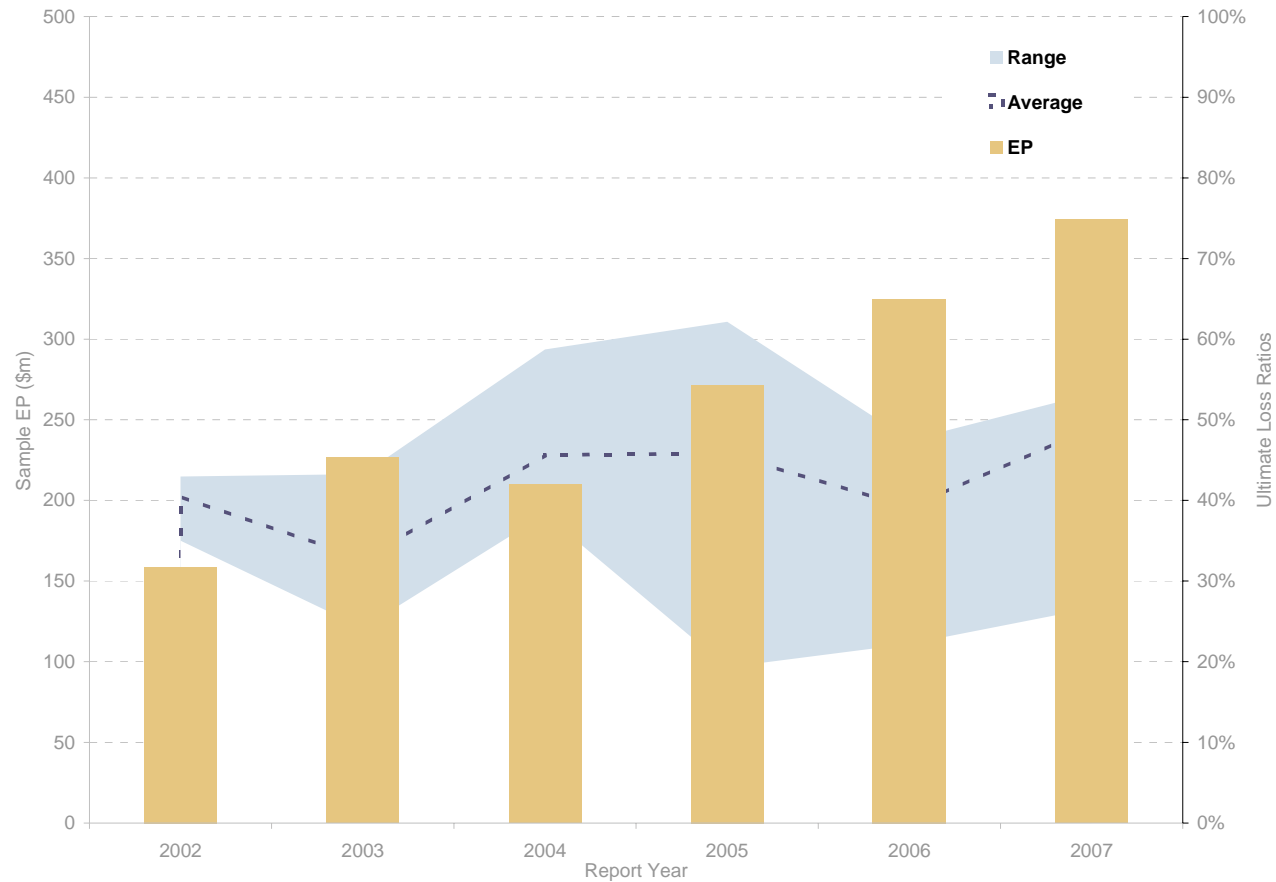
Pricing Environmental Treaties: Practical Advice

- Complications of XOL
 - Policy limits and claims are very large (50M policy limits) – Balance issue
 - ILFs very similar across industry – are they accurate?
 - Variable QS more common than excess of loss
- Look carefully at underwriters qualifications
 - Very technical background necessary
- Track changes in policy terms and conditions
- Keep informed about current issues, potential exposures
- Recent large claims:

Dana Corporation (2008):	\$125M to settle liabilities at 6 toxic waste sites; pollution occurred 1936-1956.
Various Oil Companies (2008):	Pay \$422M to settle claims of contamination to drinking water caused by gasoline additive MTBE; added to gasoline 1997-2007
Appleton, NCR (2008):	\$390M to clean up Fox River in Green Bay, Wisconsin; pollution occurred 1954-1971.
American Electric Power (2007):	\$4.6B to install pollution controls at 16 coal-fired power plants; lawsuit filed in 1999.
Fluor Corporation (Murrin Murrin project, 1999 claim settled in 2004):	\$123M to settle claim, “entire amount paid by insurers”.



Environmental Loss Ratios



- Selected Ultimate Loss Ratios by Report Year based on Aon Benfield Analytics analysis of total Pollution Liability results
- Includes clients with \$10m or more in total Pollution Earned Premium for the Report Year



Reviewing an Environmental Book: What to look for

➤ Strong Team Environment

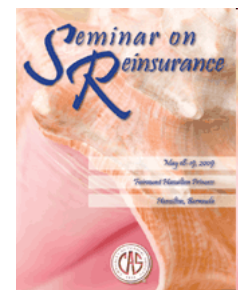
- Inclusive Definition of Team
- Longevity
- Communication
- Collaboration
- Attention to Terms and Conditions

➤ Mix of Legal, Technical, Insurance, and Business Skills

- Internal and External Components
- Balance of all Elements

➤ Consistent Approach to Risk

- Recognize that there is little commonality of risk characteristics
- Strong guidelines for approaching issues
- Credible matrix to understand pricing trends
- Internal Review Process



Environmental Insurance

Section 3: Emerging Issues

- United States
- Canada
- Europe
- Elsewhere



Breaking Issues

➤ Regulatory Change

- U.S.
- E.U.
- Asia, South America, Africa

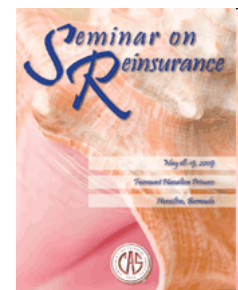
➤ Indoor Air Quality

➤ Global Warming / Greenhouse Gases

➤ “Chinese Drywall”

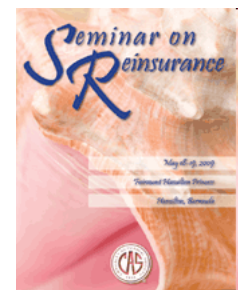
➤ Marketplace issues that will affect results

- Shrinking Marketplace
- Greatly Increased Capacity
- Spread of Available Talent
- Combined GL/Pollution Policies



The International Environmental Specialty Marketplace: What is Changing?

- We are seeing significant change in how companies manage their environmental liabilities. Why now?
 - Regulatory frameworks are being re-drafted and enforced and the courts are interpreting written law as intended (thereby setting new precedent);
 - Political shifts in priorities and voter pressure;
 - Economic conditions;
 - Contractual obligations extending beyond tort law;
 - Lender security requirements;
 - International Expansion & Compliance Concerns (both operational and administrative);
 - Director & Officer Responsibility and Accountability;
 - Financial Disclosures;
 - Shifts in Corporate Culture: Sustainability
- In response, the Environmental Insurance market is gaining momentum and becoming a mainstream player.

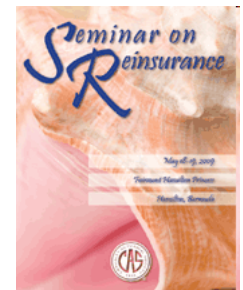


The International Environmental Specialty Marketplace: Future Challenges?

- Need to recognize the inherent differences in the risk profiles of Canada and the EU compared to the US:
 - Punitive Damages/Fines & Penalties;
 - Natural Resource Damages;
 - Waste Disposal Activities;
 - Remediation Requirements/Standards
 - Claims Experience (scope and quantum);

- Insurers need to be flexible and innovative in designing:
 - Product solutions to address differences
 - Pricing models that recognize the unique risk profiles

- Availability and consistency in local coverage offering abroad;
 - Meets compliance requirements;
 - Ensure seamless global programs.



The International Environmental Specialty Marketplace: In Summary

- The convergence of influencing drivers has created unprecedented momentum in the international environmental specialty marketplace in recent years;
- International risk profiles and business objectives differ in many respects from those seen in the US;
- The opportunity for growth and product innovation/development is tremendous!

