

# *Assessment of Environmental Liability Insurance Options for Cleanup Activities*



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# ASSESSMENT OF ENVIRONMENTAL LIABILITY INSURANCE OPTIONS FOR CLEANUP ACTIVITIES

## Introduction

The purpose of this assessment is to: (1) review the state of the practice in the insurance market to provide products that reduce potential exposure to liability arising from the use of technology options and (2) determine the effects of such insurance products on the use of innovative technology for cleanup activities at sites containing hazardous waste.

## Methodology

Tetra Tech EM Inc. (Tetra Tech) performed a literature review of existing information to provide background information and serve as a starting point to conduct the assessment. Tetra Tech prepared an interview guide and conducted interviews with several insurance professionals.<sup>1</sup> In addition, Tetra Tech attended a presentation, "Environmental Risk and the Insurance Industry," hosted by the Forum for Environmental Law, Science, Engineering and Finance on November 17, 1998 in Washington, D.C. The following discussion provides an overview of the results of those efforts.

## Preliminary Results

The following sections present the results of Tetra Tech's assessment of the insurance market and the effects of insurance products on cleanup activities. Because the results represent discussions with a limited number of insurance professionals, additional discussions may be useful to substantiate or expand the results.

### ■ Effects of Insurance on the Use of Innovative Technology

The information gathered to date indicates that the insurance market is not imposing any unreasonable restrictions that would inhibit the use of innovative technologies. Unlike other forms of insurance products (for example, automobile or homeowner coverage), for which actuarial data are available to use in predicting risk and setting premiums, environmental insurance to support site remediation requires site-specific analyses. The analyses involve probabilistic risk calculations that must be based on site-specific technical data (for example, characteristics of the site, estimates of cleanup costs, and appropriateness of the selected technology) and, in some cases, such intangible information as potential regulatory changes that could affect specific cleanup standards. The analyses also may consider the adequacy of information that is presented to show that an innovative technology is ready for commercial use. Tetra Tech was unable to ascertain specific details of the analyses performed by the insurance companies and their technical consultants because of their concerns about business confidentiality.

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<sup>1</sup> Tetra Tech interviewed an insurance underwriter, an insurance broker, and an insurance risk manager to obtain a broad perspective. It was agreed in advance that these individuals and the companies they represent would remain anonymous to allow for open discussion.

## ■ Environmental Insurance Products

Roughly 80 percent of the insurance market is controlled by four major insurance providers; American International Group (AIG), Reliance National, Zurich America, and Kemper. Those providers have expanded rapidly the number of insurance “products” in the environmental area. Although the products vary by provider, products are available to cover the following:

- bodily injury and property damage
- contract damages
- environmental cleanup costs
- legal defense expense
- business interruption expense
- remediation cost overruns

Appendix A provides a description of the key features of each of the six types of coverage.

Tetra Tech’s assessment focused on factors that affect the cost of the remediation cost overrun insurance product because that product appeared to have the highest probability of affecting the use of innovative technology. It is interesting to note that the remediation cost overrun insurance product has “blurred the line” between insurance products and surety products. Insurance products are used to provide indemnity protection against the occurrence of an insured event (for example, failure of the remedy). Surety products are used to ensure the performance of a product (for example, an innovative technology). Remediation cost overrun insurance does not guarantee the performance of the remediation technology; rather, it insures against exceeding the estimated cost of the remedial action.

## ■ Factors that Affect the Underwriting Decision-Making Process and the Cost of Premiums

One insurance professional stated that the underwriting process for environmental insurance products is similar to any other lines of specialized insurance where there is insufficient loss data to actuarially set insurance premiums. Tetra Tech’s assessment indicates that insurance underwriters who review site-specific remediation information tend to have technical degrees (for example, professional engineers, chemists, or geologists) and specific remediation experience. For example, one underwriter characterized himself as 50 percent environmental expert, 25 percent commercial industry expert, 15 percent market developer, 9 percent insurance expert, and 1 percent “tree hugger.”

The results of the interviews conducted suggest there is significant variation in the method of calculating premium costs for the remediation cost overrun insurance product. According to one insurance professional, the premiums for such coverage are based in part on the “innovativeness” of the remediation technology. The degree of innovativeness assumed is based almost entirely on the determination of the adequacy of site characterization and appropriateness of the technology to those conditions. The determination is based on best professional judgment, rather than on any information tools provided by the U.S. Environmental Protection Agency (EPA) (that is, the verification and validation program or web sites presenting technology information, such as, Remediation and Characterization Innovation Technologies [REACH IT]).

A second insurance professional indicated that premium costs for the remediation cost overrun insurance product are relatively fixed, ranging from 3 to 6 percent of the value of the policy. Within that range, the actual percentage is based on best professional judgment and an assessment of the appropriateness of the selected remedy. Assessment of appropriateness is based on the acceptance of the remedy by the state or federal regulatory bodies. For example, if a site has been characterized adequately (that is, contaminants are well known), the remedy has proven to be effective in similar situations, and the approval process has been uncontroversial, the premium will be at the 3 percent level. If the nature of site complicates characterization (for example, a landfill where there are unknown “hot spots”), the remedy is “innovative” (that is, has not been used often or at all), and the regulators have requested more than normal documentation or justification of the remedy, the premium will be at the 6 percent level. The insurance professional stated that insurers do not use any cost and performance or verification and validation information provided by EPA or any other information provider in conducting their analysis.

A third insurance professional indicated that premium costs for the remediation cost overrun insurance product are based on (1) the estimated cost of the cleanup and (2) an estimate of the probability of failure of the remedy and the probability of regulatory changes that could affect the remedy. Typically, consultants working on behalf of the insurer perform cost engineering reviews to ensure that the cost of the remedy is reasonable for the site. Technical experts from the insurance company and, if necessary, consultants evaluate the appropriateness of the proposed remedial technology. The burden of proof of the performance of the technology is on the purchaser of the insurance. Prospective purchasers must supply all the documentation necessary to support the selection of the remedy and associated technology. Insurance companies prefer to conduct as little technology evaluation as possible because of the associated costs.

#### ■ Next Steps

As discussed above, the results presented in this preliminary assessment represent discussions with a limited number of insurance professionals. On the basis of the information obtained to date, Tetra Tech offers the following suggestions for future activities:

1. ***Interview additional insurance professionals.*** Given the differences among the observations of the insurance professionals interviewed, it may be valuable to continue interviewing insurance industry professionals to gain further insights and put the existing information in perspective.
2. ***Interview insurance company consultants.*** As discussed in the preceding sections, consultants to the insurance industry appear to be the focal point of the technical analysis of the appropriateness of the selected technology. Although their exact methodologies are considered business confidential, it may be possible to extract useful information from such consultants to (1) understand the data (cost and performance) required to conduct probabilistic risk analyses for innovative remediation technologies and (2) identify potential ways EPA could assist in providing that data. It may be highly productive to develop and implement a focus group of such professionals to gather such information efficiently. A number of cost engineering societies (for example, The

International Cost Engineering Council) could be contacted to identify participants.

3. ***Explore the effect of premium costs.*** Tetra Tech’s preliminary assessment indicates that insurance for innovative technologies is available. The issue may be whether premium costs are an impediment to the use of innovative technology. It may be useful to research that issue. Interviews could be conducted with Potentially Responsible Parties (PRP) groups or their design engineers at sites at which construction recently has begun. If premium costs are in fact an impediment, the effort could identify means of reducing those costs. For example, greater access to information, or the availability of more appropriate information (for example, cost and performance data) may accomplish that goal. Another possible approach could focus on efforts to establish a pool of technology users or vendors to obtain insurance at rates below market. (One of the insurance professionals interviewed indicated that an organization of industrial hygienists obtained lower premiums by forming such a pool).
4. ***Work with Northern Kentucky University.*** Northern Kentucky University (NKU) is assisting EPA in updating the study entitled “Potential Insurance Products for Brownfields Cleanup and Redevelopment” that was completed in 1996. NKU will again survey the individuals included in the first study to determine how the environmental insurance market has changed over the past three years. NKU also will determine how recipients of revolving loan funds are handling insurance issues at Brownfields sites. It may be useful to work with NKU to identify opportunities to extract information from the study regarding insurance at sites using innovative technologies.

**APPENDIX A**  
**SUMMARY OF ENVIRONMENTAL INSURANCE PRODUCTS**

| <b>Type of Coverage Provided</b>  | <b>Key Features of Coverage</b>  |
|-----------------------------------|--|
| Bodily Injury and Property Damage | <ul style="list-style-type: none"> <li>• Provides compensation for bodily injury and property damage due to a pollution condition, such as a release of hazardous or toxic materials. Covers injuries to others that occur on-site and off-site.</li> <li>• Personal injury damages include pain and suffering, such as mental anguish, and medical costs sustained to treat such illness.</li> <li>• Property damage includes costs to replace or repair another's property, including compensation for the loss of use of the property.</li> </ul>   |
| Contract Damages                  | <ul style="list-style-type: none"> <li>• Provides compensation where pollution impairs the insured's ability to perform under a contract.</li> <li>• Covers situations where pollution requires the insured to cease operations while the pollution problem is addressed and contracts with customers may be broken.</li> <li>• Covers situations where the insured warranties to a lessee of property owned by the insured that the property is free from pollution, but pollution exists and causes a tenant to sustain damages. The coverages pays for compensatory damages for which the insured is liable for such a breach of contract.</li> </ul> |
| Environmental Clean-up Costs      | <ul style="list-style-type: none"> <li>• Policy pays for the costs the insured must incur to address its pollution problems and comply with government standards established to protect human health and the environment.</li> <li>• Covered costs include site investigation costs and the removal, treatment or disposal of wastes.</li> </ul>   |

| Type of Coverage Provided | Key Features of Coverage  |
|---------------------------|---|
| Legal Defense Expense     | <ul style="list-style-type: none"> <li>• Coverage pays for the insured's legal costs incurred to defend or settle a liability dispute for pollution.</li> <li>• Coverage pays for legal fees to defend against lawsuits brought by federal or state regulators and private third parties.</li> </ul>  |
| Business Interruption     | <ul style="list-style-type: none"> <li>• Coverage pays for internal costs that the insured suffers as a result of pollution.</li> <li>• Internal costs include loss of income, continued payment of salaries and other routine business expenses, and expenses for temporary relocation of the business during the period of restoration.</li> </ul>  |
| Remediation Cost Overruns | <ul style="list-style-type: none"> <li>• Also called cleanup cost cap or stop loss insurance.</li> <li>• Policy pays for clean-up costs that run substantially over budget, including remediation costs.</li> <li>• Policies require the insured to accept the risk of the project going over budget by a certain percentage of the estimated project cost. The insurer pays only if the project cost exceeds the estimated cost, plus the agreed upon buffer.</li> </ul> |