BLDI Environmental

Environmental Insurance and Forensics

April 2014

Prepared by: Joseph Berlin, EP, CP, PE

April 2014

About BLDI, Inc.

BLDI was established in 1991 to focus on providing environmental services within the legal and financial community. We believe that data should be collected with a pre-determined goal with the pro's and con's of collecting that data prior to developing a work plan. That protocol has been continually emphasized during over 20 years of forensic work for cases from Michigan to Ohio, Kentucky, New York and Texas.

"Our work is only valuable to the extent our client can benefit." Joe Berlin, BLDI President

Our understanding of the principles of environmental risk management, investigation, remediation and the necessary supporting data is often used in risk mitigation, insurance underwriting, claims, quantification, source and origin and closure verification.

Mr. Berlin started his career in The Boeing Company Test Lab conducting various types of testing on aerospace products under the tightest of testing protocols and security clearances. Mr. Berlin is a professional engineer in several states, Ohio VAP CP and member of several professional organizations, including National Academy of Forensic Engineers. Mr. Spehar uses his knowledge of industrial processes and chemistry to support various types of investigation, remediation and forensic projects. Mr. Spehar is a professional engineer with on-going projects in multiple states.

Environmental Drivers

- Real Estate Sales
- Liability Transfer
- Third-party
- Financial Statements

Dave has already discussed transactional dynamics and the benefits of insurance…what's next

Common Process Flow

- **Indemnity considered: often does not meet goals**
- **Other tools**
- **Insurance**
  - **Environmental documentation**
  - **Application**
  - **Underwriting**
  - **Compliance**
  - **Claims**

Terms

- **Baseline**
- **Retroactive date**
- **Quantify**
- **Contingency**
- **Transfer**
- **Known Conditions**
- **Trigger**
- **Allocate**

Environmental Documentation

- Standard Phase I ESA
- Phase II ESA – sampling
- Site Characterization
- Source area definition
- Off-site migration
- On-site migration
- Contracts
- Regulatory environment
- Clear Trigger
- Underwriting data package

"Know your goals, drivers, criteria and limitations ."

Data Package

- Soil, groundwater definition
- Covered/excluded contaminants
- Vapor???
- Cleanup or lack thereof
- Figures and Tables
- Quantification and definition
- Estimating documentation
- Agency v. Self-Implemented
- Visuals
- Re-submittals

"Paint a picture for the insurer, especially for the chap reviewing the environmental reports."

Advisor* Issues

- Overpromising, oversimplifying or data cramming
- Advisor(s) with limited field, forensic, analytical or remediation expertise
- Insufficient data: cause/origin, quantify, baseline, underwriting, trigger
- Dataset parsing
- Limited or no data in source area(s)
- Closure reports with limited data
- Suspect data

*Advisor can include consultant, underwriter, adjuster or attorney

Compliance and Claims

- On-going reporting or compliance
- Cleanup documentation
- Notices
- Defense costs
- Claims

Claims

- Notice
- Policy period
- Extended reporting periods
- Rejection
- Allocation

What is Forensic Engineering and Environmental Forensics?

Forensic Engineering "...is defined as; —the application of the art and science of engineering in matters which are in, or may possibly relate to, the jurisprudence system, inclusive of alternative dispute resolution."*

- *National Academy of Forensic Engineers*

Environmental Forensics is…"a combination of analytical and environmental chemistry, which is useful in the court room context. It therefore involves field analytical studies and both data interpretation and modelling connected with the attribution of pollution events to their causes."

- *Royal Society of Chemistry*

Use of Forensics

- Underwriting
- Claims
- Quantification (e.g. SOX, Estate)
- Source and origin
- Component failure
- Estimating Escrows/Reserves/Liabilities (e.g. O&D)
- Baseline impact
- Closure program/report review
- Consultant issues

Toolbox

Designation: E2753 – 10

Standard Guide for
Investigation of Equipment Problems and Releases for
Petroleum Underground Storage Tank Systems[1]

- Archaeological excavation
- Physical data/testing
- Component failure analysis
- UST system dissection/corrosion models
- Chemical use/availability
- Fingerprinting
- Degradation models - VOCs, CVOCs
- Statistical models
- Isotopic Analysis

Designation: E2137 – 06 (Reapproved 2011)

Standard Guide for
Estimating Monetary Costs and Liabilities for Environmental
Matters[1]

Data Management and Collection

- Hypothesis: starting point
- Application of Daubert Factors
- Data Use Objectives
- Data Quality Objectives

RULE 702. TESTIMONY BY EXPERT WITNESSES

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

(b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.

Standard Guide for Collecting Treatment Process Design Data at a Contaminated Site—A Site Contaminated With Chemicals of Interest

"Know your goals, criteria and limitations before recommending any type of data collection."

Projects

1. Policy Trigger
2. COSTCAP
3. Foreign Purchase - Risk Mitigation
4. Forensic Investigation – Discovery
5. Officers & Directors Insurance - Claim by Shareholders

We'll try to get through Cases 1, 2 and 3 here.

Case 1: Policy Trigger

- UST insurance ($1M for releases)
- A senior EP was onsite to conduct initial site documentation for a potential real estate transaction at a C-Store.
- During the site visit a load of fuel was “dropped”
- Tank fitting was observed to be a release point
- Further assessment found the tank lining failed
- Release undocumented by the tank monitoring system

Forensic engagement: Review of historic site data, documentation of trigger event, source and origin, archaeological excavation, component failure analysis, dissection of UST system source and origin, claims documentation

Case 1: cont'd

Outcome:

- Direct evidence of release from covered portion of UST system.
- Documentation of specific release sources, including tank, sumps, piping, bungs.

Take Away:

- Paint a picture for all parties so parties can render an informed opinion
- Have "real" data that supports or refutes claim

Case 2: COSTCAP

- Site with on-going cleanup
- Two former owners and new purchaser
- Former owners had unfunded indemnity
- Attorney solicits “solutions”
  - Two consultants submit common cost proposals with a “guaranteed” cleanup
    - Try to work through contract issues
    - No COSTCAP
  - 3rd Consultant provides “guaranteed” cleanup with COSTCAP policy
    - Work through contract issues
    - COSTCAP policy obtained in 45 days
- Cleanup/closure completed within two years
- Utilized self-insured retention but COSTCAP not triggered

Case 2: cont'd

Take Away:

- Indemnities complicated latest transaction
- COSTCAP simplified sale, transferred risk and accomplished goals
- Collection of select additional data allowed simplified underwriting at a lower cost.

Case 3: Foreign-Owned Company Risk Aversion

- Foreign-owned company with significant risk aversion purchases bankrupt company
- Heavy manufacturing at site since 1910
- Known soil and groundwater impact
- Working with State agency on liability mitigation
- Work with EU-based consultant on source area(s) and Baselining impact
- Time for agency approvals further increased importance of Insurance
- Legal Liability Policy purchased for 5-year term
- Annual 3rd-party inspections for compliance
- Renewal simple at Year 5

Case 3: cont'd

Take Aways

- Foreign purchasers often have higher risk aversion than domestic
- The cost of policy can be small percentage of deal

Case 4: Forensic Environmental Case

- Large C-store owner replaced UST systems (Dozens of sites)
- New USTs and double-walled piping systems
- Cleanup was undertaken prior to the installation of new UST system
- Within two years new system failed testing
- Investigation found “new” piping system failure requiring a new round of cleanup
- Enter…lawyers, engineers, experts, threats and lots of time and frustration

Case 4: Forensic Environmental Case

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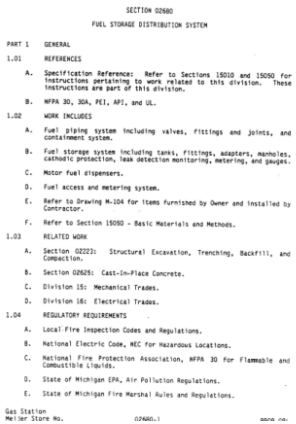
Case 4: cont'd

Engagement

- Hypothesis for failure
- Protocols for
  - Initial documentation
  - Assessment
  - Investigation
  - Documentation
  - Reporting
- Develop system/site criteria for all locations
- Assess prior testing protocol and results
- Assess correlation between prior testing and system/site criteria
- Conduct literature review related to UST system failure, manufacturer-specific information, testing protocols



SECTION 02680

FUEL STORAGE DISTRIBUTION SYSTEM

PART 1 GENERAL

1.01 REFERENCES

A. Specification Reference: Refer to Sections 15010 and 15050 for Instructions pertaining to work related to this division. These Instructions are part of this division.

B. NFPA 30, 30A, PEI, API, and UL.

1.02 WORK INCLUDES

A. Fuel piping system including valves, fittings and joints, and containment system.

B. Fuel storage system including tanks, fittings, adapters, manholes, cathodic protection, leak detection monitoring, metering, and gauges.

C. Motor fuel dispensers.

D. Fuel access and metering system.

E. Refer to Drawing M-104 for items furnished by Owner and installed by Contractor.

F. Refer to Section 15050 - Basic Materials and Methods.

1.03 RELATED WORK

A. Section 02223: Structural Excavation, Trenching, Backfill, and Compaction.

B. Section 02625: Cast-In-Place Concrete.

C. Division 15: Mechanical Trades.

D. Division 16: Electrical Trades.

1.04 REGULATORY REQUIREMENTS

A. Local Fire Inspection Codes and Regulations.

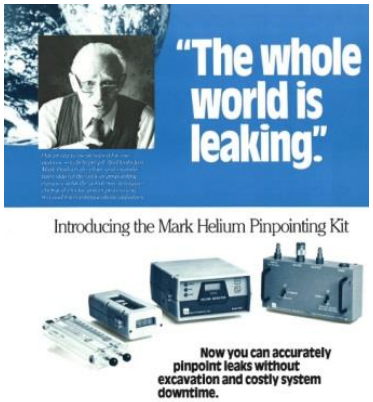
B. National Electric Code, NEC for Hazardous Locations.

C. National Fire Protection Association, NFPA 30 for Flammable and Combustible Liquids.

D. State of Michigan EPA, Air Pollution Regulations.

E. State of Michigan Fire Marshal Rules and Regulations.

Gas Station
Meijer Store No. 02680.1

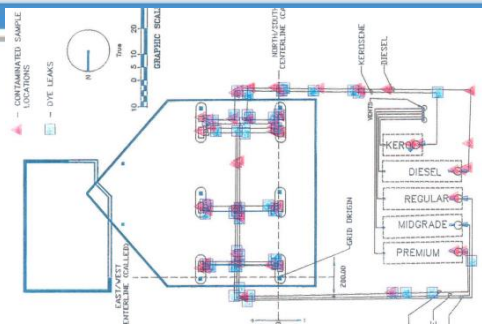


Case 4: cont'd

Engagement: cont'd

- Assess manufacturer systems, installation instructions, specified test methods and referenced testing protocols (e.g. ASTM, ASME)
- Review design plans, specifications and contract documents
- Assess contractor correspondence, change orders, as-built plans
- Develop conceptual model(s) for system and component failure
- Using conceptual model(s) develop field testing protocol
- Conducted system pre-testing, archaeological-type excavation and final testing of the systems and associated components

Case 4: cont'd



Results

- System and component failure identified
- System failure more expansive than piping or tanks
- Both primary and secondary product piping failed resulting in releases to the environment.
- Other release sources included galvanic corrosion, contractor damage to installed system, product creep, incompatible materials, design failure, testing failure, non-compliance with referenced industry standards.
- After a significant discovery period and lengthy depositions the case was settled for our Client (Plaintiff)

Case 4: cont'd

Take Aways

- Design and testing validation
- Feedback loop for field testing failure
- Verify value engineering assumptions
- Retain "your" expert for "their" expert deposition
- Allow forensic program to evolve
- Be patient

Summary

- Data and data packing key to underwriting
- Forensic techniques have broad application
- Keep the entire toolbox in mind
- Take care in minimizing the scope of engagement or investigation
- Facts, data and good science don’t always win

Contact

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The Use of Environmental Insurance In Facilitating Property Transfers

Ohio Brownfields
April 2014

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American Risk Management Resources Network, LLC

- Specialists in environmental insurance
- Wholesale insurance brokers
- Insurance architects
- Authors
- Expert witness on historical environmental insurance placements
- Insurance consultants to the US Army Corps of Engineers on $500,000,000 of fixed priced environmental remediations

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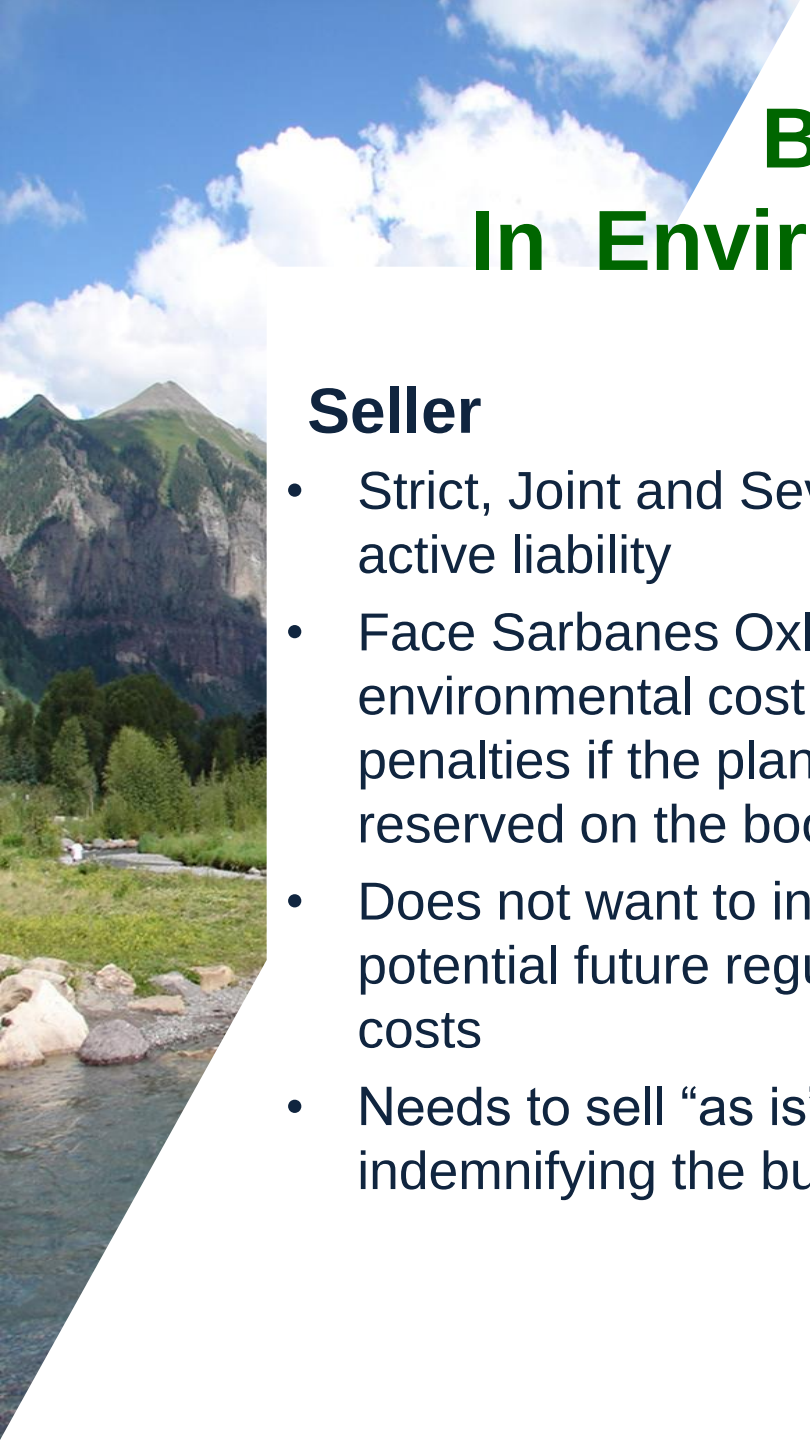

Buyer And Seller Dynamics In Environmental Legacy Property

Seller

- Strict, Joint and Several, Retro active liability
- Face Sarbanes Oxley environmental cost disclosure penalties if the plant is under reserved on the books
- Does not want to investigate = potential future regulatory costs
- Needs to sell “as is” without indemnifying the buyer forever

Buyer

- Strict, Joint and Several, Retro active liability
- Assumes the prior acts risks of the seller by default
- Needs to quantify and fund all future environmental costs
- Without insurance, needs to reduce the purchase price by the worst case cost scenario in cash regardless of probability

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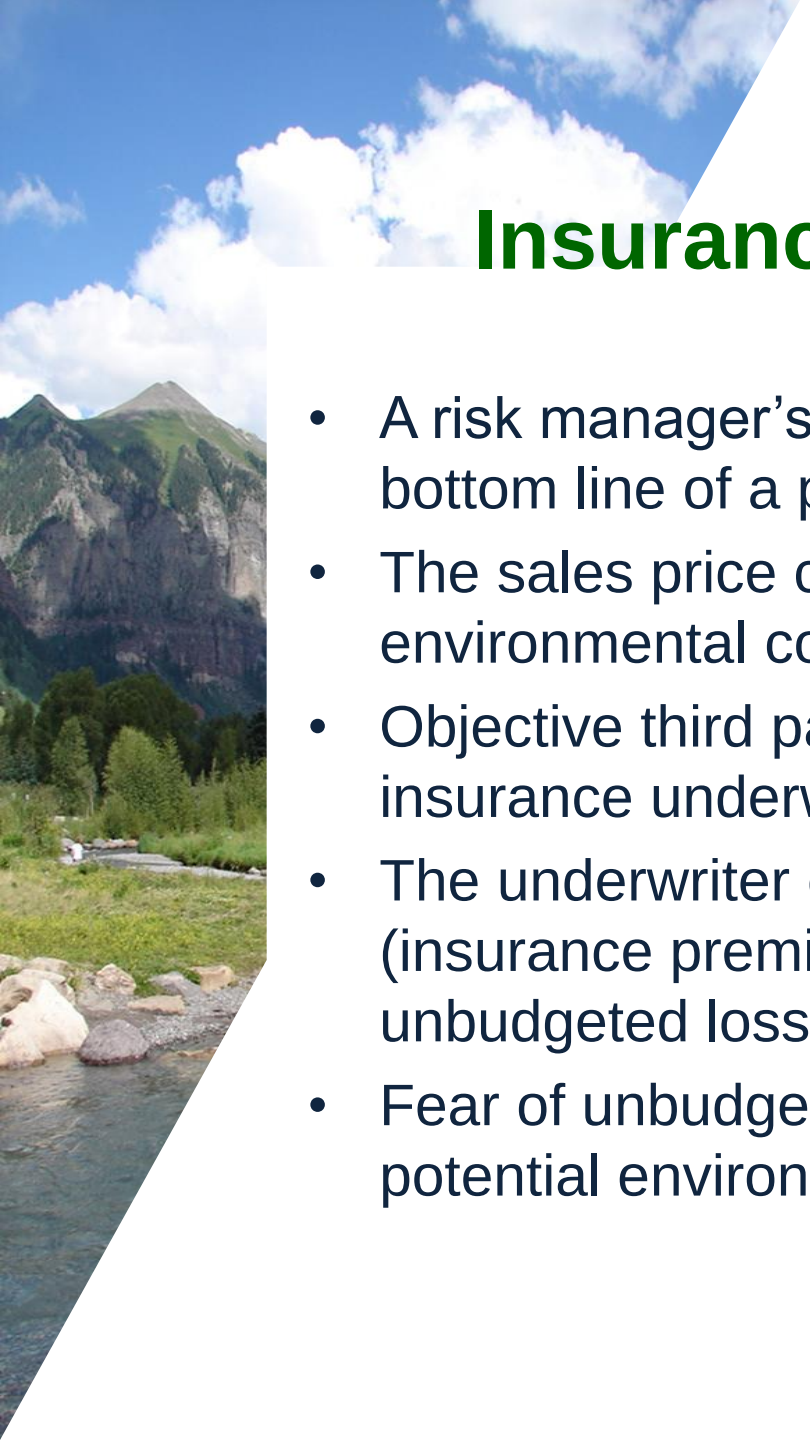

Why Use Environmental Insurance In Property Transfers?

- A risk manager's insurance skills can add cash to the bottom line of a property purchase/sale transaction
- The sales price can be maximized by minimizing environmental contingencies
- Objective third party monetization of the risk through insurance underwriting speeds the transaction along
- The underwriter can be partially funded for a loss (insurance premium) and not get fired for incurring unbudgeted losses (insurance)
- Fear of unbudgeted costs forces over compensating for potential environmental legacy costs - Brownfields

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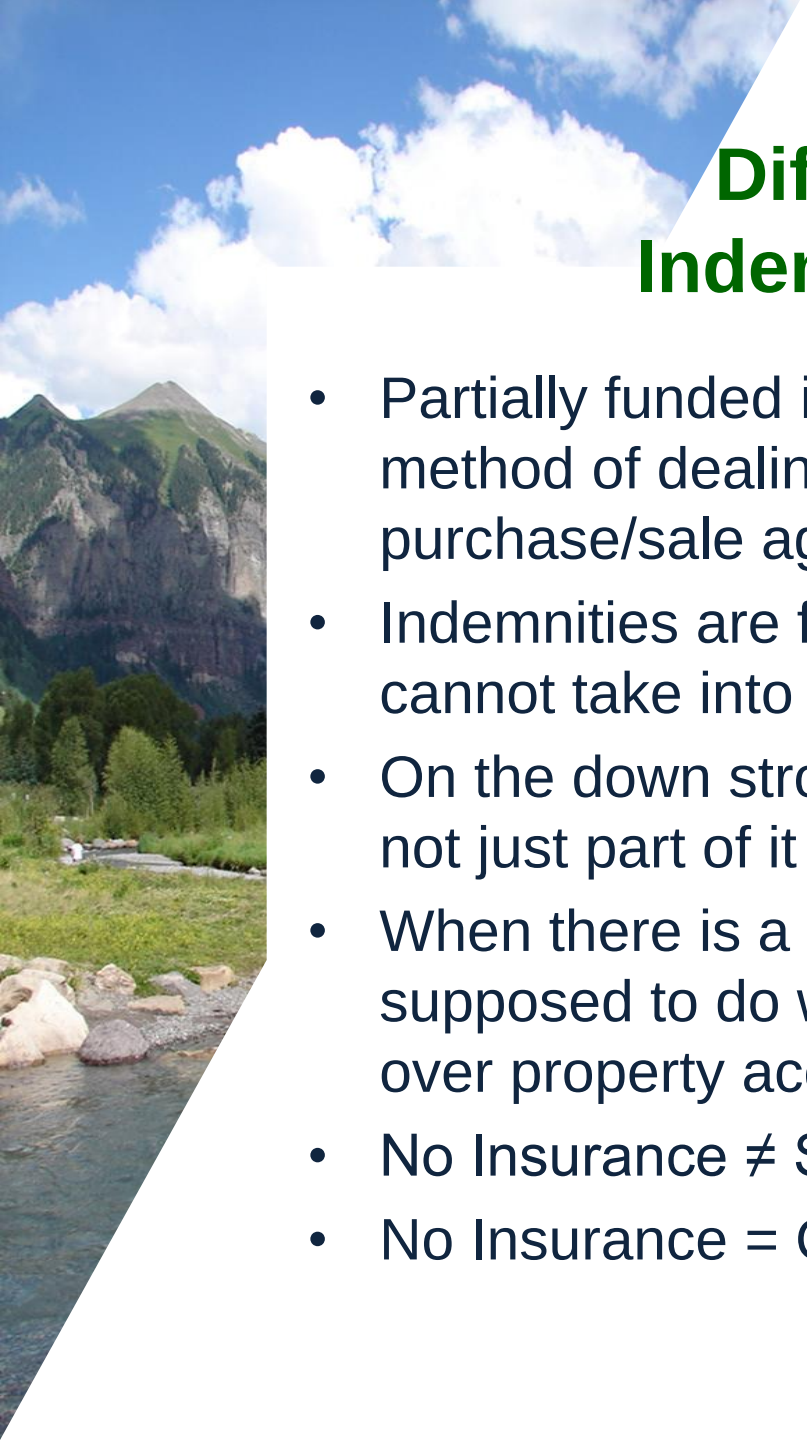

Difficulties With Environmental Indemnities In Property Transfers

- Partially funded indemnities are the most common method of dealing with environmental legacy issues in purchase/sale agreements
- Indemnities are fundamentally flawed because they cannot take into account the probability of a loss
- On the down stroke 100% of a loss needs to be paid, not just part of it
- When there is a loss, conflict always arises on who is supposed to do what, when, for what amount and even over property access to conduct a remediation
- No Insurance ≠ Self Insurance
- No Insurance = Career Risk

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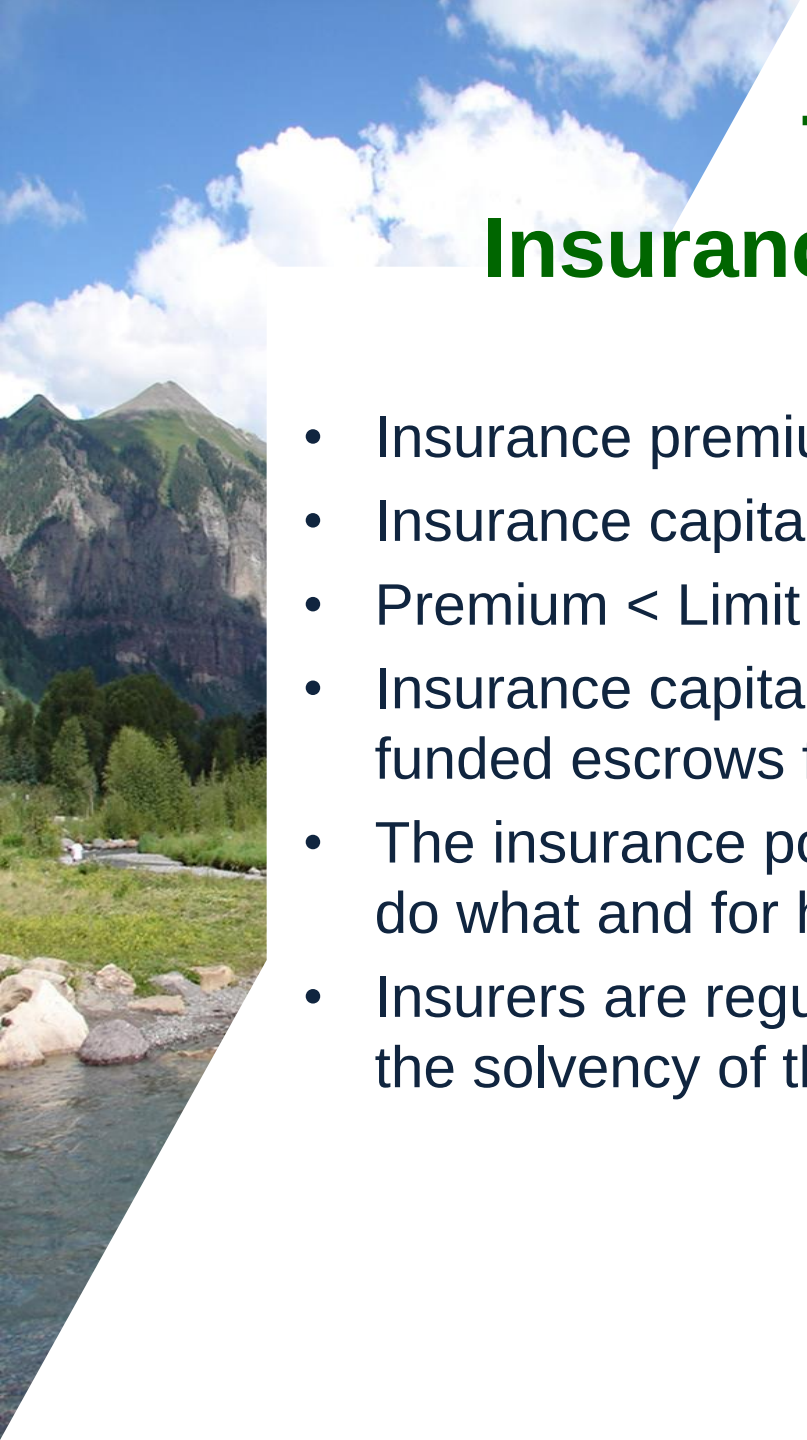

The Advantages Of Using Insurance Capital In M&A Activity

- Insurance premium = (loss x probability) + profit
- Insurance capital = limits of liability purchased
- Premium < Limit of liability on the insurance policy
- Insurance capital is inherently less expensive than fully funded escrows for improbable events
- The insurance policy fully defines who is supposed to do what and for how much
- Insurers are regulated, the indemnity is only as good as the solvency of the indemnifying party

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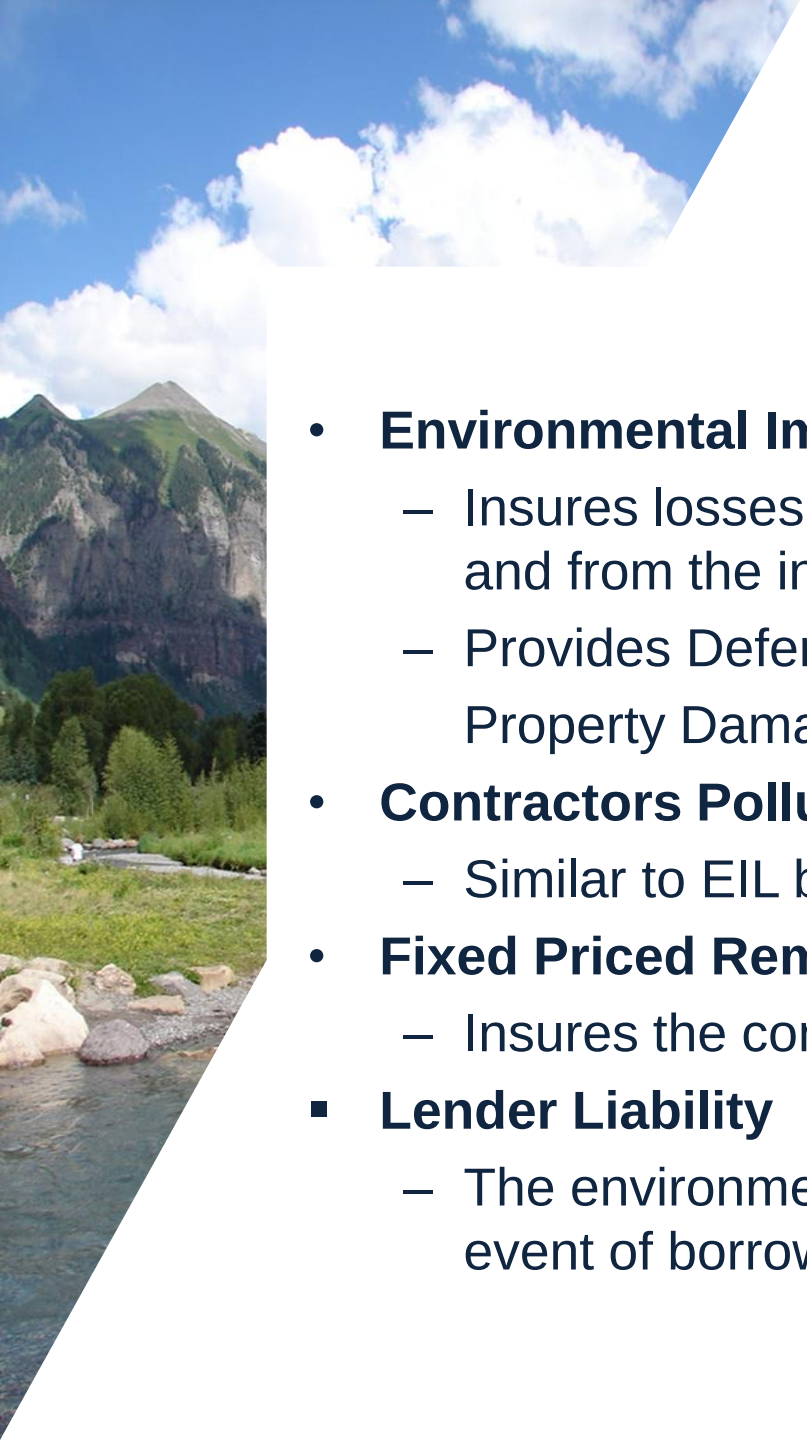

The Basic Environmental Insurance Policies Used In Property Transfers

- **Environmental Impairment Liability**
  - Insures losses from previously unknown contaminants on and from the insured location
  - Provides Defense and indemnity for Bodily Injury, Property Damage and No Fault Clean Up Costs
- **Contractors Pollution Liability**
  - Similar to EIL but insures the operations of the contractor
- **Fixed Priced Remediation Insurance**
  - Insures the completion of a specified remedial plan
- **Lender Liability**
  - The environmental protection for a secured lender in the event of borrower default on collateralized property

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Insured Property Transfer
A Case Example

Facts:

- Chemical manufacturing company, one plant
- 40 years old
- Buyer & seller agree on value of $40,000,000
- Current approved remedial plan @ $1,000,000
- Buyers due diligence raises "potential liabilities" valued at up to $24,500,000

How much will the plant sell for?

$40,000,000	or	$40,000,000
- $ 1,000,000		- $26,000,000
$39,000,000		**$14,000,000**

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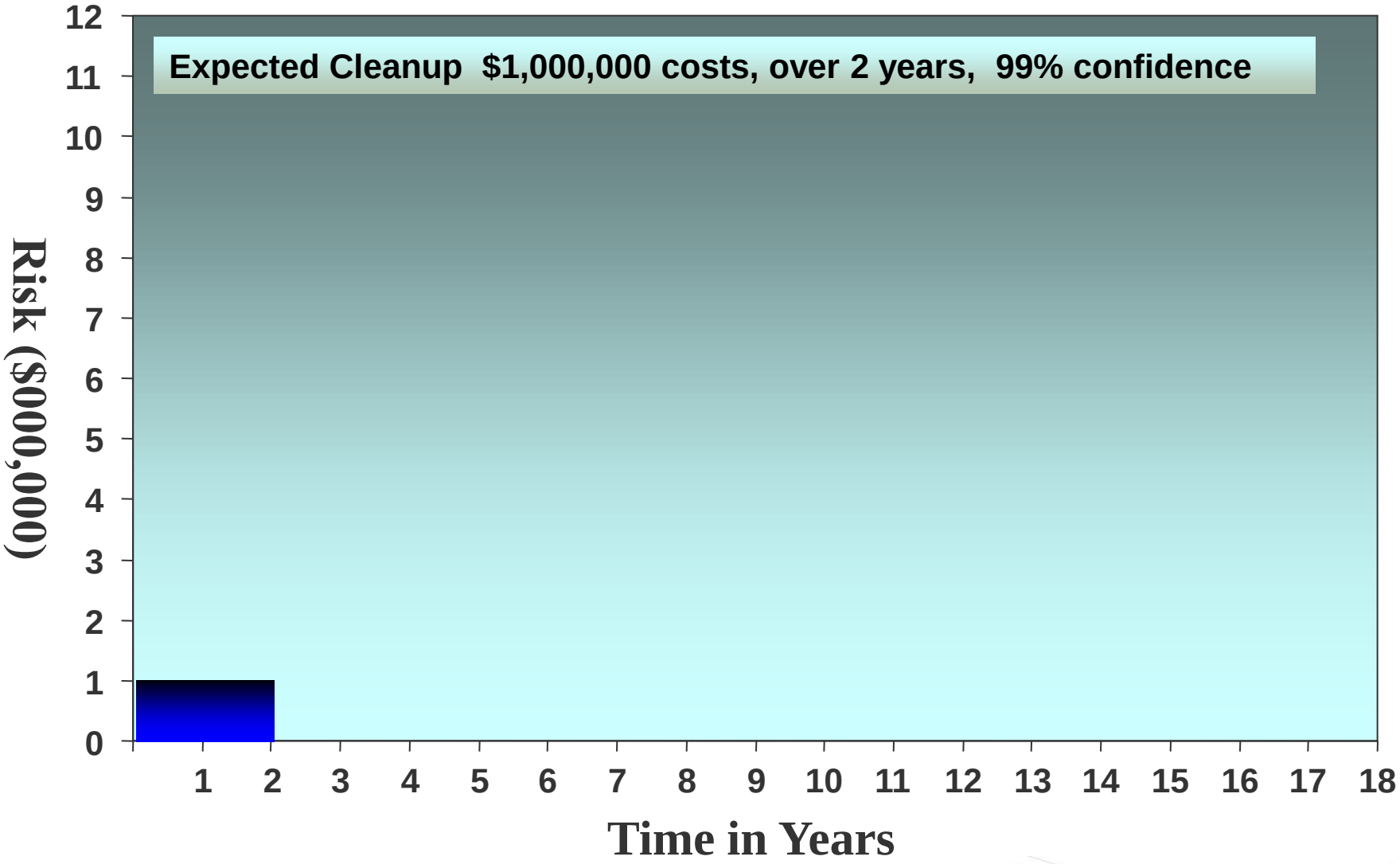
Expected cost of remediation to regulatory closure



Key - shaded areas show risk over time, not expected cost

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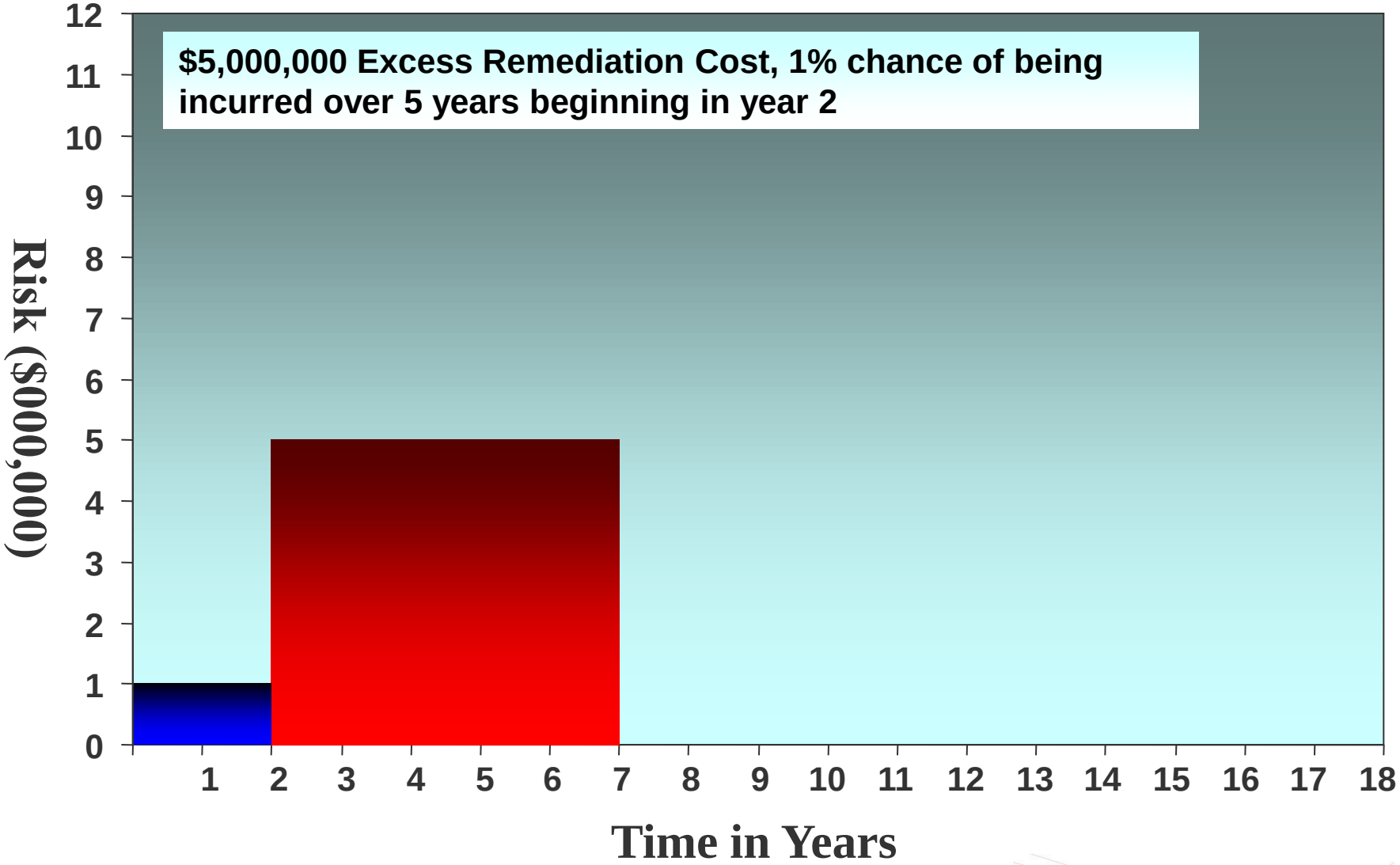
Excess remediation cost in achieving regulatory closure



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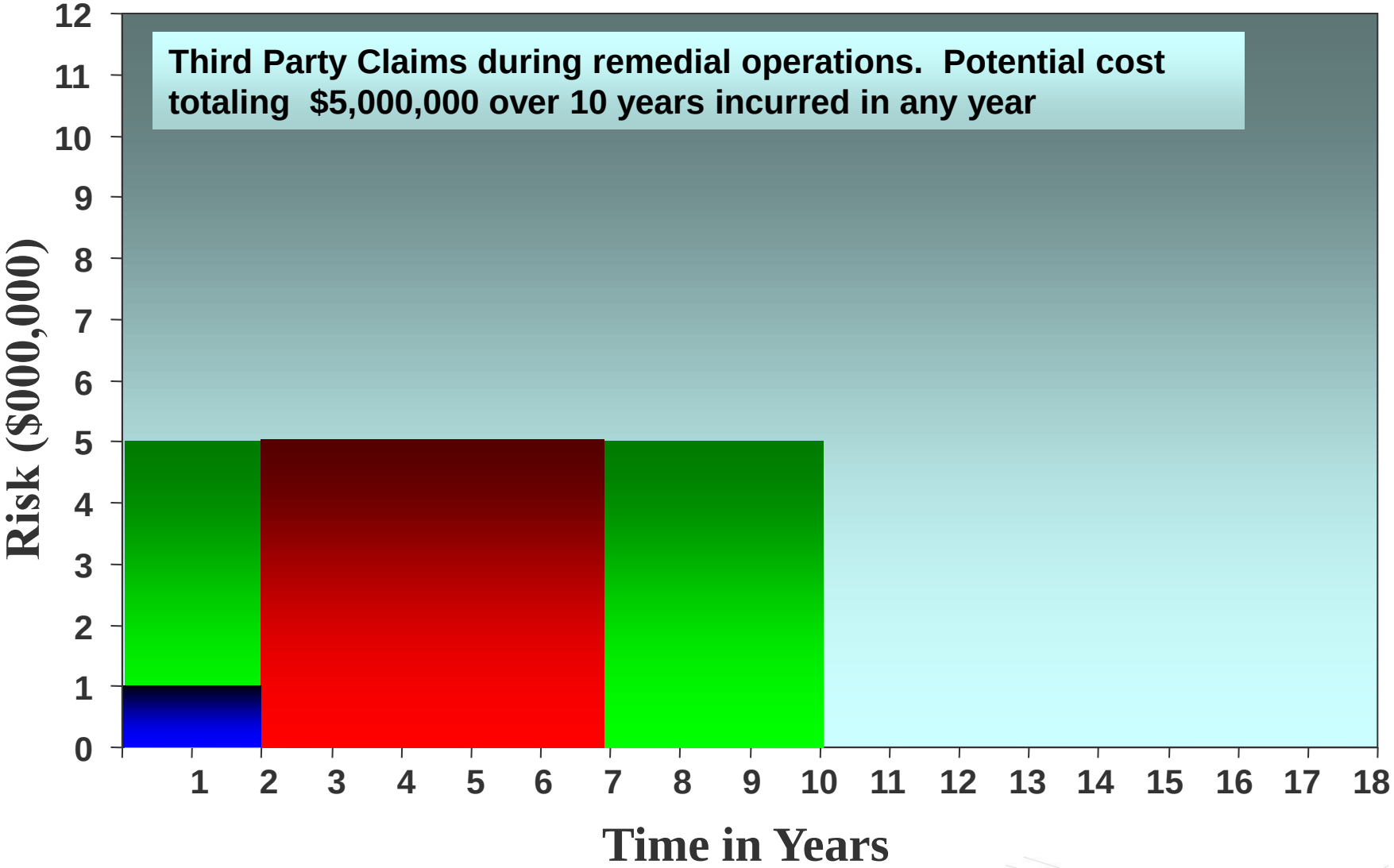
Third party risks during the remediation process



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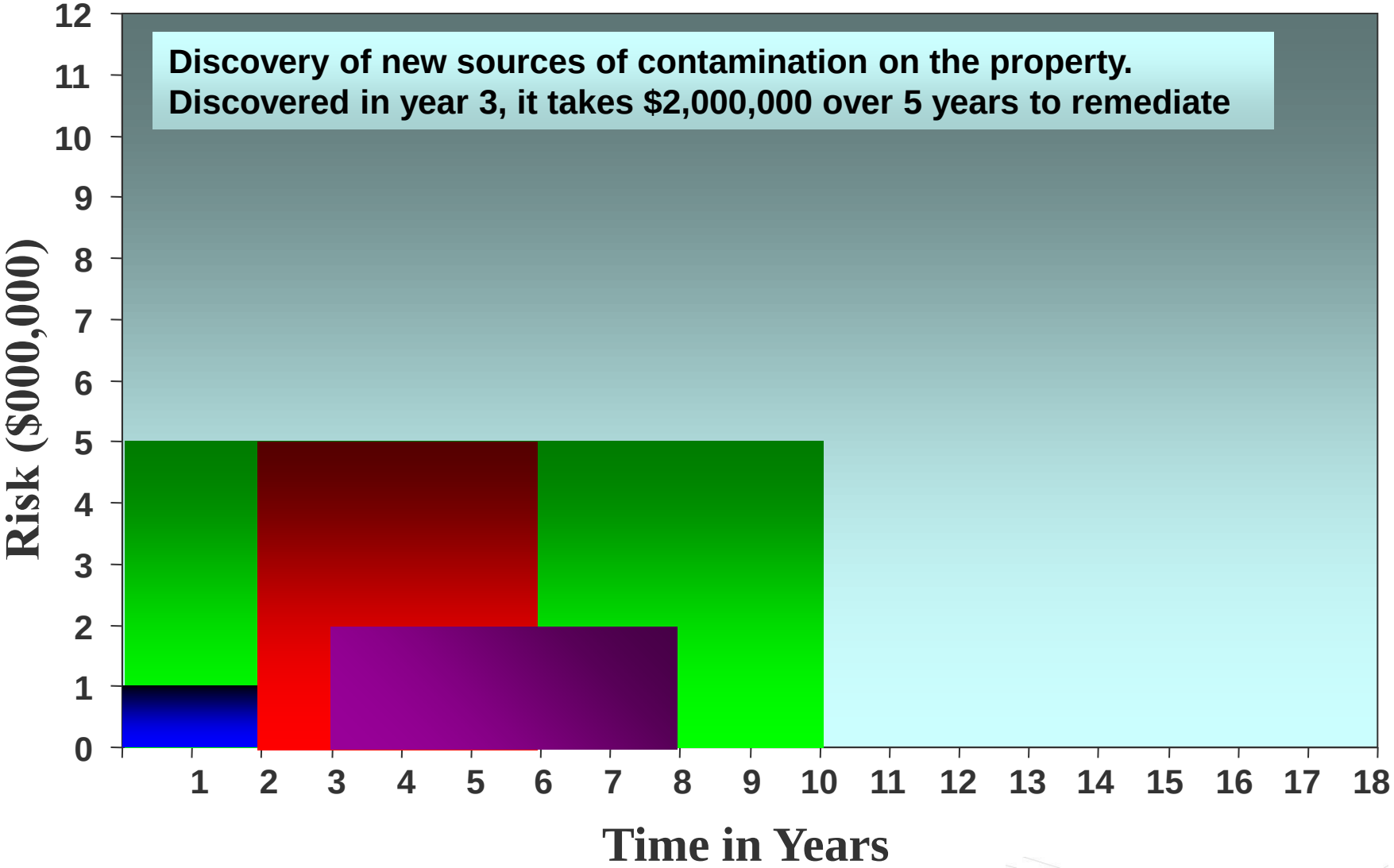
Environmental legacy risks newly discovered



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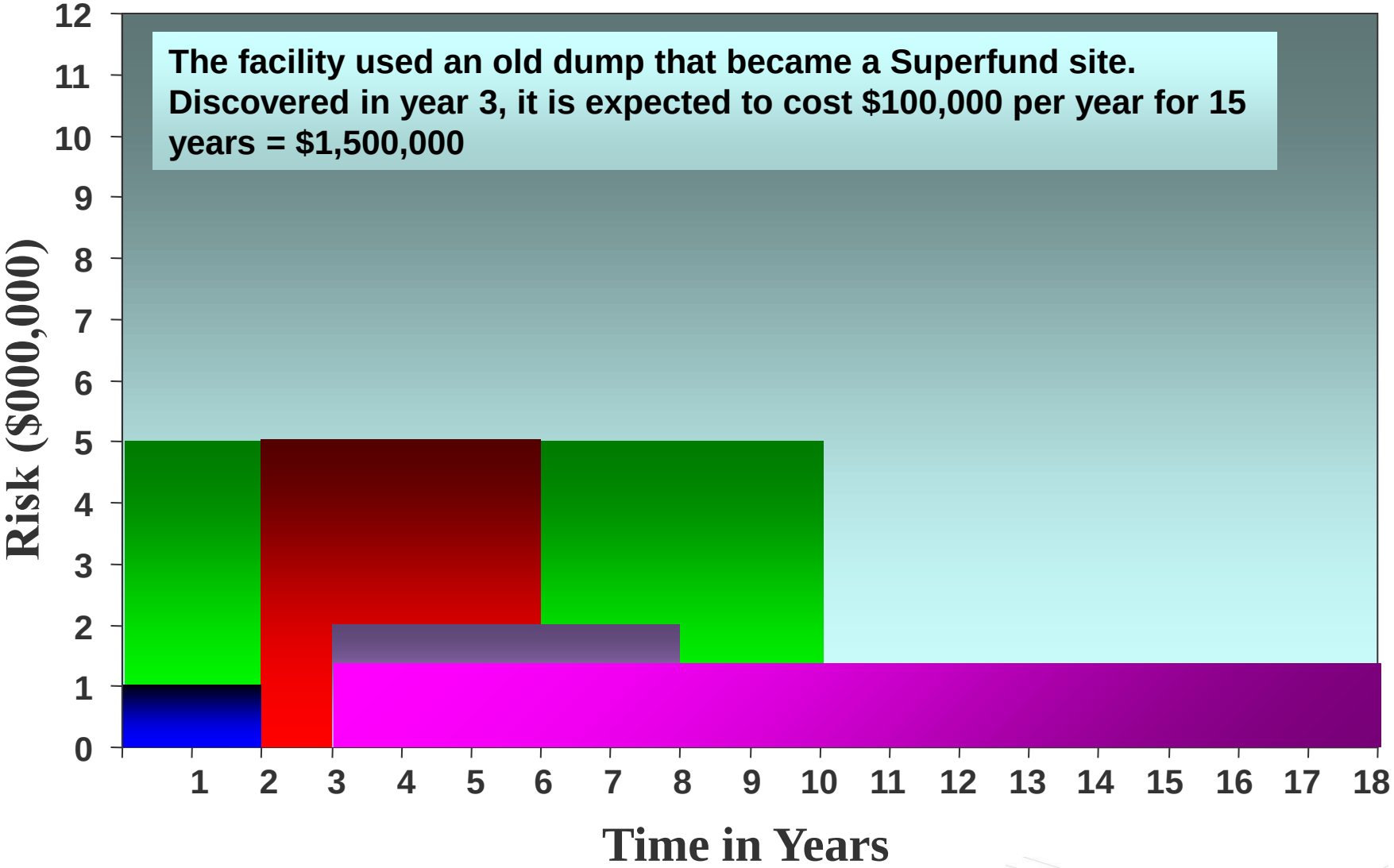
Environmental legacy risks non owned disposal sites



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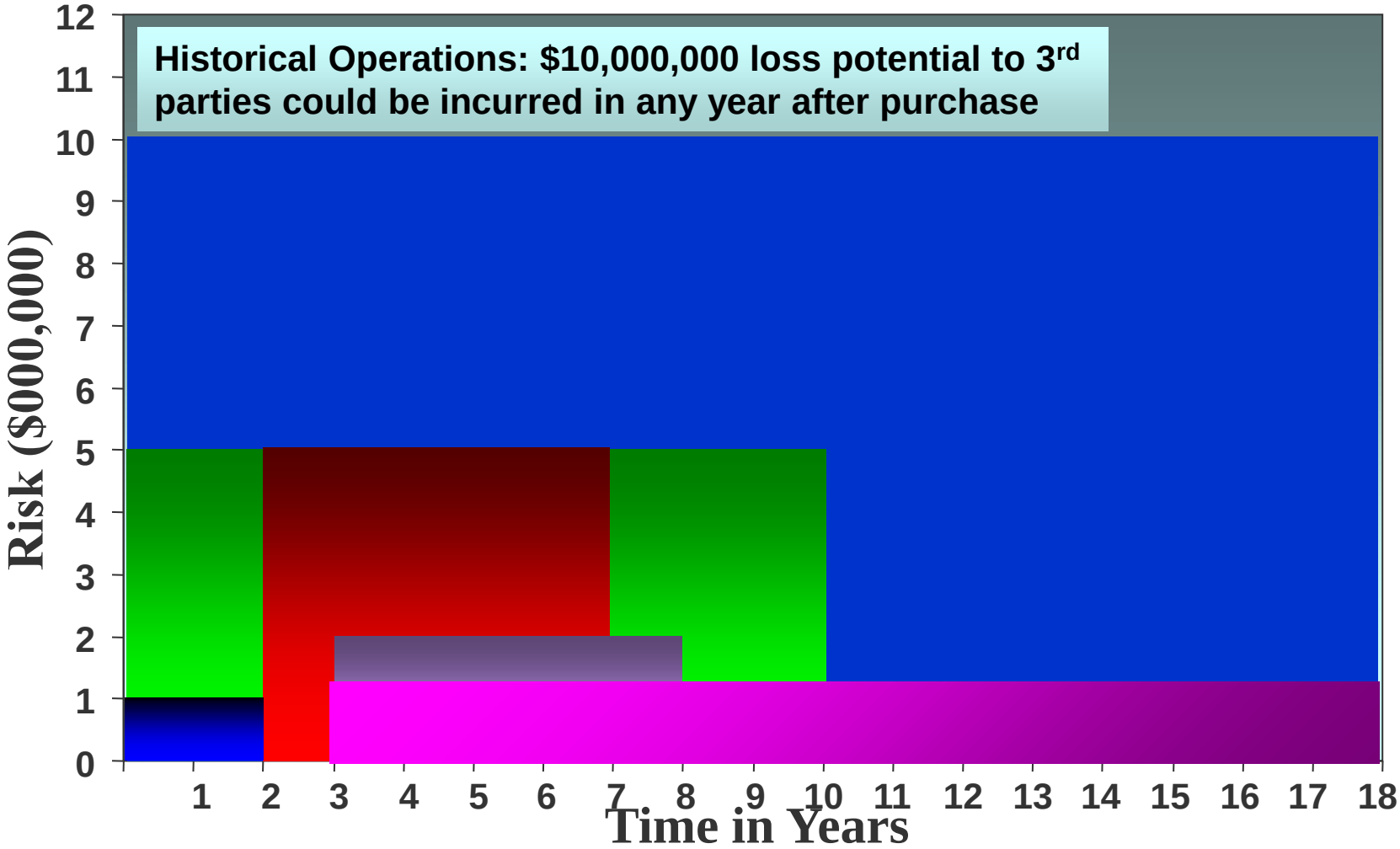
Environmental legacy risks - injury to neighbors



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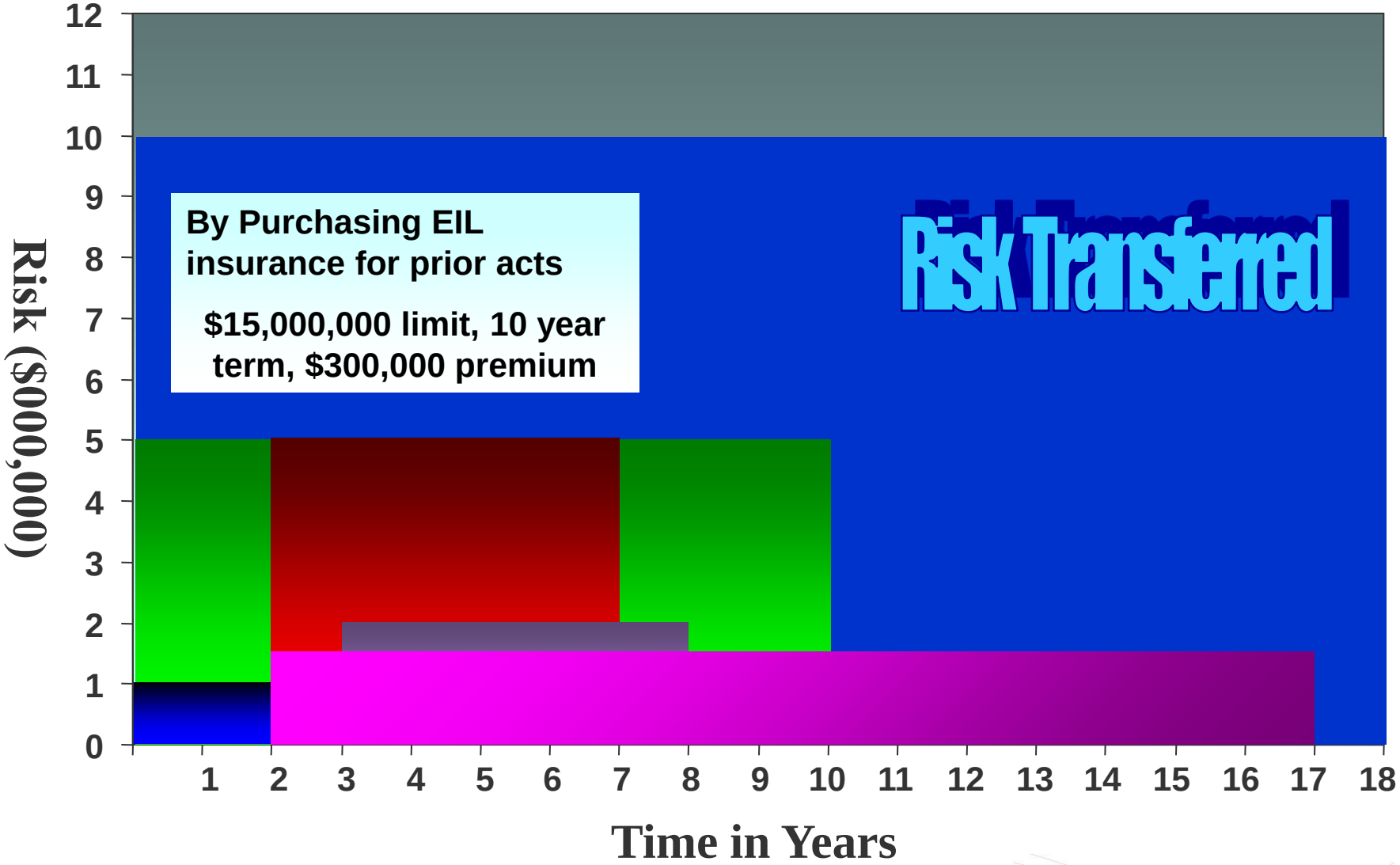
Environmental Impairment Liability Insurance



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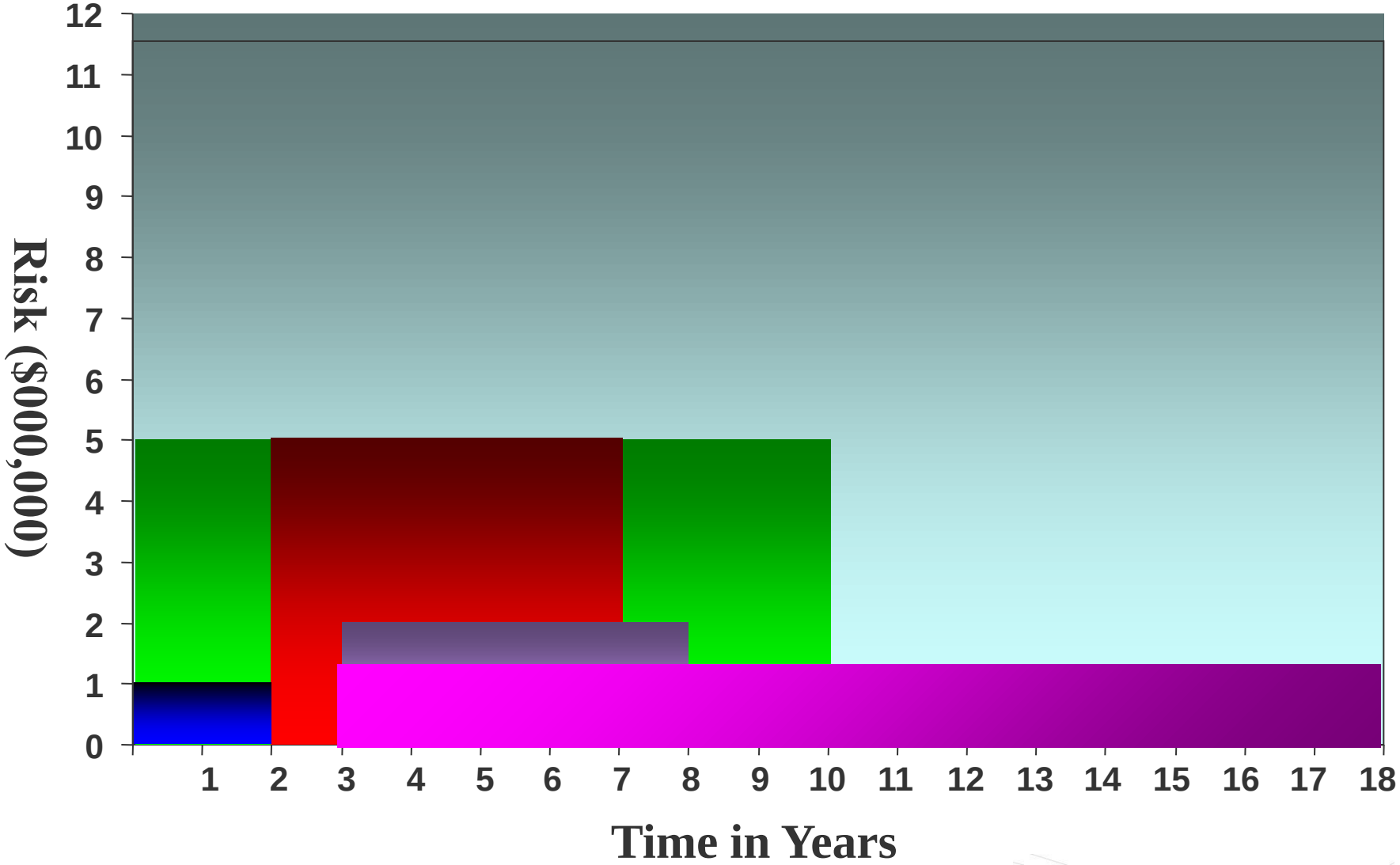
Risks after purchase of Environmental Impairment Liability



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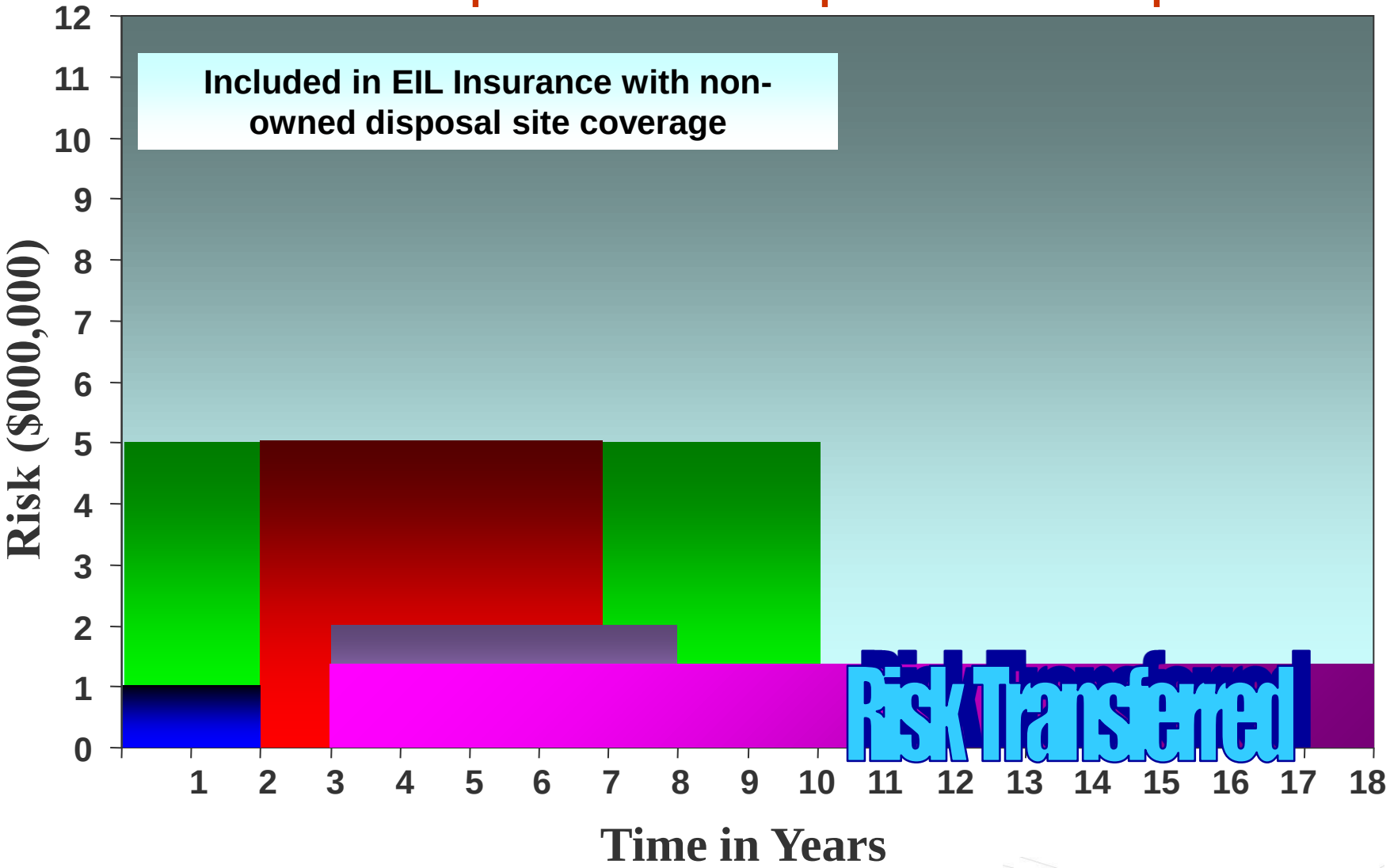
Non-owned disposal site loss exposure after EIL purchase



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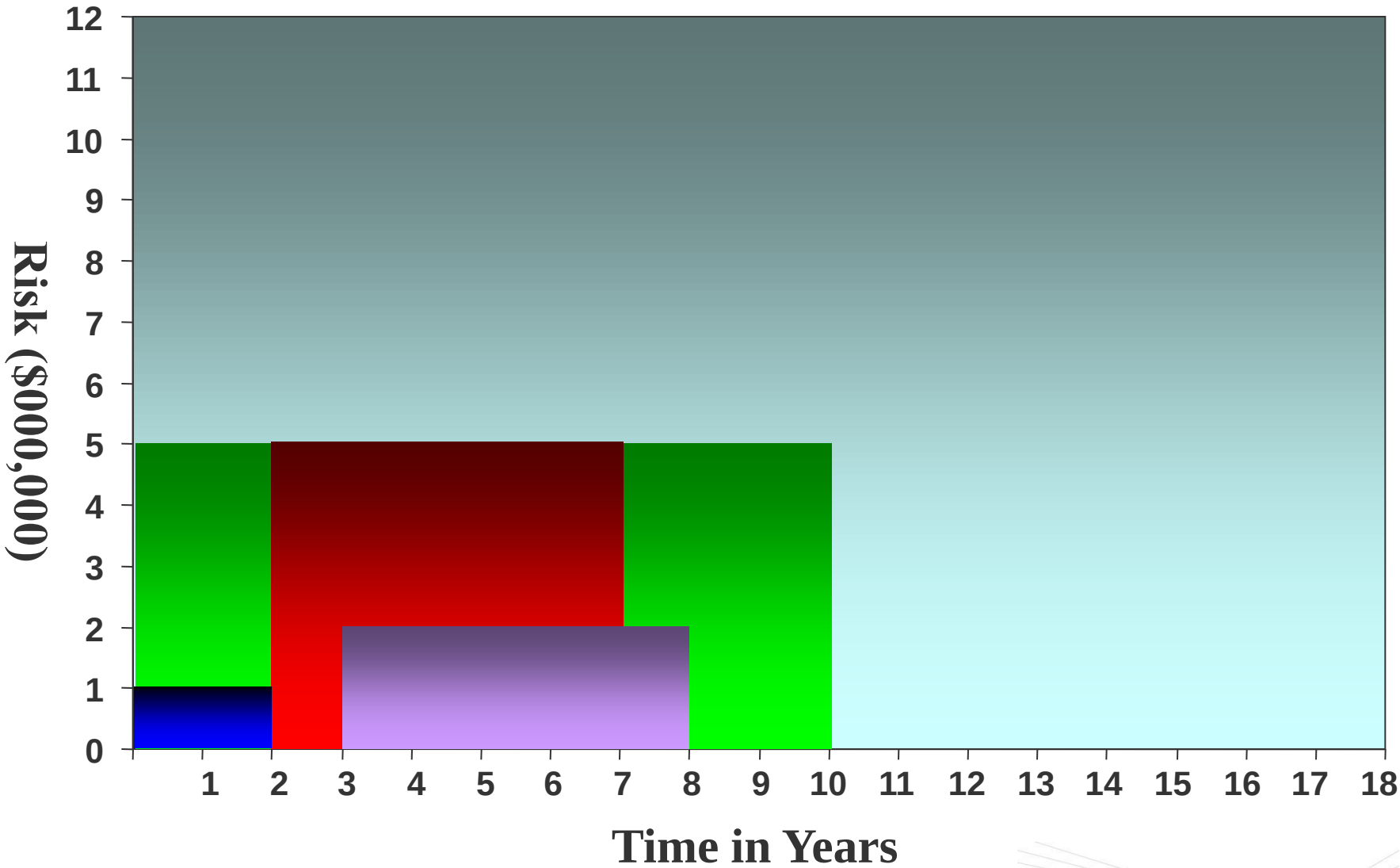
Remaining risks after EIL with non-owned disposal sites coverage



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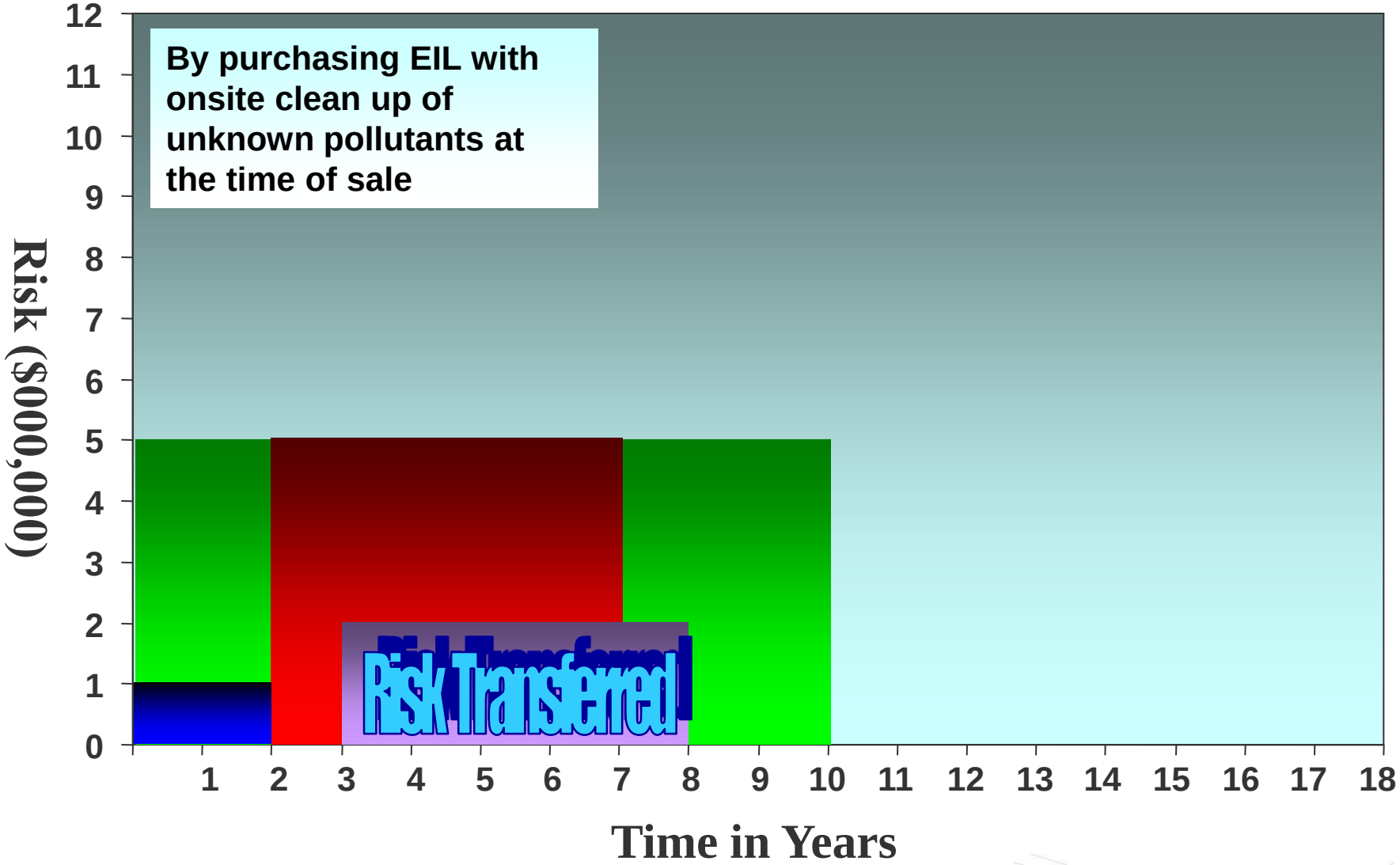
Discovery of unknown contamination from prior acts



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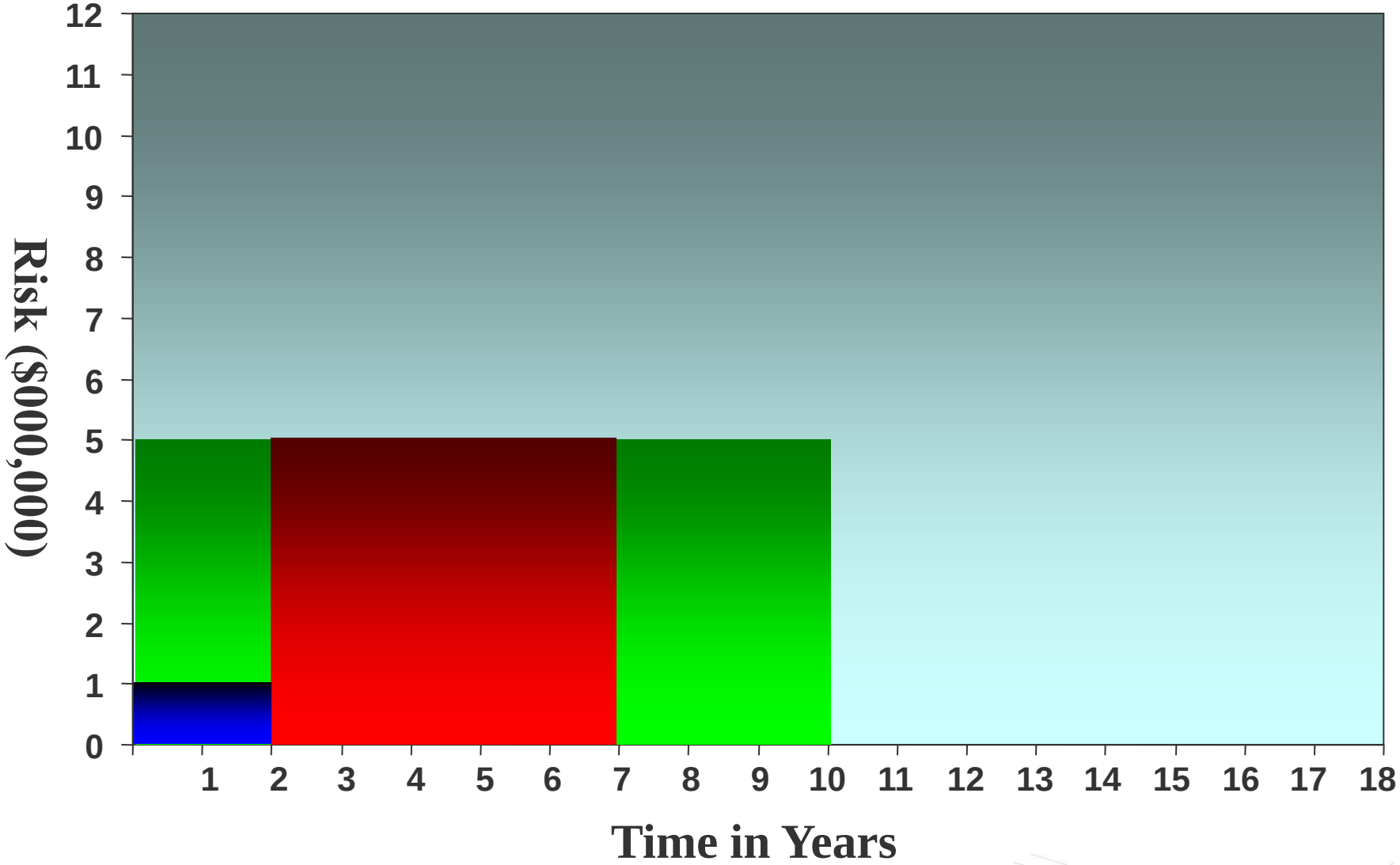
Remaining risks after the purchase of EIL



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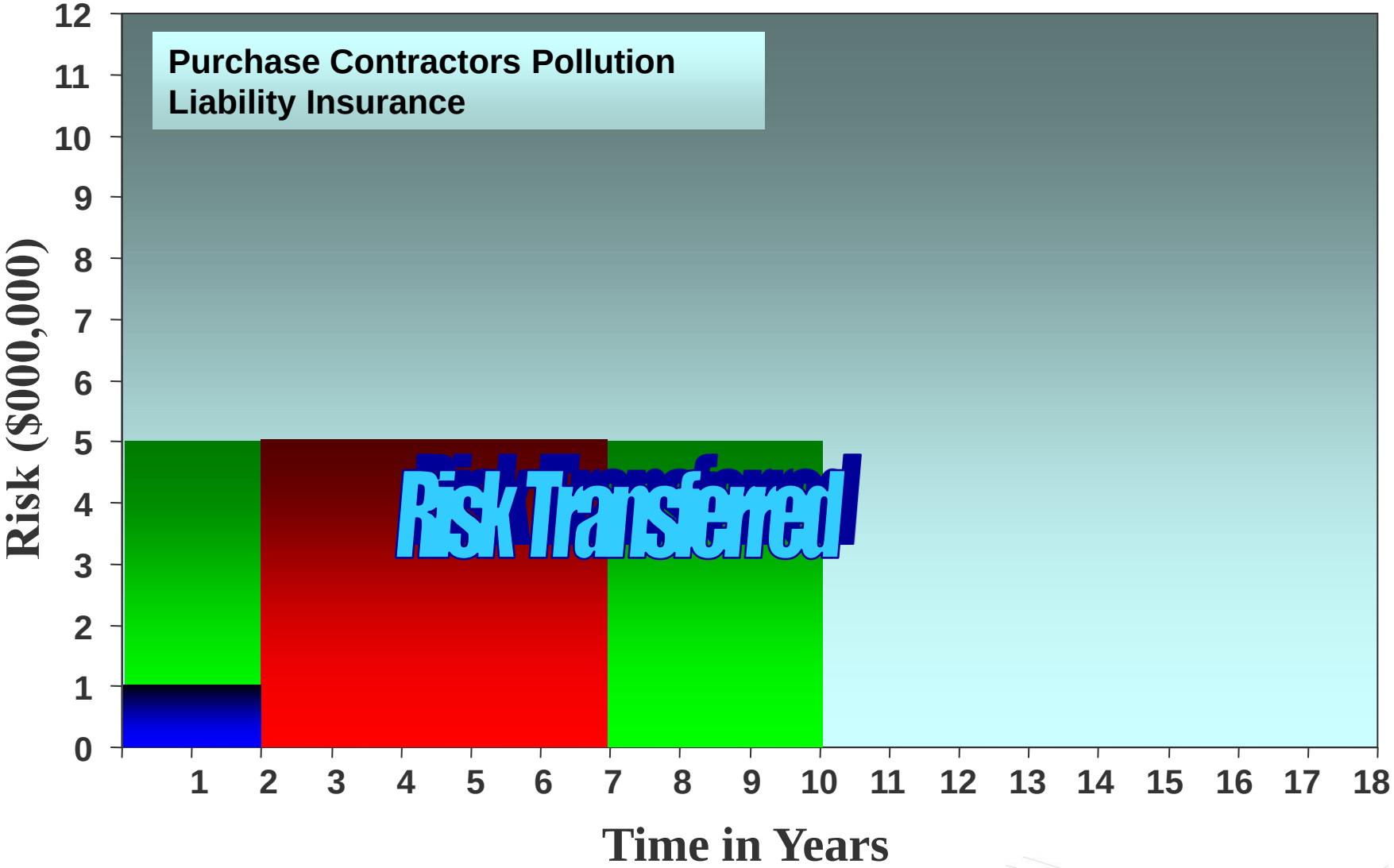
Contractors Loss Exposures



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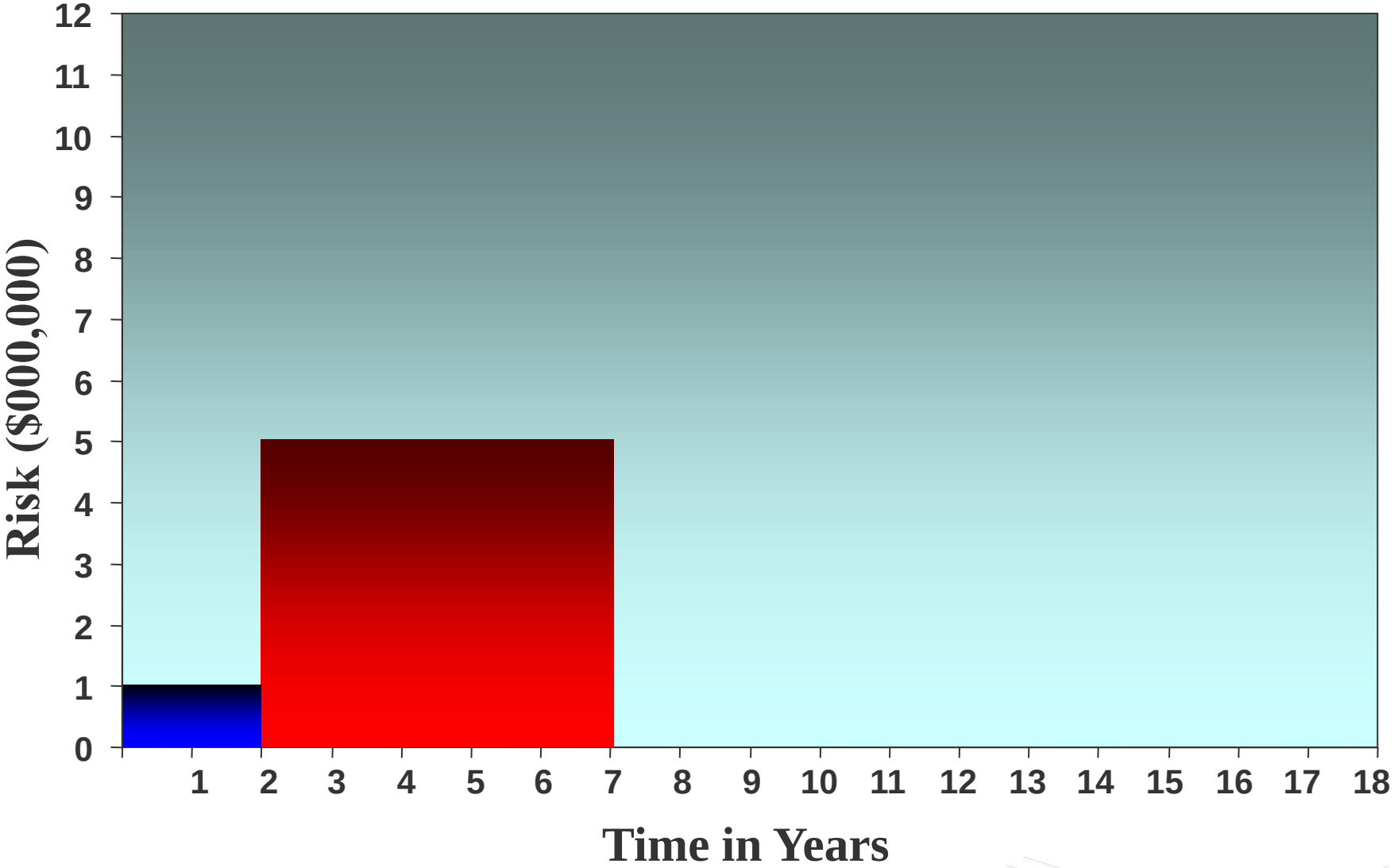
ENVIRONMENTAL RISKS ASSOCIATED WITH THE TRANSFER OF PROPERTY

Remaining risks after the purchase of CPL



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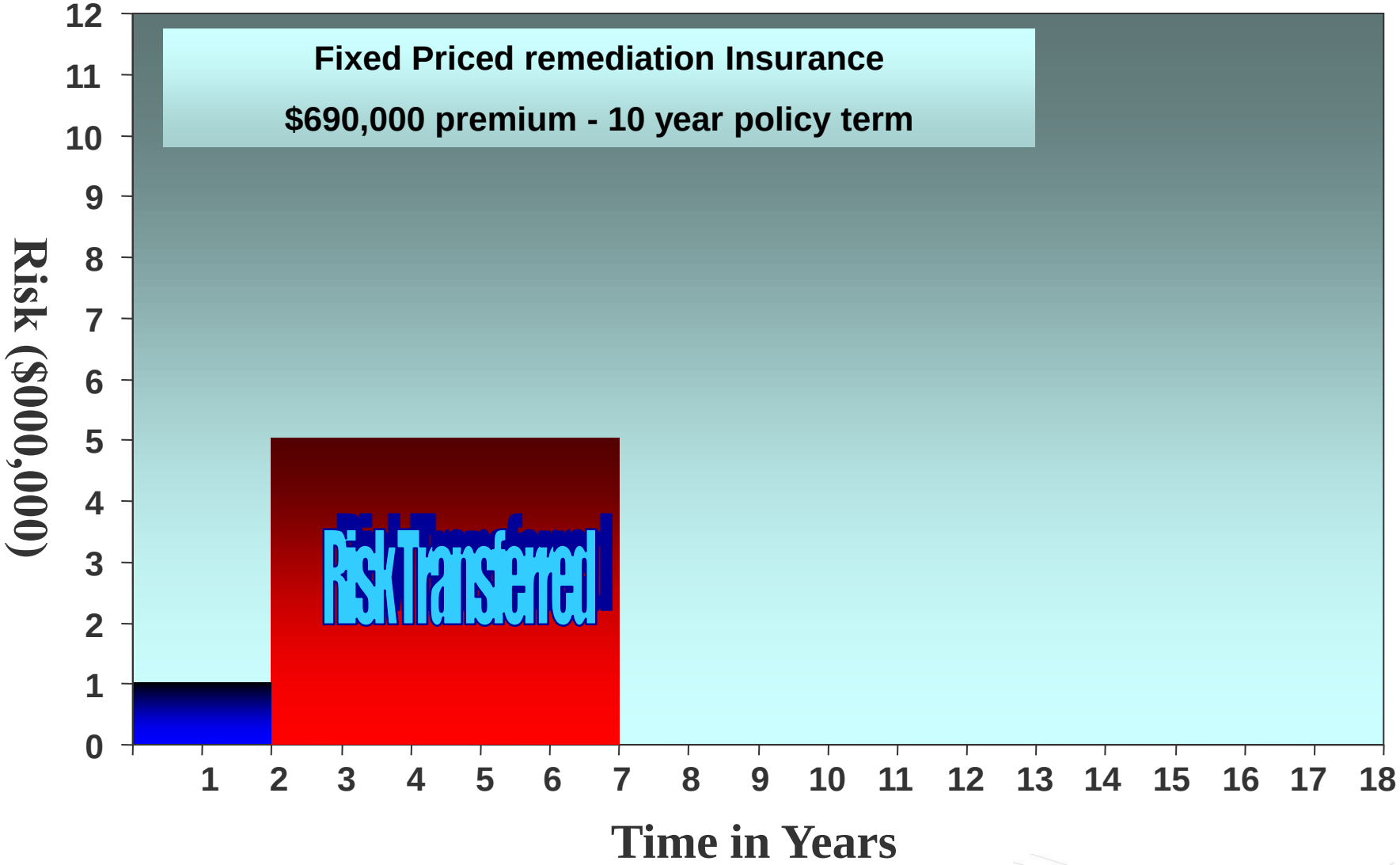
Purchase Fixed Priced Remediation Insurance



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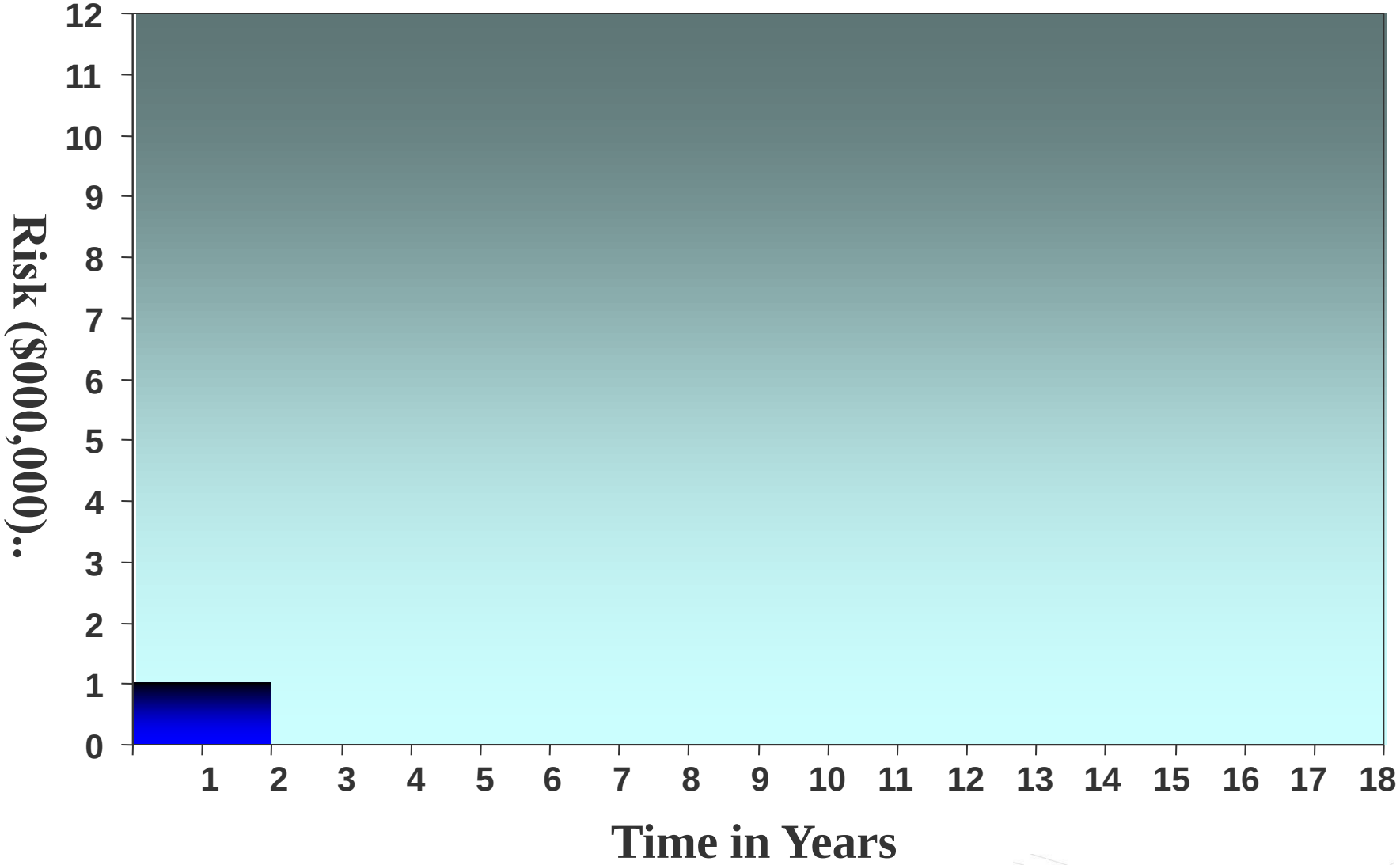
ENVIRONMENTAL RISKS ASSOCIATED WITH THE TRANSFER OF PROPERTY

Risks after the purchase of fixed priced remediation insurance



Shaded areas show risk over time, not expected cost

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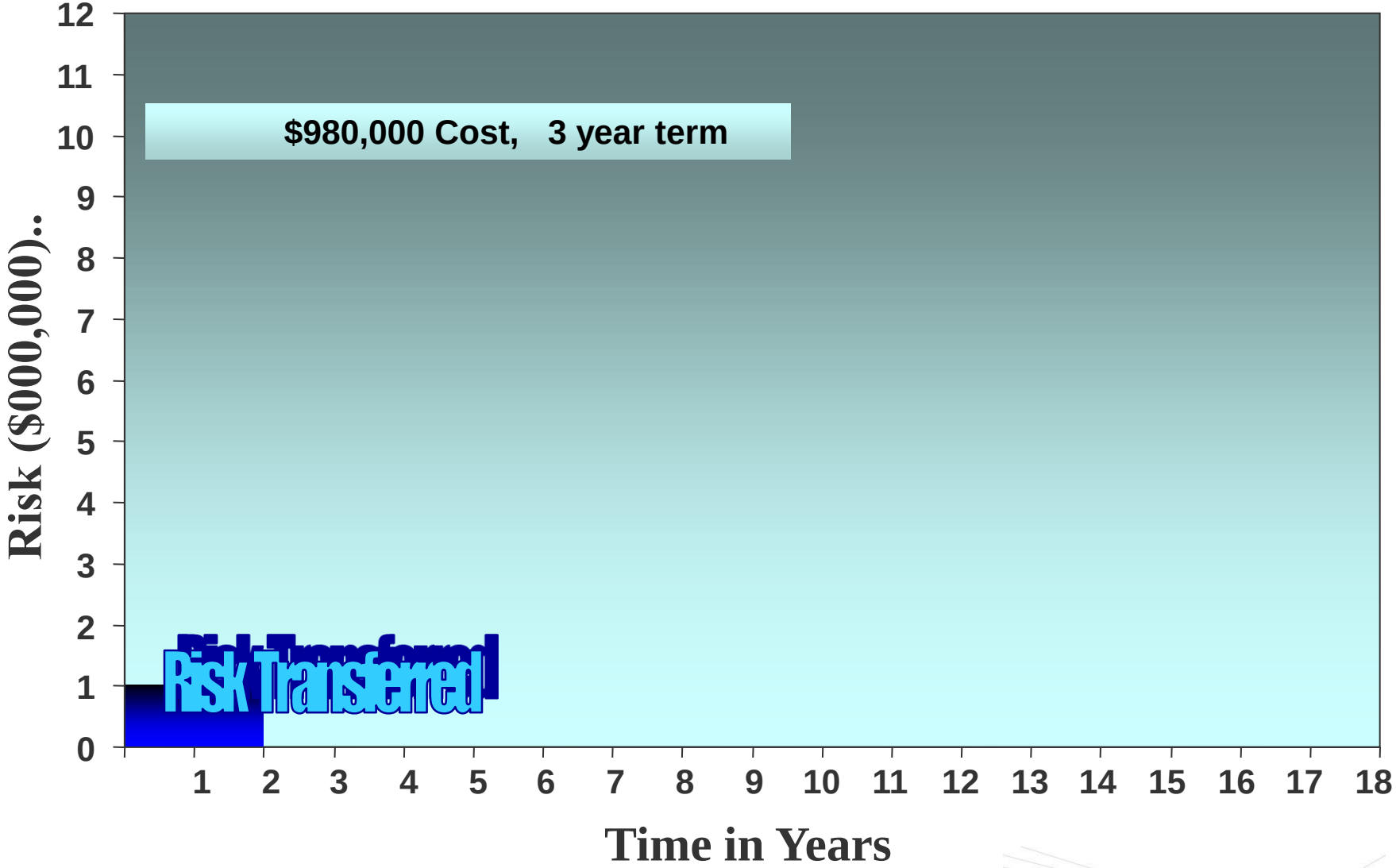
ENVIRONMENTAL RISKS ASSOCIATED WITH THE TRANSFER OF PROPERTY

Third Party Escrow, Expected Remediation Cost



Key shaded areas show risk over time, not expected cost

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Using Insurance Tools To Facilitate A Property Transfer

Risk	Exposure/Limit	Insurance Policy	Premium
Expected clean up cost	$1,000,000	3rd Party Cash Escrow	$1,000,000
Excess remediation costs	$5,000,000	Fixed Priced Remediation surcharge	$690,000
3rd party claims during remediation	$5,000,000	Contractors Pollution Liability	$ 20,000
Discovery of new contamination on Property (EIL)	$15,000,000	Environmental Impairment Liability	$ 290,000
Superfund liability at a non-owned disposal site	Included in EIL	Environmental Impairment Liability	Included
Environmental loss from the ongoing operations of the plant	Included In EIL	Environmental Impairment Liability	Included
Total Purchased Insurance Limits	$26,000,000	Total Costs	$2,000,000

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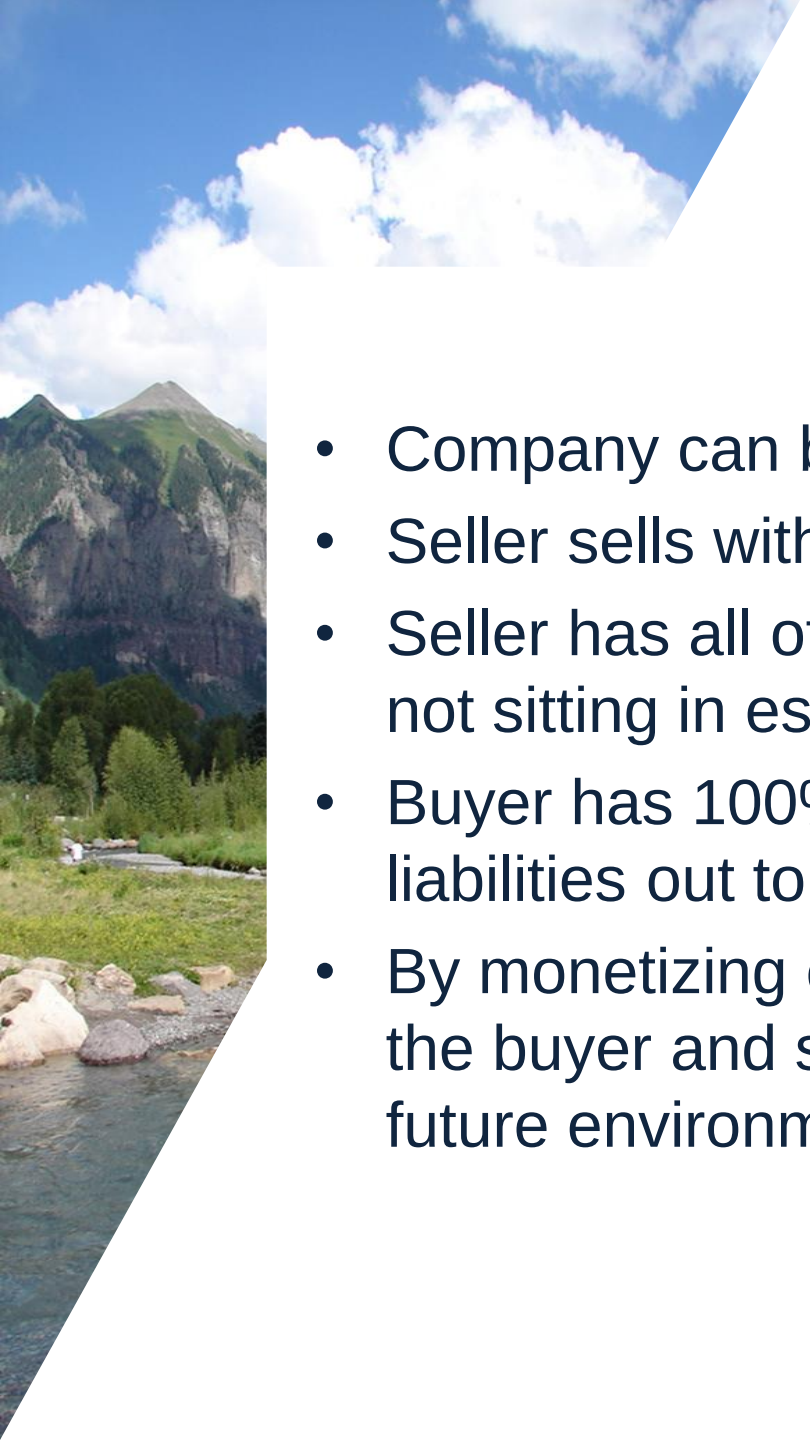
Better Insurance By Design



The Insured Property Transfer Transaction

- Company can be sold for $38,000,000
- Seller sells without open ended indemnities
- Seller has all of the sales price available as cash, not sitting in escrow for years to back an indemnity
- Buyer has 100% funded all identified potential liabilities out to ten years
- By monetizing environmental risks with insurance the buyer and seller avoid haggling about potential future environmental costs

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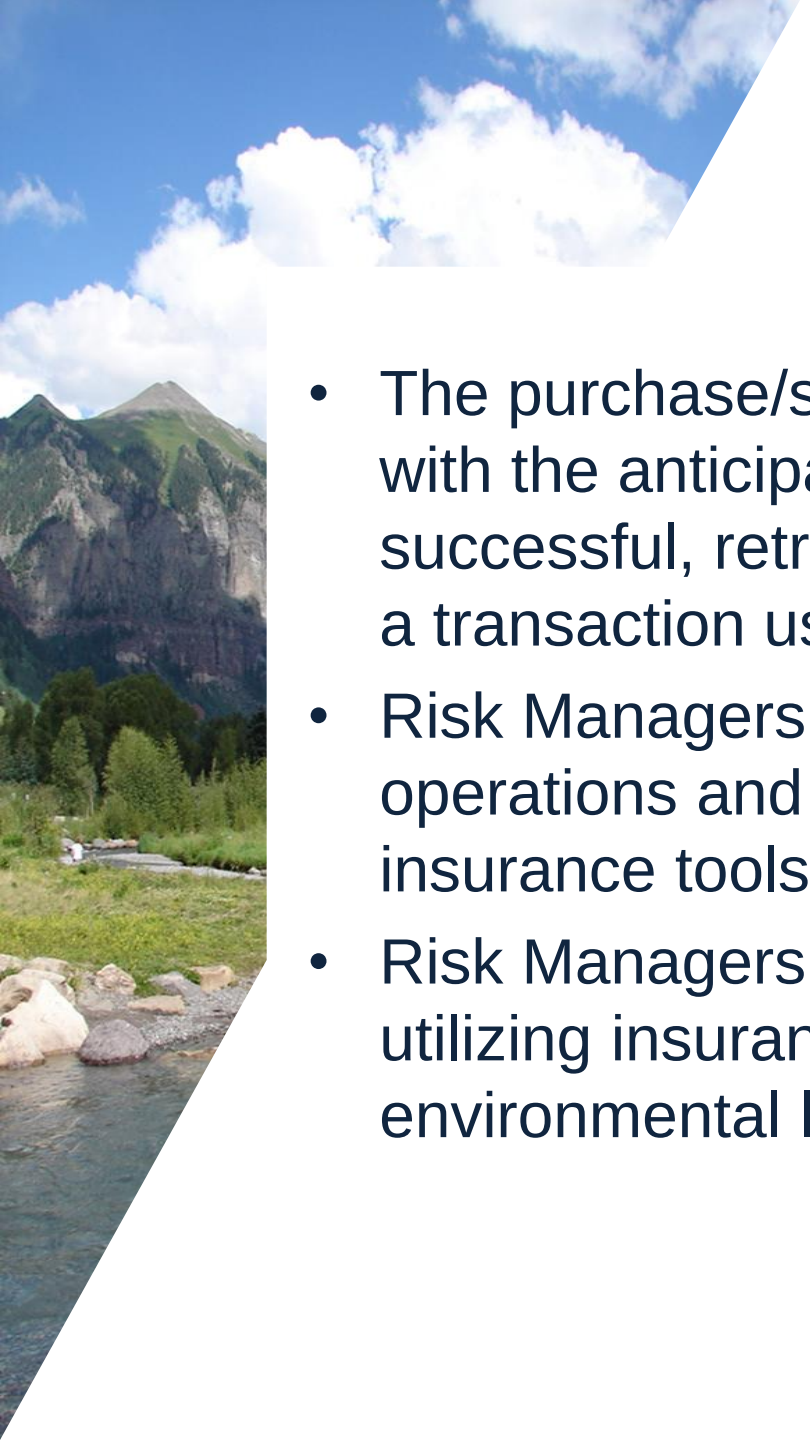
Better Insurance By Design



CONCLUSION

- The purchase/sale transaction needs to be set up with the anticipated use of insurance to be successful, retrofitting environmental insurance into a transaction usually fails
- Risk Managers will need to work with their operations and legal departments to utilize these insurance tools
- Risk Managers can add cash to the bottom line by utilizing insurance capital instead of cash to fund environmental legacy costs

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