UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 01 2016

OFFICE OF THE
CHIEF FINANCIAL OFFICER

The Honorable Kenneth Calvert
Chairman, Subcommittee on Interior,
Environment and Related Agencies
Committee on Appropriations
House of Representatives
Washington, D.C. 20515

The Honorable Betty McCollum
Ranking Member, Subcommittee on Interior,
Environment and Related Agencies
Committee on Appropriations
House of Representatives
Washington, D.C. 20515

The Honorable Lisa Murkowski
Chairman, Subcommittee on Interior,
Environment and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

The Honorable Tom Udall
Ranking Member, Subcommittee on Interior,
Environment and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Chairmen Calvert and Murkowski and Ranking Members McCollum and Udall:

Enclosed for your review is the Environmental Protection Agency's (EPA) report to Congress on the evaluation of markets for financial responsibility instruments related to CERCLA 108(b) Hardrock Mining and Mineral Processing. The explanatory statement for the FY 2016 Omnibus Consolidated Appropriations Act (P.L. 114-113) directs the EPA to submit a report to the Committees on Appropriations on financial assurance market capacity as follows:

Financial Assurance *- Prior to proposing any rule pursuant to section 108(b) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9608(b)), the Administrator is directed to collect and analyze information from the commercial insurance and financial industries regarding the use and availability of necessary instruments (including surety bonds, letters of credit and insurance) for meeting any new financial responsibility requirements and to make that analysis available to the House and Senate Committees on Appropriations and to the general public on the Agency website 90 days prior to a proposed rulemaking. In addition, the analysis shall include the Agency's plan to avoid requiring financial assurances that are duplicative of those already required by other Federal agencies.*

Should you need additional information or have further questions, please contact me, or your staff may contact Ed Walsh at (202) 564-4594.

Sincerely,

David A. Bloom
Deputy Chief Financial Officer

Enclosure

CERCLA 108(b) HARDROCK MINING AND MINERAL PROCESSING EVALUATION OF MARKETS FOR FINANCIAL RESPONSIBILITY INSTRUMENTS, AND THE RELATIONSHIP OF CERCLA 108(b) TO FINANCIAL RESPONSIBILITY PROGRAMS OF OTHER FEDERAL AGENCIES

[Disclaimer: This document compiles information currently available to EPA, and reflects the EPA's current approach. The EPA continues to collect information and develop its CERCLA 108(b) proposed rule for hard rock mining. Any mention of trade names, products, or services does not imply an endorsement by the US Government or the United States Environmental Protection Agency. The EPA does not endorse any commercial products, services, or enterprises.]

EXECUTIVE SUMMARY[1]

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly called the "Superfund" law, 42 U.S.C. 9601 *et seq.*, was passed in 1980, and has since been amended by Congress. Among other things, CERCLA authorizes the President to undertake removal or remedial actions in response to any release or threatened release into the environment of hazardous substances or, in some circumstances, any other pollutant or contaminant and imposes liability upon a variety of parties responsible for that release or threatened release. Under section 108(b) of CERCLA, classes of facilities must establish and maintain evidence of financial responsibility "consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances." Executive Order 12580 delegates the responsibility to develop these requirements to the Administrator of EPA for non-transportation related facilities. 52 FR 2923, 3 CFR, 1987 Comp., p. 193. The EPA is currently developing proposed section 108(b) rules for classes of facilities within the hard rock mining industry.

This document has been prepared in response to a request for information regarding the CERCLA Section 108(b) proposed rule, as found in language from FY 2016 Conference Committee Report. The subject request asks for the EPA to collect and evaluate information from the insurance and financial industries regarding the use and availability of financial responsibility instruments. The Committee request also asks for the agency to provide an explanation of how the CERCLA 108(b) rule will avoid prescribing financial responsibility requirements that are duplicative of those already required by other federal agencies.

In regard to the market for financial responsibility (FR) instruments, the agency has assessed the availability of FR instruments and the capacity of third-party markets to underwrite requirements for responsible parties subject to CERCLA 108(b). In addition to third-party, market-based financial instruments such as insurance and sureties, the EPA is considering affording responsible parties the opportunity to demonstrate FR by securing letters of credit (LOCs), by funding a trust fund, or by demonstrating the financial wherewithal to self-insure based on a set of financial metrics (i.e., qualify to self-insure through a financial test option).[2] This document however, focuses predominantly on the accessibility of insurance and surety instruments, and to a lesser degree on LOCs. This document does not discuss trust funds or the corporate financial test in any great detail, as neither of these instruments directly relies upon the availability of third-party markets for financing. This is because the funding of a trust fund or the passage of a financial

[1] Also see the glossary appended at the end of this document for further explanation of terminology.
[2] See glossary for explanations of Financial Test and Corporate Guarantee terminology.

test is solely contingent upon the credit worthiness of the party. As a consequence, there is essentially unlimited market capacity for these types of instruments.

In the context of insurance and surety instruments, the agency uses the term, market capacity, as a measure of the supply available to meet demand, whereby capacity reflects the amount of business (or premium volume) that the market could write based on excess (or unused) capital. The agency looked to published industry data on both insurance premiums and surety premiums as a reliable measure with which to assess market capacity. With respect to environmental insurance coverages (inclusive of reinsurance),[3] estimates suggest capacity totaling approximately $600 million.[4] With respect to surety coverages, estimates suggest capacity totaling approximately $5 billion. If combined, these estimates suggest that the current capacity of (re)insurance and surety markets for the product lines necessary to serve the financial responsibility needs of the Hard Rock Mining (HRM) industry pursuant to CERCLA 108(b) requirements may be as much as $5.6 billion.[5] The specific proportion of the CERCLA 108(b) financial responsibility market for the hard rock mining industry that the (re)insurance and surety marketplace can satisfy depends on facility-specific criteria, including the aggregate limit required for each facility, residual useful operating life of the facility, specific physical characteristics of the facility, the commodity extracted, the financial condition of the operator/insured and parent company, and the compliance record of the operator and/or owner.

In addition to the above factors, insurance and surety underwriters will consider investment yield, industry consolidation, loss potential across the mining sector, general weakness in commodity markets, and general market retreat from volatile investments. Collectively, these measures inform the capacity of the insurance and surety markets to provide financial responsibility coverage. Furthermore, with all else equal, standard economic principles suggest that as demand for a new product increases, insurers and sureties will seek to satisfy such demand with new products. The timing, pricing and nature of such products will ultimately depend on the requirements established by the final rule.

Although the insurance and surety capacity for environmental liabilities may be contracting, the growth in the Alternative Risk Transfer (ART) market, and specifically that of Risk Retention Groups (RRGs),[6] may present an opportunity for creation of additional capacity to serve the financial service needs of the HRM industry. RRGs are special purpose, group-owned captives which provide primary insurance market capacity to industries with risk profiles and actual loss experience (or expected probable loss projections) that are volatile. In 2005, and again in 2012, the GAO scrutinized RRG regulation.[7] For example, the lack of available liability coverage for certain risks was the reason that Congress in 1986 expanded the scope of the Product Liability Risk Retention Act (1981) to include liability exposures, creating the Liability Risk Retention Act

[3] See Glossary.
[4] Total 2014 premium volume for the insurance industry was $1.23 trillion, comprising $503 billion for the commercial property and casualty (P&C) segment, including surety. See Annual Report on the Insurance Industry, Federal Insurance Office, U.S. Dept. of Treasury, Sept. 2015, https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2015%20FIO%20Annual%20Report_Final.pdf. Of this, approximately $0.6 billion in premiums are associated with facility environmental insurance coverage (as represented in Wells Fargo Outlook & Commentary for 2016, page 14), as well as approximately $5.0 billion in surety premiums, net of state funds (as represented by SNL Financial LC).
[5] Ibid.
[6] Alternative Risk Transfer (ART) instruments include insurance-linked securities, industry-loss warranties, and collateralized reinsurance. Also see Glossary of Terms.
[7] US GAO, *Risk Retention Groups: Common Regulatory Standards and Greater Member Protections Are Needed*, GAO-05-536 Aug. 2005, http://www.gao.gov/new.items/d05536.pdf and *Clarifications Could Facilitate States' Implementation of the Liability Risk Retention Act*, GAO 12-16 Dec. 2011, http://www.gao.gov/assets/590/587531.pdf.

(LRRA).[8] RRGs offer capacity to high-risk industries like oil and gas, pharmaceuticals, medical malpractice, and other industries like mining, with liability-driven risks.

RRG members provide capital, thereby providing confidence to the insurance and surety markets that risk mitigation actions and best practices will be pursued. Specifically, RRG members place their own capital at risk for known or expected loss (the "working layer") of the insurance instrument. Typically, the RRG members also put their capital at risk for the higher frequency primary risk layers, where the risks assumed are most influenced by operating risk controls and procedures. In so doing, RRGs create a layered risk management-based insurance instrument, whereby insureds falling within the RRG are motivated to reduce risk and minimize losses to protect their own capital. For these reasons, RRGs offer additional capacity to the insurance markets to cover volatile, capital-intensive risks like those associated with hard rock mining.

In general, the EPA's assessment suggests that the current insurance and surety markets continue to perform well and demonstrate "sound financial condition."[9] This in turn suggests that the economic condition of the overall industry is positive, which in turn should help support the ultimate availability of instruments industry wide, as well as potentially under any CERCLA 108(b) regulations. Further, industry outlooks suggest continued solid financial performance, with modest premium growth. However, industry commentary also suggests that reduced underwriting of volatile business lines is a necessity to maintain stability and profitability in the current financial environment. For example, AIG's January 2016 exit from the environmental impairment liability line of business may reflect this market shift.[10] The potential for reduced underwriting suggests that a range of diverse financial assurance instruments may be needed to help ensure sufficient coverage for entities potentially regulated under any CERCLA 108(b) rules.

Regarding the Committee request for the agency to provide an explanation of how the proposed CERCLA 108(b) rule will avoid requiring financial assurances that are duplicative of requirements already developed by other federal agencies, the agency has evaluated the applicability of Section 108(b) requirements at facilities where other federal financial responsibility requirements apply. The EPA believes that Section 108(b) requirements, established to address CERCLA liabilities, are distinct from federal closure and reclamation bonding requirements imposed under other statutes. Nevertheless, the agency recognizes that in requiring implementation of certain controls to serve the objectives of their programs, federal closure programs also may have an effect on the risk a facility presents. The agency is working to address this issue through a formula which would be used to calculate the facility-specific financial responsibility amount in the proposed regulation. The EPA intends the Section 108(b) financial responsibility amount to take account for environmentally protective practices at the facility, including those required by other regulations. Any

[8] Pub. L. No. 97-45, 95 Stat. 949 (1981) (codified as amended at 15 U.S.C. §§ 3901-3906). LRRA authorized the creation of Risk Retention Groups (RRGs) and risk purchasing groups (RPGs). RRGs are special purpose, group-owned captives that provide primary insurance capacity to industries with risk profiles and actual loss experience. RPGs are businesses with similar risk exposures that join together to purchase liability insurance as a single entity. See 15 U.S.C. § 3901(a)(5).
[9] U.S. Department of Treasury, Federal Insurance Office, *Annual Report on the Insurance Industry*, September 23, 2015, available online at: https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2015%20FIO%20Annual%20Report_Final.pdf.
[10] See https://www-160.aig.com/content/dam/aig-mktg/america-canada/us/documents/landing-pages/aig-strategy/press-release/aig-pr-strategy-update-1-26-16-press-release.pdf; and http://www.lawandenvironment.com/2016/01/28/aig-bows-out-of-the-pollution-legal-liability-market/.

such reductions in risk, including those attributable to the requirements of other programs, would result in reductions in the amount of financial responsibility required at the facility under CERCLA 108(b).

INTRODUCTION

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly called the "Superfund" law, 42 U.S.C. 9601 *et seq.*, was passed in 1980, and has since been amended by Congress. Among other things, CERCLA authorizes the President to undertake removal or remedial actions in response to any release or threatened release into the environment of hazardous substances or, in some circumstances, any other pollutant or contaminant and imposes liability upon a variety of parties responsible for that release or threatened release. Under section 108(b) of CERCLA, classes of facilities must establish and maintain evidence of financial responsibility "consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances." Executive Order 12580 delegates the responsibility to develop these requirements to the Administrator of EPA for non-transportation related facilities. 52 FR 2923, 3 CFR, 1987 Comp., p. 193. The EPA is currently developing proposed section 108(b) rules for classes of facilities within the hard rock mining industry.

In the FY16 Conference Committee Report for P.L. 114-113, the Committee makes the following request:

> *Financial Assurance.- Prior to proposing any rule pursuant to section 108(b) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9608(b)), the Administrator is directed to collect and analyze information from the commercial insurance and financial industries regarding the use and availability of necessary instruments (including surety bonds, letters of credit and insurance) for meeting any new financial responsibility requirements and to make that analysis available to the House and Senate Committees on Appropriations and to the general public on the Agency website 90 days prior to a proposed rulemaking. In addition, the analysis shall include the Agency's plan to avoid requiring financial assurances that are duplicative of those already required by other Federal agencies.*

This document has been prepared in response to this request.

This document focuses primarily on assessing the capacity of third-party markets to underwrite financial responsibility (FR) requirements for meeting any CERCLA 108(b) requirements, and describes the relationship of CERCLA 108(b) to other federal FR programs. The findings offered below emphasize the underwriting and capital conditions specific to the hard rock mining (HRM) and mineral processing industries. Specifically, the FR capacity assessment offers insights on:

I. The current state of markets for financial responsibility instruments; and
II. Outlook and future trends for financial responsibility markets.

The findings herein are based on publically available, attributable information from the following sources:

- U.S. Department of Treasury, Federal Insurance Office;
- U.S. Government Accountability Office;
- Standard and Poor's Research via SNL Financial;
- Industry representatives; and
- The Insurance Information Institute.

Also, the EPA recently met with representatives of the insurance, surety and banking communities to discuss the agency's plans for the CERCLA 108(b) proposed rule, particularly the potential mechanics of the financial instruments under consideration. The CERCLA 108(b) proposed rule is structured somewhat differently from other financial responsibility programs. For example, the instruments in other programs are designed to support regulatory programs that impose technical requirements, and are designed to pay to limited named parties or at the direction of a single beneficiary (e.g., the regulator). However, CERCLA is a response program that addresses CERCLA Section 107 liabilities, and the EPA intends for its proposed Section 108(b) rules to complement, but not change, existing Superfund cost recovery and enforcement procedures. Thus, the EPA would use existing Superfund enforcement processes (e.g., settlements, orders, and cost recovery actions) against potentially responsible parties (PRP) to effect clean up. The EPA also expects that under the proposed rules, other parties (i.e., other federal agencies, the states, and the public) also could make claims against the owner or operator under Section 107, payable from the instruments. CERCLA 108(c) also includes a "direct action" provision allowing claims against instrument providers under certain circumstances. Representatives of the financial community expressed differing levels of comfort regarding these unique aspects of the potential instruments under the EPA's CERCLA 108(b) rulemaking.

The representatives from the insurance, surety and banking communities are familiar with providing instruments for other financial responsibility programs. However, because CERCLA 108(b) presents a different regulatory framework, aspects of the potential instruments were not universally familiar to the providers. Unfamiliar criteria included the payout of the instrument under the direct action provision, the scope of coverage, and the payout to multiple claimants. Feedback during these meetings will be useful to the EPA in drafting details of the financial instruments in light of the business practices and conventions in these financial sectors. This may have a positive impact on the availability of these instruments. At this time, it is not possible to predict the exact market for these instruments in response to the EPA's CERCLA 108(b) regulations, as it may take some time for the market to process these features. All else equal, standard economic principles suggest that as demand for a new product increases, insurers and sureties will seek to satisfy such demand with new products. The timing, pricing and nature of such products will ultimately depend on the requirements established by the final rule. "In terms of timing, EPA expects the rules to phase in the FR requirements over a period up to 4 years, as provided for in CERCLA 108(b)(3). This should help to provide lead time for the markets to respond to demand and companies to obtain assurance.

The EPA will consider comments submitted during the public comment period on the proposed rule regarding the market for instruments and the time period for compliance. Lastly, the EPA also intends to monitor the market response to any final regulations.

RELATIONSHIP OF EPA'S PROPOSED CERCLA 108(B) FINANCIAL RESPONSIBILITY REQUIREMENTS FOR HARD ROCK MINING TO THOSE OF OTHER FEDERAL AGENCIES

Regarding the committee request for the agency to provide an explanation of how the CERCLA 108(b) rule will avoid financial responsibility requirements that are duplicative of those already required by other federal agencies, the EPA has evaluated the applicability of Section 108(b) requirements at facilities where other federal financial responsibility requirements apply. In order to better understand other federal FR programs for the mining industry, the EPA held consultation meetings with the Bureau of Land Management and the U.S. Forest Service. Through these meetings, the EPA learned from the Federal land management agencies (FLMAs), about their financial responsibility regulations for hard rock mining and their implementation.[11]

Having considered this information, the EPA believes that Section 108(b) requirements established to address CERCLA liabilities are distinct from federal closure and reclamation bonding requirements imposed under other statutes. The agency is considering an approach for the forthcoming proposed CERCLA section 108(b) rule for hard rock mining under which owners and operators would be required to establish and maintain financial responsibility consistent with the degree and duration of risk associated with aspects of the hazardous substance management at their facilities. The EPA intends for the required instruments to cover all CERCLA Section 107 liabilities – response costs, natural resource damages (NRD), and health assessments. The objective is to promulgate stand-alone financial responsibility requirements under CERCLA, for CERCLA liabilities, and not for any obligations under other statutes. The regulations are not expected to determine that a CERCLA response is required at any given regulated facility, nor affect CERCLA liability when an owner or operator provides evidence of financial responsibility.

In contrast, the existing federal bonding requirements for hard rock mines are associated with permitting programs that help assure proper design, operation, closure, and reclamation. The agency does not expect the CERCLA 108(b) proposed rule to include technical requirements regulating the design, operation, closure, or reclamation of hardrock mining facilities, nor to provide for financial responsibility to ensure closure or reclamation requirements made applicable to hardrock mining facilities through a permit. At the same time, the agency recognizes that, in requiring implementation of controls pursuant to their program objectives, some federal mine closure program requirements help to address releases to the environment and thereby may have the effect of reducing the risk a facility presents. The agency is working to address such reductions in risk through the cost formula under development for the proposed regulation. To determine the amount of financial responsibility required for response costs, the agency is developing a formula that would identify an amount of financial responsibility to reflect the primary site conditions and characteristics that would affect the costs of removal or remedial action. The EPA intends for the formula to reflect the relative risk of facility practices in managing hazardous substances, including reductions in risk due to environmentally protective practices at the facility, and future protective practices that may result from compliance with other regulatory requirements. These reductions could potentially be quite significant at some facilities with strong controls and adequate existing financial responsibility. In this

[11] Summarized here are the consultation meetings that EPA has held with BLM and USFS. Four joint policy group meetings were held in 2012 (Jul. 5, Aug. 8, Sept. 12, and Oct. 10), along with 3 such meetings in 2013 (Dec. 11, Apr. 10, and Nov. 18). A meeting was also held on Jan. 25 as kickoff for the formation of both a technical and a financial workgroup. The Technical Workgroup met four times in 2013 (Jan. 30, Feb. 13, Feb. 20, and Mar. 20). The Financial Workgroup met on three separate occasions (Feb. 19, Mar. 5, and Mar. 19). The BLM and USFS have further participated with EPA in more recent meetings, some which also included the Office of Management and Budget (OMB) and the Small Business Administration (SBA) in advance of EPA's planned SBREFA (Small Business Regulatory Enforcement Fairness Act) panel for the rulemaking. These meeting occurred on July 2nd in 2015, and on May 10th & 11th of 2016.

manner, the EPA intends for reductions in risk, including those attributable to the requirements of other programs, to result in reductions in the level of financial responsibility required under EPA's proposed CERCLA 108(b) rules. The EPA intends for this approach to both reduce the amount of financial responsibility where strong regulatory controls are already present, and also provide an incentive for sound mining practices that will reduce financial responsibility costs for owners and operators.

SUMMARY OF FINANCIAL INSTRUMENTS AUTHORIZED UNDER EPA'S FORTHCOMING CERCLA 108(B) PROPOSED RULE FOR THE HARD ROCK MINING INDUSTRY

CERCLA Section 108(b)(2) specifically states that "financial responsibility may be established by any one, or any combination, of the following: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer." Consistent with this, the EPA anticipates consideration of at least the following financial responsibility instruments in its proposed CERCLA 108(b) rule for hard rock mining: letters of credit, insurance, trust funds, surety bonds, and a credit-rating-based financial test/corporate guarantee.

The request (as set forth in the FY 2016 Conference Committee Report), asks the agency to collect and evaluate information from the insurance and financial industries regarding the use and availability of financial responsibility instruments. There exists a distinct difference in how these various instrument options work relative to their use and availability. Some of the FR options possess few limits on their use or availability, while some can only be obtained via third party instruments available from market providers.

Specifically, the establishment of trust funds and the procurement of LOCs depend primarily on the credit worthiness of the owner or operator. A broad range of financial institutions including banks and trustees will provide the necessary arrangements for trust funds and LOCs, provided that an owner or operator has adequate credit, assets, and demonstrated performance. Similarly, the passage of a financial test (or use of a corporate guarantee relying on another party's passage of a financial test) is solely contingent upon the financial health and credit worthiness of the party. As a consequence, there is essentially unlimited market capacity for these specific FR options.

For insurance and sureties, instruments are obtained through third party providers. The availability of such instruments will be entirely dependent upon market capacity within the insurance and surety sectors. This report thus focuses predominantly on the market for insurance and surety instruments, and to a lesser degree on LOCs. For similar reasons, this document does not discuss trust funds or the corporate financial tests/guarantees relative to market capacity, as neither of these instruments directly rely upon the availability of third-party markets for financing.

CURRENT STATE OF MARKETS FOR FINANCIAL RESPONSIBILITY INSTRUMENTS

According to a September 2015 report issued by the U.S. Dept. of Treasury, Federal Insurance Office (FIO), the U.S. insurance industry maintained good financial performance and, in aggregate, is "in sound financial condition."[12] Written premiums for commercial surety are up approximately $90 million year-over-year, with a total written premium of $1.65 billion, while loss ratios are low at just 3.3 percent.

Providers even report having seen cases where capacity could be extended in excess of $1 billion, primarily with the top five carriers.[13] One provider in 2015 also characterized the industry wide market for FR instruments as soft, and projected that this condition would likely continue into 2016 and perhaps beyond. A "soft" market suggests that there exists the potential for greater instrument supply than demand. Current conditions within the FR market overall, both for insurance and surety bonds, would therefore appear to be healthy in terms of its continued aggregate financial performance, and potential capacity for expansion.

During 2015, there was a marked level of merger and acquisition (M&A) activity within the insurance property and casualty (P&C) sector.[14] Further, just such an acquisition recently occurred with the recent acquisition of Lexicon Surety Group (one of the largest surety providers in the U.S.). Although market consolidation likely will yield efficiencies, there may be softening in the underwriting of traditionally volatile lines of business, including environmental liability and mining. The conflicting evidence from the literature, in terms of the relative strength of these sectors versus the impacts of market consolidation, serves to underscore the inherent uncertainty that exists within all markets. Such uncertainly makes it exceedingly difficult to make inferences or predictions from the data as to future market trends and capacity. In spite of this, the agency has collected significant evidence with which to better understand, to the extent possible, the relevant trends and capacity of the market for FR instruments.

In the following sections, specific areas are presented that offer indicators of the capacity that may exist in third party markets. Capital capacity within the insurance market is first examined to understand overall capacity, and the overall premiums paid more specifically, across the insurance industry. Premiums in particular can serve as a metric by which to understand the size and capacity of the market. Written premiums are a principal measure of the size and growth of the insurance industry, and help in gauging overall profitability. Additional data and exhibits are provided to help break down the overall insurance market into those subcomponents most relevant to a future market for CERCLA 108(b) instruments. As such, exhibits are provided that outline current property and casualty premium (P&C) levels, as well as those premiums associated directly with environmental liability coverage. Because growth in the markets for ARTs and RRGs may present an opportunity for creation of additional capacity, the report next provides more details on them and how they work. The EPA then presents information on Environmental Insurance Markets and Environmental Surety Markets. The report provides data on the top ten providers in the insurance market and their non-admitted direct written premiums, followed by information of the volume of premiums associated with sureties.

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[12] U.S. Department of Treasury, Federal Insurance Office (FIO), *Annual Report on the Insurance Industry*, September 23, 2015, available online at: https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2015%20FIO%20Annual%20Report_Final.pdf.

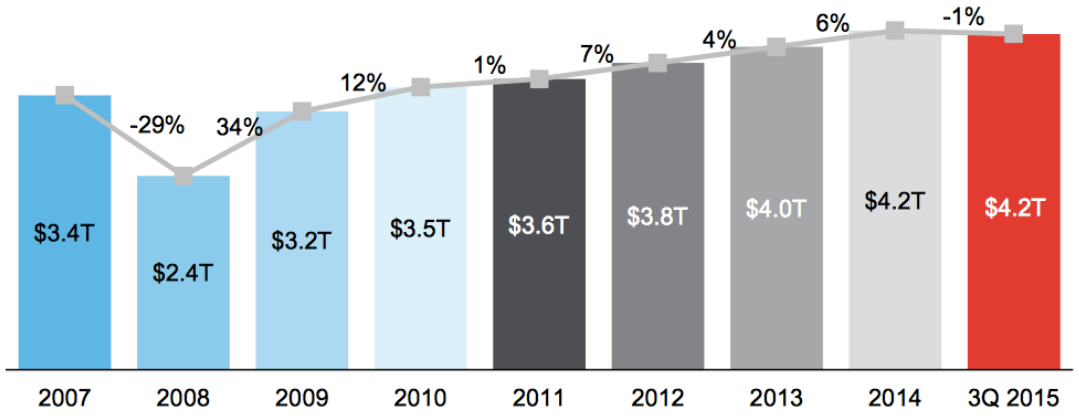
[13] For Marsh outlook and commentary, see Marsh, United States Insurance Market Report 2016, https://www.marsh.com/us/insights/united-states-insurance-market-report-2016.

[14] See Willis Towers Watson, *Defying Gravity: Insurer M&A on the Rise*, January 2016. Insurance industry M&A activity totaled $143.5 billion in transaction volume in 2015 and included very large deals, such as XL PLC's acquisitions of the Catlin Group, and the merger of ACE and Chubb.

OVERALL INSURER CAPITAL CAPACITY

As shown in Exhibit 1 below, overall capital capacity for insurers remained relatively flat at approximately $4 trillion in recent years.[15] In 2008, during the Recession, insurer capacity dropped from $3.4 trillion to $2.4 trillion, but steadily rebounded to $4.2 trillion by the third quarter of 2015.

Exhibit 1. Insurer Capital Capacity



Source: Aon Benfield Analytics

According to the September 2015 FIO report, direct written premiums for the Life, and Property and Casualty (P&C) sectors totaled $1.23 trillion, or approximately seven percent of U.S. Gross Domestic Product (GDP).[16] Less than half of the $1.23 trillion (or $503 billion) represents the net written premium (NWP) derived from the combined personal and commercial lines of the P&C sector.[17] Environmental liability premiums constitute a relatively small proportion of this $503 billion in P&C premiums. Overall, the FIO identifies approximately $279 billion in commercial P&C direct written premiums. Of this amount, approximately $61 billion in direct written premiums is attributable to "other" commercial lines, of which a proportionate share constitutes environmental liability premiums.[18] A review of market overview documents by brokers, as well as information from industry executives suggest that approximately $600 million of this $61 billion total is associated with facility environmental coverage across all industries (i.e., including, but not limited to, the hard rock mining industry). [19] Given the $600 million estimate, premiums that could qualify as financial responsibility appear to represent less than 0.2 percent (i.e., $600 million divided by $279 billion) of overall premiums for commercial business lines.[20]

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[15] Aon Benfield Analytics, *Reinsurance Market Outlook - January 2016*. The agency uses the term, market capacity, as a measure of the supply available to meet demand, whereby capacity reflects the amount of business (or premium volume) that the market could write based on excess (or unused) capital.

[16] 2015 premium and other insurer data are not yet available. The comparison to GDP was made using GDP figures published by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). See U.S. Department of Treasury, Federal Insurance Office (FIO), *Annual Report on the Insurance Industry*, September 23, 2015, available online at: https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2015%20FIO%20Annual%20Report_Final.pdf.

[17] NWP is a generally accepted measure of the size and growth of the insurance industry. See *ibid*.

[18] National Association of Insurance Commissioners (NAIC), *State Insurance Regulation: Key Facts and Market Trends*, p. 4, http://www.naic.org/state_report_cards/report_card_nc.pdf.

[19] See the discussion in the "Outlook and Future Trends for Financial Assurance Markets" section of this document. Also see specifically, Wells Fargo, *2016 Insurance Market Outlook*, https://wfis.wellsfargo.com/insights/clientadvisories/Documents/WCS-1780103-WFI-2016-PC-Mkt-Outlook-WIP-FNL-PG-NoCrops.pdf. Trade press place estimates at potentially half as much, i.e., $350 million, solely for pollution legal liability, which is a subset of environmental liability coverages. See, for example, a November 2015 article by John J. Heft titled, "Keep Real Estate Deals Clean with Pollution Legal Liability Cover."

[20] *Ibid*.

Exhibits 2 and 3 below offer information about how the overall insurance market breaks down into the various lines of business covered under property and casualty insurance. As such, these exhibits help to further substantiate information from FIO reports presented above. Exhibit 2 also provides information from the National Association of Insurance Commissioners (NAIC) on premiums by line of business.

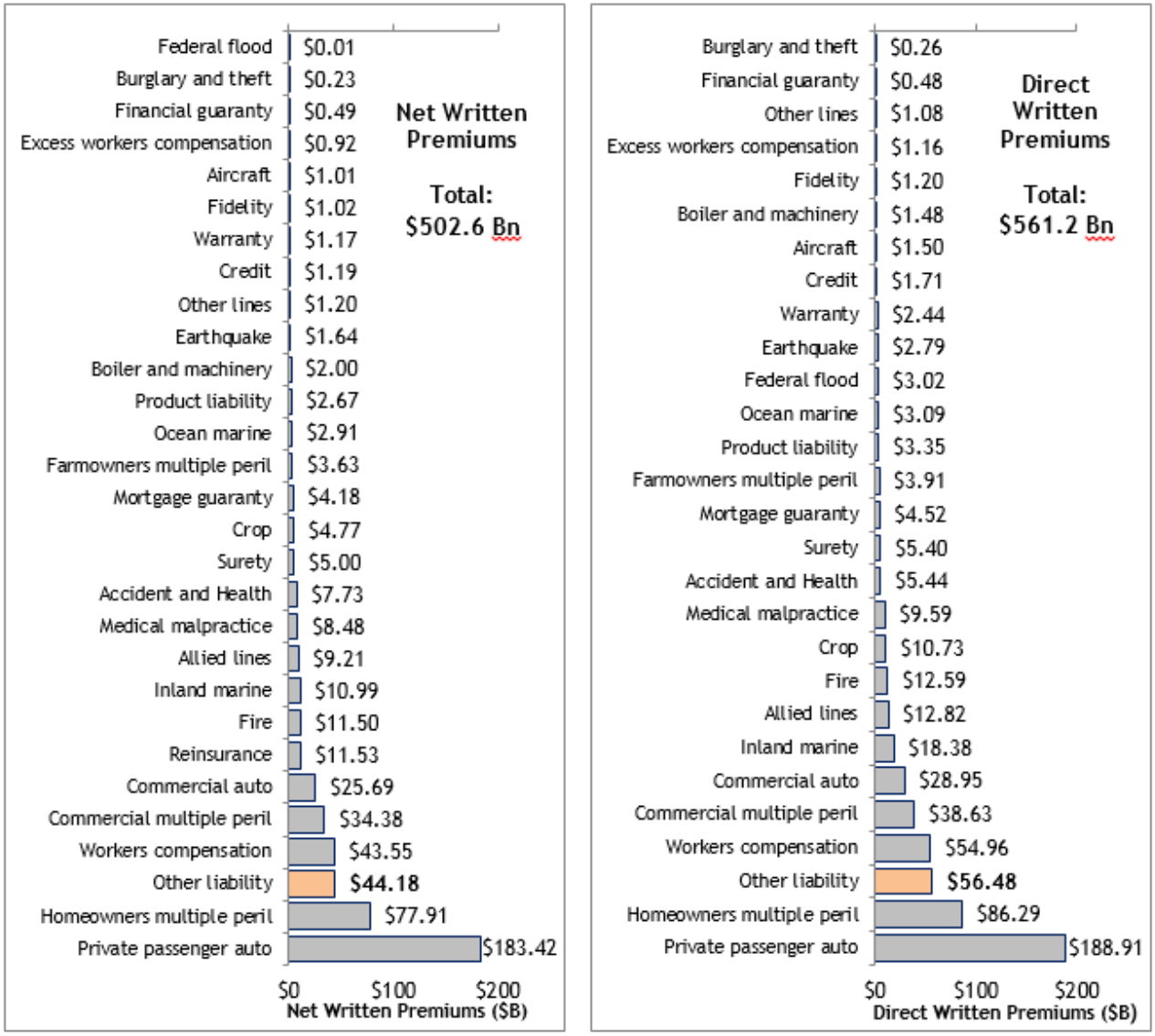
EXHIBIT 2. U.S. PROPERTY & CASUALTY PREMIUMS BY LINE OF BUSINESS

Line of Business	2013	2014
Accident & Health	$5,493,310,369	$5,601,767,251
Allied lines	$13,349,691,960	$12,995,129,881
Federal flood	$3,078,500,389	$3,028,609,117
Crop	Not provided	$967,755,975
Farm	$15,084,480,622	$13,666,645,811
Homeowners multiple peril	$82,660,181,703	$86,303,533,486
Commercial multiple peril	$37,721,168,598	$38,961,757,164
Mortgage guaranty	$4,546,543,732	$4,534,832,939
Ocean and inland marine	$19,947,274,865	$21,586,864,497
Financial guaranty	$608,444,024	$477,564,807
Fire	$13,098,155,584	$12,670,360,838
Earthquake	$2,280,047,235	$2,301,676,840
Workers' compensation	$55,708,292,405	$59,444,975,584
Products liability	$3,321,275,989	$3,358,246,777
Automobile	$207,309,338,508	$218,409,045,763
Aircraft (all perils)	$1,550,680,659	$1,502,705,778
Fidelity	$1,171,257,946	$1,211,389,569
Surety	$5,214,468,817	$5,459,383,404
Burglary and theft	$246,775,411	$265,462,287
Boiler and machinery	$1,466,336,006	$1,492,824,809
Credit	$1,695,022,129	$1,714,424,883
Other (including environmental liability coverage)	**$57,058,714,233**	**$61,491,956,150**
Medical professional liability	$9,784,635,293	$9,658,127,504
Total	**$542,844,596,029**	**$567,105,040,780**

Source: National Association of Insurance Commissioners (NAIC), State Insurance Regulation: Key Facts and Market Trends, p. 4, http://www.naic.org/state_report_cards/report_card_nc.pdf.

Exhibit 3 lists insurer industry statistics tracked by Standard and Poor's and published via its SNL Financial outlet. The figures in Exhibit 3 illustrate direct written premiums and net written premiums by line of business. As described above, environmental liability coverage premiums are included in the "other liability" category, which comprise an array of specialty, non-standard lines of business, including professional liability, contractor liability, cyber liability coverage, and niche markets like mining.

EXHIBIT 3. NET WRITTEN AND DIRECT PREMIUMS, PROPERTY & CASUALTY, BY LINE OF BUSINESS, 2014



Notes: 1) Net written premiums are post-reinsurance transactions and exclude state funds; 2) direct written premiums are pre-reinsurance transactions and include some state funds; 3) credit lines include international and miscellaneous coverages; 4) crop includes federally sponsored multiple peril crop and private market crop-hail; 5) accident and health premiums include premiums from certain insurers that write health insurance file financial statements with state regulators on a property/casualty rather than life/health basis; 6) reinsurance includes only non-proportional reinsurance, an arrangement in which a reinsurer makes payments to an insurer whose losses exceed a predetermined amount; and 7) other liability includes coverages protecting against legal liability resulting from negligence, carelessness, or failure to act.

Source: SNL Financial LC via Insurance Information Institute, Premiums Written by Line, Property/Casualty Insurance, 2014, http://www.iii.org/graph-archive/96079.

MARKET CAPACITY: CAPITAL AND OTHER METRICS

Regarding capital and various metrics pertaining to market capacity, research finds that both the written premiums and combined ratios (both accepted measures for evaluating the health and capacity within the market), demonstrated net profits and an expansion of equity capital in recent years. RRGs also are further described and identified as a positive vehicle that could help to provide additional support to the FR sector in meeting demand for FR coverage.

According to the September 2015 FIO report, net income for the P&C sector derived from its net written premiums totaled approximately $65 billion, corresponding to approximately 13 percent of net written premiums received.[21] The September 2015 FIO report also noted that the P&C sector had $689 billion in policyholder surplus (net worth) as of 2014, and that the insurance market had raised $8 billion in new equity capital in 2014.[22] These data indicate that the P&C sector was very profitable.

Another measure frequently used in evaluating market capacity is that of the "combined ratio". In insurance markets, the combined ratio refers to the sum of the loss ratio (incurred losses divided by earned premiums) and the expense ratio (incurred expenses divided by written premiums). This ratio is a measure of profitability for the insurance sector. A combined ratio less than 100 percent indicates that premiums successfully covered losses and expenses. For 2014, the combined ratio for the P&C sector of the insurance market was at 97.20 percent, indicating continued profitability and successful avoidance of operating losses.[23]

Further, the FIO documented growth of $14 billion (a 28 percent annual growth rate) in alternative risk transfer transactions (ART).[24] ART instruments include insurance-linked securities, industry-loss warranties, collateralized reinsurance, and "sidecars." These financial instruments allow capital market investors to diversify and seek higher yields than may otherwise be available by participating in risks that are conventionally underwritten by reinsurance companies.

Risk Retention Groups (RRGs), a subset within the ART market, wrote approximately $2.5 billion of liability-related premiums, or approximately 0.1 percent of the overall market. [25, 26] In the event that

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[21] U.S. Department of Treasury, Federal Insurance Office, *Annual Report on the Insurance Industry*, September 23, 2015, available online at: https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2015%20FIO%20Annual%20Report_Final.pdf. Note, the Insurance Information Institute provided a 2015 net income figure of $55.5 billion. See http://www.iii.org/article/2014-year-end-results for additional information.

[22] *Ibid*. Policyholder surplus is the difference between an insurer's admitted assets and its liabilities. Policyholder surplus reflects the insurer's net worth, and is used to determine the insurer's financial strength and capacity to write new business. For more information, see https://www.irmi.com/online/insurance-glossary/terms/p/policyholder-surplus.aspx.

[23] U.S. Department of Treasury, Federal Insurance Office, Annual Report on the Insurance Industry, September 23, 2015, available online at: https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2015%20FIO%20Annual%20Report_Final.pdf.

[24] *Ibid*. Although ARTs are growing quickly, the total amount of ART capital (approximately $64 billion) is small in comparison to the $575 billion of capital in reinsurance companies. Also see Aon Benfield, *Reinsurance Market Outlook – April 2015*, http://thoughtleadership.aonbenfield.com/sitepages/display.aspx?tl=485.

[25] There are RRGs that have been established specifically to address environmental liability. One such example is American Safety RRG, established to provide coverage for remediation contracts. See National Association of Insurance Commissioners, *NAIC 2014 Insurance Department Resources Report Volume Two*, 2015, http://www.naic.org/documents/prod_serv_naic_state_sta_bb_2.pdf.

[26] See http://www.asrrg.com for additional information.

insurance and surety capacity for environmental liabilities should possibly contract, growth in the ART market, and specifically RRGs,[27] may present an opportunity for creation of additional capacity to serve the financial service needs of the HRM industry.

In 2005, and again in 2012, the GAO scrutinized RRG regulation.[28] RRGs are special purpose, group-owned captives which provide primary insurance market capacity to industries with risk profiles and actual loss experience (or expected probable loss projections) that are volatile. For example, the lack of available liability coverage for certain risks was the reason that Congress in 1986 expanded the scope of the Product Liability Risk Retention Act (1981) to include liability exposures, creating the Liability Risk Retention Act (LRRA).[29] RRGs offer capacity to high-risk industries like oil and gas, pharmaceuticals, medical malpractice, and other industries like mining, with liability-driven risks.

RRG members provide capital offering confidence to the insurance and surety markets that risk mitigation actions and best practices will be pursued. Specifically, RRG members place their own capital at risk for the working layer of the insurance instrument (i.e., for the known or expected loss). Typically, the RRG members also put their capital at risk for the higher frequency primary risk layers, where the risks assumed are most influenced by operating risk controls and procedures. In so doing, RRGs create a layered risk management-based insurance instrument, whereby insureds falling within the RRG are motivated to reduce risk and minimize losses to protect their own capital. [30] For these reasons, RRGs offer additional capacity to the insurance markets to cover volatile, capital-intensive risks like those associated with hard rock mining.

ENVIRONMENTAL INSURANCE MARKETS

Identified below are ten of the top companies and parent companies that provide insurance in the U.S., in order to profile the size and magnitude of market share carried by these companies. An evaluation of the leading primary U.S.-based insurers, based on data from SNL Financial LC, reveals non-admitted direct written premiums in excess of $11.4 billion, which helps provide context relative to CERCLA 108(b). Thus, data indicate that any FR insurance acquired in response to CERCLA 108(b), should still represent a small portion of the overall insurance market.

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[27] Alternative Risk Transfer (ART) instruments include insurance-linked securities, industry-loss warranties, and collateralized reinsurance.

[28] US GAO, *Risk Retention Groups: Common Regulatory Standards and Greater Member Protections Are Needed*, GAO-05-536 Aug. 2005, http://www.gao.gov/new.items/d05536.pdf and *Clarifications Could Facilitate States' Implementation of the Liability Risk Retention Act*, GAO 12-16 Dec. 2011, http://www.gao.gov/assets/590/587531.pdf.

[29] Pub. L. No. 97-45, 95 Stat. 949 (1981) (codified as amended at 15 U.S.C. §§ 3901-3906). LRRA authorized the creation of RRGs and risk purchasing groups (RPG). RPGs are businesses with similar risk exposures that join together to purchase liability insurance as a single entity. See 15 U.S.C. § 3901(a)(5).

[30] It should be noted however that the GAO has also identified some potential concerns with self-insurance mechanisms (such as RRGs), including anecdotal evidence suggesting that RRG mechanisms may be associated with greater accident rates among covered firms than do third-party mechanisms. In spite of this, it still also holds that with all else being equal, entities covered by RRGs are able to spread their risk across multiple owners and operators and are therefore less likely to default on their environmental obligations than would owners and operators who self-insure.

In general, insurance for purposes of financial responsibility is provided by "surplus" and "excess lines" insurers. Exhibit 4 lists the top ten excess and surplus lines insurance carriers and their volumes of written premiums.

EXHIBIT4. U.S.-BASED EXCESS AND SURPLUS LINES INSURERS BY NON-ADMITTED DIRECT PREMIUMS WRITTEN, 2014.

Rank	Company	Parent Company	Non-admitted direct written premiums
1	Lexington Insurance Co.	American International Group Inc.	$3,814,636,188
2	Scottsdale Insurance Co.	Nationwide Mutual Insurance Co.	$1,541,509,541
3	Steadfast Insurance Co.	Zurich Insurance Group Ltd.	$1,065,950,654
4	Ironshore Specialty Insurance Co.	Ironshore Inc.	$901,226,373
5	AIG Specialty Insurance Co.	American International Group Inc.	$899,743,943
6	Columbia Casualty Co.	CNA Financial Corp.	$746,194,802
7	Indian Harbor Insurance Co.	XL Group P.L.C.	$727,864,465
8	Axis Surplus Insurance Co.	Axis Capital Holdings Ltd.	$591,636,313
9	Westchester Surplus Lines Insurance Co.	Ace Ltd.	$577,206,821
10	Arch Specialty Insurance Co.	Arch Capital Group Ltd.	$545,949,763

Source: Business Insurance (www.businessinsurance.com), August 31, 2015.

Typically, single insurance companies maintain many underwriting entities (companies), each of which is designed to service specific markets. These companies are part of the cross-collateralized pool of the parent company. The purpose of cross-collateralizing is to spread risk, use capital efficiently, and improve stability and financial soundness of *all* members of the parent company pool.

ENVIRONMENTAL SURETY MARKETS

Sizable net premiums also have been written on surety bonds, with annual totals netting between $3.8 and $5 billion between 2005 and 2014. Annual combined ratios in this period also reflect consistency in annual net profits for providers in the business of issuing surety bonds. This data, combined with that of other prior statistics previously presented, reveal relatively solid performance across the FR market.

Issuance of surety bonds requires different and distinct licensure, as well as different administrative and collateralization requirements as compared to insurance. In some cases, surety is offered by companies with dual licensure (i.e., insurance and surety licensure); in other cases, surety is offered through entities operated separately and distinctly from insurer companies. This may be so, even if a parent has both a surety issuer and an insurer as subsidiaries.

Exhibit 5 lists the premium volume of surety written in the U.S. over the last decade. The figures therein suggest modest growth in the surety market over the last ten years, with some arguably "flat" (i.e., non-growth) periods during the core of the economic correction.

EXHIBIT 5. SURETY BOND PREMIUMS, 2005-2014

Year	Net Premiums Written[1]	Annual Percent Change[2]	Combined Ratio	Annual Point Change[3]
2005	$3,817,496,000	0.4%	102.1	-18.5
2006	$4,434,780,000	16.2%	81.5	-20.6
2007	$4,779,117,000	7.8%	72.2	-9.3
2008	$4,960,250,000	3.8%	67.0	-5.2
2009	$4,835,409,000	-2.5%	79.5	12.6
2010	$4,851,328,000	0.3%	70.7	-8.8
2011	$4,849,480,000	< 0.1%	72.9	2.2
2012	$4,695,782,000	-3.2%	76.8	3.9
2013	$4,868,847,000	3.7%	72.7	-4.0
2014	$5,000,382,000	2.7%	70.6	-2.1

[1] After reinsurance transactions; excludes state funds.

[2] After dividends to policyholders. A drop in the combined ratio represents an improvement; an increase represents a deterioration.

[3] Calculated from unrounded data, refers to the annual change in the combined ratio.

Source: SNL Financial LC via Insurance Information Institute, Standard Lines Premiums, http://www.iii.org/publications/commercial-insurance/what-it-does/lines-of-business/standard-lines-premiums.

RECENT DEVELOPMENTS IN ENVIRONMENTAL INSURANCE AND SURETY

Occurrences as noted above can be in direct conflict, in terms of what they tell us about the behavior of the market. On one hand, we have a major provider leaving the market. Yet, we also see evidence of mergers and acquisitions where other providers appear ready to step into the potential void. This serves as yet another example of the inherent uncertainty that exists within financial markets. Such uncertainly makes it difficult to make inferences or predictions from the data in regards to future market trends and capacity.

In January 2016, AIG announced that it would no longer offer environmental impairment liability coverages, i.e., a specialized form of insurance that covers environmental liabilities, and in some cases pollution-related cleanup costs.[31] Research suggests that the marketplace is continuing to evaluate the impact of this decision, given that AIG is considered to be the largest underwriter of environmental insurance that addresses large scale, long-tailed environmental risks. Specifically, long-tailed environmental risks are those that span several years, and in some cases, last in perpetuity.

More recently, in April 2016, Ironshore, Inc. announced the acquisition of Lexon Surety Group, LLC and its surety-related affiliates. Lexon Surety Group represented the 12th largest write specializing in surety bonds in the U.S. with more than $135 million in direct written premiums annually.[32]

Recent bankruptcies in the coal mining industry also may have an impact on market capacity. If these high profile bankruptcies result in public policy shifts that lead to a restriction in the use of self-

[31] See AIG's press release here: https://www-160.aig.com/content/dam/aig-mktg/america-canada/us/documents/landing-pages/aig-strategy/press-release/aig-pr-strategy-update-1-26-16-press-release.pdf and additional press coverage information here: http://www.lawandenvironment.com/2016/01/28/aig-bows-out-of-the-pollution-legal-liability-market/.

[32] See: http://www.ironshore.com/pdfs/press/Ironshore_Announces__Lexon_Acquisition_04_07_2016.pdf.

bonding to meet coal mine reclamation obligations, this may result in a material increase in the demand for surety bonds and other third-party mechanisms.[33]

OUTLOOK AND FUTURE TRENDS IN MARKETS FOR FINANCIAL RESPONSIBILITY INSTRUMENTS[34]

Overall, the industry advisory and brokerage firm commentary compiled by the EPA in preparation of this report observes that the industries offering financial responsibility instruments remain financially solid. Commentary offered by advisory and brokerage firms is consistent with the following themes:

- Growth will continue to be inorganic (i.e., through mergers and acquisitions);
- Automation and analytics will be the most significant drivers of efficiency and profit;
- Premium growth will be modest; and
- Reduced underwriting in business lines that are inherently volatile is necessary to ensure long-term financial stability and profitability in a low interest rate environment.

These themes are important because they help to place the financial responsibility market into a fuller context with which to understand potential capacity in relation to future demand for CERCLA 108(b) insurance policies and surety bonds. Periods of mergers and acquisitions can be typical at times across all sectors. While reducing competition, mergers and acquisitions can however also create industry efficiencies, as reflected in observed movement towards greater automation and analytics. Modest premium growth also may prove advantageous to owners and operators seeking instruments. In spite of these findings, it is important to keep in mind that insurers and sureties will continue to be wary of business lines that are recognized as volatile (as the HRM industry could be characterized).

The remainder of this section summarizes key information from outlook reports published by industry advisory and brokerage firms. These firms included Ernst & Young, Wells Fargo, Marsh, Aon Benfield, and Willis Holdings. All key commentary and referenced findings are organized according to the firm from which they were derived. The comments from advisory firms focus on the business of insurance, while commentary from brokers focuses on the breadth of available insurance and surety products. To a limited degree, information also is provided regarding the current market capacity of irrevocable letters of credit (ILOCs).

The intent of this section is to package facts/statements for attribution, but without inference or analysis. In so doing, the following section is organized by sources with relevant content cited to their publically available documentation. These findings from the literature are provided in combination with other referenced statements by industry throughout this assessment.

[33] For example, in response to the recent bankruptcies, Senators Durbin (IL) and Cantwell, (WA) requested the Comptroller General to initiate GAO investigations into self-bonding under the Surface Mining Control and Reclamation Act (SMCRA) and a comparison of authorizations to self-bond across federal programs that govern resource extraction. See *Cantwell and Durban to GAO: Investigate Self-Bonding by Coal Companies*, Democratic News, Mar. 8 2016, http://www.energy.senate.gov/public/index.cfm/2016/3/cantwell-durbin-to-gao-investigate-self-bonding-by-coal-companies.

[34] The content of this section is based on the outlook and commentaries offered by brokerage and advisory providers in the surety and insurance markets collected via research services by independent non-government entities. The section is organized by provider, wherein the directly attributable commentary is called out in shaded blue boxes. Parenthetical references offer page citations for each commentary.

The EPA has been careful not to make or assert interpretations/ inferences from the available literature cited in this document, except when they can be made with a sufficient level of confidence. Given the inherent uncertainty in such projections, the EPA feels that it is more appropriate that certain information throughout this document (and particularly in this section of the document) should be provided as presented by institutions in the field.

ERNST AND YOUNG[35]

Competition is putting downward pressure on pricing, particularly in the commercial property and liability lines. This is compounded by slowing growth in commercial exposures due to economic weakness. (See footnote 21, page 3.)

Ernst and Young identifies technology and automation as critical to the long-term success of the sector. Specifically, insurance companies are actively engaged in leveraging technology across the supply chain, i.e., from underwriting to claims processing.

Technology facilitates regulatory compliance by reducing human error. This push to automation, and the related efficiency and compliance values, suggests that underwriting complex operations that require highly skilled, professional judgment, may become less favorable lines of business.

Volatile loss profiles are likely to be similarly unattractive in a low-yield rate environment, where combined ratios of less than 100 percent are more difficult to realize.

WELLS FARGO[36]

Wells Fargo notes that the insurance marketplace in 2016 continues to be characterized by "abundant" capacity. Their research suggests that surety (commercial) premiums are expected to increase by five to ten percent over the year. Further, the abundance in capacity coupled with underwriting competition across carriers likely will yield soft pricing and continued opportunities for

[35] For Ernst and Young outlook and commentary, see Ernst and Young, *2016 US property-casualty insurance outlook*, http://www.ey.com/Publication/vwLUAssets/ey-2016-us-property-casualty-insurance-outlook/$FILE/ey-2016-us-property-casualty-insurance-outlook.pdf.

[36] For Wells Fargo outlook and commentary, see Wells Fargo, *2016 Insurance Market Outlook*, https://wfis.wellsfargo.com/insights/clientadvisories/Documents/WCS-1780103-WFI-2016-PC-Mkt-Outlook-WIP-FNL-PG-NoCrops.pdf.

commercial surety bonds. Surety markets remain interested in insurance collateral and program bonds, which appear to be more widely accepted by insurance carriers.

With respect to commercial surety pricing and capacity, Wells Fargo offers the following:

> *Written premiums for commercial surety are up approximately $90 million year-over-year, with a total written premium of $1.65 billion. Loss ratios are low at 3.3 percent.*
> *We have seen cases where capacity can be extended in excess of $1 billion, primarily with the top five carriers: Travelers, Chubb, Zurich, Liberty, and C.N.A. (See footnote 31, page 32.)*

With respect to liability coverage, Wells Fargo noted that liability lines are expected to be flat overall with respect to volume and price. With respect to environmental insurance, Wells Fargo expected a five to ten percent decrease in pricing, with an overall stable and competitive environment.

> *Pricing has continued to soften as underwriting competition remains strong. There is an uncertainty about how low rates may go. Some rates for exceptional credit and short term risks have been as low as $1.50 to $5.00 per thousand, while rates for moderate credit and risk have remained fairly stable in the $5.50 to $10.00 per thousand range, and low credit/high risk are in the $10.00 to $20.00 per thousand ranges. (See footnote 31, page 32.)*

Wells Fargo lists total market capacity for environmental liability at slightly greater than $600 million.[37] They further offer:

> *The environmental insurance marketplace remains incredibly competitive with premium decreases in most coverages, at least 40 carriers in the marketplace, and more than $600 million in capacity. Even with the ACE/Chubb and XL/Catlin industry mergers over the past year, pricing for the more "vanilla" site liability placements remains stable or is decreasing. Competition for contractors' pollution liability placements is even more aggressive, especially for more routine contractors' risks, driving premiums to all-time lows. (See footnote 31, page 14.)*

However, with respect to risks with volatility, including mining, Wells Fargo cautioned:

> *Energy risks, power and utility risks, and mining risks: these industries have significantly less capacity available to them, with carriers generally not willing to write more than a one- or two-year term. (See footnote 31, page 14.)*

MARSH[38]

Marsh offered that the industry is moving in a "general direction of soft pricing." Marsh noted that soft conditions, driven by abundant capacity, defined the environmental insurance market in 2015. In

> *Barring unforeseen changes, the soft environmental insurance market conditions seen in 2015, which were driven by abundant capacity, are likely to continue in 2016. The rapid pace of M&A activity has led to an increase in environmental insurance purchases to help facilitate transactions. (See footnote 33, page 3.)*

[37] Wells Fargo, *2016 Insurance Market Outlook*, https://wfis.wellsfargo.com/insights/clientadvisories/Documents/WCS-1780103-WFI-2016-PC-Mkt-Outlook-WIP-FNL-PG-NoCrops.pdf, p. 14.
[38] For Marsh outlook and commentary, see Marsh, *United States Insurance Market Report 2016*, https://www.marsh.com/us/insights/united-states-insurance-market-report-2016.html.

Marsh's view, this trend is likely to continue in 2016. Particularly for environmental liability underwriting, Marsh offered the following observations:

Further, Marsh notes that rates are expected to remain generally flat with a slight decrease for pollution legal liability (PLL) and contractor's pollution liability (CPL). Marsh cautions:

> *An influx of claims related to long-term, in-force PLL policies around legacy risks, redevelopment-related risks, and cost cap policies shaped claims development in 2015. (See footnote 33, page 38.)*

With respect to surety, Marsh offers the following observations:

> *For the tenth consecutive year, surety underwriters typically saw profitability in 2015.*
>
> *An emerging risk trend involves substituting surety bonds, which are conditional guarantees, for letters of credit - cash equivalents - when faced with liquidated damages and other difficult terms in construction contracts. (See footnote 33, page 42.)*

With respect to mining, Marsh noted the following:

> *The sustained downward movement in commodity prices continued in 2015, and mining companies faced constant pressure to contain risk and insurance costs. (See footnote 33, page 63.)*

AON BENFIELD[39]

Aon Benfield issued their (re)insurance outlook report, and like other brokers, anticipates a flat marketplace for 2016.

> *Global reinsurance capital remained unchanged at $565 billion since Q2 2015, and down two percent from year-end 2014. Alternative capital increased further in Q3 2015 to $69 billion, essentially doubling the property catastrophe reinsurance capacity of the market. (See footnote 34, page 1.)*

With respect to the outlook for sureties, Aon Benfield views surety as a continued opportunity for stability, profitability, and growth.[40]

> *Surety capacity commitments now exceed $1 billion, with some in excess of $2 billion. This is well over the $750 million the larger markets saw just a few years ago. (See footnote 35, page 3.)*

WILLIS[41]

Willis offered the following overarching observation regarding the insurance / surety markets in the introduction to its 2016 outlook:

> *The key force driving this change in the market is consolidation. In commercial insurance (ACE/Chubb) and in health insurance (Anthem/Cigna and Aetna/Humana), some of the pieces are on the verge of getting a lot bigger, should the transactions come to fruition, giving rise to a new breed of "super carrier" as some have proclaimed. Another factor is insurers in Japan/China buying Lloyd's syndicates or other British insurers, which is expected to continue into 2016. (See footnote 36, page 3.)*

With respect to the subset of environmental liability, Willis offered a predicted premium decrease for environmental surety of five percent; for environmental site liability, Willis offered a premium decrease of five to ten percent. However, Willis cautioned that, with the consolidation and increased claims activity in combined general/environmental impairment liability lines, market hardening may occur. Specifically, Willis notes:

> *We are seeing upward price pressure from veteran markets feeling the effects of long-tail losses, which have reduced their appetite for longer-term programs and coverage for known conditions. (See footnote 36, page 21.)*

If true, institutional underwriting may pose challenges, but properly constructed RRGs should not be affected.

> *Changes in underwriting appetites may necessitate the involvement of multiple carriers to create program continuity.*
>
> *Highly publicized catastrophic claims have increased regulatory scrutiny on transportation/railroad, mining, energy, and pipeline exposures, resulting in the reevaluation of these sectors by underwriters and inspiring a new push to shift liability to users of the facilities. (emphasis added) (See footnote 36, page 21.)*

Willis identifies mining as a risk of concern, warranting careful evaluation. This, along with the commentary of others, suggests an insurance marketplace that likely will push toward insurance solutions that maximize the use of captives and RRGs. A 20 to 30 percent increase is material, and

[39] For Aon Benfield outlook and commentary, see Aon Benfield, *Reinsurance Market Outlook January 2016*, http://www.aon.com/japan/product_services/by_specialty/reinsurance/report/20160101-ab-analytics-reinsurance-market-outlook-january-2016.pdf.

[40] Aon Risk Solutions, *Surety and Construction Market Outlook for 2016*, http://www.aon.com/attachments/risk-services/surety-market-update-2016-final.pdf.

[41] For Willis outlook and commentary, see Willis, *Marketplace Realities 2016*, http://www.willis.com/documents%5Cpublications%5CMarketplace_Realities%5CMarketplace_Realities_2016%20-%20v1.pdf.

may negatively impact the willingness of the market to expand underwriting commitments without comparable adjustments to underwriting criteria.

> *The frequency of environmental claims continues to rise by 20 to 30 percent each year. (See footnote 36, page 21.)*

Similar to other brokerages, Willis expected surety growth to be modest, with premium rate changes ranging from flat to slightly negative.

> *With increased M&A activity, we have seen commercial surety play a key role in facilitating acquisitions and investment strategies. Since surety remains the most cost effective form of capital, many companies are maximizing their surety capacity to replace irrevocable letters of credit (ILOCs) and release restricted capital at preferred terms. (See footnote 27, page 25.)*

Willis specifically mentions captive markets as a growth market:

> ***Captive Developments**: Two recent cases involving IRS challenges to captive insurance companies may open the doors to broader use of captives for long-tail primary casualty risks. The decisions in the cases moved the focus from the number of entities insured to the quantity of exposure, a significant change that should more readily afford insurance company status to captives. (See footnote 36, page 7.)*

CONCLUSIONS RELATED TO MARKET CAPACITY

As discussed above, the brokerage industry expects steady or slightly decreasing premiums for the environmental marketplace, and steady or slightly increasing premium charges for the surety marketplace. In some cases, adverse claim development in the environmental liability lines of business may arise, but brokerages note consistent multi-year profitable performance in the surety marketplace, even during the financial crisis. This conclusion coupled with competitive pricing and relatively strong profitability supports the positive nature of the insurance and surety markets. By extension, when considered in the fuller context of available FR options/instruments, these findings also suggest that additional market capacity likely exists to support entities seeking financial responsibility coverage in response to CERCLA 108(b).

However, industry advisors and brokerages are uniformly measured about the degree of growth capacity in the environmental insurance marketplace, particularly with respect to volatile risks such as mining. Notably, this assessment suggests a growing trend on the part of underwriters to shy away from volatile lines of coverage. This consideration will weigh on the degree of additional market capacity that third-party insurers and sureties are likely to leverage to provide the instruments necessary for hard rock mining entities required by any CERCLA 108(b) final rule. For example, a leading provider of environmental financial responsibility coverage, AIG, recently announced its exit from the environmental impairment liability marketplace in January 2016.[42] AIG's exit from this line

[42] See https://www-160.aig.com/content/dam/aig-mktg/america-canada/us/documents/landing-pages/aig-strategy/press-release/aig-pr-strategy-update-1-26-16-press-release.pdf; and http://www.lawandenvironment.com/2016/01/28/aig-bows-out-of-the-pollution-legal-liability-market/.

of business likely will place downward pressure on capacity available in the insurance market to respond to CERCLA 108(b) financial responsibility provisions.

As noted previously, RRGs provide primary insurance market capacity to industries with risk profiles and actual loss experience (or expected probable loss projections) that are volatile. Specifically, RRG members place their own capital at risk for the working layer of the insurance instrument (i.e., for the known or expected loss). Typically, the RRG members also put their capital at risk for the higher frequency primary risk layers, where the risks assumed are most influenced by operating risk controls and procedures. In so doing, RRGs create a layered risk management-based insurance instrument, whereby insureds falling within the RRG are motivated to reduce risk and minimize losses to protect their own capital. For these reasons, RRGs offer additional capacity to the insurance markets to cover volatile, capital-intensive risks like those associated with hard rock mining.

Specifically, RRGs may provide a useful solution to expand available capacity beyond that which currently is available by affording greater flexibility of coverage to affected hard rock mining entities. In general, the greater the diversity in compliant financial responsibility instruments that meet the requirements of CERCLA 108(b) (inclusive of insurance, sureties, letters of credit, trust funds, and financial test options, etc.), the greater the likelihood that sufficient capacity will exist to satisfy the demand of entities affected by the Rule. While the findings of this study suggest that there will likely exist sufficient providers and capacity to meet the requirements of future CERCLA 108(b) regulations, this of course cannot be predicted with certainty until after those rules are finalized and the market has had an opportunity to respond.

Further, the specific proportion of the CERCLA 108(b) financial responsibility market for the hard rock mining industry that the (re)insurance and surety marketplace can satisfy depends on facility-specific criteria, including the aggregate limit required for each facility, the residual useful operating life of the facility, specific physical characteristics of the facility, the commodity extracted, the financial condition of the operator/insured and parent company, and the compliance record of the operator and/or owner. Finally, as previously noted, this document does not discuss trust funds or the corporate financial test in any great detail, as neither of these instruments directly relies upon the availability of third-party markets for financing. The funding of a trust fund or the passage of a financial test is contingent solely upon the credit worthiness of the responsible party. As a consequence, there is essentially unlimited market capacity for these types of instruments.

GLOSSARY[43]

"Admitted Insurance": Insurance purchased from a company that is licensed in the state in which the policy was sold.

"Alternative Risk Transfer (ART)": The use of techniques other than traditional insurance and reinusrance to provide risk bearing entities with coverage or protection. Alternative Risk Transfer (ART) instruments include insurance-linked securities, industry-loss warranties, and collateralized reinsurance.

"Captive Insurer": An insurance company set up by a single company or group of companies to insure its own risks or risks common to the group.

"Combined Ratio": The combined ratio is the sum of the loss ratio (incurred losses divided by earned premiums) and the expense ratio (incurred expenses divided by written premiums). A combined ratio less than 100 percent indicates that premiums received covered losses and expenses in a given period.

"Commercial General Liability (CGL) Insurance": A policy designed to cover all types of third-party damages (i.e., an "all hazards" scope of protection), subject to certain exclusions and conditions specified in the policy form.

"Corporate Guarantee": A contract in which the guarantor undertakes to answer for the payment of another's debt or the performance of another's duty, liability or obligation.

"Direct Written Premiums": Total premiums taken in by insurance carriers before they pay reinsurance premiums.

"Environmental Impairment Liabiltiy (EIL) Insurance": A type of insurance first developed in the 1970's specifically to cover third party damages caused by pollution. Virtually all EIL insurance policies are issued on a claims-made basis. EIL can be purchased to cover third party damages caused by sudden accidental occurrences and/or nonsudden accidental occurrences. (See also Commercial General Liability.)

"Excess and Surplus Lines Insurance": Coverage that cannot be placed with an admitted insurer. Risks placed through excess and surplus lines insurance tend to be substandard with respect to the loss profile, reflect unusual circumstances, or be of a nature that conventional insurance markets are unwilling to underwrite them. Market participants, e.g., policyholders, agents, brokers and insurance

[43] This Glossary provides general explanations of selected terminology solely to assist the reader in understanding the main text. It is not intended to provide definitions for purposes of the EPA's forthcoming CERCLA 108(b) proposed rule for the hard rock mining industry. The EPA is continuing to evaluate definitions for inclusion in the forthcoming proposed rule.

companies, are able to design specific insurance coverages and negotiate pricing based on the particular risk profile.

"Financial Responsibility": The demonstrated capability to pay for remediating potential damage to the environment or compensating third parties.

"Financial Responsibility Mechanism": A financial instrument, such as a state fund program, guarantee, letter of credit, surety bond, or insurance, that is available to an owner or operator to demonstrate financial responsibility.

"Financial Test": A prescribed set of financial ratios, multiples and/or other requirements through which a company may satisfy a requirement to provide evidence of financial responsibility, without having to purchase a separate financial responsibility mechanism.

"Insurance": A contract whereby, for a stipulated consideration or premium, one party undertakes to compensate the other for losses on a specified subject by specified perils. (See Premium Payments.)

"Irrevocable Letter of Credit (ILOC)": Correspondence issued by a bank guaranteeing payment for goods and services purchased by the requesting party, which cannot be canceled or modified in any way without explicit consent by the affected parties involved.

"Letter of Credit (LOC)": Formalized, written, line of credit extended from a financial institution to a client, e.g. an owner or operator. It serves as a mechanism by which the credit of one party, such as a bank, is extended on behalf of a second party, called the account party, to a third party, the beneficiary.

"Liability Risk Retention Act (LRRA)": A federal law that was passed by Congress in 1986 to help U.S. businesses, professionals, and municipalities more readily obtain liability insurance in the United States.

"Liability Insurance": A form of insurance that indemnifies against legal liability on account of injuries to the person or property of another (i.e., a third party).

"Net Written Premiums": Direct written premiums less net reinsurance premiums ceded.

"Non-admitted Insurer": Designation that a state gives to insurance companies that are not licensed to transact business in that state. Because such companies are not regulated, states include specific regulations for agents and brokers of excess or surplus lines in the broker's or agent's license.

"Policyholder Surplus": The difference between an insurer's admitted assets and its liabilities. Policyholder surplus reflects the insurer's net worth, and is used to determine the insurer's financial strength and capacity to write new business.

"Pollution liability insurance": Insurance designed to provide protection for bodily injury, property damage, and environmental impairment resulting from the sudden and/or gradual discharge, dispersal, release, escape or seepage of toxic substances into the environment.

"Premiums": Periodic payments of money that the policyholder agrees to pay the insurer for insurance coverage.

"Reinsurance": Insurance purchased by an "insurance company" from a "reinsurer". 'Reinsurance enhances the fundamental financial risk-spreading function of insurance and serves at least four basic functions for the direct "insurance company", including: (1) increasing the capacity to write insurance; (2) stabilizing financial impacts similar to the way in which insurance protects purchasers against spikes from realized financial losses; (3) protecting against catastrophic losses; and (4) financing growth.' [44] Reinsurance contracts are contracts of indemnity and the obligation to pay only accrues after the reinsured entity (commonly referred to as the 'cedant') has fully paid the loss. Reinsurance is regulated as a commercial transaction, not a consumer transaction.

"Risk Retention Groups (RRGs)": Special purpose, group-owned captives that provide primary insurance market capacity to industries with risk profiles and actual loss experience (or expected probable loss projections) that are volatile.

"Risk Purchasing Groups (RPGs)": Businesses with similar risk exposures that join together to purchase liability insurance as a single entity.

"Soft Pricing": Pricing that slowly goes down over time.

"Surety Bond": A contract in which a surety company is liable for the default of an owner or operator. The surety agrees to satisfy these responsibilities if the owner or operator does not.

"Tail Coverage": Coverage of claims, on a claims-made policy, that stem from an incident that occurred during the policy period for which claims are made during an extended reporting period, or long-tailed reporting period.

"Trust Fund": A three-party agreement whereby one party, called the grantor (sometimes also called the trustor), transfers assets (often money) to a second party, called the trustee, to hold on behalf of a third party, called the beneficiary.

[44] See New Appleman Insurance Practice Guide, Chapter 40, Chadbourne & Parke, Copyright © 2007 Matthew Bender & Company, Inc., a member of LexisNexis.