CERCLA § 108(b) Financial Responsibility Instrument Support

Potential Issuer Eligibility Requirements for Insurance, Surety Bonds, Letters of Credit, and Trust Agreements and Standby Trust Agreements under CERCLA § 108(b)

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Part 1. Introduction.

1.1. Background.

Section 108(b), 42 U.S.C. 9608 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, requires the promulgation of regulations that require classes of facilities to 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. The Agency has identified classes of facilities within the hard rock mining industry as those for which financial responsibility requirements will first be developed.

EPA is considering including insurance, surety bonds, letters of credit and trust funds among the allowable financial responsibility instruments for its CERCLA 108(b) regulations.
This report identifies and analyzes potential issuer eligibility requirements for CERCLA § 108(b) insurance, surety bond, letter of credit, and trust agreement instruments.

1.2. Organization of Document.

This report is organized as follows: Part 2 presents eligibility criteria specific to issuers of insurance. Part 2 includes four sections: (1) Background on insurance licensing and regulation, (2) Historical trends and performance of insurance providers, (3) Potential insurer eligibility criteria for CERCLA 108(b), and (4) Applicability of insurance eligibility criteria to CERCLA 108(b) insurers.

Part 3 presents eligibility criteria specific to issuers of surety bonds. Part 3 includes four sections: (1) Background information on surety bonds and what types of entities have federal approval to issue surety bonds, (2) Historical trends and performance of surety bond issuers, (3) Potential surety issuer criteria, and(4) Applicability of surety issuer eligibility criteria to CERCLA 108(b) sureties.

Part 4 presents eligibility criteria specific to issuers of letters of credit. Part 4 includes four sections: (1) Background information on letters of credit and what types of entities have the authority to issue letters of credit, (2) Historical trends and performance of financial institutions offering letters of credit, (3) Potential letter of credit issuer criteria, and (4) Applicability of letter of credit eligibility criteria to CERCLA 108(b) letter of credit issuers.

Part 5 presents eligibility criteria specific to issuers of trust agreements. Part 5 includes four sections: (1) Background information on trust agreements and what types of entities have the authority to act as trustees, (2) Historical trends and performance of trust agreement issuers, (3) Potential trustee eligibility criteria, and (4) Applicability of trustee eligibility criteria to CERCLA 108(b) trust agreement issuers.

Part 2. Insurance.

EPA is considering including insurance among the allowable financial responsibility instruments for its CERCLA 108(b) regulations. Insurance is a contract by which one party, for compensation called the premium, assumes particular risks of the other party and promises to pay a certain or ascertainable sum of money on a specified event. In the context of CERCLA § 108(b) these two parties are the owner/operator of the regulated facility (i.e., the insured) and the insurance company (i.e., the insurer). Insurance policies are only as strong as the ability of the issuing insurer to honor them. The Agency wishes to prescribe eligibility criteria for providers of CERCLA 108(b) insurance policies to ensure that providers of policies issued under its regulations are prepared to perform when called upon to do so. The following sections provide background on insurance licensing and regulation, data describing insurer insolvencies and impairments, potential insurer eligibility criteria, including eligibility of captive insurers, and discuss the how EPA has chosen to apply those criteria in its proposed CERCLA 108(b) regulations.

2.1. State Licensing and Regulation of Insurers.

Insurance companies generally must be licensed by state agencies to conduct the business of insurance. Each state's insurance department or other equivalent agency enforces the licensing, oversight, and regulation of insurance companies doing business in its state. General reasons for regulating the insurance industry include such public policy goals as ensuring fair pricing of insurance products, maintaining insurance company solvency, preventing unfair practices, and ensuring availability of insurance coverage.[1] As of year-end 2010, there were 2,689 state-licensed property/casualty and 1,061 life/health insurance companies.[2]

As alternatives to commercial insurance, captives and risk retention groups (RRGs) have become increasingly common in the U.S. insurance market in recent decades. A captive insurer is an insurance company that provides insurance primarily or exclusively to its owner(s).[3] A pure captive is defined as having only one owner and providing insurance coverage to only one corporate entity, whereas a group captive is defined as having more than one owner and providing insurance coverage only to members of the group. More than 75% of captive insurers are owned by a single parent. A risk retention group (RRG) is a liability insurance company owned by its members and organized under the federal Liability Risk Retention Act. An RRG may offer insurance coverage for such liabilities as general liability, third-party liability, environmental liability, errors and omissions, and directors and officers liability.[4] RRGs cannot provide first-party property damage coverage. According to the Captive Insurance Companies Association (CICA), there were approximately 2,000 U.S.-domiciled captive insurance companies and

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[1] Randall, Susan. "Insurance Regulation in the United States: Regulatory Federalism and the National Association of Insurance Commissioners," Florida State Law Review, 1999, 26: 625-699.

[2] Insurance Information Institute, Industry Overview, 2012. Property/casualty insurers include environmental liability insurance as well as other lines of business such as auto insurance, fire insurance, etc. Life/health insurers include companies involved in the life insurance and health insurance industries only including annuities.

[3] EPA, Financial Responsibility for Underground Storage Tanks: A Reference Manual. EPA 510-B-00-003, January 2000.

[4] EPA, Financial Responsibility for Underground Storage Tanks: A Reference Manual. EPA 510-B-00-003, January 2000.

RRGs as of November 2012.[5] Vermont—the leading U.S. state for U.S.-domiciled captive insurers— has over 1,000 captives licenses as of January 2016.[6]

Apart from the SEC, which has authority over securities issued by insurers, no national government licensing or regulatory body oversees the entire U.S. commercial property/casualty insurance industry, including captive insurers and risk retention groups. The National Association of Insurance Commissioners (NAIC), however, is a standard setting and regulatory support organization created and governed by the chief insurance regulators from the 50 states, the District of Columbia, and five U.S. territories.[7] The purpose of the NAIC is to establish national standards (not regulations), which can be implemented across the states. Although they are not regulations themselves, the NAIC standards have been used to establish state regulations. The NAIC moved to strengthen solvency regulation in the 1980s, by establishing minimum capital requirements for insurers, based on the riskiness of their business. NAIC also developed an accreditation program that requires state insurance departments to meet certain prescribed standards.[8]

2.2. Performance of Insurers: Insurer Insolvencies and Impairments.

Insurance companies do not file for bankruptcy under federal law, but address serious financial distress via insolvency under state law. Insolvency is the inability of a debtor to pay its debt; for insurers, insolvency can mean inability to pay claims. State actions can include involuntary liquidation because of insolvency.[9]Impairment is any official action by a state regulator that restricts the insurance business activity of an operating insurance company due to concerns, such as over an insurer's ability to pay claims.

Nationally Recognized Statistical Ratings Organizations (NRSROs), such as A.M. Best, Moody's, and Standard and Poor's (S&P) issue credit ratings that address the prospect for insurer insolvency or impairment. In addition, relatively high ratings can improve an insurer's access to credit and therefore lower its costs of obtaining capital,[10] in addition to allowing an insurer to charge higher premiums.[11]Credit ratings are also used as eligibility criteria in federal and state requirements or guidance. Each rating agency uses its own models, data, and approaches to rating an insurer's financial strength; one study concluded that rating agencies differ in the relative importance given to each factor they consider in their ratings, and therefore can have different outlooks on the same issuer.[12]

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[5] Captive Insurance Companies Association (CICA), 2012.Domiciles – World Map.

[6] Vermont Captive, "Why Vermont?", accessed November 17, 2016, available at: http://www.vermontcaptive.com/about-us/why-vermont.html.

[7] See www.naic.org/index_about.htm.

[8] Insurance Information Institute, Commercial Insurance – How it Functions/Regulation, accessed July 18, 2016.

[9] A.M. Best, Best's Impairment Rate and Rating Transition Study- 1977-2014. August 21, 2015.

[10] Pottier and Sommer, Property-Liability Insurer Financial Strength Ratings: Differences across Rating Agencies, The Journal of Risk and Insurance, 1999, Vol. 66, No. 4, 621-642.

[11] Sommer found that the level of insolvency risk is reflected in the market price of insurance; insurers viewed as having little risk for insolvency are therefore able to charge higher rates for their products. Similarly, Sommer argues that since prices reflect this risk, insurers have a non-regulatory incentive to control and reduce risk of insolvency. Sommer, David, The Impact of Firm Risk on Property-Liability Insurance Prices, *The Journal of Risk and Insurance*, 1996, Vol. 63, No. 3, 501-514.

[12] The price of a rating depends on several metrics so the rating agencies use a "sliding scale" to price ratings. Pottier and Sommer, Property-Liability Insurer Financial Strength Ratings: Differences across Rating Agencies, The Journal of Risk and Insurance, 1999, Vol. 66, No. 4, 621-642.

EPA obtained insolvency statistics for A.M. Best-rated property/casualty insurers for the years 1971 through 2001 and impairment statistics for the entire (in contrast to only A.M. Best-rated insurers) property/casualty insurance industry for the years 2000 through 2010.[13] Between 1971 and 2001, roughly 22 A.M. Best-rated property/casualty insurers became insolvent each year, peaking in 1992 with 63 insurers becoming insolvent. This trend was similar for impairments by all property/casualty insurers (i.e., those rated by A.M. Best as well as those not rated by A.M. Best): between 2000 and 2010, 24 property/casualty insurers impaired, peaking in 2001 with 48 impairments. As discussed below, insolvency statistics for A.M. Best-rated property/casualty insurers and impairment statistics for all property/casualty insurers are comparable and are useful proxies to assess risks associated with property/casualty insurers.

For this analysis, impairment data are considered more inclusive than insolvency data for two reasons. First, whereas the insolvency data include only property/casualty insurers rated by A.M. Best (A.M. Best claims to rate 98 percent of the property/casualty insurance industry), the impairment data include the entire property/casualty insurance industry, not limited to the 98 percent rated by A.M. Best. Second, as the American Academy of Sciences Property/Casualty Financial Soundness/Risk Management Committee noted, while an impaired company may not necessarily be declared insolvent, the causes of impairment are often precursors to insolvencies.[14] Therefore, impairment is a more inclusive metric than insolvency,[15] and it should be expected that the number of insurer insolvencies in a given year is either less than or equal to the total number of insurers impaired in that year. As shown in Exhibit 1, for the two years of overlapping data, this holds true. Therefore, using the number of impairments as the upper bound for insolvencies between 2002 and 2010, it should be expected that the number of insolvencies experienced a generally decreasing trend over this time period, being highest in 2002 and lowest in 2007.

Exhibit 1 shows that insolvencies were most common from the mid-nineteen eighties through the early nineteen nineties, as illustrated by the peaks in 1985, 1989, and 1992. Decade by decade, 112 property/casualty insurers rated by A.M. Best became insolvent between 1971 and 1980; 298 did so between 1981 and 1990; and 257 did so between 1991 and 2000.[16] Data for impairments of property/casualty insurers were readily available for 2000 to 2014. On average, the number of property/casualty insurers that impaired annually over this time period decreased, although there was a slight upward trend in impairments from 2007 to 2009 (the Great Recession) with decreasing impairments in the following years.

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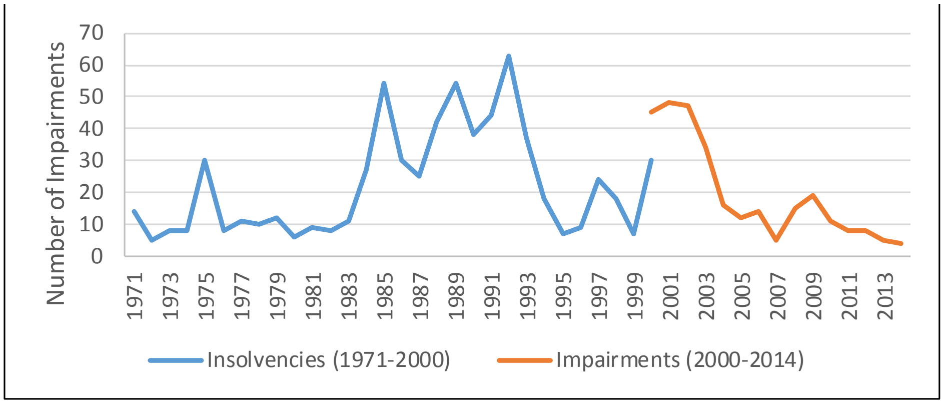
[13] A.M. Best is considered the primary source of impairment information. In a study of 15 years (1996-2010) of insolvencies and impairments conducted for the NAIC, A.M. Best identified 86% of the affected companies. See "A Review of Historical Insurance Company Impairments (1996-2010)," Report 4 of the CAS Risk Based Capital (RBC) Research Working Parties, Casualty Actuarial Society *E-Forum*, Winter 2012 Volume 1.

[14] American Academy of Sciences (AAs) Property/Casualty Financial Soundness/Risk Management Committee, September 2010. Property/Casualty Insurance Company Insolvencies.

[15] A.M. Best designates an insurer as a Financially Impaired Company (FIC) "upon the first official regulatory action taken by an insurance department. Such state actions include involuntary liquidation because of insolvency, as well as other regulatory processes and procedures such as supervision, rehabilitation, receivership, conservatorship, a cease-and-desist order, suspension, license revocation, administrative order and any other action that restricts a company's freedom to conduct its insurance business as normal."(A.M. Best, Best's Impairment Rate and Rating Transition Study – 1977 to 2011.)

[16] A.M. Best Company, P/C Industry-2001 Insolvencies, 2002.

Exhibit 1 - Property-Casualty Insurer Insolvencies (1971-2001) and Impairments (2001-2014)



Source (Insolvencies): A.M. Best Company, P/C Industry: 2001 Insolvencies, 2002.
Source (Impairments): A.M. Best Company, 1977-2014 P/C Impairment Review, 2014.

2.3. Potential Insurer Eligibility Criteria.

Financial responsibility programs often have eligibility requirements for issuers of acceptable types of financial responsibility mechanisms. Section 2.3 describes insurer eligibility requirements under Resource Conservation and Recovery Act (RCRA) Subtitle C- Hazardous Waste Regulations (40 CFR264) for insurance, as well as insurer eligibility requirements of other federal and state financial responsibility programs.

U.S. EPA reviewed financial responsibility programs under RCRA Subtitle C, which provide benchmarks for insurer eligibility criteria. Those criteria have been widely used for many years without alteration:

- 40 CFR 264/265, Subpart H Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities: Closure/Postclosure Care and Liability Coverage.
- 40 CFR 261 Financial Requirements for Management of Excluded Hazardous Secondary Materials: Removal and Decommissioning and Liability Coverage.

EPA also reviewed insurer eligibility criteria under other Federal financial responsibility programs including:

- RCRA Subtitle D Solid Waste Regulations- 40 CFR Part 258 Subpart G Criteria for Municipal Solid Waste Landfills.
- RCRA Subtitle I Underground Storage Tank Regulations- 40 CFR Part 280, Subpart H Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST) and 1999 guidance document "Financial Responsibility for Underground Storage Tanks: A Reference Manual."

- Underground Injection Control (UIC) Class I Wells- 40 CFR Part 144 Subpart F Financial Responsibility: Class I Hazardous Waste Injection Wells. Also Class VI Wells 40 CFR 146.85 and Class VI Financial Responsibility Guidance (2011)[17]

- Bureau of Land Management (BLM) - 43 CFR Part 3809 Mining Claims under the General Mining Laws- Surface Management.

- Bureau of Ocean Energy Management (BOEM)/Minerals Management Service (MMS) - 30 CFR Part 553 Oil Spill Financial Responsibility for Offshore Facilities.[18]

- U.S. Coast Guard – 33 CFR Part 138 Financial Responsibility for CERCLA 108(a) Water Pollution (Vessels) and OPA 90 V(Vessels and Deepwater Ports).[19]

- Nuclear Regulatory Commission (NRC) - 10 CFR Part 30 Rules of General Applicability to Domestic Licensing of Byproduct Material, Part 40 Source Material, Part 70 Special Nuclear Material, Part 72 Independent Storage of Spent Nuclear Fuel ("NRC General Rules for Materials Licensees"), and 2003 NRC guidance document, NUREG-1757, Vol. 3 Appendix A, "Standard Format and Content of Financial Assurance Mechanisms for Decommissioning."

EPA chose to review these financial responsibility programs for issuer eligibility requirements because of their relevance to CERCLA 108(b) as well as for offering potential variations to RCRA Subtitle C issuer eligibility benchmarks. For example, the Coast Guard and BOEM financial responsibility programs are relevant because they both implement the Oil Pollution Act (OPA), a statute related to CERCLA, and the Coast Guard program also implements the CERLCA 108(a) financial responsibility regulations. RCRA Subtitle I UST Regulations were chosen because they establish financial responsibility for prospective remediation and liability claims. The NRC General Rules for Materials Licensees was chosen because it applies financial responsibility to the decommissioning of process equipment and non-waste facilities. EPA selected BLM because of that agency's responsibilities over federal lands.

EPA also reviewed selected state financial responsibility programs for hardrock operations (see Appendix A for list of state programs reviewed).State hardrock financial responsibility programs exhibit a diverse range of approaches to issuer eligibility criteria. EPA selected and reviewed programs that are representative of financial responsibility regulation in key hardrock mining states.

Exhibit 2 compiles the criteria identified in the federal and state programmatic reviews.

Exhibit 2 - Summary Table: Insurance Issuer Eligibility Criteria

Federal Regulation	State Regulation	Eligibility Language
- 40 CFR 144 Class I Hazardous Waste Injection Wells		Insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or

[17] This report references both regulations and guidance materials in the discussion of issuer eligibility requirements. Guidance materials are referenced when regulatory language does not explicitly address certain eligibility requirements which are discussed only in guidance.
[18] BOEM accepts the use of self-insurance, insurance, indemnity, surety bond, or alternative method approved by the Director as a demonstration of financial responsibly. (30 CFR 533.20)
[19] The Coast Guard accepts insurance, surety bonds, self-insurance, a financial guarantee, or other evidence of financial responsibility approved by the Director as evidence of financial responsibility (33 CFR 138.80(b)).

Federal Regulation	State Regulation	Eligibility Language
- 40 CFR 258 Subpart H Criteria for Municipal Solid Waste Landfills - 40 CFR 261 Subpart I Financial Requirements for Management of Excluded Hazardous Secondary Materials - 40 CFR 264/ 265 Subpart H Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities - NRC Guidance: NUREG-1757, Vol. 3 A.4.1		surplus lines insurer, in one or more State.
	- Arizona Mined Land Reclamation [ARIZ. ADMIN. CODE R11-2-101 – R11-2-822]. - Nevada Regulation of Mining Operations and Exploration Projects, Duties of Division of Minerals. [NEV. ADMIN. CODE ch. 519A.010 et seq.]. - Texas Natural Resource Code, Title 4: Mines and Mining, Chapter 134: Texas Surface Coal Mining and Reclamation Act [TEX. NAT. RES. CODE ANN. § 134].	Provider must be licensed by Dept. of Insurance or otherwise eligible to provide insurance in State.
- 30 CFR 253 BOMERE Oil Spill Financial Responsibility for Offshore Facilities		Insurers must have achieved a “Secure” rating for claims paying ability in their latest review by A.M. Best's Insurance Reports, Standard &Poor's Insurance Rating Services, or other equivalent rating made by a rating service acceptable to MMS [BOEMRE].
	- New Mexico Title 19: Natural Resources and Wildlife. Chapter 10, Non-Coal Mining [.M. Code R. § 19.10.12 et seq.].	Insurer must have an A.M. Best rating of A- or equivalent.
	- Florida Phosphogypsum Stack Closure Management [FLA. ADMIN. CODE ANN. r. 62-673.100 – 62-673.900].	Insurer must have “Secure” financial strength rating by A.M. Best of B+ or better.
- 43 CFR 3809 BLM Mining under the General Mining Laws-Surface Management		Insurer must have an A.M. Best rating of “superior” or an equivalent rating from a nationally recognized insurance rating service.
- 40 CFR 280 Technical Standards and Corrective Action Requirements for Owners and		Insurer must be a qualified insurer or part of a risk retention group. A risk retention group, at a minimum, must

Federal Regulation	State Regulation	Eligibility Language
Operators of Underground Storage Tanks (UST)		be licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states. 40 C.FR. 280.97(c).
- NRC Guidance: NUREG-1757, Vol.3.A.12.1		Insurance policies issued by "captive" insurers (insurers owned by at least one of the parties for which they provide coverage) may not be used by licensees to provide financial assurance for decommissioning.
- 30 CFR 253 BOEMRE Oil Spill Financial Responsibility for Offshore Facilities		Indicate the insurer's claims-paying-ability rating and the rating service that issued the rating.
- 33 CFR 138 Coast Guard Financial Responsibility for CERCLA 108(a) Water Pollution (Vessels) and OPA 90 (Vessels and Deepwater Ports)		Insurer is a type of guarantor and means one or more insurance companies, associations of underwriters, ship owners' protection and indemnity associations, or other persons, each of which must be acceptable to the Director.
	- Florida Phosphogypsum Stack Closure Management [FLA. ADMIN. CODE ANN. r. 62-673.100 – 62-673.900].	Neither owner, operator, nor any affiliate may be related to the insurer.
	- Nevada Regulation of Mining Operations and Exploration Projects, Duties of Division of Minerals. [NEV. ADMIN. CODE ch. 519A.010 et seq.].	-The net worth of the insurer must be at least: -$10,000,000; and -Twice the amount of insurance required. -The tangible fixed assets in the U.S. of the insurer must be at least $20,000,000. -The ratio of liabilities to the net worth of the insurer must not be more than 2:1. -The net income, excluding nonrecurring items, of the insurer must be positive.

The Agency previously addressed insurer eligibility in connection with RCRA financial assurance programs. RCRA Subtitle C regulations include insurance as an acceptable instrument for(1) closure and/or post-closure care and (2) liability coverage. Although each type of insurance is distinct, RCRA Subtitle C specifies the same insurer eligibility criteria: insurers must be licensed or eligible to provide insurance as "excess or surplus lines" insurers, in one or more states.[20] Both admitted (licensed) and non-admitted (those that provide excess or surplus lines of insurance) insurers may offer policies that satisfy specific substantive RCRA financial responsibility requirements, such as the requirements in RCRA

[20] 40 CFR 264.143(e)(1); 40 CFR 264.145(e)(1).

Subtitles C, D, or I and their corresponding regulations. The RCRA Subtitle C eligibility criteria for insurers have not changed since they were originally promulgated by the US EPA in 1982. Relevant for 108(b) is also the eligibility of two specialized types of insurance issuers: (1) captive insurers and (2) risk retention groups. These insurers also are subject to the same eligibility criteria as for commercial insurers: a captive or RRG must be licensed to transact the business of insurance or be eligible to provide insurance in one or more states as an excess or surplus lines insurer but may merit additional criteria in the 108(b) proposed regulations.

EPA reviewed selected federal and state financial responsibility programs for potential insurer eligibility criteria for use in CERCLA 108(b) rulemaking. The following discussion highlights findings from this review, including the licensing criteria required under RCRA Subtitle C. This section includes the following subsections:

2.3.1 Licensing Requirements
2.3.2 Criteria Regarding the Eligibility of Captives and Risk Retention Groups (RRGs)
2.3.3 Capital, Asset, and Other Financial Criteria
2.3.4 Minimum Rating(s) Requirements

2.3.1. Licensing Requirements.

EPA identified and reviewed several federal and state financial responsibility issuer eligibility criteria for insurers. Select programs with licensing and related criteria are outlined below:

- RCRA Subtitle C financial responsibility criteria require that the insurer be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.[21]Other financial responsibility programs using identical language for insurers include RCRA Subtitle D Solid Waste Regulations,[22] RCRA Subtitle I UST Regulations (for commercial insurance and risk retention groups),[23]and UIC Class I (Hazardous Waste Injection) Wells.[24]
- Although EPA found no regulatory language in the NRC General Rules for Materials Licensees on issuer eligibility for insurers, the NRC NUREG-1757 Vol. 3 guidelines (2003) include eligibility provisions similar[25] to those of RCRA Subtitle C.
- The insurer must be licensed by the state Department of Insurance to provide insurance for the Arizona Mined Land Reclamation,[26] Texas Surface Iron Ore,[27] and Nevada Reclamation[28]

[21] Financial assurance for closure, 40 CFR § 264.143(e)(1); Financial assurance condition, 40 CFR § 261.143 (d)(1).
[22] Allowable mechanisms, 40 CFR § 258.74 (d)(1).
[23] Insurance and risk retention group coverage, 40 CFR § 280.97(b). RCRA Subtitle I UST financial responsibility guidance also states that "a risk retention group must be domiciled, registered, and licensed in a state before it is allowed to issue coverage." Financial Responsibility for Underground Storage Tanks: A Reference Manual. U.S. EPA Office of Underground Storage Tanks. November 30, 1999.
[24] Financial assurance for plugging and abandonment, 40 CFR § 144.63(e)(1).
[25] The NRC NUREG-1757 Vol. 3 guidelines (2003) state that "an insurance company that issues a policy to provide financial assurance for decommissioning must be licensed by State regulatory authorities to transact business as an insurer in one or more U.S. States." Insurance, NRC NUREG-1757, Vol.3.A.12.1.
[26] Insurance, ARIZ. ADMIN. CODE R11-2-808.
[27] Requirement to File a Certificate of Liability Insurance, 16 Tex. Admin. Code § 12.302.
[28] General requirements, NEV. ADMIN. CODE ch.519A.350(1)(d); NEV. ADMIN. CODE ch519A.350(6).

programs. The Arizona Mined land Reclamation program specifically allows that an insurer need not be licensed if otherwise eligible to provide insurance in Arizona.

EPA's analysis of potential insurer eligibility criteria assumes that the requirements of RCRA Subtitle C will form the baseline of criteria that will be required under CERCLA 108(b). EPA believes that such standards help assure the integrity of the insurers whose policies are being used as it subjects the insurer to pre-existing state oversight processes which help maintain insurance company solvency. RCRA Subtitle C financial responsibility requirements state that the insurer:

> *"must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States."*[29]

Insurer licensing is performed by a state insurance regulatory agency for specific "lines" of insurance offered by an insurer. A licensed "standard lines"(e.g., home, auto) insurer typically is subject to rate filing and approval requirements, reserve requirements, and investment restrictions by its responsible state agency. The complement to a "standard lines" insurer is an insurer of "excess or surplus lines," which generally includes risks that cannot be easily standardized. Typically, access to such a non-admitted insurer in a state requires that the desired type or amount of coverage is not available from admitted insurers in that state. Excess or surplus lines of insurance are not subject to rate and form review and are sold by special intermediaries (e.g., surplus lines brokers). Each excess or surplus lines insurer must be licensed in the state that serves as its domicile and must meet the solvency requirements of that state alone.[30] Such an insurer can sell policies in other states as a non-admitted insurer. Although available from admitted insurers in a number of states, pollution or environmental liability insurance often qualifies as an "excess or surplus line" because of the unusual nature of the risk (i.e., compared to more standardized fire and auto).[31] As a result, insurers offering environmental coverage in a state where a facility is located may or may not be licensed in that state; as noted above, some states require that pollution insurers be licensed by the state where the covered facility is located; such a criterion can reduce the number of eligible providers.

Because CERCLA 108(b) coverage is expected to apply to relatively high-risk facility classes and provide relatively high dollar limits of coverage, the Agency believes that initially many if not all CERCLA 108(b) insurers may qualify as excess or surplus lines rather than as admitted insurers. Notably, policyholders of an admitted insurer are protected from insurer insolvency up to a maximum amount set under the state's Guaranty Fund. Policies issued by a non-admitted insurer are not covered by the Guaranty Fund. Therefore, policies under CERCLA 108(b) are unlikely to be backed by a state guaranty fund. Amounts provided under Guaranty Funds tend to be low in comparison with expected CERCLA 108(b) required

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[29] Financial assurance for closure, 40 CFR § 264.143(e); Financial assurance condition, 40 CFR § 261.143 (d)(1); Post-closure insurance, 40 CFR § 264.145(e); Liability requirements, 40 CFR § 264.147(a)(ii).RCRA Subtitle D Solid Waste Regulations, RCRA Subtitle I UST Regulations, and UIC Class I Wells have the same requirement for insurers.

[30] Financial Responsibility for Underground Storage Tanks: A Reference Manual. U.S. EPA Office of Underground Storage Tanks. November 30, 1999.

[31] Financial Responsibility for Underground Storage Tanks: A Reference Manual. U.S. EPA Office of Underground Storage Tanks. November 30, 1999.

amounts of coverage;[32] thus the Agency will not require that 108(b) insurers must be licensed in the state where the covered facility is located because such a requirement could exclude much of the pollution liability market from participation in the 108(b) program.

EPA reviewed whether admitted and non-admitted insurers pose such different degrees of risk of insolvency or impairment that either type of insurer should not be eligible to provide instruments for EPA's CERCLA 108(b) regulations. Complicating such an analysis is that the admitted or non-admitted status of an insurer depends on the specific state where coverage is offered; a product may be treated as standard in one state but non-standard in another. Due to differences in state laws, a single insurer may offer an environmental insurance product as an admitted insurer in some states and offer a nearly identical environmental product as a non-admitted insurer in other states. Thus, because classifying insurers nationally as admitted or non-admitted is problematic, EPA did not attempt to do so itself. An industry trade association maintained that A.M. Best has found the solvency record of the excess and surplus lines market was as good if not better than the overall insurance industry, and that surplus lines insurers had a median Best Financial Strength Rating slightly stronger than the median rating for standard insurers.[33]A.M. Best as recently as 2015 has noted that the surplus lines (non-admitted) industry's failure frequency rate of 0.86% from 1977 to 2014 remains close to the admitted company average of 0.91%.[34]Both admitted and non-admitted insurers will be eligible for CERCLA 108(b).

In addition to licensing requirements, some federal agencies judge insurer eligibility on a case-by-case basis. Coast Guard insurance eligibility requirements mandate that insurers be found acceptable by, and remain acceptable to, the Director, NPFC, for purposes of providing insurance to the Coast Guard's financial responsibility program.[35] The Coast Guard, in response to requests to incorporate standards for approval of insures, sureties, and financial guarantors, has clarified that insurers "found acceptable" by the coast guard will be done on a case-by-case basis by the Federal Maritime Commission (FMC).[36] The Coast Guard has followed the criteria established by FMC decisions. Any insurer that desires to be recognized as an eligible insurer may telephone, write to, or meet with the Coast Guard to review the factors considered.[37]To ease the implementation burden on the Agency, EPA does not anticipate establishing a requirement that involves case-by-case determination of acceptable insurance companies.

[32]For example, the Nevada Insurance Guaranty Association, the property and casualty insurance guaranty association for Nevada, generally caps benefits at the lesser of $300,000 or the policy limits. See http://nevada.ncigf.org/node/192 (accessed August 2016). Vermont Property and Casualty Insurance Guaranty Association generally caps payments at the lower of the policy limit or $500,000. See https://www.gfms.org/faq.php?state=vermont#60 (accessed August 2016)

[33] American Association of Managing General Agents (AAMGA). An Introduction to the Background and Strength of the Excess & Surplus Lines Insurance Marketplace(2006).

[34] A.M. Best, Best's Special Report, U.S.Surplus Lines : Record Levels Reached (August 2015). Pg 31.

[35] 33 CFR 138.80(b)(1).

[36] 59 FR 34219 (July 1, 1994).

[37] 59 FR 34219 (July 1, 1994).

2.3.2. Criteria for the Eligibility of Captives and Risk Retention Groups (RRGs).

EPA reviewed federal and state financial responsibility programs for criteria regarding the eligibility of pure and group captive insurers and risk retention groups (RRGs).RRGs are a form of group captive insurer subject to the Federal Liability Risk Retention Act (LRRA), where several companies form an insurance company for the purpose of insuring the parent companies. RCRA Subtitle C requirements include no explicit criteria regarding pure or group captives or risk retention groups (RRGs). In both cases (i.e., pure and group captives), a captive differs from a commercial "mutual" insurer in that its owners actively participate in managing the captive.[38] Some financial responsibility programs include specific language on captives and/or RRGs, as outlined below, in addition to the criteria discussed in Sections 2.3.1 – 2.3.3 (i.e., licensing requirements; NRSRO ratings; capital, asset, and other financial eligibility criteria):[39]

- RCRA Subtitle I UST Regulations explicitly allow insurance from a risk retention group (RRG), provided the RRG, at a minimum, must be "licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or

A Decade of Captive Regulation in California. Captive insurance companies have been recognized as a method of risk management under California's Insurance Code since 1992. In 1998 a law was passed allowing CalRecycle to review and approve captive insurance companies of solid waste facility operators as a financial assurance demonstration (AB 715, Chapter 978). Specifically, Section 43601 of the California Public Resources Code was revised to allow owners or operators of solid waste landfills to utilize any of the available financial mechanisms set forth in Part 258 of Title 40 of the Code of Federal Regulations, including captive insurance. Furthermore, Section 43601 specified that issuers of insurance policies must be licensed by the California Department of Insurance (CDI) to transact the business of insurance in California as an admitted carrier or be eligible to provide insurance as an excess and surplus lines insurer in California, but that captive insurers can be domiciled and licensed in any state in the United States (Public Resources Code § 43601(e)(2)).

However, in 2002, amendments to CalRecycle regulations, Section 2248 of Title 27 of the California Code of Regulations, clarified that captive insurers must either maintain a CDI license as an admitted insurer or be eligible to provide coverage as a surplus lines insurer in California to be eligible to provide financial assurance to CalRecycle for solid waste facilities. In October 2010, Waste Management, Inc. petitioned CalRecycle, requesting that CalRecycle amend its regulations to arguably limit the eligibility of captive insurers in a way that conflicts with the California statute that allows captive insurers domiciled and licensed in any state in the United States (AB 480, Hearing Notes, July 6, 2011 at p. 9). California Department of Toxic Substances Control's (DTSC) position on captives, per a 2009 justification, is that they should only be permitted if the insurers "qualify for and make all filings required by the financial test." However, DTSC then reasons that any company who does so also has the ability to pass the financial test, and would therefore opt for the financial test mechanism in place of captive insurance, ultimately labeling the mechanism "unnecessary and unduly cumbersome." (California DTSC, Initial Statement of Reasons: Financial Assurance). As part of the response to this conflict, on September 28, 2012 California's Governor approved a bill that temporarily revises the conditions under which the use of captive insurance could be allowed as a financial assurance mechanism for solid waste landfills, while limiting its use to providing not more than 50 percent of an owner or operator's financial assurance obligation for closure, post closure maintenance, and corrective action. The passage of this bill follows more than ten years of controversy in the California solid waste program over the acceptability of captive insurance as a financial assurance mechanism for solid waste landfills.

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[38] EPA, Financial Responsibility for Underground Storage Tanks: A Reference Manual. EPA 510-B-00-003, January 2000.

[39] In October 2001, EPA released a set of proposed rules that included a request for public comment on the ability for captive insurers to adequately cover their insured parents, many of which were finalized in a September 2005 final rulemaking. In the September 2005 final rulemaking, however, EPA stated that they "are not determining whether or not to allow captive insurance as a financial assurance mechanism," and similarly that they are "not promulgating a final rule on a minimum rating" for captive insurers. EPA further stated that they will continue to seek information on the ability for captive insurers to insure policies. 70 FR 53420, Hazardous Waste Management System; Standardized Permit for RCRA Hazardous Waste Management Facilities, September 8, 2005.

more states."[40] RCRA Subtitle I UST financial responsibility guidance also states that per the 1986 Liability Risk Retention Act (LRRA), a RRG "must be domiciled, registered, and licensed in a state before it is allowed to issue coverage."[41]

- Although EPA found no regulatory language in the NRC General Rules for Materials Licensees regarding eligibility of captives or risk retention groups, NRC NUREG-1757 Vol. 3 Guidelines (2003) state that insurance policies issued by captive insurers may not be used to provide financial assurance for decommissioning.[42] NUREG-1757 Vol. 3 reasons that captive insurance is not allowed because captive insurers "(1) are less strictly regulated than commercial insurers, (2) may not be monitored closely after their operations have been approved, and (3) usually do not have access to guarantee funds that pay claims in the event the insurer is not able to do so."[43]

EPA reviewed a 2001 audit by the Office of the Inspector General (OIG) of RCRA Financial Assurance for Closure and Post-Closure,[44] which included a discussion of states that accept captive insurers. The following EPA table (Exhibit 3), which summarizes the responses by state agencies about whether they accept captive insurers under RCRA Subtitle C and Subtitle D, was developed in the 2001 audit report. An "X" indicates the presence of language in state regulations that explicitly allows or denies captive insurers. More recently, a 2005 report by the OIG noted that 13 states do not accept captive insurance as a financial assurance mechanism under RCRA, although the report did not list which states are included in the 13.[45] Of the list below, EPA confirmed in 2013 that Virginia does not accept captive insurance for solid waste (RCRA Subtitle D).[46] Washington no longer accepts captive insurance as a financial responsibility mechanism.[47] The information appears to suggest a lack of consensus amongst states with experience implementing financial responsibility regulations on whether or not captive insurance is an acceptable financial responsibility instrument.

[40] Insurance and risk retention group coverage 40 CFR §280.97(c).

[41] Financial Responsibility for Underground Storage Tanks: A Reference Manual. U.S. EPA Office of Underground Storage Tanks. November 30, 1999.

[42] Insurance Policies, NRC NUREG-1757, Vol. 3.A.12.1.

[43] NRC NUREG-1757, Vol. 3, Appendix A, Section A.21.

[44] EPA Office of Inspector General. March 30, 2001. Audit Report: RCRA Financial Assurance for Closure and Post-Closure.

[45] EPA Office of Inspector General, September 26, 2005. Continued EPA Leadership Will Support State Needs for Information and Guidance on RCRA Financial Assurance.

[46] Virginia Administrative Code 9VAC 20-70. Financial Assurance Regulations for Solid Waste Disposal.

[47] Washington Administrative Code WAC 173-350-600.Financial Assurance Requirements.

Exhibit 3–State Acceptance of Captive Insurers (2001)

State	Subtitle C		Subtitle D	
	Allowed	Denied	Allowed	Denied
Alabama*		X		
California	X			X
Connecticut	X**		X	
Missouri	X**			X
New York		X		S**
Ohio	X		X	
Texas		X		X
Virginia		X		X
Washington	X**		X**	

S Would be subject to review and probably denied.

* Alabama legislature has not passed the necessary legislation and therefore does not have a Subtitle D financial assurance program. However, [OIG was] told that EPA Region IV will be working with the Alabama Department of Environmental Management to facilitate adopting financial assurance requirements.

** No captive insurance policies for RCRA financial assurance have been identified.

Source: EPA Office of Inspector General. Audit Report: RCRA Financial Assurance for Closure and Post-Closure. March 30, 2001.

EPA's review of state hardrock financial responsibility programs found a requirement in the Florida Phosphogypsum Stack Closure Management program that neither the owner, operator, nor any affiliate may be related to the insurer.[48] This provision may be intended to block captives from participating in that program.

The analysis of property/casualty insurance company failures presented in Section 2.2 of this Part includes captive insurers and RRGs in the property/casualty market in addition to traditional insurers. The results of that analysis show that failures of insurance companies generally occur in cycles consistent with economic expansions (i.e., lower number of failures) and contractions (i.e., higher number of failures). Data were not available to allow EPA to determine the population of these insurers that were captive insurers or RRGs, or to determine failure rates of captive insurers or RRGs only, because readily available data were not disaggregated by insurer type.

Literature reviewed by EPA generally argued that captive insurers and RRGs have a heightened chance of failure following the failure or insolvency of other subsidiaries of their owning parent company(s), given that captives' failure risks are affected by the financial risks of the insured subsidiaries of the parent company. In principle, the extent to which the risk of failure of the insured and the risk of failure of the insurer differ is believed to be an indicator of the effectiveness of a financial responsibility mechanism. Ideally, risk of insurer default should be independent of the risk of the insured's default. According to a report by EPA Office of Inspector General, however, captive insurers are generally unable to separate the risks associated with the failure of the parent company (the insured) and the failure of the captive entity (insurer) because they are financially and legally connected to each other, hence

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[48] Financial Assurance, FLA. ADMIN. CODE ANN. r. 62-673.640(4)(c).

questioning the "effectiveness" of captive insurance as a financial responsibility mechanism.[49] This concern was evidenced by the 2001 bankruptcy of Reliance Holdings, where a Reliance subsidiary's inability to pay debts led to the captive insurer for Reliance defaulting on its debts. In this case, the risks associated with the obligations of the captive subsidiary appeared not to be mutually exclusive of the risks associated with the obligations of the insured subsidiary.[50]

Pure captive insurance has a limited ability to fulfill a basic purpose of insurance: to spread the risks of potential losses among multiple parties. Typically, an insurance company spreads risk by insuring many entities. A pure captive; however, spreads risk among its own, often financially-related affiliates only. Citing the limited ability for captive insurers to spread risk, among other concerns, a March 2001 report from the EPA OIG concluded that captive insurance is not an adequate financial assurance mechanism for RCRA Subtitle C.[51] A group captive or risk retention group, on the other hand, may be better suited to provide insurance as a financial responsibility mechanism than will a pure captive, given that, in general, a group captive or RRG is more likely to have a larger pool of funds available and a more constant cash flow.

In June of 2006, the EPA Environmental Financial Advisory Board (EFAB) convened a workshop with stakeholders, regulators, and financial rating analysts to reassess the issues presented in the 2001 EPA OIG report. Many participating experts argued that captive insurance was not an adequate financial assurance mechanism. However, one expert disagreed and likened captive insurers to traditional insurance companies by arguing that like a traditional insurance company, the strength of a captive insurer is dependent upon the adequacy of its reserves, investment income, and reinsurance, and therefore opined that a captive's strength depends more on successful management of the business than on the strength of the parent company.[52]

The June 2006 EFAB workshop made no conclusions regarding the ability for captive insurers to issue RCRA policies, but did include discussions of benefits and concerns raised by captive insurance. EFAB followed the June 2006 workshop with a report on captives that was released in March 2007.[53] The 2007 report included findings and recommendations of the board, as follows:

- Minimum capitalization requirements are necessary, and a respected insurance rating agency is in the best position to determine what the minimum capital and surplus level should be for a particular insurer. Further, the use of rating agencies is a cost-effective mechanism for demonstrating the financial strength of a captive insurer. Vermont, A.M. Best, the insurance industry, and state regulators agreed that ratings from NRSROs are important corroborating evidence of fiscal soundness for companies seeking to issue captive insurance;
- Policies written by captives should be treated as equally acceptable as those written by commercial insurers, permitted they meet licensing standards and are subject to effective,

[49] EPA Office of Inspector General. March 30, 2001. Audit Report: RCRA Financial Assurance for Closure and Post-Closure.
[50] EPA Environmental Financial Advisory Board. March 2007. The Use of Captive Insurance as a Financial Tool in Office of Solid Waste and Emergency Response Programs.
[51] EPA Office of Inspector General. March 30, 2001. Audit Report: RCRA Financial Assurance for Closure and Post-Closure.
[52] EPA Environmental Financial Advisory Board. March 2007. The Use of Captive Insurance as a Financial Tool in Office of Solid Waste and Emergency Response Programs.
[53] EPA Environmental Financial Advisory Board. March 2007. The Use of Captive Insurance as a Financial Tool in Office of Solid Waste and Emergency Response Programs.

independent oversight. It is especially important to apply rigorous and transparent licensing procedures—for example, requiring audited financial statements and annual reports, and instituting enforceable requirements such as access to letters of credit in the event of financial difficulty ; and

- The language of policies written by captives should not differ in any way from the language for those issued by commercial insurers.

EPA also reviewed other reports, workshops, and statements to better understand the benefits of captive insurance and RRGs. Other benefits include:

- To the extent that the business of the parent company and the subsidiary captive insurer are interconnected, captive insurers may reduce the moral hazard between insured entities and insurance companies. In 2004, the average Bermuda single-parent captive ceded only 23.8 percent of its premiums (up from 17.4 percent in 2003) to a reinsurer, whereas commercial insurers filing Form 10-K with the U.S. SEC that year ceded 40.0 percent of their premiums.[54] Although other factors may have contributed to this significant difference, this statistic may suggest that the financial and legal relationship between the captive (i.e., the insurer) and its parent company (i.e., the insured) incentivizes the insured party to engage in less risky behavior and to therefore cede fewer premiums to a re-insurer.
- Captives may be more familiar with the finances of the parent company and place a larger emphasis on loss control, and therefore may be able to mitigate losses based on a better understanding and more proactive oversight of operations.[55]
- A captive insurer generally can provide insurance coverage to its parent at a lower cost than a commercial insurer for various reasons, including its ability to operate at a lower expense ratio than commercial insurers.[56]

Ratings for captive insurers are directly comparable to ratings of traditional insurers. A captive that is assigned the same rating as a traditional insurer has a comparable likelihood for failure as does the traditional insurer, based on the assessment of the rating agency. A.M. Best states that captive insurers are assessed using the same financial models as those used for insurers, and captives are assigned financial strength ratings that are comparable to any other insurance company. A.M. Best also states that all ratings carry the same implications for financial strength regardless of the type of insurance company because the rating process is able to incorporate the unique characteristics of captives, including consideration given to the financial risk posed by the parent company.[57,58]

Based on this information EPA recognizes that there may be some benefits to allowing captive insurers or risk retention groups to provide policies under the CERCLA 108(b) program. For example, it may increase the total availability of instruments because the availability of insurance would not be entirely dependent on the commercial insurance industry. However, EPA remains concerned over the limited

[54] Scordis, N., Barrese, J., Yokoyama, M. 2007. Conditions for Captive Insurer Value: A Monte Carlo Simulation. Journal of Insurance Issues, 30(2): 79-101.
[55] A.M. Best. April 29, 2009. A.M. Best's Rating Methodology for Captive Insurance Companies.
[56] Scordis, N., Barrese, J., Yokoyama, M. 2007. Conditions for Captive Insurer Value: A Monte Carlo Simulation. Journal of Insurance Issues, 30(2): 79-101.
[57] EPA Environmental Financial Advisory Board. March 2007. The Use of Captive Insurance as a Financial Tool in Office of Solid Waste and Emergency Response Programs.
[58] A.M. Best. A.M. Best's Captive Review – 2015 Edition (2015).

financial independence between the insurer and the insured, particularly in the case of pure captives. At this time, EPA does not anticipate proposing that captives and risk retention groups be eligible insurers under the Agency's 108(b) regulations. EPA instead plans to request comment on possible options for the treatment of risk retention groups and captive insurers including that of requiring a minimum financial strength rating from A.M. Best or a comparable rating from another nationally recognized statistical rating organization and that of accepting policies only from group captives or risk retention groups but not from pure captive insurers.

2.3.3. Capital, Asset, and Other Financial Eligibility Criteria.

EPA reviewed federal and state insurer eligibility criteria for requirements relating to capital, asset, and other financial criteria. RCRA Subtitle C requirements and most of the other programs make no reference to minimum capital levels or ratios. EPA's UIC Class VI program requires that owner/operators provide proof that the insurer has either (1) passed financial strength requirements based on credit ratings (discussed below in Section 2.3.4) or (2) met a minimum rating, minimum capitalization, and has the ability to pass the bond rating when applicable.[59] EPA recommends in guidance that the Class VI issuer meet the financial ratios presented in Exhibit4, below.[60]The ratios in the Exhibit include:

- **Assets (current, total, U.S.)** – property owned by an entity
- **Liabilities (total, current)**–obligation for which an entity is responsible
- **Net Income**– excess of revenues over outlays in a given period of time, with consideration of:
    - **Amortization** – reduction in the value of an asset by prorating its cost over a period of years
    - **Depletion** – act of decreasing the value of an asset
    - **Depreciation** – reduction in the value of an asset over time
- **Net Worth**– total assets minus total liabilities of an entity
- **Total Environmental Obligations**– the sum of current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

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[59] 40 CFR § 146.85(a)(4)(i) and (a)(6)(ii).

[60] Environmental Protection Agency, *Underground Injection Control (UIC) Class VI Program: Research and Analysis in Support of UIC Class VI Program Financial Responsibility Requirements and Guidance (December 2010),* available athttps://www.epa.gov/sites/production/files/2015-07/documents/uicclass6reasearchandanalysisupdatedpg84.pdf.

Exhibit 4– List of Financial Ratios and Recommended Thresholds under EPA UIC Class VI Program

Ratio	Explanation of Ratio	UIC Class VI Program Recommended Threshold[61]
Debt-Equity	Total Liabilities / Net Worth	< 2.0
Assets-Liabilities	Current assets / Current Liabilities	> 1.5
Cash Flow to Liabilities	(Net Income + Depreciation + Depletion + Amortization) / Total Liabilities	> 0.10
Liquidity	(Current Assets – Current Liabilities)/ Total Assets	> -0.10
Net Profit		> 0
Net Working Capital & Tangible Net Worth		NA
Tangible Net Worth		NA
Assets	A) U.S. Assets / Total Assets B) U.S. Assets/ Total Environmental Obligations	NA

The Nevada Reclamation program established the following financial criteria for insurance policy issuers:[62]

- The net worth of the insurer must be at least:
  - $10,000,000; and
  - Twice the amount of insurance required.
- The tangible fixed assets of the insurer in the U.S. must be at least $20,000,000.
- The ratio of liabilities to the net worth of the insurer must not be more than 2:1.

The net income, excluding nonrecurring items, of the insurer must be positive.

Many studies have attempted to quantify the predictive powers of various financial indicators for insurer insolvency. One study, for example, analyzed the ability for two risk-based capital ratios[63] to predict property-liability insurer insolvency. The authors found that Best's Capital Adequacy (BCA) ratio to be a "more powerful insolvency detection model," and further, that the ratio alongside A.M. Best ratings is "jointly more powerful than either measure alone."[64]

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[61] Environmental Protection Agency, *Underground Injection Control (UIC) Class VI Program: Research and Analysis in Support of UIC Class VI Program Financial Responsibility Requirements and Guidance (December 2010),* available athttps://www.epa.gov/sites/production/files/2015-07/documents/uicclass6reasearchandanalysisupdatedpg84.pdf.

[62] Financial Assurance Mechanisms, NEV. ADMIN CODEch.519A.350.

[63] The authors compared the National Association of Insurance Commissioners (NAICS) Risk-Based Capital (RBC) ratio to A.M. Best's Capital Adequacy (BCA) ratio. A risk-based capital ratio is defined by the authors as "a measure of an insurer's actual level of capital and surplus relative to the level of capital that the risk-based model determines is adequate to maintain a particular probability of solvency given the specific risks faced by the insurer, and argue that it is a "summary measure of financial strength."

[64] Pottier and Sommer, January 2009, Capital Ratios and Property-Liability Insurer Insolvencies.

By comparison, the National Association of Insurance Commissioners' (NAIC) Financial Analysis and Surveillance Tracking (FAST) tool quantifies insurer risk by calculating and analyzing roughly 31financial ratios. The tool provides state and federal regulators with early detection and warning of financially troubled property and casualty insurers; insurers with a specified number of ratios outside the acceptable ranges determined by the NAIC are classified as priority firms for regulatory scrutiny.[65]FAST appears to be used on a case-by-case basis instead of serving in industry-wide regulations. One study noted a limitation to the FAST system, and other ratio-based systems, which is that they are "based on a 'snapshot' of the firm at a given point in time," and do not provide ongoing assessments of the insurer's risk as would, arguably, a cash flow analysis method.[66]

The Agency does not expect to use financial criteria in specifying the eligibility of 108(b) insurers because of the burden on owners and operators as well as on the Agency to review and evaluate annual financial statements. Further, state insurance commissions have a quantitative tool (FAST) at their disposal to assist in evaluating potential insurer insolvency, and rating agencies also consider quantitative measures in their ratings process. EPA believes that leveraging the expertise of these organizations would be a better option for CERCLA 108(b) than evaluating financial ratios itself.

2.3.4. Minimum Rating(s) Requirements.

Minimum Ratings Criteria Found in Other Financial Responsibility Programs

EPA's review of eligibility criteria used in other financial responsibility programs found some use of minimum credit ratings, whether generated by Nationally Recognized Statistical Rating Organizations (NRSROs)or by rating agencies not registered with the SEC as NRSROs. EPA found federal and state financial responsibility programs with insurer eligibility criteria based on various named rating agencies and specified rating levels. RCRA Subtitle C issuer eligibility requirements include no such rating criteria for insurers.[67] Selected programs that required minimum credit ratings are outlined below:

- The EPA UIC Class VI financial responsibility program regulations (40 CFR 146.85) require that owners/operators provide proof that the insurer has either (1) passed financial strength requirements based on credit ratings or (2) met a minimum rating, minimum capitalization, and ability to pass the bond rating when applicable. EPA Class VI guidance (2010) recommends that owners or operators demonstrate that insurers have a credit rating in the top four categories from either Standard & Poor's or Moody's (i.e., AAA, AA, A, or BBB for Standard & Poor's and Aaa, Aa, A, or Baa for Moody's) or from any NRSRO as long as the owner or operator can demonstrate the equivalency of the rating with the recommended ratings;[68];
- The Bureau of Ocean Energy Management (BOEM), Oil Spill Financial Responsibility for Offshore Facilities requires that an insurer has a "secure" rating for claims paying ability in the latest

[65] Cummins, et. al., August 28, 1998, Regulatory Solvency Prediction in Property-Liability Insurance: Risk-Based Capital, Audit Ratios, and Cash Flow Simulation, Working Paper No. 98-20, Federal Reserve Bank of Philadelphia.
[66] Cummins, et. al., August 28, 1998, Regulatory Solvency Prediction in Property-Liability Insurance: Risk-Based Capital, Audit Ratios, and Cash Flow Simulation, Working Paper No. 98-20, Federal Reserve Bank of Philadelphia.
[67] RCRA Subtitle C employs credit ratings in connection with self-insurance and corporate guarantees.
[68] The top four ratings for S&P and Moody's constitute "investment grade" ratings; comparable ratings for A.M. Best and Fitch are similarly labeled "investment grade," and include aaa, aa, a, and bbb from A.M. Best and AAA, AA, A, and BBB from Fitch.

review by A.M. Best's Insurance Reports, Standard & Poor's Insurance Rating Service, or other equivalent rating made by a rating service acceptable to BOEM;[69]

- The Bureau of Land Management (BLM) requires that an insurer must have an A.M. Best rating of "superior" (A++ or A+) or an equivalent rating from a NRSRO;[70]
- The Florida Phosphogypsum Stack Closure, Phosphogypsum Management program requires an insurer to have a financial strength rating by A.M. Best of B+ (secure) or better;[71]
- The New Mexico Reclamation program requires than an insurance provider has an A.M. Best rating of A- or equivalent rating of other recognized rating companies;[72] and
- The Nevada Reclamation program requires that the insurance company issuing the policy must have a "superior" financial strength rating (A++, A+), as determined by A.M. Best or equivalent rating from a NRSRO.[73]

Of the programs noted above, two specify ratings from Standard and Poor's, one specifies Moody's, five refer to A.M. Best ratings, three refer to NRSROs, and two do not specify NRSROs but refer to "recognized" or "acceptable" rating agencies. Of the five A.M. Best criteria, BOEM and Florida phosphogypsum are at the "secure" level, BLM and Nevada are at the "superior" level, and New Mexico is at A-. To implement a rating criterion for 108(b), the Agency is considering specification of both the required minimum ratings and the acceptable rating agencies.

NRSRO Ratings Performance

Four major rating agencies – A.M. Best, Fitch, Moody's, and S&P – are all NRSROs in the business of rating insurance companies. The five common classifications of ratings by NRSROs are presented in Exhibit 5; insurance companies, which are the focus of this analysis, comprise one of the five NRSRO ratings classes. As presented in Exhibit 5, A.M. Best rated over 7,900 insurance companies of all types and their securities, Fitch and Moody's about 3,000 each, and 6,800 by S&P. The number of insurance companies and securities rated by each agency exceeds the total number of state-licensed property/casualty and life/health insurance companies (i.e., 3,750 as of 2010[74]), indicating that in many cases, insurers obtain multiple ratings from each rating agency, including ratings for specific debt securities. Only ratings for the insurance entity as a whole would be applicable to 108(b) and not ratings of specific debt securities of the insurers.

[69] 30 CFR §553.29(a). A "secure" rating for claims paying ability from A.M. Best includes ratings A++, A+, A, A-, B++, and B+. Comparable ratings from S&P, Moody's, and Fitch are labeled "investment grade," and include of AAA, AA, A, and BBB ratings from S&P, Aaa, Aa, A, and Baa ratings from Moody's, and AAA, AA, A, and BBB ratings from Fitch.
[70] 43 CFR §3809.555(f). A "superior" financial strength rating and above from A.M. Best constitutes the top two ratings, including A++ and A+. Comparable ratings from S&P include at least a "very strong" rating (AAA and AA); from Moody's, include at least a "high quality" rating (Aaa and Aa); and from Fitch include at least a "very low (risk of default)" rating (AAA and AA).
[71] Florida Administrative Code, Ann. R. 62-673.640(4)(c).
[72] New Mexico Code R. § 19.10.12.1208.F. An A- financial strength rating constitutes at least an "Excellent" rating. Comparable ratings include at least an A rating from S&P, Moody's, and Fitch.
[73] Adopted Regulation of the State Environmental Commission, LCB File NO. R044-12, Section 6, NAC 519A.350, September 14, 2012. A "superior" financial strength rating and above from A.M. Best constitutes the top two ratings, including A++ and A+. Comparable ratings from S&P include at least a "very strong" rating (AAA and AA); from Moody's, include at least a "high quality" rating (Aaa and Aa); and from Fitch include at least a "very low (risk of default)" rating (AAA and AA).
[74] Insurance Information Institute, Industry Overview, 2012.

Exhibit 5 –Ratings Reported to SEC by NRSROs by Ratings Class

	Financial Institutions	Insurance Companies	Corporate Issuers	Asset-Backed Securities	Gov., Muni. & Sovereign	Total Ratings
A.M. Best	N/R[1]	7,910	1,526	26	N/R	9,462
Fitch	46,260	3,011	15,558	42,237	194,086	301,152
Moody's	52,049	3,336	41,364	71,504	673,166	841,419
S&P	61,000	6,800	53,000	85,200	970,200	1,176,200
Other*	37,748	1,278	15,807	19,665	17,363	91,861
Total	197,057	22,335	127,255	218,632	1,854,815	2,420,094

* Includes DBRS, Inc., Egan-Jones Rating Company, HR Ratings de Mexico, Kroll Bond Rating Agency, Inc., Japan Credit Rating Agency, Ltd., and Morningstar Credit Ratings, LLC.
[1] N/R indicates that the NRSRO is not registered for the rating category indicated.
Source: Securities and Exchange Commission, December 2015, Annual Report on Nationally Recognized Statistical Rating Organizations.

Each of the NRSROs employs its own rating scale, with modifiers as needed. For example, A.M. Best uses seven major rating levels, 3 ("Superior," "Excellent," and "Good") considered "secure" or investment grade, and 4 ("Fair, " "Marginal," "Weak," and "Poor") considered "vulnerable" or non-investment grade. Best's reports that the average annual impairment rate for all Best-rated insurers from 1977-2014 was 0.64%. Companies rated secure had an average annual impairment rate of 0.22% while companies rated vulnerable had a rate of 3.79%.[75] Each NRSRO's rating scale rates companies based on credit risk and identifies companies that are investment grade and non-investment grade. See Appendix B for detailed ratings descriptions for A.M. Best, Moody's, S&P, and Fitch.

EPA reviewed material published by various NRSROs and others that specifically analyzed the financial strength of insurance companies in relation to their ratings. For this report, EPA used impairment[76] rates from A.M. Best (Exhibits 6, 7, and 9) and default[77] rates from Standard and Poor's (Exhibit 8).The data in Exhibit 7 through Exhibit 9 apply to all insurers, including life/health and property/casualty, whereas the data in Exhibit10 are specific to the property/casualty insurance industry only.[78]

The major rating agencies have published their own performance information, using various methods and metrics that are not completely comparable. SEC rules finalized in 2014 (discussed in Appendix C)

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[75] A.M. Best Company, Best's Special Report: Best's Impairment Rate and Rating Transition Study – 1977 to 2014(2015).
[76] A.M Best definition of "impairment" includes a substantially wider category of financial duress than an event of default. This leads to substantially higher impairment rates at any given rating level than would be observed purely using default data. A.M. Best also explains that an event of default is considered to have occurred when an issuer misses interest or principal payments on its obligations; restructures its debt in a way that is deleterious to investors; or files for bankruptcy. A.M. Best, Best's Impairment Rate and Rating Transition Study, 1977 to 2009, May 19, 2010.
[77] S&P defines "default" as the first occurrence of a payment default on any financial obligation. Source: Standard and Poor's, Standard and Poor's Rating Performance, 2002.
[78] In this analysis EPA used A.M. Best's impairment data for all insurers when comparing A.M. Best ratings to documented insurer impairments. EPA used impairment data for all insurers because consistent data for only property/casualty insurers was not available. EPA's analysis of impairment rates indicates that the rate of impairment of all insurers is positively correlated to the rate of impairment of property/casualty insurers. For this reason, EPA used A.M. Best's impairment data for all insurers in Exhibit 8 as a proxy for property/casualty insurer impairment.

now require NRSROs to disclose certain standardized performance statistics, including default rates. Apart from the 2014 SEC disclosure requirements, the major rating agencies (i.e., A.M. Best, Fitch, Moody's, and S&P) have used generally similar approaches to assess the performance, accuracy, and/or quality of their ratings. They focus on the following metrics and measures:

- strong correlations between higher (e.g., secure, investment grade) ratings and lower default rates, and between lower (e.g., vulnerable, non-investment grade) ratings and higher default rates;
- defaulting issuers rated lower than issuers that did not default; and
- the period of deteriorating creditworthiness before default usually is shorter for lower ratings than for higher ratings.

Despite the generally similar approaches used, the rating agencies have employed different definitions, methods, data, and methodologies in measuring their ratings performance. Moody's expressed a view in 2011 that no single metric can summarize the quality of a ratings system or distinguish a "good" system from a "bad" system, and added that no set of metrics captured at any one time or through any one cycle can do so either. Moody's stated that a ratings system can be fairly evaluated only over many cycles and from multiple perspectives.[79]

According to its own statistics, A.M. Best holds that its ratings have been good predictors of insurer impairment. Exhibit 6 shows that lower-rated issuers, on average, became impaired sooner than higher-rated insurers from 1977 to 2010. A secure-rated insurer that became impaired did so, on average, around the thirteenth year after receiving its secure rating, whereas an insurer rated as vulnerable became impaired, on average, around the ninth year after receiving its vulnerable rating. Based on such determinations, A.M. Best concludes that a higher-rated insurer is less-likely than a lower-rated insurer to become impaired in the near term.

Exhibit 6– Initial Rating and Average Years to Impairment

A.M. Best U.S. life/health and property/casualty insurer data (1977-2010)

Initial Rating Category	Impairments	Ave. Years to Impairment
A++/A+	100	15.7
A/A-	154	13
B++/B+	138	10.8
Total for Secure Ratings	*392*	*12.9*
B/B-	114	9.8
C++/C+	55	7.7
C/C-	30	10.2
D	122	9.4
Total for Vulnerable Ratings	*321*	*9.3*

Source: A.M. Best, A.M. Best Impairment and Rating Transition Study, 2010.

[79] Moody's Investors Service, Measuring the Performance of Credit Ratings (Special Comment November 1, 2011).

Exhibit 7 shows insurance company impairment rates one, five, 10, and 15 years after an initial rating from A.M. Best. An issuer or security that receives a relatively high rating (e.g., A, B+) appears less likely to impair/default than does an issuer or security that receives a low rating (e.g., C, D). For A.M. Best, an issuer or security that receives a D rating has a 50 percent chance of impairing within 15 years.

Exhibit 7- Best's Cumulative Average Impairment Rates

U.S. life/health and property/casualty insurer data, 1977-2009

	1year	5years	10years	15years
A++/A+	0.06%	0.64%	1.95%	3.97%
A/A-	0.18%	2.04%	5.05%	7.36%
B++/B+	0.77%	5.59%	10.63%	14.67%
Avg. for Secure Ratings	*0.24%*	*2.13%*	*4.79%*	*7.24%*
B/B-	2.13%	10.32%	19.05%	26.29%
C++/C+	3.73%	14.65%	27.51%	33.66%
C/C-	5.81%	17.39%	33.86%	45.32%
D	7.53%	26.21%	41.51%	50.23%
Avg. for Vulnerable Ratings	*3.75%*	*14.78%*	*26.35%*	*34.15%*

Source: A.M. Best, Best's Impairment Rate and Rating Transition Study – 1977 to 2009.
Secure ratings include ratings A++ through B+.
Vulnerable ratings include ratings B through D.

Exhibit 8 shows default rates for insurers in three separate pools by initial S&P rating in the first year, third year, and 10th years of the rating for these three pools. Higher ratings tended to be associated with lower default rates, and lower ratings are associated with higher default rates for the insurers in these three pools. The association is weaker in this data based on three separate pools than in the cumulative impairment data presented in Exhibit 7, likely due to the smaller sample size.

Exhibit 8 –Insurance Default Rates, Standard & Poor's, 2001-2010

	1 Year	3 Year	10 Year
AAA	0.00%	2.70%	1.67%
AA	0.00%	1.23%	1.13%
A	0.00%	0.28%	2.50%
BBB	0.00%	0.76%	4.80%
BB	0.00%	1.52%	26.39%
B	0.00%	11.11%	41.67%
CCC/C	28.75%	0.00%	100.0%

Source: Standard & Poor's, 2010 Annual Global Corporate Default Study and Rating Transitions, March 31, 2011. Table 49.

Exhibit 9shows that as property/casualty insurers approached the year in which they became impaired, their ratings diminished. Of the 118 property/casualty insurers rated by A.M. Best that became impaired between 2001 and 2010, 85 (72 percent) had "secure" ratings three years prior to impairment. That statistic must be interpreted somewhat favorably in light of the approximately 87% of A.M. Best rated companies in the period 1977-2009 that were rated secure.[80] However, in the year that the 118 insurers became impaired, only one had a secure rating and 103 had a vulnerable rating (the remaining 14 were either not rated or assigned FPR-4 or NF ratings). Based on this data, a property/casualty insurer with a secure rating from A.M. Best is unlikely to become impaired in the same year the rating is made. These statistics differ from data on impairment or default rates associated with specific ratings levels over various time horizons; for example, the percentage of secure ratings that impair or default in 3 years after being rated (see Exhibit 7).

Exhibit 9– Ratings of A.M. Best Financially Impaired Property/Casualty Insurance Firms in Years Prior to Financial Impairment, 2001-2010

		3 Years Prior	2 Years Prior	1 Year Prior	Year Of
Secure	A++/A+	0	0	0	0
	A/A-	49	42	4	0
	B++/B+	36	41	30	1
Vulnerable	B/B-	15	18	26	15
	C++/C+	5	7	15	18
	C/C-	0	0	15	25
	D	2	2	15	45
	E	3	1	0	0
NR		6	7	12	14
Total*		**116**	**118**	**117**	**118**

Source: A.M. Best, A.M. Best Impairment Rate and Rating Transition Study, 2010
* There were 118 defaults in this time period; total does not include FPR-4 and NF ratings.

EPA compiled data on RCRA insurers and selected a random sample for analysis of their latest available credit ratings, shown in Exhibit 10.[81]

As shown in Exhibit 10, the credit ratings from different NRSROs for RCRA insurers tend to be similar though not identical. For example, ACE American Insurance Company was given the highest possible rating by A.M. Best (A++) indicating 'superior ability to meet ongoing insurance obligations', while the same company was given the second highest rating by S&P (AA) indicating that the company has' very strong financial security characteristics'.[82] ACE was also given a rating of Aa3 by Moody's which is on the lower end of Moody's second highest rating. Although similar, NRSRO ratings for ACE American Insurance company are not identical. This trend appears across rated RCRA insurance providers. Pottier and Sommer noted that insurer ratings assigned by Moody's and S&P tend to be lower on average than those assigned by A.M. Best.[83] That difference in ratings is consistent with data showing that the

[80] A.M. Best, Best's Impairment Rate and Rating Transition Study – 1977 to 2009 (2010).
[81] A random sample was established by removing duplicates from the database of RCRA insurance issuers, alphabetizing the list of issuers, assigning each issuer a number, and using Microsoft Excel's RANDBETWEEN function to select a set of 25 numbers (each corresponding to an issuer).
[82] A.M. Best has fewer ratings levels in its rating scheme than Moody's or S&P (See Appendix B), so a one-to-one comparison between the ratings of these three NRSROs is not possible.
[83] Pottier and Sommer, Property-Liability Insurer Financial Strength Ratings: Differences across Rating Agencies, The Journal of Risk and Insurance, 1999, Vol. 66, No. 4, 621-642.

percentage of insurers obtaining ratings from each NRSRO differs by rating agency: in 1995, 90 percent of insurers obtained a rating from A.M. Best, 18 percent from S&P, and 10 percent from Moody's.[84]

In one case where ratings significantly differ in Exhibit 10, Ironshore Specialty Insurance Company's ratings from Moody's and S&P are significantly lower than the rating assigned by A.M. Best. Although some companies have been provided with inconsistent ratings from NRSROs, in general, ratings for RCRA insurance issuers, where assigned, could be considered "equivalent".

Although most provider credit ratings are similar, not all RCRA insurance providers have received credit ratings from major ratings providers. EPA randomly sampled EPA's RCRA insurance issuer database and compiled the credit rating of 25 insurance providers. Of the 25 randomly sampled insurers, seven had not received a credit rating from either Moody's, S&P, or A.M. Best (Exhibit 10). Many of the insurers that had not received a rating from the major ratings agencies are small providers with a local or regional presence. If credit ratings are used as an eligibility requirement for 108(b), that requirement may disqualify many of the insurers which currently participate in the RCRA Subtitle C program. Insurers without credit ratings wishing to participate in the 108(b) program may then face the burden and expense of obtaining a credit rating in order to be eligible to participate in the 108(b) program.

The ratings shown in Exhibit 10 all belong to the "secure" or "investment grade" categories for A.M. Best, Moody's, and S&P, where available, and would therefore meet the insurer eligibility requirements established by many of the programs reviewed by EPA. However, only seven of the 25RCRA Subtitle C insurers would have met the requirements set forth in the Bureau of Land Management or the Nevada programs, which require a "superior" rating from A.M. Best (i.e., A++ or A+) or equivalent rating from a NRSRO (the ratings from S&P for these two insurers would also meet this requirement).

Exhibit 10–Financial Strength Ratings of 25 Randomly Selected Insurers under RCRA Subtitle C

	Provider	Provider Ratings		
		Moody's[1]	S&P[2]	A.M. Best[3]
1	ACE American Insurance Company	Aa3 1/15/2016	AA 5/19/2014	A++ 6/22/2016
2	American International Group	Baa1 1/26/2016	A- 9/15/2008	---
3	American Safety Indemnity Co.	---	---	---
4	Assured Capital Casualty & Surety LLC	---	---	---
5	Blue Whale RE LTD.	---	---	A 04/07/2016
6	Chartis Specially Insurance Co. (AIG)	Baa1 01/26/2016	A+ 05/06/2013	A 6/02/2016
7	Colony Insurance Co.	---	A- 06/07/2005	A 10/22/2015
8	Endurance American Specialty Co.	---	A 12/5/2006	A 05/12/2016
9	Endurance Specialty Insurance Co.	A3 11/16/2015	A 12/5/2006	A 05/12/2016
10	Evanston Insurance	A2 05/29/2014	A 07/29/2015	A 07/01/2016
11	General Star Indemnity	---	AA+	A++

[84] Pottier and Sommer, Property-Liability Insurer Financial Strength Ratings: Differences across Rating Agencies, The Journal of Risk and Insurance, 1999, Vol. 66, No. 4, 621-642.

			02/04/2010	10/28/2015
12	Global Indemnity Assurance Co.	---	---	A 06/12/2015
13	Great American E&S Insurance Co.	A1 06/15/2015	A+ 10/05/2010	A+ 05/12/2016
14	Harbor Insurance Company	---	---	---
15	Hudson Specialty Insurance Co.	---	A- 04/09/2004	A 05/05/2015
16	Ironshore Specialty Insurance Co.	Baa1 05/06/2015	BBB 06/19/2014	A 06/24/2016
17	Maclean Oddy and Associates	---	---	---
18	Northeast Indemnity Co.	---	---	---
19	Osprey Insurance Co.	---	---	---
20	Steadfast Insurance Co.	---	AA- 06/19/2007	A+ 10/02/2015
21	Traveler's Indemnity Co.	Aa2 08/14/2014	AA 07/28/2011	A++ 05/28/2015
22	Vestur Insurance Limited	---	---	---
23	Westchester Fire Insurance Co.	Aa3 01/15/2016	AA 05/19/2014	A++ 06/22/2016
24	XL Specialty Insurance	A2 01/09/2015	A+ 10/30/2013	A 05/01/2015
25	Zurich American Insurance Co.	---	AA- 08/08/2015	A+ 10/02/2015

* ICF randomly selected 25 Insurance providers from EPA's RCRA insurance provider database and compiled the current credit ratings of the selected issuers from Moody's, S&P, and A.M. Best. Of the randomly selected providers, seven had not received a rating from the three ratings agencies (7 out of 25 or 28%).
[1] Moody's Long Term Credit Rating
[2] S&P Local Currency Long Term Rating
[3] A.M. Best Financial Strength Rating

A ratings requirement appears like it may reduce the risk of provider impairment in the near term although not eliminate the risk. However, the rating would entail an additional burden on the Agency to review while also narrowing the pool of available insurance providers from those eligible to provide insurance in the RCRA Subtitle C program.

2.4. Conclusion: Applicability to CERCLA 108(b) Rulemaking.

This report examined potential issuer eligibility criteria for insurers under CERCLA 108(b).As presented in Section 2.3.1, RCRA Subtitle C licensing and eligibility requirements will form the baseline for CERCLA 108(b). Those criteria have been widely used for many years without alteration, will be familiar to EPA staff implementing the program, and will leverage the existing framework of state oversight of insurance companies' solvency.

As discussed in Section 2.3.2, the captive insurance industry is currently experiencing significant growth but have been the subject of concern. To allow for greater flexibility and an additional compliance option, it may be beneficial to EPA and to the regulated entities if captive insurers and risk retention groups are eligible issuers for CERCLA 108(b) insurance. Captive insurers offer cost savings to regulated companies and can often provide unique policy needs; captives allow financially viable firms the opportunity to demonstrate financial responsibility without having to pay the costs of procuring financial mechanisms from a third party. However, captive insurers are generally believed to be higher-risk forms of insurance because their ability to spread risk and to separate the failure of the insurer from the failure of the insured is limited. According to the EPA Environmental Financial Advisory Board (EFAB), the use of rating agencies is a cost-effective mechanism for demonstrating the financial strength of a captive insurer. However, EFAB noted that the greatest risk to the solvency of a captive insurer is an infrequent, large insurance claim, which may be the nature of potential CERCLA liability claims in the hardrock mining industry.[85] In theory, because of the size of potential CERCLA claims, it is likely that a group captive or RRG will be better suited to pay the claims than will a pure captive, given that, in general, a group captive or RRG is more likely to have a larger pool of funds available and a more constant cash flow. According to EFAB, at the time a claim is filed, the cash flow to a pure captive insurer may be limited or non-existent due to the weakened financial capacity of the parent company as a result of the subsidiary's insolvency. However, with a larger pool of financially and legally independent subsidiaries, a group captive or RRG is less likely to experience a situation where cash flow becomes almost non-existent at the time a claim is filed, given that other insured companies within the group, unless also concurrently financially weakened, will continue to pay premiums. A group captive or risk retention group may be less likely than a pure captive insurer to become insolvent, and therefore more likely to be able to support large CERCLA claims under CERCLA 108(b). For 108(b), EPA will not propose that insurance may be provided by captive insurers or risk retention groups due to the concerns of limited financial independence. However the Agency expects to request comment on possible options for the treatment of risk retention groups and captive insurers including that of requiring a minimum financial strength rating from A.M. Best or a comparable rating from another rating agency and that of accepting policies from group captives and risk retention groups only but not from pure captive insurers.

Section 2.3.3 included a discussion of capital, asset, and other financial criteria for eligibility. EPA did not analyze the extent to which specific financial criteria – such as a requirement for a company's debt-to-equity ratio to be less than two – can predict and/or prevent insurer insolvency. Implementing yearly financial criteria would significantly add to Agency burden and reduce the pool of potential providers with difficult to assess benefits. Further, state insurance commissions have a quantitative tool at their disposal to assist in evaluating insurer solvency; EPA believes that leveraging the expertise and work of state insurance commissions would be a better option for CERCLA 108(b) than evaluating financial ratios itself. Accordingly, EPA is not proposing to include financial ratios that insurers wishing to provide insurance under the Agency's 108(b) rules must meet but will rather require they be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

EPA reviewed minimum ratings in Section 2.3.4. Although credit ratings as a group have been shown to be correlated with insolvency/impairment, individual company credit ratings sometimes have been inaccurate. For example, two and three years before becoming impaired, nearly 75 percent of all A.M. Best-rated property/casualty insurers that became impaired between 2001 and 2010 had secure ratings. However, Section 2.3.4 identified strong reported correlations between low ratings and increased likelihood for failure, and conversely, high ratings and decreased likelihood for failure. EPA's review found that in the year of failure, nearly all (except one) property/casualty insurers rated by A.M. Best between 2001 and 2010 were assigned a vulnerable rating from A.M. Best. However, if credit ratings were used as eligibility criteria it would limit the pool of potential insurers from those eligible to provide insurance under the RCRA Subtitle C program. A rating requirement for insurer eligibility may offer the beneficial oversight of another entity (the credit rating agency), in addition to the oversight of state insurance regulators from licensing/eligibility criteria. In light of these tradeoffs, EPA believes a rating

[85] EPA Environmental Financial Advisory Board. March 2007. The Use of Captive Insurance as a Financial Tool in Office of Solid Waste and Emergency Response Programs.

requirement would likely be of the greatest benefit in instances where the financial strength of the insurer may not be entirely independent of that of the owner operator (i.e. for captive insurance or risk retention groups). Accordingly, EPA is not proposing to require a minimum rating from insurers providing 108(b) insurance but will solicit comment on a potential ratings requirement for captive insurers or risk retention groups were one or both of those compliance options to be offered in the final rule.

Part 3. Surety Bond.

This part examines potential CERCLA 108(b) financial responsibility surety bond issuer eligibility criteria and issuer risk of default. The following sections describe a surety bond, what types of entities have federal approval to issue surety bonds, historical trends in approved surety issuers, potential additional surety issuer criteria, and applicability to CERCLA 108(b) financial responsibility criteria.

A surety bond is a written agreement based upon a three-party relationship. In the context of CERCLA § 108(b) these three parties include the current owner/operator of the regulated facility, the issuer of the surety bond, and the obligee claimant(s) (e.g., U.S. Government or injured 3rd party) to whom is owed the required payment/performance under CERCLA. Exhibit 11 below illustrates the responsibilities that are characteristic of this three-party relationship.

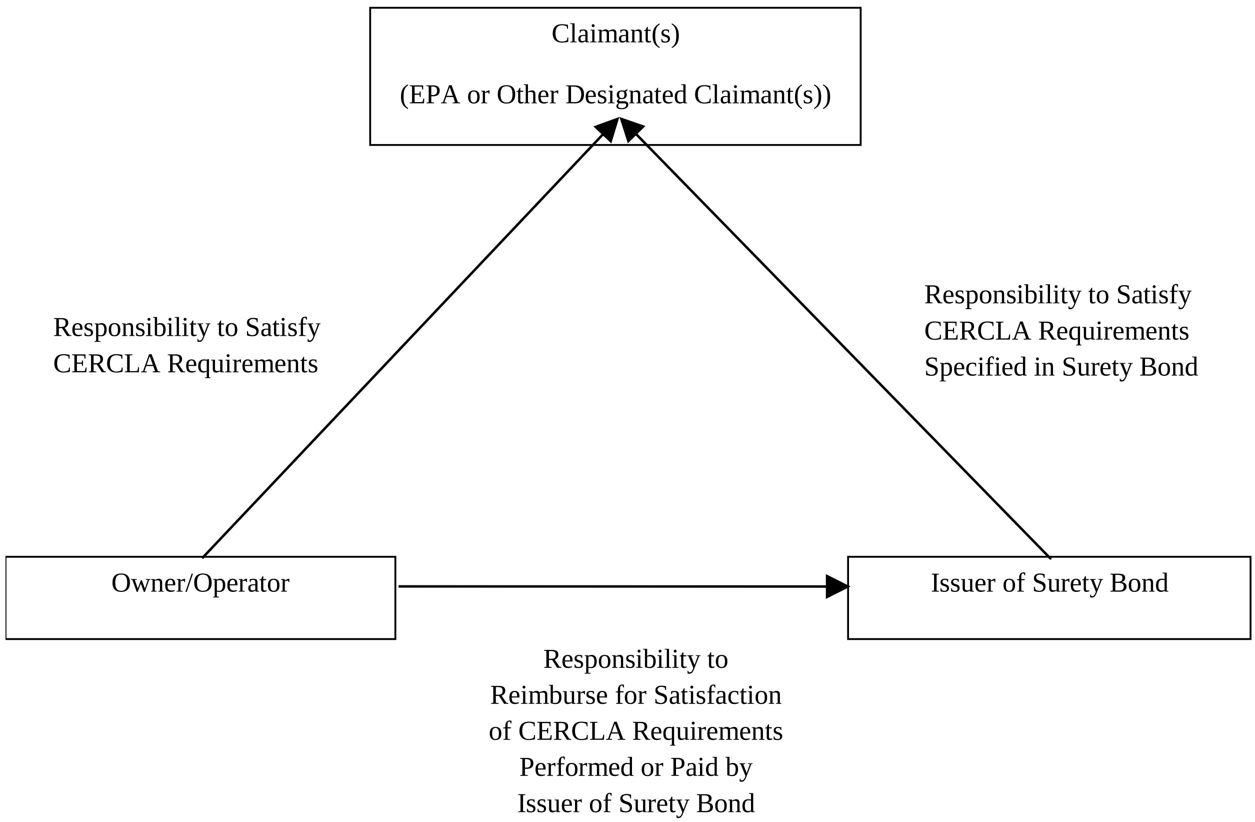
The relationship between the owner/operator and the claimant(s) originates from the owner/operator's participation in an activity that is subject to CERCLA. Participation in the covered activity creates the owner/operator's responsibility to satisfy all CERCLA requirements.

The relationship between the owner/operator and the issuer of the surety bond originates from the owner/operator's decision to obtain a surety bond to satisfy its CERCLA § 108(b) requirement to demonstrate FR to ensure payment/performance of specified CERCLA requirements (e.g., remediation, compensatory liability).

A surety bond creates two relationships for the issuer - one between the issuer of the surety bond and the claimant and the other between the issuer of the surety bond and the owner/operator. Upon issuance of the surety bond, the issuer becomes responsible to satisfy, up to a specified maximum amount known as the "penal sum," the CERCLA requirements identified in the surety bond if the owner/operator fails to do so (often termed "default"). Simultaneously with the creation of the surety bond issuer's responsibility to pay/perform, the owner/operator becomes responsible to reimburse the issuer of the surety bond for payment/performance made in accordance with the terms of the surety bond.[86] The surety bond issuer's right to reimbursement helps to ensure that it is the owner/operator rather than the issuer of the surety bond that ultimately bears the cost of fulfilling the CERCLA obligations owed to the claimant.

[86] Restatement (Third) of Suretyship and Guaranty, § 22.

Exhibit 11 – Surety Bond Relationships



Most surety bonds are sold through insurance agents or brokers; many large property and casualty insurance companies have surety departments. There are also some companies whose primary business is the issuance of surety bonds. Surety bonds are only as secure as the ability of the issuing institution to honor them.

3.1. Surety Authority.

Understanding the regulations and authorization process applicable for entities wishing to issue surety bonds helps inform the potential default risk of the issuer. Of the many surety-issuing organizations, those that "do business" with the federal government must comply with laws administered by the Department of the Treasury. Under 31 CFR 223, "Surety Companies Doing Business With the United States," qualified companies are published in Circular 570 as "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds" and as "Acceptable Reinsuring Companies." The Bureau of Fiscal Service (Fiscal Service) of the U.S. Department of the Treasury administers the federal corporate surety bond program. The Treasury Circular 570 is published annually and lists companies authorized to issue federal bonds (i.e., bonds with any federal agency or office listed as the obligee). Although the EPA or another federal agency (e.g., Bureau of Land Management, United States Forest Service) may not necessarily be named an obligee on CERCLA 108(b) bonds (as discussed in the Surety Bond Specifications background document), limiting eligible 108(b) surety-issuers to those listed on Circular 570 may provide assurance of a low probability of default by the issuer. The Circular 570list provides information on companies approved to direct write federal bonds (i.e., issue a surety bond with a federal agency or office listed as the obligee) and/or, reinsure federal surety bonds. In addition to listing all the states where the surety is licensed, Circular 570 contains information on each entity's "underwriting limitation" (i.e., the maximum amount of a single bond that the surety may issue without a co-issuer or reinsurer).[87] If a company does not wish to issue federal bonds it need not apply for a listing in Circular 570.

In order to be listed in Circular 570, a surety first must apply for a certificate of authority and pay an application fee; as of January 27, 2016, this fee was $9,300.[88] The surety company must already be engaged in suretyship, must not be engaged in any type or class of business not authorized by its charter or the laws of the State in which the company is incorporated, and must intend to execute surety bonds in favor of the United States.[89] Treasury will issue a certificate of authority to an applicant company if after reviewing the application as a whole, it determines in its discretion and according to the regulations at 31 CFR Part 223 that the company has the necessary qualifications. Treasury will evaluate whether the company is authorized under its charter or articles of incorporation to conduct the business referenced in 31 USC § 9304(a)(2), has paid-up capital in cash or its equivalent of not less than $250,000, is solvent, is financially and otherwise qualified to do business, and is able to keep and perform its contracts.[90] It also evaluates a company's financial statements, charter or articles of incorporation, past history, and any other information that it may require the company to submit. The surety's underwriting limit is calculated by the Department of the Treasury as ten percent of the company's paid-up capital and surplus for Treasury's purposes.[91] The Secretary considers a variety of information submitted by the applicant to determine whether to issue a certificate of authority and to determine the amount of the underwriting limit, including but not limited to the following:[92]

- Annual Financial Statements for the company and its subsidiaries;
- The company's most recent quarterly financial statement;
- The company's most recent examination report;
- The company's 10-K report if the company files with the Securities and Exchange Commission (SEC);
- Insurance Regulatory Information System (IRIS) ratio results;[93]
- A certificate from a State Insurance Commissioner or other financial official showing that the company has on deposit legal investments of at least $100,000;
- A list of all bonds and policies in force with a face amount or penal amount in excess of 10% of the company's capital and surplus, or for lines of business with numerous risks, only the largest risk underwritten;

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[87] List of certificate holding companies, 31 CFR 223.16.
[88] 31 CFR 223.22(a).
[89] Business, 31 CFR 223.5.
[90] Issuance of certificates of authority, 31 CFR 223.3.
[91] Limitation of risk, 31 CFR 223.10.
[92] Department of the Treasury, Financial Management Service, "To Become an Authorized (Certified) Surety and/or Reinsurer on Federal Bonds,"https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/howapply-surety.htm. and Department of Treasury, Bureau of Fiscal Services, "Annual Letter to Executive Officers of Surety Companies Reporting to the Treasury" December 31, 2015 at: https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/AnnualLetterSuretyCompanies.pdf
[93] IRIS is a database of insurance companies in the United States run by the National Association of Insurance Commissioners (NAIC) that provides information about insurers' financial solvency. National Association of Insurance Commissioners & the Center for Insurance Policy and Research. "Financial Statement Filing & Step Through Guide." Available online at http://www.naic.org/industry_financial_filing.htm.

- Documentation of large letters of credit and trust accounts;
- Lists of affiliated companies and past affiliated companies placed in liquidation or receivership;
- Details on recent and intended acquisitions and mergers;
- Evidence that the company is authorized to transact surety business and faces no restriction that would prevent it from guaranteeing bonds and undertakings in judicial procedures or guaranteeing contracts to which the U.S. is party;
- Evidence of reinsurance;
- Biographical information of company officers and directors;
- Lists of criminal convictions or a statement of "no criminal convictions;" and
- The list of states where the company is authorized to transact surety business.

In order to remain in the Circular 570 list, a company must submit its annual financial statements for review and must pay an annual fee; as of January 27, 2016, this fee was $5,450. The Treasury may investigate insolvency at any time and can require additional security from the principal (i.e., the entity required to provide a surety bond) if the Secretary decides that the issuing surety is no longer sufficiently secure.[94]

EPA looked for indicators of the size of the surety industry to help inform the impact of any eligibility requirements on potential availability of instruments. The portion of surety companies that is listed on Circular 570 appears to be a relatively large percentage of the entire surety industry. As of July 1, 2016, there were over 250 sureties listed in Circular 570 as "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds."[95] The surety industry is not very large. By way of comparison, the industry's national trade association, The Surety & Fidelity Association of America (SFAA), reported in April 2012 that it had 441 member companies including "virtually all" of the companies on Circular 570.[96]

3.2. Performance of Surety Bond Issuers.

Treasury reviews the financial statements of companies on its Circular 570 list throughout the year and in advance of the annual July 1 publication of the Circular 570. If it takes any exceptions to the financial statements, it will give a company due notice of the exceptions before issuing the Circular 570. In addition, if Treasury decides that the surety company is insolvent or is in violation of 31 USC 9304, 9305, or 9306, it will revoke a corporation's ability to do new business with the federal government (i.e., remove the surety from the Circular 570 list).[97] An issuer may also voluntarily remove its own listing from Circular 570. Changes to Circular 570 are documented publically and current practice is to document such changes in the Federal Register at the time that they occur.

An issuer eligibility criterion, such as Circular 570 listing, should have some stability and not fluctuate greatly from year to year while also remaining responsive enough to identify potential higher risk providers. To assess Circular 570 's stability, EPA reviewed ten years of its history. EPA found that almost 65 percent of sureties listed in Circular 570 as of January 1, 2001 were still listed as of December

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[94] Authority and revocation of authority of surety corporations, 31 U.S.C. 9305(d)(3).
[95] https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/C570%207.1.2016.pdf.
[96] http://www.surety.org (accessed April 30, 2012).
[97] Authority and revocation of authority of surety corporations, 31 U.S.C. 9305(d)(1).

31, 2011, which the EPA considered acceptable stability.[98] EPA identified 71 additions and 101 removals between 2001 and 2011 (Exhibit 12), which EPA did not find to be excessive.[99] Notices in the Federal Register show that at least two companies of the 71 that were added to Circular 570 after the year 2000 were since removed. Although additions to the Circular 570 list over this period were relatively consistent on a year-to-year basis (ranging from two additions in 2011 to 10 additions in 2003 and 2008), removals from the list were far more variable (ranging from zero removals in 2009 to 29 removals in 2001). Nearly half of the removals from Circular 570 from 2001 to 2011 occurred during 2001 and 2002, often considered the most recent crisis period for the surety industry, which has rebounded strongly since, with the exception of a notable number of terminations in 2010.

Exhibit 12 – Changes to Circular 570, 2001-2011

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Additions	7	4	10	8	7	5	6	10	4	8	2	**71**
Removals	29	21	11	4	4	1	8	4	0	15	4	**101**

Source: U.S. Government Printing Office, Federal Register, 2001-2011.

3.3. Potential Surety Eligibility Criteria.

Financial responsibility programs often have eligibility requirements for issuers of acceptable types of financial responsibility mechanisms such as surety bonds. Section 3.3 describes issuer eligibility requirements under Resource Conservation and Recovery Act (RCRA) Subtitle C- Hazardous Waste Regulations (40 CFR Part 264) for surety bonds, as well as surety eligibility criteria found in other federal and state financial responsibility programs.

U.S. EPA reviewed the following financial responsibility programs under RCRA Subtitle C, which provide benchmarks for surety issuer eligibility criteria:

- 40 CFR Parts 264/265, Subpart H Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities: Closure/Postclosure Care and Liability Coverage.
- 40 CFR Part 261, Subpart H Financial Requirements for Management of Excluded Hazardous Secondary Materials: Removal and Decommissioning and Liability Coverage.

EPA also reviewed surety issuer eligibility criteria under other Federal financial responsibility programs including:

- RCRA Subtitle D Solid Waste Regulations- 40 CFR Part 258 Subpart G Criteria for Municipal Solid Waste Landfills.

[98] Calculated as: (255 sureties listed as of 12/31/2011 minus the 71 that have been added since 2001 = 184 surety issuers that have remained listed in Circular 570 since 1/1/2001) / (255 sureties listed as of 12/31/2011 minus the 71 that have been added since 2001, plus the 101 that have been removed since 2001 = 285 issuers that were listed as of 1/1/2001) = 64.6 percent.

[99] U.S. Government Printing Office, Federal Register, 2001-2011. 76 FR 38891 (07/01/2011); 75 FR 38191 (07/01/2010); 74 FR 31535 (07/01/2009); 73 FR 37644 (07/01/2008); 72 FR 36192 (07/02/2007); 71 FR 67107 (06/30/2006); 70 FR 38502 (07/01/2005); 69 FR 40224 (07/01/2004); 68 FR 39186 (07/01/2003); 67 FR 44294 (07/01/2002); 66 FR 35024 (07/02/2001).

- RCRA Subtitle I Underground Storage Tank Regulations- 40 CFR Part 280, Subpart H Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST) and 1999 guidance document "Financial Responsibility for Underground Storage Tanks: A Reference Manual."

- Underground Injection Control (UIC) Class I Wells- 40 CFR Part 144 Subpart F Financial Responsibility: Class I Hazardous Waste Injection Wells.[100]

- UIC Class VI Wells- 40 CFR Part 146 Subpart H Underground Injection Control Program: Criteria and Standards Applicable to Class VI Wells and 2011 guidance document "Underground Injection Control (UIC) Class VI Program: Financial Responsibility Guidance."

- Bureau of Land Management (BLM) - 43 CFR Part 3809 Mining Claims under the General Mining Laws- Surface Management.

- Bureau of Ocean Energy Management (BOEM) 30 CFR Part 553 Oil Spill Financial Responsibility for Offshore Facilities.[101]

- U.S. Coast Guard – 33CFR Part 138 Financial Responsibility for CERCLA 108(a) Water Pollution (Vessels) and OPA 90 V (Vessels and Deepwater Ports).[102]

- Nuclear Regulatory Commission (NRC) - 10 CFR Part 30 Rules of General Applicability to Domestic Licensing of Byproduct Material, Part 40 Source Material, Part 70 Special Nuclear Material, Part 72 Independent Storage of Spent Nuclear Fuel ("NRC General Rules for Materials Licensees"), and 2003 NRC guidance document, NUREG-1757, Vol. 3, Rev. 1 Appendix A, "Standard Format and Content of Financial Assurance Mechanisms for Decommissioning."

EPA chose to review these federal financial responsibility programs for surety issuer eligibility requirements because of their relevance to CERCLA 108(b) as well as for offering potential variations to RCRA Subtitle C issuer eligibility benchmarks. For example, the BOEM financial responsibility programs is relevant because it implements the Oil Pollution Act (OPA), which is another federal response program. RCRA Subtitle I UST Regulations were chosen because they establish financial responsibility for prospective remediation. UIC Class VI regulations were reviewed because these regulations are the most recent EPA has developed for financial responsibility. The NRC General Rules for Materials Licensees was chosen because it applies to the decommissioning of process equipment and non-waste facilities. EPA selected BLM because of its responsibilities over federal lands.

EPA also reviewed selected state financial responsibility programs for hardrock operations (see Appendix A for list of state programs reviewed). State hardrock financial responsibility programs exhibit a diverse range of approaches to issuer eligibility criteria. EPA selected and reviewed programs that are representative of the state of financial responsibility regulation in key hardrock mining states.

[100] UIC regulations for Class II, III, IV, and V wells contain no financial responsibility requirements.

[101] BOEM accepts the use of self-insurance, insurance, indemnity, surety bond, or alternative method approved by the Director as evidence of financial responsibly (30 CFR 553.20). BOEM regulations do not include letters of credit or trust funds.

[102] The Coast Guard accepts insurance, surety bonds, self-insurance, a financial guarantee, or other evidence of financial responsibility approved by the Director as evidence of financial responsibility (33 CFR 138.80(b)).Coast Guard regulations do not include letters of credit or trust funds.

In this section, EPA describes the results of its review of federal and state financial responsibility programs for potential surety issuer eligibility criteria for consideration in CERCLA 108(b) rulemaking.

Exhibit 13 compiles the criteria identified in the federal and state programmatic reviews.

Exhibit 13 – Summary of Surety Eligibility Requirements

Federal Regulation	State Regulation	Eligibility Language
- 30 CFR Part 253 BOEMRE Oil Spill Financial Responsibility for Offshore Facilities - 40 CFR Part 144 Financial Responsibility: Class I Hazardous Waste Injection Wells - 40 CFR Part 258 Subpart G Criteria for Municipal Solid Waste Landfills - 40 CFR 261 Subpart I Financial Requirements for Management of Excluded Hazardous Secondary Materials - 40 CFR Parts 264/265 Subpart H Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities - 40 CFR Part 280 Subpart H Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST) - 43 CFR 3809 BLM Mining Under the General Mining Laws- Surface Management - NRC Guidance: NUREG-1757, Vol.3.A.9.1	- Florida Phosphogypsum Stack Closure Management [Fla. Admin. Code Ann. r. 62-673.100 – 62-673.900]. - Montana Chapter 17 Environmental Quality, Part 24 Reclamation, Subchapter 1 Rules and Regulations Governing the Hard Rock Mining Reclamation Act [Mont. Admin. R. 17.24.101 et seq.]. - Utah Title R647: Natural Resources; Oil, Gas & Mining; Non-Coal [UT Admin Code R647 et seq.].	Listed as acceptable surety on Federal bonds in annual Circular 570 of the U.S. Department of the Treasury.
- 30 CFR 253 BOMERE Oil Spill Financial Responsibility for Offshore Facilities	- Alaska Reclamation Title 11: Natural Resources. Chapter 97, Mining Reclamation [Alaska Admin. Code tit. 11 § 97]. - Arizona State Mine Inspector Mined Land Reclamation. - Idaho Surface Mining and Closure of Cyanidation Facilities. - Missouri Title 10: Department of Natural Resources. Division 40 – Land Reclamation Commission [MO. CODE REGS. ANN. tit. 10, §§ 40-10.010 – 40.10.100]. - Missouri The Metallic Minerals Waste Management Act of 1989	Must be licensed to do business in the State in which the surety bond is executed.

Federal Regulation	State Regulation	Eligibility Language
	[MO. REV. STAT. §§ 444.350–444.380]. - Montana Title 82: Minerals, Oil, and Gas, Chapter 4 Reclamation. Part 3 Metal Mine Reclamation [Mont. Code Ann. § 82-4-301 et seq.]. - Nevada Regulation of Mining Operations and Exploration Projects, Duties of Division of Minerals. [Nev. Admin. Code ch. 519A.010 et seq.]. - New Mexico Title 19: Natural Resources and Wildlife. Chapter 10, Non-Coal Mining [M. Code R. § 19.10.12 et seq.]. - Texas Natural Resource Code, Title 4: Mines and Mining, Chapter 131: Uranium Surface Mining and Reclamation [Tex. Nat. Res. Code Ann. § 131]. - Texas Natural Resource Code, Title 4: Mines and Mining, Chapter 134: Texas Surface Coal Mining and Reclamation Act [Tex. Nat. Res. Code Ann. § 134]. - Utah Title R647: Natural Resources; Oil, Gas,& Mining; Non-Coal [UT Admin Code R647 et seq.].	
- 40 CFR Part 146 Underground Injection Control Program: Criteria and Standards Class VI		Issuer must pass financial strength requirements based on credit ratings, or meet a minimum rating, minimum capitalization, and ability to pass the bond rating, when applicable.
	- Montana Title 82: Minerals, Oil, and Gas, Chapter 4 Reclamation. Part 3 Metal Mine Reclamation [Mont. Code Ann. § 82-4-301 et seq.].	Surety bond may not be in excess of 10% of the surety company's surplus account.
	- Montana Chapter 17 Environmental Quality, Part 24 Reclamation, Subchapter 1 Rules and Regulations Governing the Hard Rock Mining Reclamation Act [Mont. Admin. R. 17.24.101 et seq.].	DEQ may not accept surety bonds in excess of three times the surety's maximum single obligation for any person on all permits held by that person.
- NRC Guidance: NUREG-1757, Vol.3.A.9.1		The company's underwriting limitation (specified in Circular

Federal Regulation	State Regulation	Eligibility Language
		570) must be at least as great as the level of coverage required for the license.
- 30 CFR Part 253 BOEMRE/MMS Oil Spill Financial Responsibility for Offshore Facilities program		Be in compliance with applicable statutes regulating surety company participation in insurance-type risks.
	- Missouri Title 10: Department of Natural Resources. Division 40 – Land Reclamation Commission [MO. CODE REGS. ANN. tit. 10, §§ 40-10.010 – 40.10.100].	Issued by a "good and sufficient" corporate surety.
	- Utah Title R647: Natural Resources; Oil, Gas & Mining; Non-Coal [UT Admin Code R647 et seq.].	Listed in "A.M. Best's Key Rating Guide" at a rating of A- or better or a Financial Performance Rating of 8 or better, according to "A.M. Best's Guide".

3.3.1. Surety Eligibility Requirements.

RCRA Subtitle C financial responsibility requirements for closure, post-closure care, and third-party liability surety bonds include the following identical eligibility criteria for the issuing surety. The issuer:

> *"must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury."*[103]

These criteria have been unchanged since their issuance. Many of the other programs EPA reviewed included the identical criteria: RCRA Subtitle D Solid Waste Regulations,[104] RCRA Subtitle I UST Regulations,[105] UIC Class I Wells,[106] BOEM Oil Spill Financial Responsibility for Offshore Facilities program,[107] Coast Guard Financial Responsibility for Water Pollution (Vessels),[108] BLM Mining under the General Mining Laws- Surface Management,[109] Florida Phosphogypsum Stack Closure Management,[110] Montana Uranium Mining Reclamation,[111] and Utah Reclamation program.[112] Additionally, most of the other programs that EPA reviewed require that the surety be licensed to do business in the state in

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[103] Financial assurance for closure, 40 C.F.R. § 264.143(b)(1); Financial assurance for closure, 40 C.F.R. § 264.143(c)(1); Financial assurance condition, 40 C.F.R. § 261.143 (b)(1); Financial assurance for post-closure care, 40 C.F.R. § 264.145(b)(1); Financial assurance condition, 40 C.F.R. § 261.143 (b)(1). *See also* Liability requirements, 40 C.F.R. § 264.147(i)(2).

[104] Allowable mechanisms, 40 CFR§ 258.74 (c)(1).

[105] Surety bond, 40 CFR§ 280.98(a).

[106] Financial assurance for plugging and abandonment, 40 CFR§ 144.63(b)(1).

[107] How can I use a surety bond as OSFR evidence?, 30 CFR § 553.31.

[108] Surety Bond. 33 CFR 138.80(b)(2).

[109] What forms of individual financial guarantee are acceptable to BLM?, 43 CFR § 3809.555(a).

[110] Financial Assurance, FLA. ADMIN. CODE ANN. r. 62-673.640(4)(b).

[111] Bonding: Incapacity of Surety, Mont. ADMIN. R. 17.24.1106(b).

[112] Surety, UT Admin Code R647-2-111(4.11); R647-3-111(4.11); R647-4-113(4.11).

which the surety bond is executed,[113] which is also a requirement under Treasury regulations at 31 CFR 223.5(b).

Eligible surety issuers under RCRA Subtitle C include both insurance companies and non-insurance surety companies that are listed in Circular 570.

EPA's review found that the Circular 570 listing criterion seems robust. Although it is possible for a surety to default or fail while listed in Circular 570, this did not occur once over the eleven years of data reviewed by EPA (2001-2011) indicating that Treasury successfully identified high risk sureties to remove from the list prior to their defaults. However, the Federal Register makes note of one firm being liquidated soon after (i.e., one week) being removed from Circular 570.[114] This suggests that the Fiscal Service regulators have been successful in screening out financially marginal sureties from getting on the list and in removing the listing of at-risk companies from Circular 570, although not always removing such companies well in advance of a company failing.

3.3.2. Capital, Asset, and Other Financial Eligibility Criteria.

EPA reviewed federal and state surety eligibility criteria for requirements relating to capital, asset, and other financial criteria. RCRA Subtitle C requirements and most of the other programs make no reference to minimum capital levels or ratios. EPA's UIC Class VI program requires that owner/operators provide proof that the surety has either (1) passed financial strength requirements based on credit ratings (discussed below in Section 3.3.3) or (2) met a minimum rating, minimum capitalization, and has the ability to pass the bond rating when applicable.[115] EPA recommends in guidance that the Class VI issuer meet the financial ratios presented in Exhibit 15, below.[116] The ratios in the Exhibit include:

- **Assets (current, total, U.S.)** – property owned by an entity
- **Liabilities (total, current)**–obligations for which an entity is responsible
- **Net Income**– excess of revenues over outlays in a given period of time, with consideration of:
    - **Amortization** – reduction in the value of an asset by prorating its cost over a period of years
    - **Depletion** – act of decreasing the value of an asset

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[113] How can I use a surety bond as OSFR evidence?, 30 CFR § 553.31(a); Corporate surety bond, ALASKA ADMIN. CODE tit. 11 § 97.405.; Surety Bonds, ARIZ. ADMIN. CODE R11-2-804.; Corporate Surety Bond, IDAHO ADMIN. CODE r.20.03.02.122(01).; Form of Performance Bond, IDAHO ADMIN. CODE r.20.03.01.035(02)(a).; Bonding, MO. CODE REGS. ANN. tit. 10, § 40-10.030; Financial assurance instrument required, form, amount, MO. REV. STAT. § 444.368. 4.; Performance bond, MONT. CODE ANN. § 82-4-338(1)(a).; Financial Assurance Mechanisms, N.M. Code R. § 19.10.12.1208.A; General requirements, NEV. ADMIN. CODE ch. 519A.350(1)(b); NEV. ADMIN. CODE ch 519A.350(3).; Security for Bond, TEX. NAT. RES. CODE ANN. § 134.126(a).; Security for Bond, Tex Nat. Res. Code § 131.205(a).; Surety, UT Admin Code R647-2-111(4.11); R647-3-111(4.11); R647-4-113(4.11).

[114] The Fiscal Service removed Amwest Surety Insurance Company from the Circular 570 on May 31, 2001. Amwest was liquidated one week later on June 7, 2001. 66 FR 26832 (July 13, 2001).

[115] 40 CFR § 146.85(a)(4)(i) and (a)(6)(ii).

[116] Environmental Protection Agency, *Underground Injection Control (UIC) Class VI Program: Research and Analysis in Support of UIC Class VI Program Financial Responsibility Requirements and Guidance (December 2010),* available athttps://www.epa.gov/sites/production/files/2015-07/documents/uicclass6reasearchandanalysisupdatedpg84.pdf.

- **Depreciation** – reduction in the value of an asset over time
- **Net Worth**– total assets minus total liabilities of an entity
- **Total Environmental (Financial Responsibility) Obligations**– the sum of current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

Exhibit 15 – List of Financial Ratios and Recommended Thresholds under EPA UIC Class VI Wells Program

Ratio	Explanation of Ratio	UIC Class VI Program Recommended Threshold[117]
Debt-Equity	Total Liabilities / Net Worth	< 2.0
Assets-Liabilities	Current assets / Current Liabilities	> 1.5
Cash Flow to Liabilities	(Net Income + Depreciation + Depletion + Amortization) / Total Liabilities	> 0.10
Liquidity	(Current Assets – Current Liabilities)/ Total Assets	> -0.10
Net Profit		> 0
Net Working Capital & Tangible Net Worth		NA
Tangible Net Worth		NA
Assets	A) U.S. Assets / Total Assets B) U.S. Assets/ Total Environmental Obligations	NA

EPA also identified other state and federal financial responsibility programs that require acceptable surety bond issuers to satisfy minimum financial levels or ratios. Select programs are outlined below:

- Although NRC regulations themselves contain no language regarding underwriting limits or other financial ratios, guidance in NUREG-1757,Vol. 3, Rev. 1 states "the company's underwriting limitation must be at least as great as the level of coverage required," and that "a company issuing a surety can only exceed its underwriting limitation if it brings another qualified company into the agreement to share the risk. When acting together, none of the companies may exceed its individual underwriting limit."[118] This is consistent with Treasury specifications.
- Montana Uranium Mining Reclamation program states that a surety bond may not be in excess of 10 percent of the surety company's capital surplus account as shown on a balance sheet certified by a certified public accountant.[119] Montana law also provides that the department

[117] Environmental Protection Agency, *Underground Injection Control (UIC) Class VI Program: Research and Analysis in Support of UIC Class VI Program Financial Responsibility Requirements and Guidance (December 2010),* available athttps://www.epa.gov/sites/production/files/2015-07/documents/uicclass6reasearchandanalysisupdatedpg84.pdf.
[118] Surety Bonds, NRC NUREG-1757, Vol. 3, A.9.1.
[119] Bonding: Surety Bonds, Mont. Admin R. 17.24.144(1)(a).

may not accept a surety bond from a surety company for any person, on all permits held by that person, in excess of three times the surety's maximum single obligation limit.

EPA assessed NRC's guidance for surety issuers. NRC's guidance in NUREG-1757,Vol. 3, Rev. 1 recommends provisions that mirror Treasury requirements for co-insurance and reinsurance at 31 CFR 223.11.

EPA believes that eligibility criteria comparable to the Montana Uranium Mining Reclamation program are more restrictive than eligibility criteria based on Treasury specifications. Whereas the U.S. Department of the Treasury calculates an issuer's underwriting limit as ten percent of both paid up capital and surplus, the Montana Uranium Mining Reclamation program does not allow a single bond to exceed ten percent of its issuer's capital surplus only. Any added security for EPA that might come from using the more restrictive Montana issuer criteria or the UIC's recommended financial thresholds instead of or in addition to the Circular 570 criteria would need to be balanced by (1) the greater implementation burden that would fall on EPA and the regulated community to use the Montana alternative or UIC ratios and (2) the potentially reduced availability of qualified issuers.

The Agency does not expect to use financial criteria in specifying the eligibility of 108(b) surety because of the burden on owners and operators as well as on the Agency to review and evaluate annual financial statements. Further, the Circular 570 listing requirement appears a relatively stable and robust predictor of default risk that leverages a pre-existing Federal oversight process that reviews the issuers' financials.

3.3.3. Minimum Rating(s) Requirements.

EPA identified federal and state financial responsibility programs for surety bond issuer eligibility criteria incorporating credit ratings issued by nationally recognized statistical rating organizations (NRSROs). Two of these programs include:

- Utah Mined Land Reclamation Act requires that the surety be licensed to do business in Utah, be listed in the current issue of the U.S. Department of the Treasury Circular 570, and be listed in "A.M. Best's Key Rating Guide" at a minimum rating of A- or better or a financial performance rating of 8 or better.[120]

- EPA's UIC Class VI financial responsibility program requires that the surety must either (1) have passed financial strength requirements based on credit ratings or (2) have met a minimum rating, minimum capitalization, and ability to pass the bond rating when applicable.[121] EPA Class VI guidance (2010) recommends that owners or operators demonstrate that insurers have a credit rating in the top four categories from either Standard & Poor's or Moody's (i.e., AAA, AA,

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[120] Exploration: Surety Bonds, Rule R647-2-11, Utah Administrative Code. From 1990 to 2002, A.M. Best" categorized" companies that were not eligible for a Best's Rating such as small companies or newly established companies. A Financial Performance Rating (FPR) was used to measure the financial strength of small or new companies. A rating of NR-2: Insufficient Size and/or Operation Experience was assigned to companies that did not meet A.M. Best's minimum size and/or operating experience requirements. FPR ratings were assigned on a scale of 1-9, where 5-9 were considered "Secure Ratings" and 1-4 "Vulnerable Ratings."

[121] Financial Responsibility, 40 CFR § 146.85(a)(6)(ii).

A, or BBB for Standard & Poor's and Aaa, Aa, A, or Baa for Moody's) or from any NRSRO as long as the owner or operator can demonstrate the equivalency of the rating with the recommended ratings.[122]

EPA assessed a minimum NRSRO credit rating requirement for CERCLA 108(b) surety issuers. As discussed above, companies in the business of issuing surety bonds include both diversified insurance companies and surety companies that issue only surety bonds. The five common classes of issuers and instruments rated by NRSROs are shown in Exhibit 16. Insurance companies and instruments are rated by each of the four major rating agencies. There is no rating class for surety companies alone. See Appendix B for a detailed description of each NRSRO's ratings.

Exhibit 16 –Ratings Reported to SEC by NRSROs by Ratings Class

	Financial Institutions	Insurance Companies	Corporate Issuers	Asset-Backed Securities	Gov., Muni. & Sovereign	Total Ratings
A.M. Best	N/R[1]	7,910	1,526	26	N/R	9,462
Fitch	46,260	3,011	15,558	42,237	194,086	301,152
Moody's	52,049	3,336	41,364	71,504	673,166	841,419
S&P	61,000	6,800	53,000	85,200	970,200	1,176,200
Other*	37,748	1,278	15,807	19,665	17,363	91,861
Total	197,057	22,335	127,255	218,632	1,854,815	2,420,094

* Includes DBRS, Inc., Egan-Jones Rating Company, HR Ratings de Mexico, Kroll Bond Rating Agency, Inc., Japan Credit Rating Agency, Ltd., and Morningstar Credit Ratings, LLC.
[1] N/R indicates that the NRSRO is not registered for the rating category indicated.
Source: Securities and Exchange Commission, December 2015, Annual Report on Nationally Recognized Statistical Rating Organizations.

Exhibit 16 shows that nearly 84 percent of ratings by A.M. Best are for insurance companies and their debt securities, whereas the other agencies' rating portfolios are far more diversified among the five NRSRO rating categories. EPA searched for datasets by various NRSROs that specifically analyzed surety issuers, but was unable to locate such data, probably because the surety industry is so small in number. Therefore, EPA reviewed data on NRSRO rating of insurance companies in general. For its analysis, EPA used impairment rates from A.M. Best for property/casualty and life/health insurance companies (Exhibit 17 and Exhibit 18,) and impairment rates from A.M. Best for property/casualty insurers only (Exhibit 19).[123]

A.M. Best rates over 7,900 insurance companies and their securities, Fitch over 3,000, Moody's over 3,300, and S&P over 6,800 (Exhibit 16). The number of insurance ratings by each of these companies greatly exceeds the 255 surety issuers listed in Circular 570 (as of December 31, 2011). One reason for this difference is that not all insurance companies issue federal surety bonds; as a result, data for A.M. Best-rated impairments of insurers may differ from data for approved issuers of federal bonds only (i.e., companies listed in Circular 570). To understand the potential significance of this difference, EPA

[122] The top four ratings for S&P and Moody's constitute "investment grade" ratings; comparable ratings for A.M. Best and Fitch are similarly labeled "investment grade," and include aaa, aa, a, and bbb from A.M. Best and AAA, AA, A, and BBB from Fitch.
[123]Impairment data for A.M. Best property/casualty insurers only (i.e. not including life/health insurers) were not readily available for a year-by-year analysis.

compared 10 years of data on impairments of A.M. Best-rated insurers to removals of surety issuers from the Circular 570 list; these comparisons are presented in Exhibit 17.

EPA found a strong correlation coefficient (0.77) between A.M. Best yearly insurer impairment rates and Circular 570 yearly removal rates shown in Exhibit 17.[124] Years of increased removal rates from the Circular 570 list correspond with years of greater impairment rates (as defined by A.M. Best).

Exhibit 17 –A.M. Best Impairment Rates[125]versus Circular 570 Removal Rates, 2001-2011

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
A.M. Best Impairments	0.7	0.7	0.6	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2
Circular 570 Removals*	11.4	8.2	4.3	1.6	1.6	0.4	3.1	1.6	0.0	5.9	1.6

*Calculated as (issuers removed in that year divided by 255 sureties listed in Circular 570 as of December 31, 2011).

The major rating agencies have published their own performance information, using various methods and metrics that are not completely comparable. SEC rules finalized in 2014 (discussed in Appendix C) now require NRSROs to disclose certain standardized performance statistics, including default rates. Apart from the 2014 SEC disclosure requirements, the major rating agencies (i.e., A.M. Best, Fitch, Moody's, and S&P) have used generally similar approaches to assess the performance, accuracy, and/or quality of their ratings. They focus on the following metrics and measures:

- strong correlations between higher (e.g., secure, investment grade) ratings and lower default rates, and between lower (e.g., vulnerable, non-investment grade) ratings and higher default rates;
- defaulting issuers rated lower than issuers that did not default; and
- the period of deteriorating creditworthiness before default usually is shorter for lower ratings than for higher ratings.

Despite the generally similar approaches used, the rating agencies have employed different definitions, methods, data, and methodologies in measuring their ratings performance. Moody's expressed a view in 2011 that no single metric can summarize the quality of a ratings system or distinguish a "good" system from a "bad" system, and added that no set of metrics captured at any one time or through any one cycle can do so either. Moody's stated that a ratings system can be fairly evaluated only over many cycles and from multiple perspectives.[126]

According to its own statistics, A.M. Best believed that its ratings have been fairly strong predictors of insurer impairment. A.M. Best has found that insurers with higher ratings have experienced lower impairment rates than lower rated companies.[127]Exhibit 18 shows that lower rated insurers, on average, became impaired sooner than higher rated insurers. A secure-rated insurer that becomes impaired does so, on average, around the thirteenth year after receiving its secure rating, whereas an insurer rated as

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[124] Yearly termination rates are calculated as the number of surety bond issuers removed from Circular 570 in a given year divided by the number of surety bond issuers listed in the Circular 570 as of December 31, 2011.Data on the annual numbers of issuers listed on Circular 570 was unavailable.

[125] A.M. Best, Best's Impairment Rate and Rating Transition Study – 1977 to 2011, March 26, 2012, http://www.ambest.com/nrsro/impairment.pdf.

[126] Moody's Investors Service, Measuring the Performance of Credit Ratings (Special Comment November 1, 2011).

[127] A.M. Best, Best's Impairment Rate and Rating Transition Study – 1977 to 2011, March 26, 2012, http://www.ambest.com/nrsro/impairment.pdf.

vulnerable becomes impaired, on average, around the ninth year after receiving its vulnerable rating. Based on its analyses, A.M. Best concluded that a higher rated insurer is less likely than a lower-rated insurer to become impaired.

Exhibit 18 – Initial Rating and Average Years to Impairment

U.S. life/health and property/casualty data (1977-2010)

Initial Rating Category	Impairments	Ave. Years to Impairment
A++/A+	100	15.7
A/A-	154	13
B++/B+	138	10.8
Secure	*392*	*12.9*
B/B-	114	9.8
C++/C+	55	7.7
C/C-	30	10.2
D	122	9.4
Vulnerable	*321*	*9.3*
All	**713**	**11.3**

Source: A.M. Best, A.M. Best Impairment Rate and Rating Transition Study, 2010.

Exhibit 19 shows that as property/casualty insurers approach impairment, their ratings diminish. Only one of the 118 issuers (0.8 percent) received a secure rating in the year that it impaired, but 34 of the issuers (28.8 percent) received a secure rating the year prior to the year of becoming impaired. Two and three years before becoming impaired, nearly 75 percent of all A.M. Best-rated property/casualty insurers that became impaired between 2001 and 2010 had secure ratings. That statistic must be interpreted somewhat favorably in light of the approximately 87% of A.M. Best rated companies in the period 1977-2009 that were rated secure.[128]

Exhibit 19– Ratings of A.M. Best Financially Impaired Property/Casualty Insurance Firms in Years Prior to Financial Impairment, 2001-2010

	3 Years Prior	2 Years Prior	1 Year Prior	Year Of
A++/A+	0	0	0	0
A/A-	49	42	4	0
B++/B+	36	41	30	1
Secure	*85*	*83*	*34*	*1*
B/B-	15	18	26	15
C++/C+	5	7	15	18
C/C-	0	0	15	25
D	2	2	15	45
Vulnerable	*22*	*27*	*71*	*103*
E	3	1	0	0

[128] A.M. Best, Best's Impairment Rate and Rating Transition Study – 1977 to 2011, March 26, 2012, http://www.ambest.com/nrsro/impairment.pdf.

NR	6	7	12	14
Other	*9*	*8*	*12*	*14*

Source: A.M. Best, A.M. Best Impairment Rate and Rating Transition Study, 2010
* There were 118 total defaults in this time period; FPR-4 and NF ratings are not included in this matrix.

The Agency compared the 118 A.M. Best impairments between 2001 and 2010 (Exhibit 19) to the 101 surety issuers removed from Circular 570 between 2001 and 2011 (Exhibit 12). Over each period reviewed, only one property/casualty insurer became impaired while having a secure rating, and no surety issuers failed or were liquidated while listed in Circular 570. Based on this information, EPA cannot conclude that adding a rating requirement would necessarily improve on the strong assurance provided by Circular 570 listing alone. Further, such a requirement would limit the pool of potential surety bond providers. The SFAA has stated that requiring that a surety be "A" rated from an NRSRO may needlessly limit the availability of some required bonds.[129]

EPA compiled data on RCRA surety bond providers and analyzed their latest available credit ratings, shown in Exhibit 20. In Parts 2, 4, and 5 of the report, data on RCRA insurance, LOC, and trust fund providers was randomly sampled for analysis, but due to the small number of RCRA surety bond providers, all RCRA providers were included in the analysis in this section.

As shown in Exhibit 20 the ratings from different NRSROs for RCRA surety bond issuers tend to be similar. For example, Westchester Fire Insurance Co. received the highest ratings of the group of issuers from both S&P (AA) and A.M. Best (A++), and Regions Bank received the lowest ratings of the group of issuers from Moody's (A3) and S&P (BBB+). Ratings also tend to be similar within their respective scales across NRSROs, although not identical. For example, Liberty Mutual was given the third highest rating by both Moody's (A2) and S&P (A) but the second highest rating by A.M. Best (A).[130] Although similar, NRSRO ratings for Liberty Mutual are not identical. This observation appears to be consistent across most rated RCRA surety bond issuers.

EPA analyzed the ratings of all surety bond issuers in EPA's RCRA Info database. Although most surety bond issuer credit ratings are similar, for several of the issuers EPA analyzed, EPA found no credit ratings from a major ratings agency (A.M. Best, Moody's, or S&P). Of the 31 RCRA issuers, three had not received a rating from any of the three NRSROs. The issuers that had not received a rating from the major ratings agencies are small providers with a local or regional presence. If credit ratings are used as an eligibility requirement for 108(b), the requirement may disqualify surety bond issuers which currently participate in the RCRA Subtitle C program. Surety bond issuers without credit ratings wishing to participate in the 108(b) program may then face the burden and expense of obtaining a credit rating in order to be eligible to participate in the 108(b) program.

All of the ratings shown in Exhibit 20 belong to the "secure" or "investment grade" categories for A.M. Best, Moody's, and S&P and would therefore meet the surety bond issuer eligibility requirements established by many of the programs reviewed by EPA.

[129] SFAA "Surety Eligibility Requirements: The "A" Rated Surety Issue" (6/2/2010). Accessed April 30, 2012.
[130] A.M. Best has fewer ratings levels in its rating scheme than Moody's or S&P (See Appendix B), so a one-to-one comparison between the ratings of these three NRSROs is not possible.

Exhibit 20 – Financial Strength Ratings of Surety Bond Providers under RCRA Subtitle C

Provider		Provider Ratings		
		Moody's[1]	S&P[2]	A.M. Best[3]
1	ACSTAR Insurance Co.	---	---	**A** 01/07/2016
2	Aegis Security Insurance	---	---	**A** 01/27/2016
3	Arch Insurance Co.	**A1** 11/18/2014	**A+** 07/29/2010	**A+** 08/21/2015
4	Argonaut Insurance Co.	---	**A-** 06/27/2005	**A** 10/22/2015
5	Atlantic Specialty Insurance Co.	**A3** 02/10/2015	**A-** 07/02/2010	**A** 10/30/2015
6	BB&T	**A2** 08/18/2015	**A-** 12/06/2011	---
7	Berkley Insurance Co.	**A2** 07/30/2014	**A+** 05/13/1999	**A+** 06/30/1976
8	Bond Safeguard Insurance Co.	---	---	**B++u** 04/12/2016
9	Electric Insurance Co.	---	---	**A** 07/30/2015
10	Evanston Insurance	**A2** 05/29/2014	**A** 07/29/2015	**A** 07/01/2016
11	Evergreen National Indemnity	---	---	**A-** 05/27/2016
12	Federal Insurance Co.	**Aa3** 01/15/2016	**AA** 03/24/2003	**A++** 06/22/2016
13	Hanover Insurance Co.	**A3** 04/01/2016	**A** 01/29/2015	**A** 05/19/2016
14	Lexon Insurance Co.	---	---	**B++u*** 04/12/2016
15	Liberty Mutual	**A2** 11/01/2013	**A** 07/17/2014	**A** 10/08/2015
16	National Indemnity Co.	**Aa1** 07/22/2014	**AA+** 02/04/2010	**A++** 09/01/2015
17	National Union Fire Insurance Co. of Pittsburgh	**A2** 01/26/2016	**A+** 05/06/2013	**A** 06/02/2016
18	Ohio Indemnity Co.	---	---	**A-** 03/11/2016
19	Regions Bank	**A3** 05/14/2015	**BBB+** 11/20/2014	---
20	RLI Insurance Co.	**A2** 04/21/2016	**A+** 12/26/2002	**A+** 06/04/2015
21	Safeco Insurance Co.	**A2** 11/01/2013	**A** 07/17/2014	**A** 10/08/2015
22	Safeguard Insurance Co.	---	---	---
23	St. Paul Fire and Marine Insurance Co.	**Aa2** 08/14/2014	**AA** 07/28/2011	**A++** 05/28/2015
24	Traveler's Casualty & Surety Co. of America	**Aa2** 08/14/2014	**AA** 07/28/2011	**A++** 05/28/2015
25	Traveler's Guarantee Co. of Canada	---	---	---
26	US Bank, N.A.	**Aa1** 05/14/2015	**AA-** 08/20/2012	---

27	US Specialty Insurance Co.	---	**AA-** 10/28/2015	**A+** 10/22/2015
28	Westchester Fire Insurance Co.	**Aa3** 01/15/2016	**AA** 05/19/2014	**A++** 06/22/2016
29	Western Mutual Fire Insurance Co.	---	---	---
30	Western Surety Co.	---	**A** 07/24/2013	**A** 02/23/2016
31	Zurich American Insurance Co.	---	**AA-** 08/08/2015	**A+** 10/02/2015

* The modifier "u" denotes that the rating is "under review."
[1] Moody's Long-term Rating
[2] S&P's Local Currency Long-term Rating
[3] A.M. Best's Financial Strength Rating

3.4. Conclusion: Applicability to CERCLA 108(b) Rulemaking.

This report examined potential eligibility criteria for issuers of surety bonds under CERCLA 108(b) based on readily available information.

EPA's analysis in Section 3.3.1 found that being listed on the Department of the Treasury Circular 570 is a common and seemingly effective eligibility criterion for surety issuers. EPA found that over an eleven year period, no sureties listed on the Circular 570 defaulted. Further, there is active oversight on the part of Treasury, including removals from the list. Such a requirement leverages an existing Federal oversight process limiting the administrative burden of the requirement on EPA.

In Section 3.3.2, EPA explored capital, asset, and financial requirements for potential surety issuers. Two financial criteria would limit a surety bond's amount either to the Treasury's "underwriting limit" or to a limit based solely on capital surplus. For a surety bond provided in an amount greater than the issuer's Circular 570 underwriting limitation, either the regulation would need to require submission of information demonstrating co-surety(ies) and/or reinsurance or EPA would need to perform the research itself to determine the participation of co-surety(ies) and/or reinsurance. This requirement would increase the implementation burden on the regulated community and the EPA. The more restrictive Montana-style limitation also would entail a greater implementation burden, requiring submission of the surety's independently audited financial statements and calculation/verification of 10% of the surety's capital surplus. EPA found no compelling evidence for the superiority or effectiveness of either criterion in addition to the Circular 570 listing criteria addressed in Section 3.3.1. The Agency does not expect to use financial criteria in specifying the eligibility of 108(b) surety issuers because of the burden on owners and operators as well as on the Agency to review and evaluate annual financial statements.

The analysis in Section 3.3.3 found a strong correlation between yearly impairment rates of A.M. Best-rated insurers and yearly termination rates of Circular 570-listed companies. EPA's review found that in the year of insurer failure, nearly all (except one) property/casualty insurers rated by A.M. Best between 2001 and 2010 were assigned a vulnerable rating from A.M. Best. Furthermore, A.M. Best's own studies showed a strong correlation between higher ratings and lower impairment rates over time. However, the predictive power of the A.M. Best ratings may be limited: two years prior to their failure nearly 75 percent of A.M. Best rated insurance companies that became impaired had secure ratings. A.M. Best ratings are highly concentrated in the secure range, however, so that statistic must be interpreted somewhat favorably. The Agency also determined that some of its RCRA sureties do not have ratings from any of the major ratings agencies, which would exclude those RCRA sureties from participating in the 108(b) program unless they incurred the burden and expense of obtaining ratings. Given the availability and regular update of a listing specifically for sureties and its robust performance, the Agency is not proposing ratings as criteria for 108(b) sureties.

The Agency concluded that the Circular 570 list is well designed to serve alone as the eligibility criterion for 108(b) sureties and presents only minimal additional administrative burden while not reducing the pool of eligible sureties compared to the RCRA Subtitle C program where surety bonds are a common mechanism.

Part 4. Letter of Credit.

The following sections describe what a letter of credit is, what types of entities have the authority to issue letters of credit, historical performance and default risk of financial institutions offering letters of credit, and potential letter of credit issuer eligibility criteria applicable to CERCLA 108(b) financial responsibility regulations.

EPA has offered the following definition of a **letter of credit**, in guidance on its RCRA Subtitle C financial assurance regulations:

> *A **letter of credit** is a mechanism by which the credit of one party, a bank or other financial institution, is extended on behalf of a second party, called the account party, to a third party, the beneficiary. The first party, the issuer, allows the beneficiary to draw funds upon the presentation of documents in accordance with the terms of the letter of credit. . . . The issuer offers this assurance in exchange for a fee paid by the owner or operator. The owner or operator also undertakes to repay, with interest, any funds drawn through the letter of credit. While EPA specifies the wording of the letter [under the regulations], the terms of the credit arrangement between the owner or operator and the issuer will depend on individual circumstances and negotiations.*[131]

EPA expects letters of credit to operate similarly in the CERCLA 108(b) rules. Because letters of credit do not require the owner/operator to pay assured funds up-front (e.g., into a trust fund), they often present a relatively inexpensive alternative as a financial responsibility mechanism. However, letters of credit are only as secure as the ability of the issuing institution to honor them. As described next, letters of credit can be issued by either banks or non-bank financial organizations.

4.1. LOC Issuer Authority.

A letter of credit is most commonly issued by a bank, although non-bank financial institutions have the legal authority to conduct letter of credit operations. This paper uses the terms "bank" and "banking institution" to include all Federal Deposit Insurance Corporation (FDIC)-insured, depository institutions, and the term "financial institution" to include all FDIC-insured banks as well as other non-bank financial institutions. A non-bank financial institution does not have the authority to conduct traditional banking activities (e.g., receive deposits); these include such entities as trust companies, financial holding companies, securities brokers and dealers, insurance companies, and investment advisors. This paper focuses primarily on the issuance of letters of credit by commercial banks because letters of credit are most commonly issued by these institutions and because data on the other non-bank issuers were not readily available.

Types of banking institutions that commonly issue letters of credit include commercial and savings banks, savings and loan associations, credit unions, and domestic branches of foreign banks.[132] These institutions can be either state-chartered, in which case their banking authority is granted by their respective state agencies, or federally-chartered, in which case their banking authority is granted by the

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[131] Financial Assurance for Closure and Post-Closure Care: Requirements for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities, A Guidance Manual (SW 955). U.S.EPA. May, 1982.

[132] Financial Responsibility for Underground Storage Tanks: A Reference Manual. U.S. EPA Office of Underground Storage Tanks. November 30, 1999.

Office of Comptroller of the Currency (OCC). Federally-chartered "national banks" automatically are members of the Federal Reserve System, which plays an important role in the U.S. payments system and in setting interest rates. State-chartered banks may elect to become "members" of the Federal Reserve System, if they satisfy specified criteria, or are considered "nonmember" banks.[133]

In the terms of its charter, a bank is granted the authority to conduct all activities included in the "business of banking." Letter of credit operations are considered one part of the "business of banking" and are therefore authorized within the terms of a bank's charter. For state- and federally-chartered banks, no additional approval for letter of credit operations is needed from the respective chartering authority.[134]No additional approval to issue letters of credit is required by the Federal Deposit Insurance Corporation (FDIC).

Upon receiving a bank charter, the letter of credit operations of a banking institution falls under the oversight of the bank's respective chartering agency, the FDIC, and, if a member of the Federal Reserve System, the Federal Reserve Board (FRB). The FRB, which defines the requirements for membership of state-chartered banks in the Federal Reserve System, states that letters of credit extended by member banks count toward that bank's legal lending limit.[135] FDIC Rules and Regulations require that "a standby letter of credit issued by an insured state nonmember bank[136] shall be combined with all other standby letters of credit and all loans for purposes of applying any legal limitation on loans of the bank."[137] The FDIC also requires that "all such standby letters of credit must be adequately reflected on the bank's published financial statements."[138] The OCC similarly requires that letters of credit be included in the calculation of a bank's legal lending limit, and that all letters of credit be accounted for on the bank's annual disclosure statement.[139,140]

The Federal Reserve Board, the OCC, and the Securities and Exchange Commission are the primary regulators of many non-depository financial institutions: the FRB supervises the "financial condition and activities" of financial holding companies;[141] federally-chartered trust companies are regulated by the OCC; state-chartered trust companies are regulated by their respective state agencies; and the SEC regulates investment advisors and securities brokers and dealers.

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133 As year-end 2015, the Federal Reserve oversees almost 7,000 entities, including almost 900 state member banks. The Federal Reserve System: Purposes and Functions (Tenth Ed., 2016).

134 Financial Responsibility for Underground Storage Tanks: A Reference Manual. U.S. EPA Office of Underground Storage Tanks. November 30, 1999.

135 Letters of credit and acceptances, 12 CFR§ 208.24

136 As defined in Section 3(e) of the Federal Deposit Insurance Act, a "State nonmember bank" is any State bank which is not a member of the Federal Reserve System.

137 Standby Letters of Credit, 12 CFR § 337.2(b).

138 Standby Letters of Credit, 12 CFR § 337.2(b).

139 Lending Limits, 12 CFR § 32.3.

140 Contents of annual disclosure statement, 12 CFR § 18.4.

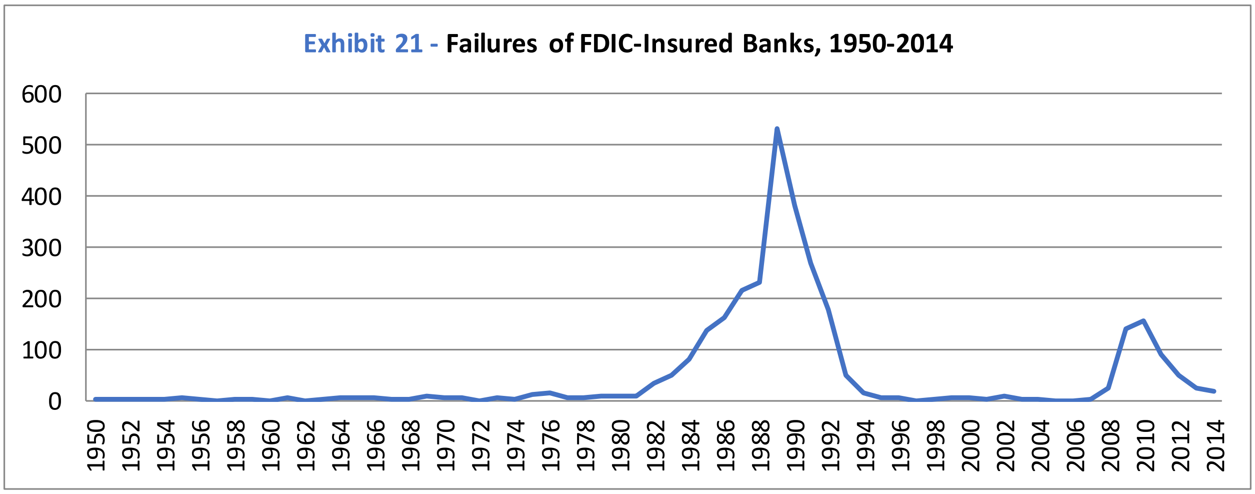
141 Federal Financial Institutions Examination Council (FFIEC), National Information Center, All Institution Types Defined, http://www.ffiec.gov/nicpubweb/Content/HELP/Institution%20Type%20Description.htm.

4.2. Performance of LOC Issuers.

Performance data specifically for banking institutions that actively issue letters of credit was unavailable to EPA. However, EPA analyzed the historical performance of FDIC-insured banking institutions and compared the performance of state-chartered banks to nationally-chartered banks. The following sections present this analysis.

4.2.1. FDIC-Insured Banking Institutions.

As illustrated in Exhibit 21, since 1950, there have been two periods of high bank failures. During the years spanning from 1982 through 1993, over 2,300 banks failed in the United States in conjuncture with the savings and loan crisis and failure of commercial banks, and from 2008 through 2014, there were over 500 bank failures. From 1994 through 2007, only 73 banks failed.[142]



Data Source: FDIC Failed Bank List; Accessed May 4, 2016.

Exhibit 22 displays the annual number of bank failures and annual failure rates for FDIC-insured banks from 1950 through 2014. For the years from 1950-1999, decade averages are presented for annual failures and annual number of banks (e.g., annual failures from 1950 through 1959 = sum of all failures from 1950 through 1959, divided by 10). Annual failure rate is calculated as the number of failures divided by the total number of banks for each year or average number of banks for multi-year periods. As shown in Exhibit 22, average annual failure rates are around 0.5% from 1950-2014. Failures reached their peak in 2010 at 157 failures and appear to be declining through 2014. These failure rates appear modest with the exception of the peak years around 2009 and 2010.

[142] FDIC Failed Bank List; Accessed May 4, 2016

Exhibit 22–Failures of FDIC-Insured Banks

	Annual Failures*	Annual Banks**	Failure Rate
1950-1959	3	13,295	0.02%
1960-1969	4	13,371	0.03%
1970-1979	8	14,102	0.06%
1980-1989	147	14,047	1.04%
1990-1999	92	10,313	0.89%
2000	7	8,315	0.08%
2001	4	8,082	0.05%
2002	11	7,888	0.14%
2003	3	7,770	0.04%
2004	4	7,631	0.05%
2005	0	7,526	0.00%
2006	0	7,401	0.00%
2007	3	7,284	0.04%
2008	25	7,088	0.35%
2009	140	6,841	2.05%
2010	157	6,531	2.40%
2011	92	6,292	1.46%
2012	51	6,097	0.84%
2013	24	5,877	0.41%
2014	18	5,643	0.32%
Average (2000-2014)	**36**	**7,084**	**0.51%**
Average (1950-2014)	**47**	**11,655**	**0.47%**

Data Sources: FDIC Failed Bank List; FDIC Historical Statistics on Banking – CBO1 – Total Number of Institutions, Branches, and Total Offices; Accessed May 4, 2016.
*Decade average presented for years from 1950-1999
**Decade average presented for years from 1950-1999

4.2.2. State versus National Charter of FDIC-Insured Institutions.

EPA also analyzed failures of FDIC-insured institutions by type of charter, and determined that a bank's chartering and regulatory agency appears to have little effect on that institution's likelihood of failure (Exhibit 23). While EPA could not determine annual failure *rates* by type of charter because data on the total number of state- and nationally-chartered banks for 2000-2014 was unavailable, the percentage of total failures for each type appears to be roughly proportional to the number of institutions of each type in 2016. As of November 16, 2016, 20% of all FDIC-insured institutions chartered in the US held a national charter, and Exhibit 23 demonstrates that from 2000 to 2014, institutions holding national charters represented roughly 17% of all bank failures (92/(460+92) = 17%). Similarly, as of November 16, 2016, 80% of all FDIC-insured institutions charted in the US held a state charter, and Exhibit 23 demonstrates that from 2000-2014, institutions holding state charters represented roughly 83% of all bank failures (460/(460+92) = 83%).[143] Based on this analysis, EPA does not believe a state- or nationally-chartered bank is necessarily more secure than the other.

[143] 2016 data obtained from FDIC Bank Data & Statistics Institution Directory; accessed on November 16, 2016.

Exhibit 23 –FDIC-Insured Institution Failures by Charter

	Failures	
	State Charter	**National Charter**
2000	5	2
2001	2	2
2002	8	3
2003	2	1
2004	3	1
2005	0	0
2006	0	0
2007	3	0
2008	22	8
2009	118	30
2010	134	23
2011	81	11
2012	46	5
2013	21	3
2014	15	3
Total	**460**	**92**

Data Source: FDIC Failed Bank List; Accessed May 4, 2016.

4.2.3. Effects of Bank Failure on 108(b) LOCs.

What Happens to Failed Banks That Had Issued Standby LOCs?

To understand what happens to LOCs that a bank issued if the bank later fails, it is essential to understand what happens to the banks themselves to resolve their failures. Although data about the state-managed resolution or liquidation of non-federally insured banks were not readily available, information was available on federally-insured bank failures and resolution which are the responsibility of the FDIC. The FDIC is the nation's agency for dealing with bank failures and their "resolution." According to a recent FDIC study, from 1986 to 2007, 2,427 insured depository institutions failed; of these, 1,244 were placed into FDIC receivership for resolution.[144] The FDIC uses different methods to resolve failed banks including deposit payoffs, insured-deposit transfers, purchase and assumption (P&A) agreements, whole-bank transactions, and open-bank assistance (OBA). Recent research shows that large banks that fail have higher capital ratios at failure, lower loss on assets, and lower receivership expenses than small banks.[145] The average time for resolution is about five (5) years which is about twice as long as a typical non-financial bankruptcy.[146]

Banks can fail for a variety of reasons including undercapitalization, lack of liquidity, safety and soundness, and fraud. As part of the resolution process, the FDIC markets the assets and liabilities of a

[144] The balance of failures were thrift institutions. Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[145]Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[146]Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).

failing bank and evaluates the bids it receives. The FDIC employs two methods to payoff depositors. In a "deposit payout," the FDIC pays off the insured depositors in cash; the uninsured depositors and general creditors file claims and are paid a pro rata share to the extent that funds are available as assets are liquidated. In a deposit payout, only insured depositors are protected 100%. On the other hand, with an "insured deposit transfer" the FDIC transfers insured deposits and secured liabilities to a healthy institution along with a cash payment. In either method the FDIC does not cover uninsured deposits, which are reimbursed their pro rata share as assets are liquidated. Alternatively, the FDIC can receive bids to purchase all or a part of a bank's assets and assume all or a part of the deposit liabilities. Most resolutions involve a bidder for a part of the bank's assets; these resolutions are termed P&A agreements. When an acquirer assumes all deposits in a P&A, 100% protection is extended to all depositors, including uninsured depositors. Bidders may bid only for insured deposits, which means imposing losses on uninsured depositors. Of the 1,244 bank failures with FDIC receivership, 19% were resolved by deposit payoffs and 81% were P&A transactions, including whole bank transactions. Deposit payoff resolutions are used for smaller-size banks, with the size of failed banks resolved through P&A being on average five times larger. On average. uninsured depositors lose about 27 percent of their claims.[147] The FDIC finds buyers for the vast majority of the failed banks, which means that all depositors were largely made whole, even uninsured deposits.

Fraud and Bank Failures

In 1993, a national commission found that fraud and misconduct were important causes of bank failures in the 1980s. Fraud typically involves either fraudulent insider loans or manipulation of bank records (e.g., creating non-existent assets). Recently, the FDIC Division of Insurance and Research compiled a database that captures the causes of bank failure, including fraud, between 1989 and the present. The database includes three fraud indicators -- whether fraud was the primary cause of failure, whether fraud contributed to bank failure, and whether fraud merely was present. Of the banks covered in the FDIC database, fraud was rated the primary cause of failure in about 6%, a contributing cause in 16%, and merely present in another 22%.[148]

Accounts Covered by FDIC Insurance

FDIC deposit insurance coverage depends on two main factors: (1) whether the bank itself is FDIC-insured and (2) whether the depositor is using a covered bank product. Although most federally-chartered financial institutions are FDIC-insured,[149] many smaller state chartered banks do not carry FDIC insurance. FDIC insurance covers bank time deposits such as bank certificates of deposit (CDs), bank money market deposit accounts, and bank savings and checking accounts up to $250,000; FDIC insurance does not cover stock and bond investments, mutual funds, life insurance policies, annuities, and other negotiable securities. As allowed by law, when an acquiring bank refuses to honor higher interest rates on CDs from failed banks, those losses may be covered by FDIC insurance.[150] Although not

[147] Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[148] Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[149] In 2013, the OCC changed its well-established policy that did not require trust-only banks with a federal charter to be FDIC-insured; under the new policy, to receive a federal charter a trust-only bank must be FDIC insured. See Richard P. Eckman et al., "The OCC's New Stance: FDIC Insurance Required for 'Trust-Only' National Banks," Pepper Hamilton LLP (4/22/2013).
[150] Ken Tumin, "Review of the 2014 Bank Failures and Their Effects on Depositors," depositaccounts.com blog post (January 2, 2015).

called out by name, an LOC is not so much a deposit as it is an agreement by the bank to implement a loan; thus it is a contingent liability of the issuing bank.

Impact of Bank Failure on Letters of Credit

In the event of a bank failure, FDIC attempts to dispose of a failed banks assets in a way that is least costly to the deposit insurance fund. Most often, FDIC disposes of bank assets through a purchase and assumption agreement. In these agreements, a purchaser purchases some or all of a bank's assets and assumes some or all of its liabilities. An LOC is a contingent liability until it is drawn upon.

When a bank fails and FDIC becomes receiver, FDIC may repudiate any contract within a 'reasonable' period of time so long as the receiver (FDIC) deems the contract to be 'burdensome' and repudiation would promote the orderly administration of the receivership estate.[151] Letters of credit are not exempt from repudiation. FDIC's position on standby by letters of credit has been that standby letters of credit are contingent obligations that do not support an allowable claim unless the right to draw occurred prior to receivership.[152] If the ability to draw due to the regulated party's default precedes FDIC's receivership, then the beneficiary will not have a secure claim.

As receiver, FDIC may reject the LOC contract as 'burdensome' if the LOC's obligor has not defaulted at the time FDIC is appointed as receiver.[153] If a LOC is not assumed by a purchasing institution through a P&A agreement and is rejected by FDIC as a 'burdensome' contract, then a LOC may not be honored. This information suggests that eligibility provisions that may reduce the failure risk of an institution issuing a 108(b) letter of credit would have the benefit of preserving assured funds to be available when necessary to pay a future claim.

4.3. Potential LOC Issuer Eligibility Criteria.

Financial responsibility programs often have eligibility requirements for issuers of acceptable types of financial responsibility mechanisms such as letters of credit. Section 4.3 describes issuer eligibility requirements under Resource Conservation and Recovery Act (RCRA) Subtitle C- Hazardous Waste Regulations (40 CFR Part 264) for standby letters of credit, as well as those of other federal and state financial responsibility programs.

U.S. EPA reviewed financial responsibility programs under RCRA Subtitle C, which provide benchmarks for issuer eligibility criteria:

- 40 CFR Parts 264/265, Subpart H Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities: Closure/ Postclosure Care and Liability Coverage.

- 40 CFRPart261 Financial Requirements for Management of Excluded Hazardous Secondary Materials: Removal and Decommissioning and Liability Coverage.

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[151] 12 U.S.C. § 1821(e).

[152] Dana I. Schiffman, "FDIC Resolution and Receivership of Failed Banks: Pitfalls and Opportunities for Landlords and Real Estate Investors" Real Estate Finance Journal. 2009.

[153] FDIC, Statement of Policy regarding Treatment of Collateralized Letters of Credit after Appointment of the FDIC as Conservator or Receiver," 60 Fed. Reg. 27976 (May 26, 1995).

EPA also reviewed issuer eligibility criteria under other Federal financial responsibility programs including:[154]

- RCRA Subtitle D Solid Waste Regulations- 40 CFR Part 258 Subpart G Criteria for Municipal Solid Waste Landfills.

- RCRA Subtitle I Underground Storage Tank Regulations- 40 CFR Part 280, Subpart H Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST) and 1999 guidance document "Financial Responsibility for Underground Storage Tanks: A Reference Manual."

- Underground Injection Control (UIC) Class I Wells- 40 CFR Part 144 Subpart F Financial Responsibility: Class I Hazardous Waste Injection Wells.

- UIC Class VI Wells- 40 CFR Part 146 Subpart H Underground Injection Control Program: Criteria and Standards Applicable to Class VI Wells and 2011 guidance document "Underground Injection Control (UIC) Class VI Program: Financial Responsibility Guidance."

- Bureau of Land Management (BLM) - 43 CFR Part 3809 Mining Claims under the General Mining Laws- Surface Management.

- Nuclear Regulatory Commission (NRC) - 10 CFR Part 30 Rules of General Applicability to Domestic Licensing of Byproduct Material, Part 40 Source Material, Part 70 Special Nuclear Material, Part 72 Independent Storage of Spent Nuclear Fuel ("NRC General Rules for Materials Licensees"), and 2003 NRC guidance document, "NUREG-1757, Vol. 3 Appendix A, Standard Format and Content of Financial Assurance Mechanisms for Decommissioning."

- Bureau of Ocean Energy Management (BOEM) 30 CFR Part 553 Oil Spill Financial Responsibility for Offshore Facilities.[155]

- U.S. Coast Guard – 33 CFR Part 138 Financial Responsibility for CERCLA 108(a) Water Pollution (Vessels) and OPA 90 (Vessels and Deepwater Ports).[156]

EPA chose to review these financial responsibility programs for issuer eligibility requirements because of their relevance to CERCLA 108(b) as well as to offer potential variations to RCRA Subtitle C issuer eligibility benchmarks. RCRA Subtitle I UST Regulations were chosen because they establish financial responsibility for prospective remediation. UIC Class VI regulations were reviewed because these regulations are the most recent EPA has developed for financial responsibility. The NRC General Rules

[154] Letters of credit are not an acceptable form of financial responsibility for vessels under CERCLA 108(a). CERLCA 108(a) lists insurance, guarantee, surety bond, or qualification as a self-insurer as eligible financial responsibility instruments.
[155]BOEM accepts the use of self-insurance, insurance, indemnity, surety bond, or alternative method approved by the Director as evidence of financial responsibly. BOEM does not accept letters of credit as evidence of financial responsibility unless the letter of credit has been approved by the Director of BOEM. (30 CFR 553.20).
[156]The Coast Guard accepts insurance, surety bonds, self-insurance, a financial guarantee, or other evidence of financial responsibility approved by the Director as evidence of financial responsibility. The Coast Guard does not accept letters of credit as evidence of financial responsibility unless the letter of credit has been approved by the Director of the Coast Guard. (33 CFR 138.80(b))

for Materials Licensees was chosen because it applies to the decommissioning of process equipment and non-waste facilities. EPA selected BLM because of its responsibilities over federal lands.

EPA also reviewed selected state financial responsibility programs for hardrock operations (see Appendix A for list of state programs reviewed).State hardrock financial responsibility programs exhibit a diverse range of approaches to issuer eligibility criteria. EPA selected and reviewed programs that are representative of the state of financial responsibility regulation in key hardrock mining states.

EPA reviewed potential letter of credit issuer eligibility criteria based on chartering agencies, FDIC insurance, and credit ratings. The following sections highlight findings from this review to identify potential issuer eligibility requirements for EPA's proposed CERCLA 108(b) rules in addition to the existing standard under EPA's RCRA Subtitle C regulations for closure, post-closure care and third-party liability LOCs. Those Subtitle C rules state that a letter of credit issuer:

> *"must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency."*[157]

Eligible issuers under this standard include depository banks and non-bank financial institutions such as trust companies, financial holding companies, insurers, and securities brokers and dealers.

Exhibit 24 - Summary Table: Letter of Credit Issuer Eligibility Criteria

Federal Regulation	State Regulation	Eligibility Language
- 40 CFR Part 144 Financial Responsibility: Class I Hazardous Waste Injection Wells - 40 CFR Part 258 Subpart G Criteria for Municipal Solid Waste Landfills - 40 CFR Part 261 Subpart H Financial Requirements for Management of Excluded Hazardous Secondary Materials - 40 CFR Parts 264/ 265 Subpart H Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities	- Arizona State Mine Inspector Mined Land Reclamation [Ariz. Admin. Code R11-2-101 – R11-2-822].	The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.
- 40 CFR Part 280 Subpart H Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)		The issuing institution must be an entity that has the authority to issue letters of credit in each state where used and whose letter-of-credit operations are regulated and examined by a federal or state agency. § 280.99 (a)
- NRC Guidance: NUREG-1757, Vol.3.A.10.1		A bank issuing a letter of credit should be a financial institution

[157] Financial assurance condition, 40 CFR § 261.143(c)(1); Financial assurance for closure, 40 CFR § 264.143(d); Financial assurance for post-closure care, 40 CFR § 264.145(d); Liability requirements, 40 CFR §264.147(h).

Federal Regulation	State Regulation	Eligibility Language
		whose operations are regulated and examined by a Federal or State agency.
- 43 CFR Part 3809 BLM Mining Claims Under the General Mining Laws- Surface Management	- Alaska Reclamation Title 11: Natural Resources. Chapter 97, Mining Reclamation [Alaska Admin. Code tit. 11 § 97]. - Montana Chapter 17 Environmental Quality, Part 24 Reclamation, Subchapter 1 Rules and Regulations Governing the Hard Rock Mining Reclamation Act [Mont. Admin. R. 17.24.101 et seq.]. - New Mexico Title 19: Natural Resources and Wildlife. Chapter 10, Non-Coal Mining [M. Code R. § 19.10.12 et seq.]. - Utah Title R647: Natural Resources; Oil, Gas,& Mining; Non-Coal [UT Admin Code R647 et seq.].	Issued by a bank or other financial institution authorized to do business in the U.S.
	- Idaho Rules Governing Exploration, Surface Mining, and Closure of Cyanidation Facilities 20.03.02.000 – 20.03.02.200.	Issued by a bank authorized to do business in the state.
- 40 CFR Part 146 Underground Injection Control Program: Criteria and Standards Class VI		Issuer must pass financial strength requirements based on credit ratings, or meet a minimum rating, minimum capitalization, and ability to pass the bond rating, when applicable.
	- Colorado Title 2: Hardrock, Metal, and Designated Mining Operations [2 Colo Code Regs. § 407-1]. - Montana Title 82: Minerals, Oil, and Gas, Chapter 4 Reclamation. Part 3 Metal Mine Reclamation [Mont. Code Ann. § 82-4-301 et seq.].	A balance sheet certified by a Certified Public Accountant must demonstrate that the Letter of Credit does not exceed 10% of the bank's capital surplus accounts.
	- Arizona Mined Land Reclamation [Ariz. Admin. Code R11-2-101 – R11-2-822]. - Florida Phosphogypsum Stack Closure Management [Fla. Admin. Code Ann. r. 62-673.100 – 62-673.900].	Federally-insured bank.
	- Idaho Rules Governing Exploration, Surface Mining, and	Issuer must be authorized to do business in Idaho. Issuer may be a foreign (i.e., non U.S.) bank if the

Federal Regulation	State Regulation	Eligibility Language
	Closure of Cyanidation Facilities 20.03.02.000 – 20.03.02.200.	entity executes or consents to jurisdiction within Idaho courts on a form prescribed by the Director.
	- Florida Phosphogypsum Stack Closure Management [Fla. Admin. Code Ann. r. 62-673.100 – 62-673.900].	Neither owner, operator, nor any affiliate may be related to the issuer.
	- Missouri Title 10: Department of Natural Resources. Division 40 – Land Reclamation Commission [MO. CODE REGS. ANN. tit. 10, §§ 40-10.010 – 40.10.100].	Issued by a bank located in the U.S. If issued from a bank located in another state, must be confirmed by a bank or trust company located in Missouri.

4.3.1. Charter and Regulatory Agency Requirements.

EPA identified federal financial responsibility issuer eligibility criteria that require or exclude LOCs from financial institutions under specific charter and regulatory agencies. Select programs are outlined below:

- RCRA Subtitle C financial responsibility criteria require that a letter of credit issuer's operations must be "regulated and examined by a Federal or State agency." Eligible issuers under RCRA Subtitle C therefore include all depository banking institutions, as well as non-depository financial institutions such as trust companies, financial holding companies, insurance companies, and securities brokers and dealers. These institutions are chartered and/or regulated by the OCC, the Federal Reserve, the FDIC, the SEC, and/or individual state agencies. Other financial responsibility programs using identical language to RCRA Subtitle C for letter of credit issuers include BLM's General Mining Laws- Surface Management,[158] RCRA Subtitle D Solid Waste Regulations,[159] RCRA Subtitle I UST Regulations, and UIC Class I.[160]
- Of the programs reviewed, many state programs required that the issuing institution be eligible to do business in the U.S. or in the state where the letter is being issued.[161] Similarly, the BLM program requires an issuer to be authorized to do business in the U.S.[162] EPA believes that these state and federal eligibility provisions offer similar protections to the RCRA Subtitle C criteria.
- The Idaho Surface Mining and Cyanidation Facilities program requires that if the issuer is a foreign bank authorized to do business in Idaho, the issuer must execute or consent to jurisdiction within Idaho courts on a form prescribed by the program administrator.[163] EPA

[158] What forms of individual financial guarantee are acceptable to BLM?, 43 CFR §3809.555(c).
[159] Allowable mechanisms, 40 CFR § 258.74(c)(1).
[160] Letter of Credit, 40 CFR § 280.99(a).
[161] Personal bond and letter of credit, certificate of deposit, or deposit of cash or gold, ALASKA ADMIN. CODE tit. 11 § 97.410(a); Letter of Credit, ARIZ. ADMIN. CODE R11-2-807; Bonding: Letters of Credit, MONT. ADMIN. R. 17.24.146.; Financial Assurance Mechanisms, N.M. Code R. § 19.10.12.1208.B.; Surety, UT Admin Code R647-2-111(4.14); R647-3-111(4.14); R647-4-113(4.14). Authorized to do business in the state of issuance, Letters of Credit, IDAHO ADMIN. CODE r.20.03.02.122(03).; Form of Performance Bond, IDAHO ADMIN. CODE r.20.03.01.035(02)(c).; Bonding, MO. CODE REGS. ANN. tit. 10, § 40-10.030(2)(C)(5); General requirements, NEV. ADMIN. CODE ch. 519A.350(1)(c); NEV. ADMIN. CODE ch 519A.350(5).
[162] Authorized to do business in the U.S., 43 CFR 3809.555 (c).
[163] Letters of Credit, IDAHO ADMIN. CODE r.20.03.02.122(03).; Form of Performance Bond, IDAHO ADMIN. CODE r.20.03.01.035(02)(c).

believes that the Idaho provisions are intended to facilitate access to assured funds and do not imply that foreign bank issuers are less likely to fulfill their obligations on their letters than domestic LOC issuers are.

4.3.2. FDIC Insurance Requirement.

EPA reviewed federal and state financial responsibility issuer eligibility criteria for letters of credit that included language regarding the issuers' federal insurance. Arizona Mined Land Reclamation and Florida Mitigation of Wetlands programs require that if the issuer is a bank that it be federally-insured (e.g., by the FDIC).[164] Data comparing the failure rates of FDIC-insured banks to state banks without such insurance was not readily available to EPA.

EPA further examined whether a letter of credit itself is, or has potential to be, FDIC-insured. 12 U.S.C. 1813(l) states that "the term 'deposit' means…a letter of credit…on which the bank or savings association is primarily liable."[165] In the case of a standby letter of credit, however, the issuing bank is secondarily liable and the account party is primarily liable. Standby letters of credit therefore do not qualify as an insurable deposit; the account party bears full responsibility for the assured funds in the case that the issuing financial institution is unable to meet its obligation. Standby letters of credit are ineligible for FDIC insurance; should an institution issuing a standby letter of credit fail, any claims for LOC payment made to that institution will not be paid by FDIC, regardless of the date that those claims were filed.

While failure rates of FDIC-insured institutions were generally modest (See section 4.2.1), EPA was unable to identify information that suggested FDIC-insured institutions are more or less secure than other financial institutions such as state-chartered financial institutions or trust companies that are not federally-insured. As such, and because standby letters of credit themselves would be ineligible for FDIC insurance, a requirement for FDIC insurance is not being proposed today.

4.3.3. Capital, Asset, and Other Financial Eligibility Criteria

EPA reviewed federal and state letter of credit eligibility criteria for requirements relating to capital, asset, and other financial criteria. RCRA Subtitle C requirements and most of the other programs make no reference to minimum capital levels or ratios. EPA's UIC Class VI program requires that owner/operators provide proof that the institution issuing the letter of credit has either (1) passed financial strength requirements based on credit ratings (discussed below in Section 4.3.4) or (2) met a minimum rating, minimum capitalization, and has the ability to pass the bond rating when applicable.[166] EPA recommends in guidance that the Class VI issuer meet the financial ratios presented in Exhibit 25, below.[167] The ratios in the Exhibit include:

- **Assets (current, total, U.S.)** – property owned by an entity
- **Liabilities (total, current)**–obligations for which an entity is responsible
- **Net Income**– excess of revenues over outlays in a given period of time, with consideration of:

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[164] Financial Assurance, FLA. ADMIN. CODE ANN. r. 62-673.640(4)(d).Letter of Credit, ARIZ. ADMIN. CODE R11-2-807.
[165] 12 U.S.C. 1813(l).
[166] 40 CFR § 146.85(a)(4)(i) and (a)(6)(ii).
[167] Environmental Protection Agency, *Underground Injection Control (UIC) Class VI Program: Research and Analysis in Support of UIC Class VI Program Financial Responsibility Requirements and Guidance (December 2010),* available athttps://www.epa.gov/sites/production/files/2015-07/documents/uicclass6reasearchandanalysisupdatedpg84.pdf.

- **Amortization** – reduction in the value of an asset by prorating its cost over a period of years
- **Depletion** – act of decreasing the value of an asset
- **Depreciation** – reduction in the value of an asset over time

- **Net Worth**– total assets minus total liabilities of an entity
- **Total Environmental (Financial Responsibility) Obligations**– the sum of current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

Exhibit 25– List of Financial Ratios and Recommended Thresholds for Instrument Issuers under EPA UIC Class VI Wells Program

Ratio	Explanation of Ratio	UIC Class VI Program Recommended Threshold[168]
Debt-Equity	Total Liabilities / Net Worth	< 2.0
Assets-Liabilities	Current assets / Current Liabilities	> 1.5
Cash Flow to Liabilities	(Net Income + Depreciation + Depletion + Amortization) / Total Liabilities	> 0.10
Liquidity	(Current Assets – Current Liabilities)/ Total Assets	> -0.10
Net Profit		> 0
Net Working Capital & Tangible Net Worth		NA
Tangible Net Worth		NA
Assets	C) U.S. Assets / Total Assets D) U.S. Assets/ Total Environmental Obligations	NA

While financial ratios may help lower the risk of institution failure, the Agency does not expect to use financial criteria in specifying the eligibility of 108(b) letter of credit issuers because of the burden on owners and operators as well as on the Agency to review and evaluate annual financial statements.

4.3.4. Minimum Rating(s) Requirements.

EPA reviewed federal financial responsibility programs for criteria regarding credit ratings issued by Nationally Recognized Statistical Rating Organizations (NRSRO) in addition to the criteria established under RCRA Subtitle C. Issuer ratings from NRSROs "are opinions [by the rating institution] of the ability

[168] Environmental Protection Agency, *Underground Injection Control (UIC) Class VI Program: Research and Analysis in Support of UIC Class VI Program Financial Responsibility Requirements and Guidance (December 2010),* available athttps://www.epa.gov/sites/production/files/2015-07/documents/uicclass6reasearchandanalysisupdatedpg84.pdf.

of entities to honor senior unsecured debt and debt like obligations."[169] Such issuer ratings assess the creditworthiness of the entity as a whole.

RCRA Subtitle C issuer eligibility requirements include no criteria for LOC issuer credit ratings. EPA Underground Injection Control (UIC) Class VI wells financial responsibility regulations (40 CFR 146.85)require that owners/operators provide proof that the instrument issuer has either (1) passed financial strength requirements based on credit ratings, or (2) met a minimum rating, minimum capitalization, and ability to pass the bond rating, when applicable.[170] EPA UIC Class VI financial responsibility guidance (2010) recommends that owners or operators demonstrate that issuers have a credit rating in the top four categories from Standard & Poor's and/or Moody's (i.e., AAA , AA , A, or BBB for Standard & Poor's and Aaa, Aa, A, or Baa for Moody's), or an equivalent rating from a nationally recognized statistical rating organization (NRSRO).[171] The top four ratings for Moody's and S&P comprise their investment-grade categories (see Appendix B).

EPA assessed the usefulness of a minimum credit rating requirement for issuers of letters of credit. Three of the four largest rating agencies – Fitch, Moody's, and S&P – rate financial institutions; A.M. Best is generally not in the business of rating these institutions and primarily provides ratings for the insurance industry (Exhibit 26). See Appendix B for a detailed description of each agency's ratings.

Fitch rates over 46,000 financial institutions and securities, Moody's rates over 52,000, and S&P rates over 61,000 (Exhibit 26);[172] the number of firms and securities rated by each agency greatly exceeds the number of depository banks (i.e.,7,522). This is the case because rating agencies individually rate banks' affiliates, subsidiaries, and holding companies as well as all of the individual debt securities issued by each. Therefore, the institutions and securities included in Moody's stratification of "banking institutions" and those included in S&P's stratification of "financial institutions" produce a set of data that may vastly differ from solely letter of credit issuers. Due to limited availability of data, this section does not contain ratings and default information specifically for rated letter of credit issuers. Instead, EPA used default statistics for "banking institutions" from Moody's and "financial institutions" from S&P; those data include depository banks as well as non-bank financial institutions.

Exhibit 26 –Ratings Reported to SEC by NRSROs by Ratings Class

	Financial Institutions	Insurance Companies	Corporate Issuers	Asset-Backed Securities	Gov., Muni. & Sovereign	Total Ratings
A.M. Best	N/R[1]	7,910	1,526	26	N/R	9,462
Fitch	46,260	3,011	15,558	42,237	194,086	301,152
Moody's	52,049	3,336	41,364	71,504	673,166	841,419
S&P	61,000	6,800	53,000	85,200	970,200	1,176,200
Other*	37,748	1,278	15,807	19,665	17,363	91,861
Total	197,057	22,335	127,255	218,632	1,854,815	2,420,094

* Includes DBRS, Inc., Egan-Jones Rating Company, HR Ratings de Mexico, Kroll Bond Rating Agency, Inc., Japan Credit Rating Agency, Ltd., and Morningstar Credit Ratings, LLC.

[169] Moody's Investor Service, Rating Symbols and Definitions, available at https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_79004.
[170] Financial responsibility, 40 CFR §146.85(a)(6)(ii).
[171] U.S. EPA, 2011, "Underground Injection Control (UIC) Class VI Program Financial Responsibility Guidance."
[172]Securities and Exchange Commission, January 2011, Annual Report on Nationally Recognized Statistical Rating Organizations.

[1] N/R indicates that the NRSRO is not registered for the rating category indicated.
Source: Securities and Exchange Commission, December 2015, Annual Report on Nationally Recognized Statistical Rating Organizations.

EPA compared default rates of S&P rated financial institutions to FDIC failure rates (Exhibit 27). Similar data from Fitch and Moody's were not available. In the latest decade, and particularly in 2010, EPA found that S&P rated financial institution defaults[173] are not necessarily correlated to the failure rate of FDIC-insured institutions.[174]Although limited to S&P's rated issuers between 2000 and 2014 only, this comparison suggests that the issuance of ratings generally from NRSROs may not accurately predict bank default rates; however, specific ratings may.

Exhibit 27 – S&P's Annual Financial Institution Default Rates[175] v. FDIC Bank Failure Rates[176]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
S&P Default	0.13 %	1.47 %	0.80 %	0.10 %	0.10 %	0.10 %	0.0%	0.28 %	1.69 %	2.09 %	0.91 %	0.42 %	0.57 %	0.33 %	0.24%
FDIC failures	0.08 %	0.05 %	0.14 %	0.04 %	0.05 %	0.0%	0.0%	0.04 %	0.35 %	2.05 %	2.40 %	1.46 %	0.84 %	0.41 %	0.32%

For many years, the major rating agencies have published their own performance information, using various methods and metrics that were not comparable. SEC rules finalized in 2014 now require NRSROs to disclose certain standardized performance statistics, including default rates. Apart from the 2014 SEC disclosure requirements, the major rating agencies (i.e., A.M. Best, Fitch, Moody's, and S&P) have used generally similar approaches to assess the performance, accuracy, and/or quality of their ratings. They focus on the following metrics and measures:

- strong correlations between higher (e.g., secure) ratings and lower default rates, and between lower (e.g., vulnerable) ratings and higher default rates;
- defaulting issuers rated lower than issuers that did not default; and
- the period of deteriorating creditworthiness before default usually is shorter for lower ratings than for higher ratings.

[173] Standard and Poor's definition of default includes an obligor who is in payment default on one or more of its financial obligations (rated or unrated) unless S&P believes that such payments will be made within five business days in the absence of a stated grace period or within the earlier of the stated grace period or 30 calendar dates. S&P also lowers an institution's rating to default upon an issuer's filing for bankruptcy or taking similar action that jeopardizes payments on a financial obligation. S&P assigns a rating of default if S&P believes that the default will be a general default and that the obligor will fail to pay all or substantially all of its obligations as they come due. https://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf.
[174] Standard and Poor's, April 30, 2015, 2014 Annual Global Corporate Default Study and Rating Transitions, https://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf.
[175] Financial Institutions include banks, brokerages, asset managers, and other financial entities. Standard and Poor's, April 30, 2015, 2014 Annual Global Corporate Default Study and Rating Transitions, https://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf.
[176] FDIC Failed Bank List; FDIC Historical Statistics on Banking – CBO1 – Total Number of Institutions, Branches, and Total Offices; Accessed May 4, 2016.

Despite the generally similar approaches used, the rating agencies have employed different definitions, methods, data, and methodologies in measuring their ratings performance. Moody's stressed in 2011 that in its view no single metric can summarize the quality of a ratings system or distinguish a "good" system from a "bad" system, and added that no set of metrics captured at any one time or through any one cycle can do so either. Moody's position was that a ratings system can be fairly evaluated only over many cycles and from multiple perspectives.[177]

EPA assessed the ability of letter ratings – specifically the distinction between investment grade and non-investment grade – to signal future default. Exhibit 28 shows the failure rates of financial institutions for each letter rating assigned by Standard & Poor's within one, three, and ten years of that rating. Between 1981 and 2014, only 0.11 percent of financial institutions with an investment grade rating from S&P failed within one year of that rating. Alternatively, 3.87 percent of firms given a non-investment grade rating failed by the following year. This difference is more pronounced within three and ten years of those ratings. Whereas only 0.50 percent of investment grade-rated firms defaulted within three years, nearly 11 percent of non-investment grade-rated firms did so by the third year. Within ten years of the initial letter rating, firms that were rated as non-investment grade were significantly more likely to default than those that were rated investment grade. On average, one out of every five financial institutions receiving a non-investment grade rating from Standard & Poor's defaulted within ten years. Similar data were not available for Fitch and Moody's. Appendix B shows which ratings comprise the investment grade versus non-investment grade categories for Fitch, Moody's, and S&P.

Exhibit 28 –Financial Institution Default Rates, Standard & Poor's, 1981-2014[178]

	One-Year*	Three-Year*	Ten-Year*
AAA	0	0.14	0.74
AA	0.02	0.13	0.82
A	0.07	0.27	1.51
BBB	0.76	0.96	4.06
Investment Grade	0.11	0.50	2.24
BB	0.76	4.23	13.74
B	3.88	12.97	25.91
CCC/C	26.38	40.67	50.73
Speculative Grade	3.87	10.79	21.97

*One-, Three-, and Ten-Year default rates represent the default rate of the specified ratings within one, three, and ten years of the rating being issued.

EPA compiled data on RCRA LOC issuers and selected a random sample for analysis of their latest available credit ratings, shown in Exhibit 29.[179]

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177 Moody's Investors Service, Measuring the Performance of Credit Ratings (Special Comment November 1, 2011).

178 Standard & Poor's, April 30, 2015, 2014 Annual Global Corporate Default Study and Rating Transitions, https://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf

179 A random sample was established by removing duplicates from the database of RCRA LOC issuers, alphabetizing the list of issuers, assigning each issuer a number, and using Microsoft Excel's RANDBETWEEN function to select a set of 25 numbers (each corresponding to an issuer).

As shown in Exhibit 29, ratings from different NRSROs for RCRA LOC issuers tend to be similar though not identical. For example, Wells Fargo was given the second highest possible rating by Moody's (Aa1) indicating 'high quality and subject to low credit risk, while the same company was given the third highest rating by S&P (A) indicating that the company has 'strong financial security characteristics'. Although similar, NRSRO ratings for Wells Fargo are not identical. This observation appears to be consistent across most rated RCRA LOC issuers.

In one case in Exhibit 30 where ratings significantly differ, Intesa SanPaolo's rating from Moody's is A3, indicating that the company is 'upper-medium grade and subject to low credit risk', while the company's rating from S&P is significantly lower at BBB-. A rating of BBB is the lowest of S&P's investment grade ratings and suggests that the company has 'good financial security characteristics'. Although some companies like Intesa SanPaolo have been issued significantly different ratings from NRSROs, in general, ratings for RCRA LOC issuers, where assigned, could be considered "equivalent."

Although most LOC issuer credit ratings are similar, not all RCRA LOC providers have received a credit rating from a major ratings issuer (Moody's or S&P). EPA randomly sampled EPA's RCRA LOC issuer database and compiled the credit ratings of 25 LOC issuers. Of the 25 randomly sampled issuers, eleven had not received a credit rating from either Moody's or S&P (Exhibit 29). Many of the LOC issuers that had not received a rating from the major ratings agencies are small providers with a local or regional presence. If credit ratings are used as an eligibility requirement for 108(b), the requirement may disqualify many of the LOC issuers which currently participate in the RCRA Subtitle C program. LOC issuers without credit ratings wishing to participate in the program may then face the burden and expense of obtaining a credit rating in order to be eligible to participate in the 108(b) program.

Most, but not all of the ratings shown in Exhibit 29 belong to the "secure" or "investment grade" categories for Moody's, and S&P, and would therefore meet the LOC eligibility requirements established by many of the programs reviewed by EPA. Of the randomly sampled issuers with credit ratings, one was given a non-investment grade rating from Moody's (Koppers) and two were given non-investment grade ratings by S&P (Koppers and Guaranty Bank and Trust Co.)

Exhibit 29 - Financial Strength Ratings of 25 Randomly Selected Insurers under RCRA Subtitle C

	Provider	Provider Ratings	
		Moody's[1]	S&P[2]
1	Amegy Bank (subsidiary of ZB N.A.)	Baa1 02/16/2016	BBB 04/22/2009
2	Austin Bank	---	---
3	Bank of the Pacific	---	---
4	Bank One (now JPMorgan Chase)	Baa1 08/28/2015	---
5	Barclays Bank PLC	A2 06/28/2016	A- 06/09/2015
6	Bremmer Bank N.A.	---	---
7	Capstar Bank	---	---
8	Citizens Bank	A1 05/14/2015	A- 11/07/2013
9	Cornerstone Community Bank	---	---
10	First Commonwealth Bank	---	---

11	First State Bank of Webster City	---	---
12	Guaranty Bank and Trust Co.	---	B 09/22/2016
13	Harris Bank	Aa3 09/11/2015	A+ 06/08/2007
14	Intesa SanPaolo	A3 01/25/2016	BBB- 12/18/2014
15	Key Bank	Aa3 07/13/2016	A- 06/17/2009
16	Koppers	Ba3 01/27/2015	B 01/27/2016
17	Landmark Bank	---	---
18	Mainland Bank	---	---
19	Provident National Bank (PNC)	Aa2 06/19/2015	A- 12/06/2011
20	Royal Bank of Scotland	A3 06/28/2016	BBB+ 06/09/2015
21	Suntrust Bank	A1 05/14/2016	A- 10/15/2014
22	The Bank at Broadmoor	---	---
23	Troy Bank and Trust	---	---
24	UBS AG	Aa3 01/11/2015	A+ 06/06/2016
25	Wells Fargo	Aa1 05/14/2015	A 12/02/2015

* ICF randomly selected 25 Insurance providers from EPA's RCRA insurance provider database and compiled the current credit ratings of the selected issuers from Moody's and S&P. Of the randomly selected providers, 11 had not received a rating from the two ratings agencies (11 out of 25 or 44%).

[1] Moody's Long Term Credit Rating

[2] S&P Financial Strength Rating

4.4. Conclusion: Applicability to CERCLA 108(b) Rulemaking.

This section examined potential issuer eligibility criteria for letters of credit under CERCLA 108(b). The analysis included FDIC-insured banks and non-banks (i.e., trust companies, financial holding companies, and security brokers and dealers), to varying degrees based on information availability.

EPA found no clear benefits by including LOC issuer criteria that require a specific type of bank charter (i.e., state versus federal charter) or others that require FDIC insurance. The Agency found no statistically significant difference between the likelihood of failure of state-chartered versus nationally-chartered banks. EPA also did not identify information that suggested requiring the issuer to be an FDIC-insured depository bank appears to provide additional security over other uninsured banks and non-bank organizations such as trust companies, investment firms, insurance companies, and financial holding companies.

EPA's analysis of credit ratings yielded mixed results. The data EPA analyzed identified correlations between higher ratings and lower default rates. However, when EPA analyzed credit ratings for 25 randomly-selected RCRA Subtitle C LOC providers, a credit rating was not available for many of the randomly selected providers. If ratings were used as an eligibility requirement, LOC issuers without credit ratings wishing to participate in the 108(b) program would then face the burden of obtaining a credit rating in order to be eligible to participate. EPA has thus determined that a ratings requirement would occasion an incremental implementation burden and/or potentially lower the participation of LOC issuers in the 108(b) program. EPA is thus not proposing a minimum rating requirement for the CERCLA 108(b)LOC regulations.

Part 5. Trust Fund.

EPA is considering including trust funds among the allowable financial responsibility instruments for its CERCLA 108(b) regulations. The Agency wishes to prescribe eligibility criteria for trustee providers of CERCLA 108(b) trust agreements to ensure that providers of trusts issued under its regulations are prepared to perform when called upon to do so. The following sections describe a trust fund and standby trust fund, what types of entities have the authority to act as RCRA Subtitle C trustees, historical default performance of trust fund issuers, potential additional trustee eligibility criteria, and discussion of applicability to CERCLA 108(b) financial responsibility criteria.

EPA has offered the following definition of a **trust fund** in guidance on its RCRA Subtitle C financial assurance regulations:

> *A trust is a three-party agreement whereby one party, called the grantor (sometimes also called the trustor), transfers some asset(s) (often money) to a second party, called the trustee, to hold on behalf of a third party, called the beneficiary. . . . The owner or operator, as grantor, pays into the trust fund which is held in trust by the trustee. The entire arrangement is governed by a written trust agreement that sets out the responsibilities and rights of each party.*[180]

EPA has offered the following definition of a **standby trust** in a reference manual for its underground storage tank financial responsibility program:

> *A standby trust fund is simply a trust fund that is not yet funded but is otherwise ready to accept monies in the event they are received from a particular source (such as a surety bond, letter of credit, or guarantee). Once a standby trust is funded, the funds are available to pay [covered] costs just as they are with a trust fund.*[181]

EPA expects trusts and standby trusts to operate similarly in the CERCLA 108(b) rules. A trust fund is a widely used financial responsibility instrument that internalizes future costs by requiring funds be paid up-front (or during a defined build-up period) to assure payment of future costs. Financial responsibility programs often include the option of using a trust fund because this instrument is generally available to all parties who can deposit funds, regardless of their creditworthiness. These same programs may require use of a standby trust fund to receive funds from other instruments, such as surety bonds and letters of credit. These programs apply the same issuer eligibility criteria to trustees of both trust funds and standby trust funds.

The following analysis of trustee eligibility criteria is considered equally applicable to both trust funds and standby trusts. As described next, such financial institutions can be either banks or non-bank trust companies.

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[180] U.S. EPA, May, 1982, Financial Assurance for Closure and Post-Closure Care: Requirements for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities, A Guidance Manual (SW 955).

[181] Financial Responsibility for Underground Storage Tanks: A Reference Manual. U.S. EPA Office of Underground Storage Tanks. November 30, 1999.

5.1. Trustee Authority.

Federal and state chartering organizations grant financial institutions the authority to act as a trustee. These organizations grant authority to banks and trust companies (independent of issuing a banking charter), and the FDIC gives its "consent" to act as a trustee following national or state authorization. The metrics used by each regulatory body when determining the ability of each institution to act as a trustee are described in the following sections.

This paper uses the terms "bank" and "banking institution" to include all FDIC-insured, deposit-accepting institutions; the term "trust company" to include all non-federally-insured, non-depository financial institutions that administer trust funds; and the terms "trust institution" and "institution with trust powers" to include all FDIC-insured banks that have the authority to act as a trustee, as well as all non-bank trust companies.

5.1.2. Authority Granted by Chartering Agencies to Act as a Trustee.

The authority to conduct fiduciary services and manage trust funds is granted independently of the authority to conduct banking activities, and therefore requires additional authorization for an institution that has a charter to conduct banking activities. Alternatively, a trust company applies for a trust charter only; the authority to act as a trustee is granted as part of this charter.

Authority to act as a trustee is conferred bank-by-bank by either the Office of Comptroller of the Currency (OCC) or individual state agencies.[182]Nationally-chartered banks wishing to conduct fiduciary activities (i.e., act as a trustee) must obtain approval from the OCC. OCC defines an eligible bank to conduct fiduciary activities as one that:

- has a composite Capital, Asset Quality, Management, Earnings, Asset Liability Management (CAMELS) Rating of 1 or 2;[183]
- has a satisfactory or better Community Reinvestment Act (CRA) rating;[184]
- is well capitalized;[185]and
- is not subject to a cease and desist order, consent order, formal written agreement, or Prompt Corrective Action directive or, if subject to any such order, agreement or directive, is informed in writing by the OCC that the bank may be treated as an "eligible bank."[186]

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[182] Federal Deposit Insurance Corporation, 2005, Trust Examination Manual.

[183] The CAMELS system is an update to the Uniform Financial Institutions Rating System (UFIRS), and is "an internal rating system used by the federal and state regulators for assessing the soundness of financial institutions on a uniform basis and for identifying those institutions requiring special supervisory attention."

[184] The Community Reinvestment Act states that this factor does not apply to an uninsured bank or branch or a special purpose bank. A special purpose bank is defined as a bank that does not perform commercial or retail banking services. A trust company is considered a special purpose bank.

[185]12 CFR 6.4(b)(1) defines "well capitalized" as a bank that "(i) Has a total risk-based capital ratio of 10.0 percent or greater; and (ii) Has a Tier 1 risk-based capital ratio of 6.0 percent or greater; and (iii) Has a leverage ratio of 5.0 percent or greater."

[186] Office of the Comptroller of the Currency, 2002, Comptroller's Licensing Manual: Fiduciary Powers.

During the review process for eligible banks wishing to conduct fiduciary activities, OCC considers the adequacy of bank capital and surplus, the character and qualifications of management, the business plan, needs of the customers, and applicable laws.[187]

State-chartered banks wishing to administer trust funds must obtain approval from their chartering agencies. Each state's eligibility criteria differ; under Florida regulation, for example, the Office of Financial Regulation will approve an application for the authority to act as a trustee if it finds that:

- the general condition of the applicant bank or savings association is sufficient to support the proposed trust department;
- the earnings and earning prospects of the applicant bank or savings association, including the earning prospects of the proposed trust department, are sufficient to support the anticipated expenses and any anticipated operating losses of the trust department during its formative or initial years;
- the capital structure of the bank or savings association is adequate to support the trust department;
- the proposed trust officers have or will be supplied with sufficient trust and related investment, financial, and managerial experience, ability, and standing to operate the trust department; and
- provision has been made for the trust department to occupy suitable quarters at the location specified in the application.[188]

Institutions established solely as trust companies (i.e., solely to conduct fiduciary activity) must also apply for a charter to do so through the OCC (nationally-chartered) or their state agencies (state-chartered). Chartering agencies apply the same criteria when authorizing a non-bank trust company to act as a trustee as they do to banking institutions wishing to act as trustees.[189]

5.1.3. Consent by the FDIC for a Bank Institution to Act as a Trustee.

In addition to being granted authority to act as a trustee, a banking institution must gain consent from the FDIC. The FDIC does not grant trust powers, but gives "consent", or approval, to exercise such powers granted by state and national authorities. FDIC regulations (12 CFR §333.2) prohibit an insured institution from "changing the general character of its business" without prior written consent from the FDIC.[190]Administering trust funds is considered a change in the general character of a bank's business. This law applies to FDIC-insured banks only. Uninsured trust companies and other uninsured financial institutions need not receive consent from the FDIC to conduct fiduciary activities.[191]

Whereas insured banks must obtain the authority to act as trustees from their respective chartering agency and subsequent consent from the FDIC, non-insured trust companies must only obtain the authority from their respective chartering institutions– whether a state agency or OCC. Exhibit 30 presents 2011 data from the FDIC's *Trust Institution Search* on the number of institutions with trust

[187] Office of the Comptroller of the Currency, 2002, Comptroller's Licensing Manual: Fiduciary Powers.
[188] State of Florida, Trust department licensing – Florida Statute § 660.26(5).
[189] Office of the Comptroller of the Currency, 2002, Comptroller's Licensing Manual: Fiduciary Powers.
[190] Change in general character of business, 12 CFR § 333.2.
[191] Federal Deposit Insurance Corporation, 2005, *Trust Examination Manual*.

powers, categorized by FDIC insurance coverage and type of charter (i.e., national or state). The majority of institutions are FDIC-insured with state charters (58%).

Exhibit 30 –Institutions with Trust Powers (2011)

	Number	Percent of Total (%)
Total FDIC Insured Institutions with Trust Powers:	**1,783**	**84**
Federal Charter (OCC)	549	26
State Charter (state agency)	1,234	58
Total Non-Insured Institutions with Trust Powers:	**339**	**16**
Federal Charter (OCC)	65	3
State Charter (state agency)	274	13
Total Institutions with Trust Powers:	**2,122**	**100%**

Results from 10/19/2011 search, *FDIC Trust Institution Search*

As of November 16, 2016, there were 1,763 FDIC-insured institutions with trust powers, of which 20% were nationally-chartered and 80% were state-chartered, but recent data for non-insured institutions with trust powers was not publicly available.[192] In comparison with Exhibit 30, 2016 data shows that the number of institutions has remained relatively constant since 2011 and the percent of nationally-chartered institutions has grown slightly (from 16% to 20%) for FDIC-insured institutions.

5.2. Performance of Trustees.

Performance data for banking institutions that actively issue trusts was unavailable to EPA. However, EPA analyzed the historical performance of FDIC-insured banking institutions and compared the performance of state-chartered banks to nationally-chartered banks. The following sections present this analysis.

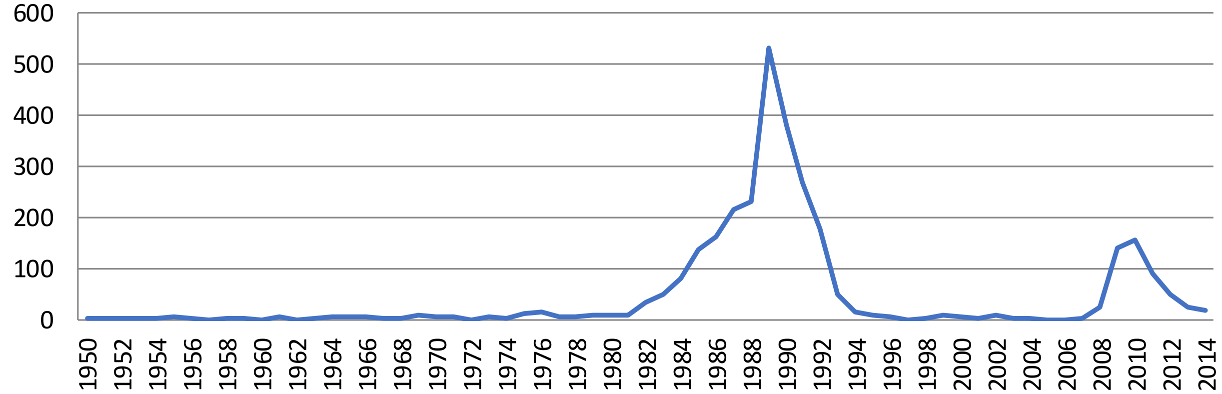
5.2.1. FDIC-Insured Banking Institutions.

The FDIC is the nation's agency for dealing with bank failures and their "resolution." As illustrated in Exhibit 31, since 1950, there have been two periods of high bank failures. During the years spanning from 1982 through 1993, over 2,300 banks failed in the United States, and from 2008 through 2014, there were over 500 bank failures. From 1994 through 2007, only 73 banks failed.[193]

Exhibit 32 displays the annual number of bank failures and annual failure rates for FDIC-insured banks from 1950 through 2014. For the years from 1950-1999, decade averages are presented for annual failures and annual number of banks (e.g., annual failures from 1950 through 1959 = sum of all failures from 1950 through 1959, divided by 10). Annual failure rate is calculated as the number of failures divided by the total number of banks for each year or average number of banks for multi-year periods. As shown in Exhibit 32, average annual failure rates are around 0.5% from 1950-2014. Failures reached their peak in 2010 at 157 failures and appear to be declining through 2014. Failure data specifically for banks with trust powers and non-bank trust companies were not readily available to EPA.

[192] 2016 data obtained from FDIC Bank Data & Statistics Institution Directory; accessed on November 16, 2016.
[193] FDIC Failed Bank List; Accessed May 4, 2016

Exhibit 31 - Failures of FDIC-Insured Banks, 1950-2014



Data Source: FDIC Failed Bank List; Accessed May 4, 2016.

Exhibit 32–Failures of FDIC-Insured Banks

	Annual Failures*	Annual Banks**	Failure Rate
1950-1959	3	13,295	0.02%
1960-1969	4	13,371	0.03%
1970-1979	8	14,102	0.06%
1980-1989	147	14,047	1.04%
1990-1999	92	10,313	0.89%
2000	7	8,315	0.08%
2001	4	8,082	0.05%
2002	11	7,888	0.14%
2003	3	7,770	0.04%
2004	4	7,631	0.05%
2005	0	7,526	0.00%
2006	0	7,401	0.00%
2007	3	7,284	0.04%
2008	25	7,088	0.35%
2009	140	6,841	2.05%
2010	157	6,531	2.40%
2011	92	6,292	1.46%
2012	51	6,097	0.84%
2013	24	5,877	0.41%
2014	18	5,643	0.32%
Average (2000-2014)	**36**	**7,084**	**0.51%**
Average (1950-2014)	**47**	**11,655**	**0.47%**

Data Sources: FDIC Failed Bank List; FDIC Historical Statistics on Banking – CBO1 – Total Number of Institutions, Branches, and Total Offices; Accessed May 4, 2016.
*Decade average presented for years from 1950-1999
**Decade average presented for years from 1950-1999

5.2.2. State versus National Charter of FDIC-insured Institutions.

EPA also analyzed failures of FDIC-insured institutions by type of charter, and determined that a bank's chartering and regulatory agency appears to have little effect on that institution's likelihood of failure (Exhibit 33). While EPA could not determine annual failure *rates* by type of charter because data on the total number of state- and nationally-chartered banks for 2000-2014 were not readily available, the percentage of total failures for each type appears to be roughly proportional to the number of institutions of each type in 2016. As of November 16, 2016, 20% of all FDIC-insured institutions charted in the US held a national charter, and Exhibit 33 demonstrates that from 2000 to 2014, institutions holding national charters represented roughly 17% of all bank failures (92/(460+92)= 17%). Similarly, as of November 16, 2016, 80% of all FDIC-insured institutions charted in the US held a state charter, and Exhibit 33 demonstrates that from 2000-2014, institutions holding state charters represented roughly 83% of all bank failures (460/(460+92)=83%).[194] Based on this analysis, EPA does not believe a state- or nationally-chartered bank is necessarily more secure than the other.

Exhibit 33 –FDIC-Insured Institution Failures by Charter

	Failures	
	State Charter	**National Charter**
2000	5	2
2001	2	2
2002	8	3
2003	2	1
2004	3	1
2005	0	0
2006	0	0
2007	3	0
2008	22	8
2009	118	30
2010	134	23
2011	81	11
2012	46	5
2013	21	3
2014	15	3
Total	**460**	**92**

Data Source: FDIC Failed Bank List; Accessed May 4, 2016.

5.2.3. Effects of Bank Failure on 108(b) Trusts.

Trust funds are considered a most secure form of financial responsibility, taking into account the low failure risk of banks holding trust fund investments, and protection in the event of bank default. Nevada's former banking commissioner was quoted as saying that, as long as the assets are properly managed, and the trust bank is federally insured, in the event of failure, the trust assets are simply rolled over to the financial institution that takes the failed bank over. In the worst case scenario, the FDIC will liquidate the failed bank and turn assets back to trustees who will need to find a new bank or trust institution.[195] Because of the time the FDIC needs to resolve a failed bank, however, assets may

[194] 2016 data obtained from FDIC Bank Data & Statistics Institution Directory; accessed on November 16, 2016.
[195] "When a Bank Fails Are Trust Assets at Risk?" The Trust Advisor (March 12 ,2010).

not be available for up to five years.[196] Where mismanagement, fraud or misappropriation have occurred, full recovery of uninsured sums may not be possible, especially with smaller institutions. As discussed further below, fraud has been found to be a primary cause of bank failure in 6% of the failed banks from 1986-2007 where FDIC was the receiver, fraud was a contributing cause of bank failure in another 16%, and fraud was present in an additional 22% of bank failures. As described below, trust assets are not necessarily fully covered by FDIC insurance, but only up to $250.000.

<u>What Happens to Failed Banks Holding Trust Funds?</u>

To understand what happens to trust funds that a bank manages if the bank fails, it is essential to understand what happens to the banks themselves to resolve their failures. Although data about the state-managed resolution or liquidation of non-federally insured banks were not readily available, information was available on federally-insured bank failures and resolution which are the responsibility of the FDIC. A recent FDIC study determined that from 1986 to 2007, 2,427 insured depository institutions failed; of these, 1,244 were placed into FDIC receivership for resolution.[197] The FDIC uses different methods to resolve failed banks including deposit payoffs, insured-deposit transfers, purchase and assumption (P&A) agreements, whole-bank transactions, and open-bank assistance (OBA). The FDIC study shows that large banks that fail have higher capital ratios at failure, lower loss on assets, and lower receivership expenses than small banks.[198] The average time for resolution is about five (5) years which is about twice as long as a typical non-financial bankruptcy.[199]

As part of the resolution process, the FDIC markets the assets and liabilities, including trust accounts, of a failing bank and evaluates the bids it receives. The FDIC employs two methods to pay off depositors. In a "deposit payout," the FDIC pays off the insured depositors in cash; the uninsured depositors and general creditors file claims and are paid a pro rata share to the extent that funds are available as assets are liquidated. In a deposit payout, only insured depositors are protected 100%. On the other hand, with an "insured deposit transfer" the FDIC transfers insured deposits and secured liabilities to a healthy institution along with a cash payment. In either method the FDIC does not cover uninsured deposits, which are reimbursed their pro rata share as assets are liquidated. Alternatively, the FDIC can receive bids to purchase all or a part of a bank's assets and assume all or a part of the deposit liabilities. Most resolutions involve a bidder for a part of the bank's assets; these resolutions are termed P&A agreements. When an acquirer assumes all deposits in a P&A, 100% protection is extended to all depositors, including uninsured depositors. Bidders may bid only for insured deposits, which means imposing losses on uninsured depositors. Of the 1,244 bank failures with FDIC receivership, 19% were resolved by deposit payoffs and 81% were P&A transactions, including whole bank transactions. Deposit payoff resolutions are used for smaller-size banks, with the size of failed banks resolved through P&A being on average five times larger. On average, uninsured depositors lose about 27 percent of their

[196] Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[197] The balance of failures were thrift institutions. Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[198] Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[199] Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).

claims.[200] The FDIC finds buyers for the vast majority of the failed banks, which means that all depositors were largely made whole, even uninsured deposits.

Fraud and Bank Failures

Banks can fail for a variety of reasons including undercapitalization, lack of liquidity, safety and soundness, and fraud. Fraud and misconduct can specifically affect the balance of trust funds held by banks, leading to reductions due to poor investment choices or due to fraudulent draws/distributions from trust funds. In 1993, a national commission found that fraud and misconduct were important causes of bank failures in the 1980s. Fraud typically involves either fraudulent insider loans or manipulation of bank records (e.g., creating non-existent assets). Recently, the FDIC Division of Insurance and Research compiled a database that captures the causes of bank failure, including fraud, between 1989 and the present. The database includes three fraud indicators -- whether fraud was the primary cause of failure, whether fraud contributed to bank failure, and whether fraud merely was present. Of the banks covered in the FDIC database, fraud was rated the primary cause of failure in about 6%, a contributing cause in 16%, and merely present in another 22%.[201]

Accounts Covered by FDIC Insurance

Trust assets may not be fully covered by federal insurance if bank assets have been compromised due to mismanagement or fraud. FDIC deposit insurance coverage depends on two main factors: (1) whether the bank is FDIC-insured and (2) whether the depositor is using a bank product. Although most federally-chartered financial institutions will be FDIC-insured,[202] many state chartered banks do not carry FDIC insurance. FDIC insurance covers bank time deposits such as bank certificates of deposit (CDs), bank money market deposit accounts, and bank savings and checking accounts up to $250,000; FDIC does not cover stock and bond investments, mutual funds, life insurance policies, annuities, and other negotiable securities. As allowed by law, when an acquiring bank refuses to honor higher interest rates on CDs from failed banks, those losses may be covered by FDIC insurance.[203]

The FDIC has special rules regarding coverage of trust accounts on a per beneficiary basis as opposed to the default amount of insurance coverage per trust. To be eligible for such greater per-beneficiary coverage under FDIC deposit insurance, an irrevocable trust must meet the following criteria : (1) valid under state law, (2) the bank's records must disclose the trust relationship, (3) the beneficiaries are identifiable from the bank's records, and (4) each beneficiary's interests must be non-contingent (unconditional).[204] It is uncommon for an irrevocable trust to meet all the criteria, which is why deposit insurance for most irrevocable trusts is up to $250,000 total (and not $250,000 per beneficiary) at each FDIC-insured bank. The CERCLA beneficiaries' interests in 108(b) trusts are explicitly contingent.

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[200] Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[201] Rosalind L. Bennett and HalukUnal, Understanding the Components of Bank Failure Resolution Costs, Working Paper Series, FDIC Center for Financial Research (July 2014).
[202] In 2013, the OCC changed its well-established policy that did not require trust-only banks with a federal charter to be FDIC-insured; under the new policy, to receive a federal charter a trust-only bank must be FDIC insured. See Richard P. Eckman et al., "The OCC's New Stance: FDIC Insurance Required for 'Trust-Only' National Banks," Pepper Hamilton LLP (4/22/2013).
[203] Ken Tumin, "Review of the 2014 Bank Failures and Their Effects on Depositors," depositaccounts.com blog post (January 2, 2015).
[204] See 12 CFR 330.10(d).

The Agency's proposed rules specify the prudent investor standard, which does not require investing trust assets in insured bank products. In any case, the amount of 108(b) assurance in a trust fund is likely to greatly exceed the $250,000 FDIC insurance coverage amount creating some small risk that CERCLA third-party liability claims might not be fully satisfied.

5.3. Potential Trustee Eligibility Criteria.

Financial responsibility programs often have eligibility requirements for issuers of acceptable types of financial responsibility mechanisms, such as trust funds. Section 5.3 describes issuer eligibility requirements under Resource Conservation and Recovery Act (RCRA) Subtitle C- Hazardous Waste Regulations (40 CFR Part 264) for trust funds, as well as eligibility requirements of other federal and state financial responsibility programs.

U.S. EPA reviewed financial responsibility programs under RCRA Subtitle C, which provide benchmarks for issuer eligibility criteria:

- 40 CFR Parts 264/265 Subpart H Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities: Closure/ Postclosure Care and Liability Coverage.

- 40 CFR Part 261, Subpart H Financial Requirements for Management of Excluded Hazardous Secondary Materials: Removal and Decommissioning and Liability Coverage.

EPA also reviewed issuer eligibility criteria for trust funds under other Federal financial responsibility programs including:

- RCRA Subtitle D Solid Waste Regulations- 40 CFR Part 258 Subpart G Criteria for Municipal Solid Waste Landfills.

- RCRA Subtitle I Underground Storage Tank Regulations- 40 CFR Part 280, Subpart H Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST) and 1999 guidance document "Financial Responsibility for Underground Storage Tanks: A Reference Manual."

- Underground Injection Control (UIC) Class I Wells- 40 CFR Part 144 Subpart F Financial Responsibility: Class I Hazardous Waste Injection Wells.

- UIC Class VI Wells- 40 CFR Part 146 Subpart H Underground Injection Control Program: Criteria and Standards Applicable to Class VI Wells and 2011 guidance document "Underground Injection Control (UIC) Class VI Program: Financial Responsibility Guidance.

- Bureau of Land Management (BLM) - 43 CFR Part 3809 Mining Claims under the General Mining Laws- Surface Management.

- Bureau of Ocean Energy Management (BOEM) 30 CFR Part 553 Oil Spill Financial Responsibility for Offshore Facilities.[205]

- U.S. Coast Guard – 33.CFR 138 Financial Responsibility for CERCLA 108(a) Water Pollution (Vessels) and OPA 90 (Vessels and Deepwater Ports).[206]

- Nuclear Regulatory Commission (NRC) - 10 CFR Part 30 Rules of General Applicability to Domestic Licensing of Byproduct Material, Part 40 Source Material, Part 70 Special Nuclear Material, Part 72 Independent Storage of Spent Nuclear Fuel Installations ("NRC General Rules for Materials Licensees"), and 2003 NRC guidance document, "NUREG-1757, Vol. 3 Appendix A, Standard Format and Content of Financial Assurance Mechanisms for Decommissioning."

EPA chose to review these financial responsibility programs for issuer eligibility requirements because of their relevance to CERCLA 108(b) as well as for offering potential variations to RCRA Subtitle C issuer eligibility benchmarks. For example, RCRA Subtitle I UST Regulations were chosen because they establish financial responsibility for prospective remediation. The NRC General Rules for Materials Licensees was chosen because it applies to the decommissioning of process equipment and non-waste facilities.

EPA also reviewed selected state financial responsibility programs for hardrock operations (see Appendix A for list of state programs reviewed).EPA selected and reviewed programs that are representative of financial responsibility regulation in key hardrock mining states. State hardrock financial responsibility programs exhibit a diverse range of approaches to issuer eligibility criteria.

RCRA Subtitle C financial responsibility requirements for closure, post-closure care, and third-party liability state that the trustee:

> "must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency."[207]

These criteria exclude personal trustees outside of the custody of regulated financial institutions. Other programs using these criteria for trust fund trustees include RCRA Subtitle D Solid Waste Regulations,[208]

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[205] BOEM accepts the use of self-insurance, insurance, indemnity, surety bond, or an alternative method approved by the Director as evidence of financial responsibly. BOEM does not accept trust funds as evidence of financial responsibility unless the trust fund has been approved by the Director of BOEM. (30 CFR 553.20).

[206] Trust funds are not an acceptable form of financial responsibility under this program, and thus the U.S. Coast Guard requirements are not discussed below. See 33 CFR 138.80(b).

[207] Trust Fund: Financial assurance for closure, 40 CFR § 264.143(a); Financial assurance for post-closure care, 40 CFR § 264.145(a); Liability requirements, 40 CFR § 264.147(a); Financial assurance condition, 40 CFR § 261.143 (a)(1). Standby Trust: Financial assurance for closure, 40 CFR § 264.143(a); Financial assurance for post-closure care, 40 CFR § 264.145(a); Liability requirements, 40 CFR § 264.147(a); Financial assurance condition, 40 CFR § 261.143 (a)(1).

[208] Allowable Mechanisms, 40 CFR§ 258.74 (a)(1).

UIC Class I Wells,[209] Arizona Mined Land Reclamation financial responsibility program[210] and New Mexico Non-Coal Mining program.[211]

RCRA Subtitle I UST Regulations employ similar eligibility criteria for the trust fund trustee:

> *"must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established."*[212]

RCRA's Subtitle I specification, although not identical to RCRA Subtitle C, have been interpreted as equivalent for practical purposes. EPA's preamble for Subtitle I trustee eligibility requirements states, "The rule requires that the trustee must have the authority to act as a trustee and its trust operations must be regulated and examined by a federal or state agency. This trustee requirement is the same as the trustee qualification requirement under Subtitle C regulations."[213]

In addition to RCRCA, the NRC has also established trustee eligibility requirements. Although the NRC Rules reviewed by EPA do not include regulatory language on trustee eligibility, the NRC NUREG-1757 Vol. 3 Consolidated Decommissioning Guidance guidelines (2003) include provisions similar[214] to those of RCRA Subtitle C. NRC NUREG-1757 Vol. 3 guidelines state than an acceptable trustee includes appropriate Federal or State government agencies and financial institutions that have the authority to act as trustees and whose trust operations are regulated and examined by a Federal or State agency.[215] The NRC rules differ from RCRA Subtitle C in accepting "appropriate" Federal or State government agencies as trustees. EPA was unable to find documentation providing an explanation for NRC's addition of "appropriate Federal or State government agencies" as trustees.

[209] Financial assurance for plugging and abandonment, 40 CFR§ 144.63(a)(1)
[210] Trust Funds, ARIZ. ADMIN. CODE R11-2-806.
[211] Financial Assurance Mechanisms, N.M. Code R. § 19.10.12.1208.E.
[212] Trust fund, 40 CFR§ 280.102(a). RCRA Subtitle I UST Regulations includes similar language on the eligibility of the trustees of standby trust funds.
[213] Preamble to 40 CFR Parts 280 and 281, Underground Storage Tanks Containing Petroleum, Financial Responsibility Requirements and State Program Approval Objective. 53 FR 43355 (October 26, 1988) https://www.epa.gov/sites/production/files/2014-09/documents/40cfr280-281preamble.pdf.
[214] According to the NRC NUREG-1757 Vol. 3 guidelines (2003), "Acceptable trustees include appropriate Federal or State government agencies and financial institutions that have the authority to act as trustees and whose trust operations are regulated and examined by a Federal or State agency." Trust Funds, NRC NUREG-1757, Vol. 3, A.4.1.
[215] Standby trust fund, 40 CFR § 280.103(a); NRC NUREG-1757, Vol. 3.A.12.1.

Exhibit 34 – Review of Trustee Eligibility Programs

Federal Regulation	State Regulation	Eligibility Language
- 40 CFR Part 144 Class I Hazardous Waste Injection Wells - 40 CFR Part 258 Subpart G Criteria for Municipal Solid Waste Landfills - 40 CFR Part 261 Subpart H Financial Requirements for Management of Excluded Hazardous Secondary Materials - 40 CFR Parts 264/ 265 Subpart H Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities - NRC Guidance: NUREG-1757, Vol. 3 A.4.1	- Arizona State Mine Inspector Mined Land Reclamation [Ariz. Admin. Code R11-2-101 – R11-2-822]. - New Mexico Title 19: Natural Resources and Wildlife. Chapter 10, Non-Coal Mining [M. Code R. § 19.10.12 et seq.].	- Trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.
- 40 CFR Part 280 Subpart H Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)		Trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.
- 40 CFR Part 146 Class VI Wells Underground Injection Control Program: Criteria and Standards		Trustee must pass financial strength requirements based on credit ratings, or meet a minimum rating, minimum capitalization, and ability to pass the bond rating, when applicable.
	- Florida Phosphogypsum Stack Closure Management [Fla. Admin. Code Ann. r. 62-673.100 – 62-673.900].	- Trustees of such funds will be either national or state-chartered banking institutions or a state-regulated trust company.

EPA reviewed potential trust fund issuer eligibility criteria based on regulatory agencies, FDIC insurance, capital and asset requirements, and credit ratings. The following sections highlight findings from this review to identify potential issuer eligibility requirements in addition to RCRA Subtitle C for consideration with respect to CERCLA 108(b).

5.3.1. Charter and Regulatory Agency Requirements.

EPA identified state and federal financial responsibility issuer eligibility criteria that require or exclude financial institutions under specific charter and regulatory agencies. Select programs are outlined below.

- RCRA Subtitle C financial responsibility criteria require that a trustee's trust operations are regulated and examined by either a federal or state agency. Other financial responsibility programs using identical language for trust fund trustees include RCRA Subtitle D Solid Waste Regulations,[216] UIC Class I Wells,[217] Arizona Mined Land Reclamation financial responsibility program[218] and New Mexico Non-Coal Mining program.[219]

- Florida Mitigation of Wetlands financial responsibility requirements, under Fla. Stat. § 373.414(19)(b), on the other hand, include the following criteria for a trustee managing a trust fund. The trustee must:

  "be either a national or state-chartered banking institution or a state-regulated trust company."[220]

5.3.1.1. Analysis of Potential Charter and Regulatory Agency Requirements.

RCRA Subtitle C financial responsibility requirements for trust funds leverage existing State and federal financial institution regulations by stipulating that the trustee must have authority to act as a trustee and must have trust operations regulated and examined by a federal or state agency .

Florida Mitigation of Wetlands financial responsibility criteria, however, further restrict potentially eligible issuers. Domestic branches of foreign-chartered banks as well as nationally-regulated trust companies are neither "a national or state-chartered banking institution or a state-regulated trust company." Therefore, these two classes of institutions appear ineligible to be trustees under Fla. Stat. § 373.414(19)(b).

EPA found there to be no less than 214 domestic branches or agencies of foreign banks as of December 31, 2015.[221] None of the 214 institutions appear to be eligible trustees for the Florida Mitigations of Wetlands program (as of October 19, 2011).

Nationally-chartered (and regulated) trust companies, also do not appear to meet the Florida Mitigations of Wetlands criteria. As of October 19, 2011, there were 65 federally-chartered trust companies (Exhibit 35); none of these 65 institutions are eligible trustees under Florida Mitigations of Wetlands financial responsibility criteria. Comparing these 65 institutions to the larger eligible universe, the Florida Mitigations of Wetlands financial responsibility criteria exclude approximately 3% of potential trustees (calculated as 65 out of 2,122 trust institutions).[222]

EPA further analyzed the ability of the 25 largest trust institutions in the United States to meet the Florida Mitigations of Wetlands criteria and found that 7 of these institutions as of August, 2007[223] had at least one subsidiary (11 subsidiaries in total) which act solely as fiduciaries and are chartered and

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[216] Allowable Mechanisms, 40 CFR § 258.74 (a)(1).

[217] Financial assurance for plugging and abandonment, 40 CFR § 144.63(a)(1)

[218] Trust Funds, Ariz. Admin. Code R11-2-806.

[219] Financial Assurance Mechanisms, N.M. Code R. § 19.10.12.1208.E.

[220] Additional Criteria for activities in surface waters and wetlands, Fla. Stat. § 373.414(19)(b).

[221] Federal Reserve footnote states: "In some cases, two or more offices of a foreign bank within the same metropolitan area file a consolidated report." Board of Governors of the Federal Reserve System, Updated March, 2016, *Assets and Liabilities of U.S. Branches and Agencies of Foreign Banks*, http://www.federalreserve.gov/econresdata/releases/assetliab/current.htm.

[222] FDIC, *Trust Institutions Search*, accessed 10/19/2011. The FDIC Trust Institution Search database was available for public access when the data were gathered in 2011. However, this database is no longer publicly available.

[223] The 2007 FDIC statistics on the 25 largest trust institutions was the latest such data available to EPA.

regulated by the federal government. These 11 institutions would be excluded from eligibility under criteria set forth in Fla. Stat. § 373.414(19)(b) (Exhibit 35).[224,225] These 11 institutions are *not* in addition to the 65 nationally-chartered trust companies, but are included in that number.

Exhibit 35 – Nationally-Chartered, Non-Insured Trust Subsidiaries of the 25 Largest Trust Companies

1	Bank of America National Trust Delaware
2	Barclay's Wealth Trustees (U.S.), NA
3	Citigroup Trust - Delaware, NA
4	Citicorp Trust, NA
5	Deutsche Bank National Trust Co.
6	Deutsche Bank Trust Co, NA
7	M&I National Trust Co.
8	Wells Fargo Delaware Trust Co, NA
9	U.S. Bank Trust Co, NA
10	U.S. Bank Trust, NA
11	U.S. Bank Trust, NA, SD

Data Source: FDIC, Table IV. The Twenty-Five Organizations Reporting the Largest Amount of Trust Assets, August 5, 2007.

5.3.1.2. Discussion of Applicability of Charter and Regulatory Agency Requirements to CERCLA 108(b) Rulemaking.

The analysis in Section 5.2.1 found minimal difference in the likelihood of failure of state-chartered banking institutions versus nationally-chartered banking institutions. The percentage of total failures for nationally-chartered and state-chartered banks was proportional to the percentage of total nationally-chartered and state-chartered banks, respectively.

If EPA were to adopt the Florida Mitigation of Wetlands financial responsibility criteria – to require that the trustee be "either a national or state-chartered banking institution or a state-regulated trust company" –a substantial number of trust institutions would appear to be ineligible as a potential trust issuer under EPA's CERCLA 108(b) regulations. Because the 25 largest trust institutions hold 92% of the dollar value of all trust accounts, the 11 entities that are excluded by Fla. Stat. § 373.414(19)(b) likely represent a sizable portion of the industry.[226] Subject companies may be significantly restricted in their

[224] Federal Deposit Insurance Corporation, *Table IV. The Twenty-Five Organizations Reporting the Largest Amount of Trust Assets*, Updated August 5, 2007,http://www.fdic.gov/bank/individual/trust/table4.htm. FDIC Table IV was a publicly available database in 2011 when the data were gathered. However, this database is no longer publicly available through the FDIC.
[225] FDIC, *Trust Institutions Search*, accessed 10/19/2011. The FDIC Trust Institution Search database was available for public access when the data were gathered in 2011. However, this database is no longer publicly available.
[226] Federal Deposit Insurance Corporation, *Table IV. The Twenty-Five Organizations Reporting the Largest Amount of Trust* Assets, Updated August 5, 2007,http://www.fdic.gov/bank/individual/trust/table4.htm. FDIC Table IV was a publicly available database in 2011 when the data were gathered. However, this database is no longer publicly available through the FDIC.

choice of trustee under such a requirement, which may lead to increased costs and fees. EPA is thus not proposing such a requirement as part of its CERCLA 108(b) regulations.

5.3.2. FDIC Insurance Requirement.

EPA also reviewed federal financial responsibility programs for criteria regarding FDIC insurance. Although this review identified no programs with such criteria for trustees, EPA explored whether to consider such criteria for the proposed CERCLA 108(b) financial responsibility trustee criteria.

Any financial institution that accepts retail deposits must obtain federal insurance from the FDIC. Non-deposit trust companies established to administer trust funds only are not required to obtain FDIC insurance unless federally-chartered.[227] Trust funds administered by state-chartered non-deposit trust companies are generally not insured by the FDIC because they are ineligible for FDIC insurance. Similarly, there are no other federal insurance funds to protect the assets of account holders at state non-depository trust companies.

As described above, if trust fund assets are held in deposit accounts, the assets (up to the maximum insurance amount) are likely covered by FDIC insurance. If those trust assets are held in an investment vehicle (e.g., annuities, mutual funds, and municipal or other bonds), however, the assets are not covered by FDIC insurance.

Accounts in the same bank benefitting the same beneficiary are aggregated and the net amount of FDIC insurance for these aggregated accounts cannot exceed the maximum deposit insurance amount of $250,000. Therefore, dividing a trust fund into separate accounts does not increase the amount of FDIC insurance.

5.3.2.1. Analysis of FDIC Insurance Requirements.

As of October 19, 2011, a total of 2,122 institutions had trust powers, of which 339 were non-bank, non-deposit trust companies (Exhibit 30).[228] If EPA were to adopt a requirement that a trust fund trustee must be an FDIC-insured institution, the 339 non-bank, non-deposit trust companies as of October 19, 2011 would be excluded from potential eligibility. This eliminates 16 percent (calculated as 339 non-bank trust companies divided by 2,122 total trust institutions) of the eligible universe, or 16 percent less than are currently eligible trustees under RCRA Subtitle C. A requirement to host the trust fund at an FDIC insured institution also may limit the number of eligible uninsured state-chartered institutions.

5.3.2.2. Discussion of Applicability of FDIC Insurance Requirements to CERCLA 108(b) Rulemaking.

According to the FDIC, none of the 339 non-bank trust companies failed between 2009 and August 29, 2011, whereas 38 of the 1,783 (2.13%) banks with trust powers did so in the same three-year period.[229] The failure rate of banks with trust authority is similar to the failure rates for all banks (including those

[227] Examination Manual of U.S. Branches and Agencies of Foreign Banking Organizations, September, 1997, http://federalreserve.gov/boarddocs/supmanual/us_branches/usbranch.pdf.

[228] FDIC, *Trust Institutions Search*, accessed 10/19/2011. The FDIC Trust Institution Search database was available for public access when the data were gathered in 2011. However, this database is no longer publicly available.

[229] EPA uses August 29, 2011 for comparison because that was the latest data EPA received from FDIC regarding trust institution failures.

without trust authority) as shown previously on Exhibit 32. Data for non-bank trust company failures were not available to EPA prior to 2009 and after 2011. Although data are limited, it appears that requiring a trustee to be an FDIC-insured institution creates no added security, given that FDIC-insured institutions with trust powers do not appear to be less likely to fail than other banks or than non-insured trust companies. In light of this, and the reduction in the number of potential trustees under CERCLA 108(b), EPA is not proposing to require a trustee be FDIC insured.

5.3.3. Capital, Asset, and Other Financial Eligibility Criteria.

EPA reviewed federal and state trustee eligibility criteria for requirements relating to capital, asset, and other financial criteria. RCRA Subtitle C requirements and most of the other programs make no reference to minimum capital levels or ratios. EPA's UIC Class VI program requires that owner/operators provide proof that the Trustee has either (1) passed financial strength requirements based on credit ratings (discussed below in Section 5.3.4) or (2) met a minimum rating, minimum capitalization, and has the ability to pass the bond rating when applicable.[230] EPA recommends in guidance that the Class VI issuer meet the financial ratios presented in Exhibit 36, below.[231] The ratios in the Exhibit include:

- **Assets (current, total, U.S.)** – property owned by an entity
- **Liabilities (total, current)**–obligations for which an entity is responsible
- **Net Income**– excess of revenues over outlays in a given period of time, with consideration of:
    - **Amortization** – reduction in the value of an asset by prorating its cost over a period of years
    - **Depletion** – act of decreasing the value of an asset
    - **Depreciation** – reduction in the value of an asset over time
- **Net Worth**– total assets minus total liabilities of an entity
- **Total Environmental (Financial Responsibility) Obligations**– the sum of current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

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[230] 40 CFR § 146.85(a)(4)(i) and (a)(6)(ii).

[231] Environmental Protection Agency, *Underground Injection Control (UIC) Class VI Program: Research and Analysis in Support of UIC Class VI Program Financial Responsibility Requirements and Guidance (December 2010),* available athttps://www.epa.gov/sites/production/files/2015-07/documents/uicclass6reasearchandanalysisupdatedpg84.pdf.

Exhibit 36– List of Financial Ratios and Recommended Thresholds under EPA's Class VI Wells Program

Ratio	Explanation of Ratio	UIC Class VI Program Recommended Threshold[232]
Debt-Equity	Total Liabilities / Net Worth	< 2.0
Assets-Liabilities	Current assets / Current Liabilities	> 1.5
Cash Flow to Liabilities	(Net Income + Depreciation + Depletion + Amortization) / Total Liabilities	> 0.10
Liquidity	(Current Assets – Current Liabilities)/ Total Assets	> -0.10
Net Profit		> 0
Net Working Capital & Tangible Net Worth		NA
Tangible Net Worth		NA
Assets	E) U.S. Assets / Total Assets F) U.S. Assets/ Total Environmental Obligations	NA

Although financial ratios may help lower the risk of institution failure, the Agency does not expect to use financial criteria in specifying the eligibility of 108(b) trustees because of the burden on owners and operators as well as on the Agency to review and evaluate annual financial statements. Further, federal and state regulators already have the ability to conduct a quantitative evaluation of an institution's financials (see section 5.1.2 above). EPA believes that leveraging the expertise of these organizations would be a better option for CERCLA 108(b) than evaluating financial ratios itself.

5.3.4. Minimum Rating(s) Requirements.

EPA also reviewed federal financial responsibility programs for criteria regarding credit ratings issued by nationally recognized statistical rating organizations (NRSROs). Issuer ratings from NRSROs "are opinions [by the rating institution] of the ability of entities to honor senior unsecured debt and debt like obligations."[233] Such ratings assess the creditworthiness of the entity as a whole, as opposed to ratings solely of the ability of an institution to retire specific debt instruments.

EPA Underground Injection Control (UIC) Class VI wells financial responsibility regulations (40 CFR 146.85)require that owners/operators provide proof that the insurer has either (1) passed financial

[232] Environmental Protection Agency, *Underground Injection Control (UIC) Class VI Program: Research and Analysis in Support of UIC Class VI Program Financial Responsibility Requirements and Guidance (December 2010),* available athttps://www.epa.gov/sites/production/files/2015-07/documents/uicclass6reasearchandanalysisupdatedpg84.pdf.

[233] Moody's Investor Service, Rating Symbols and Definitions, available at https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_79004.

strength requirements based on credit ratings, or (2) met a minimum rating, minimum capitalization, and ability to pass the bond rating, when applicable.[234] EPA UIC Class VI financial responsibility guidance (2010) recommends that owners or operators demonstrate that insurers have a credit rating in the top four categories from Standard & Poor's and/or Moody's (i.e., AAA , AA , A, or BBB for Standard & Poor's and Aaa, Aa, A, or Baa for Moody's), or an equivalent rating from a nationally recognized statistical rating organization (NRSRO).[235] The top four ratings for Moody's and S&P comprise their investment-grade categories.

Due to limited availability of data, this section does not contain default information specifically for rated trust companies or banking institutions with trust powers. Instead, EPA used default information for "banking institutions" from Moody's and "financial institutions" from S&P. Those terms include both FDIC-insured banks as well as non-insured trust companies, but also include other financial institutions such as investment firms. Fitch rates over 46,000 financial institutions and instruments, Moody's rates over 52,000 financial institutions and instruments, and S&P rates over 61,000 financial institutions and instruments (Exhibit 37);[236] these numbers greatly exceed the number of trust institutions (2,122) and banks themselves. Therefore, the scope of this analysis is greater than FDIC-insured banking institutions and trust companies only.

Three of the four largest rating agencies – Fitch, Moody's, and S&P – rate financial institutions; A.M. Best is generally not in the business of rating these institutions and primarily provides ratings for the insurance industry (Exhibit 37). EPA was able to utilize historical default data from S&P; historical default data broken out for financial industry for Moody's and Fitch were unavailable. See Appendix B for a detailed description of each agency's ratings.

Exhibit 37 –Ratings Reported to SEC by NRSROs by Ratings Class

	Financial Institutions	Insurance Companies	Corporate Issuers	Asset-Backed Securities	Gov., Muni. & Sovereign	Total Ratings
A.M. Best	N/R[1]	7,910	1,526	26	N/R	9,462
Fitch	46,260	3,011	15,558	42,237	194,086	301,152
Moody's	52,049	3,336	41,364	71,504	673,166	841,419
S&P	61,000	6,800	53,000	85,200	970,200	1,176,200
Other*	37,748	1,278	15,807	19,665	17,363	91,861
Total	197,057	22,335	127,255	218,632	1,854,815	2,420,094

* Includes DBRS, Inc., Egan-Jones Rating Company, HR Ratings de Mexico, Kroll Bond Rating Agency, Inc., Japan Credit Rating Agency, Ltd., and Morningstar Credit Ratings, LLC.
[1] N/R indicates that the NRSRO is not registered for the rating category indicated.
Source: Securities and Exchange Commission, December 2015, Annual Report on Nationally Recognized Statistical Rating Organizations.

EPA compared default rates of S&P rated financial institutions to FDIC failure rates (Exhibit 38). Similar data from Fitch and Moody's were not available. EPA found that in the latest decade, and particularly in

[234] Financial responsibility, 40 CFR §146.85(a)(6)(ii).
[235] U.S. EPA, 2011, "Underground Injection Control (UIC) Class VI Program Financial Responsibility Guidance."
[236] Securities and Exchange Commission, December 2015, Annual Report on Nationally Recognized Statistical Rating Organizations.

2010, S&P rated financial institution defaults[237] are not necessarily correlated to the failure rate of FDIC-insured institutions.[238] Although limited to S&P's rated financial institutions between 2000 and 2014 only, this comparison suggests that the issuance of ratings generally from NRSROs may not accurately predict bank default rates; however, specific ratings may.

Exhibit 38 – S&P's Annual Financial Institution Default Rates[239] vs. FDIC Bank Failure Rates[240]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
S&P Default	0.13 %	1.47 %	0.80 %	0.10 %	0.10 %	0.10 %	0.0%	0.28 %	1.69 %	2.09 %	0.91 %	0.42 %	0.57 %	0.33 %	0.24%
FDIC Failure	0.08 %	0.05 %	0.14 %	0.04 %	0.05 %	0.0%	0.0%	0.04 %	0.35 %	2.05 %	2.40 %	1.46 %	0.84 %	0.41 %	0.32%

For many years, the major rating agencies have published their own performance information, using various methods and metrics that were not comparable. SEC rules finalized in 2014 now require NRSROs to disclose certain standardized performance statistics, including default rates. Apart from the 2014 SEC disclosure requirements, the major rating agencies (i.e., A.M. Best, Fitch, Moody's, and S&P) have used generally similar approaches to assess the performance, accuracy, and/or quality of their ratings. They focus on the following metrics and measures:

- strong correlations between higher (e.g., secure) ratings and lower default rates, and between lower (e.g., vulnerable) ratings and higher default rates;
- defaulting issuers rated lower than issuers that did not default; and
- the period of deteriorating creditworthiness before default usually is shorter for lower ratings than for higher ratings.

Despite the generally similar approaches used, the rating agencies have employed different definitions, methods, data, and methodologies in measuring their ratings performance. Moody's stressed in 2011 that in its view no single metric can summarize the quality of a ratings system or distinguish a "good" system from a "bad" system, and added that no set of metrics captured at any one time or through any

[237] Standard and Poor's definition of default includes an obligor who is in payment default on one or more of its financial obligations (rated or unrated) unless S&P believes that such payments will be made within five business days in the absence of a stated grace period or within the earlier of the stated grace period or 30 calendar dates. S&P also lowers an institution's rating to default upon an issuer's filing for bankruptcy or taking similar action that jeopardizes payments on a financial obligation. S&P assigns a rating of default if S&P believes that the default will be a general default and that the obligor will fail to pay all or substantially all of its obligations as they come due. https://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf.

[238] Standard and Poor's, April 30, 2015, 2014 Annual Global Corporate Default Study and Rating Transitions, https://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf.

[239] Financial Institutions include banks, brokerages, asset managers, and other financial entities. Standard and Poor's, April 30, 2015, 2014 Annual Global Corporate Default Study and Rating Transitions, https://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf.

[240] FDIC Failed Bank List; FDIC Historical Statistics on Banking – CBO1 – Total Number of Institutions, Branches, and Total Offices; Accessed May 4, 2016.

one cycle can do so either. Moody's position was that a ratings system can be fairly evaluated only over many cycles and from multiple perspectives.[241]

EPA also assessed the ability of letter ratings – specifically the distinction between investment grade and non-investment grade – to signal future default. Exhibit 39 shows the failure rates of financial institutions for each letter rating assigned by Standard & Poor's within one, three, and ten years of that rating. Between 1981 and 2014, 0.11 percent of financial institutions with an investment grade rating from S&P failed within one year of receiving that rating. Alternatively, 3.87 percent of firms given a non-investment grade rating failed by the following year. This difference is more pronounced within three and ten years of those ratings. Whereas 0.50 percent of investment grade-rated firms defaulted within three years, nearly 11 percent of non-investment grade-rated firms did so by the third year. Within ten years of the initial letter rating, firms that were rated as non-investment grade were significantly more likely to default than those that were rated investment grade. On average, one out of every five financial institutions receiving a non-investment grade rating from Standard & Poor's defaulted within ten years. Similar historic default data for rated financial institutions were not available for Fitch and Moody's. Appendix B shows which ratings comprise the investment grade versus non-investment grade categories for Fitch, Moody's and S&P.

Exhibit 39 –Financial Institution Default Rates, Standard & Poor's, 1981-2014[242]

	One-Year*	Three-Year*	Ten-Year*
AAA	0	0.14	0.74
AA	0.02	0.13	0.82
A	0.07	0.27	1.51
BBB	0.76	0.96	4.06
Investment Grade	0.11	0.50	2.24
BB	0.76	4.23	13.74
B	3.88	12.97	25.91
CCC/C	26.38	40.67	50.73
Speculative Grade	3.87	10.79	21.97

*One-, Three-, and Ten-Year default rates represent the default rate of the specified ratings within one, three, and ten years of the rating being issued.

EPA compiled data on RCRA trust fund issuers and selected a random sample for analysis of their latest available credit ratings, shown in Exhibit 40.[243]

As shown in Exhibit 40, the ratings from different NRSROs for RCRA trust fund issuers tend to be similar. For example, Bank of New York Mellon received the highest ratings of the group of issuers from both Moody's (Aa1) and S&P (AA-), and Synovus Bank received the lowest ratings of the group of issuers from Moody's (Baa2) and S&P (BBB-). Ratings also tend to be similar within their respective scales across NRSROs, although not identical. For example, BB&T was given the third highest rating by both Moody's

[241] Moody's Investors Service, Measuring the Performance of Credit Ratings (Special Comment November 1, 2011).
[242] Standard & Poor's, April 30, 2015, 2014 Annual Global Corporate Default Study and Rating Transitions, https://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf.
[243] A random sample was established by removing duplicates from the database of RCRA trust fund issuers, alphabetizing the list of issuers, assigning each issuer a number, and using Microsoft Excel's RANDBETWEEN function to select a set of 25 numbers (each corresponding to an issuer).

(A2) and S&P (A-); however, the "2" following the Moody's rating indicates that the bank is ranked second within the tier, and the minus sign following the S&P rating indicates that the bank is ranked third within the tier. Although similar, NRSRO ratings for BB&T are not identical. This trend appears to be consistent across most rated RCRA trust fund issuers.

EPA randomly sampled EPA's RCRA trust fund issuer database and compiled the credit ratings of 25 trust fund issuers. Although most trust fund issuer credit ratings are similar, for several of the issuers EPA analyzed, EPA found no credit ratings from a major ratings issuer (Moody's or S&P). Of the 25 randomly sampled issuers, thirteen had not received a credit rating from either Moody's or S&P (Exhibit 40). Many of the issuers that had not received a rating from the major ratings agencies are small entities with a local or regional presence. If credit ratings are used as an eligibility requirement for 108(b), the requirement may disqualify many of the trust fund issuers which currently participate in the RCRA Subtitle C program. Trust fund issuers without credit ratings wishing to participate in the 108(b) program may then face the burden and expense of obtaining a credit rating in order to be eligible to participate in the 108(b) program.

All of the ratings shown in Exhibit 40 belong to the "secure" or "investment grade" categories for Moody's, and S&P, and would therefore meet the trust fund issuer eligibility requirements established by programs reviewed by EPA (e.g., UIC Class VI).

Exhibit 40– Financial Strength Ratings of 25 Randomly-Selected Trust Organizations under RCRA Subtitle C

Trustee		Trustee Ratings	
		Moody's[1]	S&P[2]
1	American Bank and Trust Co.	---	---
2	Arvest Bank	---	---
3	Bank of New York Mellon	**Aa1** 05/14/2015	**AA-** 11/29/2011
4	BB&T	**A2** 08/18/2015	**A-** 12/06/2011
5	BMO Harris Bank	**Aa3** 09/11/2015	**A+** 06/08/2007
6	Credit Suisse	**A1** 01/11/2016	**A** 07/02/2013
7	Deutsche Bank	**A3** 05/23/2016	**BBB+** 06/09/2015
8	First Bank	---	---
9	Guaranty Bank	---	---
10	HSBC Bank USA, N.A.	**Aa2** 03/17/2016	**AA-** 11/29/2011
11	Huntington Bancshares, Inc.	**Baa1** 01/26/2016	**BBB** 12/14/2010
12	Kitsap Bank	---	---
13	Lake City Bank	---	---

14	MB Financial Bank, N.A.	---	---
15	Mechanics Bank	---	---
16	PBI Bank	---	---
17	Peoples United Bank	**A2** 05/16/2016	**A-** 01/30/2007
18	PNC Bank	**Aa2** 06/19/2015	**A** 12/06/2011
19	Suburban Bank & Trust	---	---
20	SunTrust Bank	**A1** 05/14/2015	**A-** 10/15/2014
21	Synovus Bank	**Baa2** 11/12/2015	**BBB-** 08/20/2015
22	Texas Treasury Safekeeping Trust Co.	---	---
23	Trust Company of Virginia	---	---
24	US Bank, N.A.	**Aa1** 05/14/2015	**AA-** 08/20/2012
25	Waterford Bank, N.A.	---	---

[1] Moody's Long-term Rating
[2] S&P's Local Currency Long-term Rating

5.4. Conclusion: Applicability to CERCLA 108(b) Rulemaking.

This part of the report examined potential issuer eligibility criteria for trustees under CERCLA 108(b). As presented in Section 5.3.1, EPA found minimal difference in the likelihood of failure of state-chartered banking institutions versus nationally chartered banking institutions and does not see a clear benefit to restricting CERCLA 108(b) eligibility to either state or nationally chartered institutions.

Data from the FDIC in Section 5.3.2, although limited, indicate that requiring a trustee to be an FDIC-insured institution does not add additional security to the institution. FDIC's data from 2009 to 2011 suggest that FDIC insured institutions with trust powers do not appear to be less likely to fail than such banks without trust powers or than non-insured trust companies. Requiring trustees to be FDIC insured will decrease the number of trustees eligible to participate in the program and create an additional burden should non-insured state financial institutions and trust companies wish to participate in the program. EPA is thus not proposing to require trustees to be FDIC insured.

Section 5.3.3 included a discussion of capital, asset, and other financial criteria for eligibility. EPA did not analyze the extent to which specific financial criteria – such as a requirement for a company's debt-to-equity ratio to be less than two – can predict and/or prevent trustee insolvency. Implementing yearly financial criteria would significantly add to Agency burden with benefits that would be difficult to assess. EPA will not propose such a requirement.

EPA reviewed minimum ratings in Section 5.3.4.EPA noted strong reported correlations between low ratings and increased likelihood for failure, and conversely, high ratings and decreased likelihood for failure. For example, within ten years, 2.24% of financial institutions given an initial investment grade rating by S&P had failed, while one out of every five financial institutions given an non-investment grade had become impaired during the same time frame. A rating requirement for trustee eligibility may offer the beneficial oversight of another entity (the credit rating agency). Nevertheless, a minimum rating requirement would add to Agency and facility burden and reduce the potential number of eligible institutions because a significant portion of potential trustees does not appear to have ratings from a Nationally Recognized Statistical Ratings Organization. The Agency is not proposing to require a minimum rating for entities to be eligible to provide trustee services under its CERCLA 108(b) regulations in light of these tradeoffs.

Appendix A – State Financial Responsibility Programs Reviewed

State	Statute or Regulation
Alaska	Title 11: Natural Resources. Chapter 97, Mining Reclamation [Alaska Admin. Code tit. 11 § 97].
Arizona	Mined Land Reclamation [Ariz. Admin. Code R11-2-101 – R11-2-822].
Florida	Phosphogypsum Management [Fla. Admin. Code Ann. r. 62-673.100 – 62-673.900].
Idaho	Rules Governing Exploration, Surface Mining, and Closure of Cyanidation Facilities [Idaho Admin. Code. r. 20.03.02.000 – 20.03.02.200].
Missouri	Title 10: Department of Natural Resources. Division 40 – Land Reclamation Commission [MO. CODE REGS. tit. 10, §§ 40-10.010 – 40.10.100].
	The Metallic Minerals Waste Management Act of 1989 [MO. REV. STAT. §§ 444.350– 444.380].
Montana	Title 82: Minerals, Oil, and Gas, Chapter 4 Reclamation. Part 3 Metal Mine Reclamation [Mont. Code Ann. § 82-4-301 et seq.].
	Chapter 17 Environmental Quality, Part 24 Reclamation, Subchapter 1 Rules and Regulations Governing the Hard Rock Mining Reclamation Act [Mont. Admin. R. 17.24.101 et seq.].
Nevada	Nevada Administrative Code- Regulation of Mining Operations and Exploration Projects. [Nev. Admin. Code § 519A.010 – 519A.635].
New Mexico	Title 19: Natural Resources and Wildlife. Chapter 10, Non-Coal Mining [N.M. Code R. § 19-10].
Texas	Texas Natural Resource Code, Title 4: Mines and Mining [Iron Ore], Chapter 134: Texas Surface Coal Mining and Reclamation Act [Tex. Nat. Res. Code Ann. § 134].
	Texas Surface Uranium Mining Texas Natural Resource Code, Title 4: Mines and Mining, Chapter 131: Uranium Surface Mining and Reclamation [Tex. Nat. Res. Code Ann. § 131].
Utah	Title R647: Natural Resources; Oil, Gas, and Mining; Non-Coal [Utah Admin. Code r. 647.1- 647.4].

Appendix B – NRSRO Rating Schemes

Appendix B-1 – A.M. Best Ratings

Rating			Explanation
Secure	Superior	*A++*	Superior ability to meet ongoing insurance obligations.
		A+	
	Excellent	*A*	Excellent ability to meet ongoing insurance obligations.
		A-	
	Good	*B++*	Good ability to meet ongoing insurance obligations.
		B+	
Vulnerable	Fair	*B*	Fair ability to meet ongoing insurance obligations. Financial strength is vulnerable to adverse changes.
		B-	
	Marginal	*C++*	Marginal ability to meet ongoing insurance obligations. Financial strength is vulnerable to adverse changes.
		C+	
	Weak	*C*	Weak ability to meet ongoing insurance obligations. Financial strength is very vulnerable to adverse changes.
		C-	
	Poor	*D*	Poor ability to meet ongoing insurance obligations. Financial strength is extremely vulnerable to adverse changes.

For further detail of **A.M. Best ratings**, see A.M. Best's, "Best's Financial Strength Rating Guide", 2015 http://www.ambest.com/ratings/guide.pdf.

A.M. Best uses seven major rating levels, 3 ("Superior," "Excellent," and "Good") considered "secure" or investment grade, and 4 ("Fair, " "Marginal," "Weak," and "Poor") considered "vulnerable" or non-investment grade. Best's reports that the average annual impairment rate for all Best-rated insurers from 1977-2014 was 0.64%. Companies rated secure had an average annual impairment rate of 0.22% while companies rated vulnerable had a rate of 3.79%.[244]

[244] A.M. Best Company, Best's Special Report : Best's Impairment Rate and Rating Transition Study – 1977 to 2014(2015)

Appendix B-2– Moody's Ratings

Rating		Explanation
Investment Gr	*Aaa*	Highest quality, subject to lowest level of credit risk
	Aa	High quality and subject to very low credit risk
	A	Upper-medium grade and are subject to low credit risk
	Baa	Medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics
Non-Investment Gr	*Ba*	Speculative and subject to substantial credit risk
	B	Speculative and subject to high credit risk
	Caa	Speculative of poor standing and subject to very high credit risk
	Ca	Highly speculative and are likely in, or very near, default, with some prospect of recovery
	C	Lowest rated and typically in default, with little prospect for recovery
Modifiers		
1, 2, or 3		Moody's appends numerical modifiers 1, 2, or 3 to ratings Aa through Caa to show relative standing within rating categories - 1 being the high end, 3 being the low end

For further detail about **Moody's ratings**, see Moody's Investor Service, "Ratings Symbols and Definitions," July 2016,https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_79004.

Moody's uses nine major rating levels, 4 ("Exceptional," "Excellent," "Good," and "Adequate") considered investment grade, and 5 ("Questionable," "Poor," "Very Poor," "Extremely Poor," and "Extremely Poor, Present and Future") considered non-investment grade. Modifiers include 1,2,and 3.

Appendix B-3 – S&P Ratings

Rating		Explanation
Investment Gr.	*AAA*	Extremely Strong Financial Security Characteristics
	AA	Very Strong Financial Security Characteristics
	A	Strong Financial Security Characteristics
	BBB	Good Financial Security Characteristics
Vulnerable	*BB*	Marginal Financial Security Characteristics
	B	Weak Financial Security Characteristics
	CCC	Very Weak Financial Security Characteristics
	CC	Extremely Weak Financial Security Characteristics
	C	Extremely Weak Security and High Vulnerability of Nonpayment
	D	In Default or in Breach of an Imputed Promise
Modifiers		
(+) or (-)		S&P may append a plus (+) or minus (-) to rankings AA through CCC to show relative standing within rating categories

For further detail of **S&P ratings**, see Standard & Poor's, "Standard & Poor's Rating Definitions," June 2016, https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/504352.

S&P uses eight major rating levels, 4 ("Extremely Strong," "Very Strong," "Strong," sand "Good,") considered investment grade, and 4 ("Marginal," "Weak," "Very Weak," and "Extremely Weak,") considered "vulnerable" or non-investment grade. Modifiers include "+" and "-."

Appendix B-4 –Fitch Ratings

Rating		Explanation
Investment Grade	*AAA*	Highest Credit Quality
	AA	Very High Credit Quality
	A	High Credit Quality
	BBB	Good Credit Quality
Non-Investment Grade	*BB*	Speculative
	B	Highly Speculative
	CCC	Substantial Credit Risk
	CC	Very High Levels of Credit Risk
	C	Exceptionally High Levels of Credit Risk
	D	Default
Modifiers		
(+) or (-)		Fitch may append a plus (+) or minus (-) to rankings to show relative standing within rating categories

For further detail of **Fitch ratings**, see Fitch's, "Definitions of Ratings and Other Forms of Opinion", December 2014. https://www.fitchratings.com/web_content/ratings/fitch_ratings_definitions_and_scales.pdf.

Fitch uses nine major rating levels, 4 ("Highest Quality," "Very High," "High," and "Good") considered investment grade, and 5 ("Speculative, " "Highly Speculative," "Substantial Credit Risk," "Very High Risk," and "Exceptionally High") considered "speculative" or non-investment grade. Modifiers include "+" and "-.".

Appendix C – Recent Developments in the Regulation of NRSROs

The Agency understands that NRSROs became subject to significant regulation under the Credit Rating Agency Reform Act of 2006, prompted by poor performance in ratings of companies including Enron and WorldCom, which maintained high ratings until they filed for bankruptcy. Subsequently, widespread failures to accurately rate structured finance products such as mortgage-based securities prompted further legislative mandates under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank Act").The SEC is primarily responsible for regulation and oversight of credit rating agencies, and has been active in rulemaking under both the 2006 and 2010 laws. EPA reviewed SEC's implementation of these laws, including an important 2010 Government Accountability Office (GAO) evaluation of SEC's accomplishments.[245]

In its 2010 review, the GAO found that although the SEC had increased the amount of performance-related data NRSROs must disclose, the usefulness of the data was limited because each NRSRO used different methods for calculating and presenting statistics.[246] In addition, the GAO found that SEC's requirements for NRSROs to publicize certain ratings history data were insufficient and did not allow for comparability across each agency's performance statistics. The GAO also pointed out that were NRSROs to use the same methods to generate and present performance statistics, other differences in NRSROs' methods and procedures would limit the SEC's ability to achieve comparability.

The SEC acknowledged the detailed analysis in the GAO report and in response to a requirement established in the Dodd-Frank Act, issued a report to Congress in December 2012[247] on ratings of structured finance products, including a discussion of the range of metrics that could be used to determine the "accuracy" of credit ratings. This report is significant because legislative and regulatory touchstones for ratings have generally referred to transparency, integrity, quality, and comparability of ratings, not specifically to "accuracy" of ratings. Although the SEC report addressed structured finance products, which are particularly complex, the report provided useful views on measuring or determining accuracy of credit ratings more generally. Prior to issuing the report, the SEC requested public comment to assist its study.

The 2012 SEC report investigated fundamental issues surrounding the credit rating industry, specifically: (1) whether conflicts of interest exist with current NRSRO rating models that limit the "accuracy" of ratings, and (2) the feasibility of establishing an alternative business model to "issuer pays" for rating creditworthiness which limits moral hazard.[248] The SEC discussed factors that contribute to moral hazards associated with the issuer-pay model (the most common rating model) and the subscriber-pay model. Specifically, the SEC and commenters[249] noted that under both rating methodologies, NRSROs

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[245] Government Accountability Office (GAO), September, 2010, Securities and Exchange Commission: Action Needed to Improve Rating Agency Registration Program and Performance-Related Disclosures. Included in the Credit Rating Agency Reform Act was a requirement for GAO to review SEC's implementation of the legislation.
[246] Government Accountability Office (GAO), September, 2010, Securities and Exchange Commission: Action Needed to Improve Rating Agency Registration Program and Performance-Related Disclosures.
[247] U.S. Securities and Exchange Commission (SEC), December 2012, Report to Congress on Assigned Credit Ratings.
[248] "Moral hazard" is a term used to describe the possibility that the insured party may be more likely to engage in riskier behavior than it would otherwise pursue because the insurance company is responsible for the costs associated with the risky behavior.
[249] SEC received 32 comments, including six comments from ratings agencies (NRSROs).

might have conflicting incentives, depending on what product is being rated, which party pays for the rating (issuer or subscriber), and which party the rating affects, among others.

Commenters similarly expressed that under the current systems, there are incentives that serve to encourage and discourage "accurate" ratings, including reputational risk[250] and the ability for issuers to "rating shop,"[251] among others. The SEC and commenters acknowledged that measuring the "accuracy" of ratings is difficult, and it is therefore difficult to assess the degree to which conflicts of interest affect ratings. One NRSRO, for example, rejected "the notion that credit ratings can be 'accurate' or 'inaccurate'" because "ratings are not statements of fact but forward-looking opinions."[252]

Nonetheless, SEC's Report to Congress investigated alternatives to the current rating models that would limit conflicts of interest and moral hazard.[253]The SEC did not recommend any one particular model, but instead highlighted the feasibility of implementing each model and the potential benefits and concerns. Importantly, the SEC and commenters acknowledged that each model has inherent limitations to rating effectiveness, including conflict of interest and moral hazard issues; increased costs to issuers, the public, and/or investors; and political feasibility of implementing the system, among others.

In 2011,theSEC released a set of proposed rules responding to the requirements set forth in the Dodd-Frank Act.[254]Among the many detailed requirements, the SEC proposed to mandate standardized

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[250] "Reputational risk" refers to the possibility that inaccurate ratings assigned by a rating agency will be viewed as non-reliable assessment of financial strength, and therefore the NRSRO risks losing customers who rely on accurate ratings. Commenters argued that reputational risk provides an incentive to produce accurate ratings.
[251] The term "rating shop" refers to the case where an issuer seeks ratings from multiple rating agencies, and acknowledges only the rating from the NRSRO that provides the most favorable rating. This is possible because under the issuer-pay model, issuers see the rating before they are obligated to accept and pay for it, and can therefore reject a non-favorable rating without paying the NRSRO. Therefore, to receive payment, NRSROs have an incentive to provide a favorable rating. This can also occur under the subscriber-pay model, for instance, where a subscriber must meet certain regulatory requirements (e.g., obtaining insurance from an insurer with an investment grade rating).
[252] U.S. Securities and Exchange Commission (SEC), December 2012, Report to Congress on Assigned Credit Ratings. The commenter further reasons that events that cannot be foreseen at the time of the initial rating can affect the creditworthiness of a security.
[253] Alternatives include the Section 15E(w) System, the Rule 17g-5 Program, and other alternative compensation models. The Section 15E(w) System alternative would establish a Board to assign the ratings process for initial credit ratings requested by issuers to a "qualified NRSRO" registered with the Board; ratings assignments would be linked to the past performance of the NRSRO. The purpose of this system is to eliminate the incentive to provide a favorable rating to receive payment (U.S. Securities and Exchange Commission (SEC), December 2012, Report to Congress on Assigned Credit Ratings).The Rule 17g-5 Program refers to the requirements codified under 17 CFR § 240.17g-5, *Conflicts of Interest* by the Securities Exchange Act. The Program establishes a mechanism for an NRSRO that is not hired to rate an issuer to obtain the same information that the hired NRSRO uses to rate the issuer, hence allowing other NRSROs to provide "second opinions" on the issuer's creditworthiness. The SEC notes that the program is "intended to create a means for an NRSRO not hired to rate the structured finance product to nonetheless determine an initial credit rating at the same time the hired NRSRO determines an initial credit rating" and is therefore designed to encourage more accurate ratings (U.S. Securities and Exchange Commission (SEC), December 2012, Report to Congress on Assigned Credit Ratings). Alternative models include the investor-owned credit rating agency (IOCRA) model, a stand-alone model, and a designation model, among others.
[254] Proposed Rules for Nationally Recognized Statistical Rating Organizations, Release No. 34-64514, Securities and Exchange Commission, May 18, 2011. The proposed rules have not yet been finalized.

performance statistics in the form of a transition and default rate[255] matrix, separately displaying data at 1-, 3-, and 10-year intervals, and also proposed a standard definition of default to be used across all NRSROs and all asset classes when NRSROs prepare their performance statistics disclosures. Following Dodd-Frank Act specifications, SEC proposed to require NRSROs to have policies and procedures that are reasonably designed to ensure that the procedures and methodologies the NRSRO uses to determine credit ratings are approved by its board of directors or another body performing a function similar to that of a board of directors. The board of the NRSRO must oversee the "establishment, maintenance, and enforcement of the policies and procedures for determining credit ratings."[256]

The SEC promulgated final rules implementing the Dodd-Frank Act provisions for NRSROs on September 14, 2014 at 79 *FR* 55078. The rules largely followed the Dodd-Frank statutory text and the prior proposal with some changes in response to public comments and further SEC analysis. Some of the new rules and amendments to prior rules are intended to enhance NRSRO governance and the integrity of credit ratings while other requirements are intended to enhance disclosure and transparency of credit ratings. The final rule emphasizes such benefits as rating quality, consistency, and comparability.

Accuracy of ratings is cited only in the final rule requiring that NRSROs establish, maintain, document, and enforce standards of training, experience, and competence of credit rating staff that are reasonably designed to achieve the objective of accuracy in credit ratings. Although credit rating agencies are not required to register with the SEC as NRSROs, the new rules may enhance the market position of compliant NRSROs.

In the final rules regarding disclosure of performance statistics, the SEC explicitly took into account findings of the 2010 GAO report. Generally, the majority of the final rule-making addresses all classes of credit ratings, not solely ratings for structured finance products. Some of the final rules were to take effect sixty days after publication in the Federal Register, others were to take effect January 1, 2015, while others were to take effect nine months after publication in the Federal Register. The SEC took care to observe the legal restriction that the Commission may not regulate the substance of credit ratings or the procedures and methodologies by which any NRSRO determines credit ratings. The SEC recognized that credit ratings generally are intended to indicate the relative degree of credit risk of an entity (or an instrument) rather than reflect a measure of a specific default probability or loss expectation.

[255] The transition rate is the percent of credit ratings at a given level that transition to another rating level over a given time period after the starting date. Transition rates are generally used to measure the stability of ratings. The default rate is the percent of credit ratings at a given level that have defaulted over a given time period after the starting date.
[256] Proposed Rules for Nationally Recognized Statistical Rating Organizations, Release No. 34-64514, Securities and Exchange Commission, May 18, 2011.