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***TREATMENT AND DISPOSAL OF  
PETROLEUM SLUDGES***

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# THE LAW OF PETROLEUM SLUDGES & SLOP OILS

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## I. INTRODUCTION

During the past decade the petroleum refining industry has been the object of increasing regulation of its waste streams. In 1976 the Resource Conservation and Recovery Act (RCRA)<sup>2</sup> was passed to identify and regulate hazardous waste. By 1980 the Environmental Protection Agency (EPA) had adopted regulations listing several refinery waste streams as hazardous under RCRA.<sup>3</sup> In 1984 the Hazardous and Solid Waste Amendments (HSWA)<sup>4</sup> to RCRA were enacted which severely limited the disposal options for many

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<sup>2</sup>42 United States Code (U.S.C.) §§ 6921 to 6939b (1988).

<sup>3</sup>In 1978 the Environmental Protection Agency (EPA) proposed to list, as hazardous wastes, several wastes generated by petroleum refineries. *Hazardous Waste Guidelines and Regulations*, 43 **Federal Register** 58946, 58957 and 58959 (Dec. 18, 1978) (proposed rule). In 1980 the EPA finalized its rules and listed several refinery wastes as RCRA hazardous wastes. *Hazardous Waste Management System: Identification and Listing of Hazardous Waste*, 45 **Federal Register** 33064, 33123 (May 19, 1980) (final rule) (listing the Petroleum Refining "K" wastes).

<sup>4</sup>Public Law 98-616, title I, § 101(a), 98 Stat. 3224 (Nov. 8, 1984).

hazardous wastes, including refinery wastes. HSWA prohibits in most situations the "land disposal"<sup>5</sup> of untreated hazardous wastes.<sup>6</sup> In 1990 EPA modified its toxicity criteria for identifying hazardous waste to include tests for the presence of 25 organic chemicals, including benzene.<sup>7</sup> The net effect of the change was to classify a number of waste streams, which contained one or more of the toxic constituents at regulatory levels, as hazardous. Also in 1990 the EPA added to its list of hazardous wastes a broad category of sludges generated from the separation of oil/water/solids during the storage, handling, or treatment of refinery process wastewaters and oily cooling wastewaters.<sup>8</sup> Recent litigation will likely prompt the EPA to list additional refinery wastes in the future.<sup>9</sup>

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<sup>5</sup>"Land disposal" is defined broadly to include:

[A]ny placement of . . . hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave.

RCRA § 3004(k), 42 U.S.C. § 6924(k) (1988).

<sup>6</sup>RCRA § 3004(b) through (m), 42 U.S.C. § 6924(b) through (m) (1988).

<sup>7</sup>*Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Toxicity Characteristics Revisions*, 55 *Federal Register* 11798 (March 29, 1990) ("TC Rule").

<sup>8</sup>*Hazardous Waste Management Systems: Identification and Listing of Hazardous Waste; CERCLA Hazardous Substances Designation--Petroleum Refinery Primary and Secondary Oil/Water/Solids Separation Sludge Listings (F037 and F038)*, 55 *Federal Register* 46354 (Nov. 2, 1990) (final rule).

<sup>9</sup>In Environmental Defense Fund, Inc. v. U.S. Environmental Protection Agency, Civil No. 89-0598 (June 18, 1991), the EPA and the Environmental Defense Fund, have proposed a consent decree

While the EPA and industry were busy dealing with the technical regulation of hazardous wastes under RCRA, the courts were busy defining the scope and effect of another law: the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).<sup>10</sup> It is probably impossible to overstate the actual and potential financial impact of CERCLA on industry in general, and the petroleum refining industry in particular. Since 1980 when CERCLA was enacted, litigants have successfully used CERCLA to impose strict liability for the cleanup of sites where there has been a release, or there exists a "threat" of a release, of hazardous "substances."<sup>11</sup> Hazardous substances includes hazardous wastes and much more.<sup>12</sup> CERCLA imposes cleanup liability on the

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whereby the EPA would agree, among other things, to determine, by October 31, 1996, whether to list the following petroleum refining wastes:

[C]larified slurry oil sludge from catalytic cracking, crude storage tank sludge, catalyst from catalytic hydrotreating, process sludge from sulfur complex and H<sub>2</sub>S removal facilities, off-spec product and fines from thermal processes, catalyst from catalytic reforming, unleaded storage tank sludge, catalyst from catalytic hydrorefining, catalyst and fines from catalytic cracking, catalyst from sulfur complex and H<sub>2</sub>S removal facilities, spent caustic from liquid treating, catalyst from H<sub>2</sub>SO<sub>4</sub> alkylation, sludge from HF alkylation, and sludge from H<sub>2</sub>SO<sub>4</sub> alkylation.

<sup>10</sup>42 U.S.C. §§ 9601 to 9675 (1988).

<sup>11</sup>CERCLA § 107(a)(4), 42 U.S.C. § 9607(a)(4) (1988).

<sup>12</sup>CERCLA § 101(14), 42 U.S.C. § 9601(14) (1988) incorporates into the CERCLA definition of hazardous substances anything classified as a hazardous or toxic waste, chemical, substance, emission, or effluent, as defined or listed under the Clean Air Act, the Clean Water Act, RCRA, and the Toxic Substances Control

current owner or operator of a facility where there is a release or threat of a release of a hazardous substance. Also included in the chain of liability is anyone who owned or operated the facility at the time a hazardous substance was placed at the facility. Liability is also imposed on anyone who disposed of their hazardous substances at the facility or who transported substances to the facility.<sup>13</sup>

Although RCRA defines the regulatory performance standards for dealing with hazardous wastes, the risks created by potential CERCLA liability must also be weighed in the waste management decision-making process. For example, a waste management decision that meets all the strictures of RCRA will not be sound if it creates an unacceptable degree of risk under CERCLA. The nature of the "risk" under CERCLA is pretty straight forward--the cost of cleaning up any site: you presently own or operate, owned or operated in the past, or where your waste has ever been taken. The costs can be staggering.<sup>14</sup> The business planning task is simply

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Act. CERCLA § 102 also authorizes the EPA to identify and list additional hazardous substances. However, expressly excluded from CERCLA's definition of a hazardous substance is "petroleum, including crude oil or any fraction thereof" and "natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel . . . ." Commonly referred to as the "petroleum exclusion."

<sup>13</sup>CERCLA § 107(a)(1), (2), (3), (4), 42 U.S.C. § 9607(a)(1), (2), (3), (4) (1988).

<sup>14</sup>For example, the "de minimis" settlement between the EPA and several "minor" contributors to a CERCLA site in Criner, Oklahoma required payment of \$11 million to help finance an estimated \$155 million cleanup. *Environmental Reporter, Current Developments* 1129

stated: comply with RCRA in the most economical manner while minimizing, avoiding, or leveraging your liability under CERCLA. However, achieving this goal will require expert technical, and legal, assistance, and often the cheapest treatment or disposal alternative will not be an acceptable alternative once CERCLA risks are factored into the waste disposal equation. The sections that follow discuss the impact of RCRA and CERCLA on the management of petroleum sludges and slop oils generated by the petroleum refining industry.

## II. RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

RCRA governs the day-to-day management of "hazardous" wastes.<sup>15</sup> The EPA can list a waste as "hazardous" when the waste: exhibits certain hazardous characteristics, has been found to be acutely toxic, or contains certain toxic constituents.<sup>16</sup> The "hazardous characteristics" identified by the EPA to date include:

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(BNA Oct. 27, 1989).

<sup>15</sup>RCRA controls each participant in the generation, storage, transportation, treatment, and disposal of hazardous wastes. RCRA § 3002, 42 U.S.C. § 6922 (1988) (regulating "generators" of hazardous waste); RCRA § 3003, 42 U.S.C. § 6923 (1988) (regulating "transporters"); RCRA § 3004, 42 U.S.C. § 6924 (1988) (regulating hazardous waste "treatment, storage, and disposal" facilities).

<sup>16</sup>40 C.F.R. § 261.11 (1990).

**Ignitability:** The waste, during routine handling, can cause a fire or exacerbate a fire once started.<sup>17</sup>

**Corrosivity:** The waste can corrode metal or it is a liquid with a pH of 2 or lower or 12.5 or higher.<sup>18</sup>

**Reactivity:** The waste is unstable and tends to react violently when mixed with water, or can cause an explosion when mixed with other chemicals.<sup>19</sup>

**Toxicity:** The waste, applying specified test methods, produces an extract [simulating leaching of water through the waste under assumed disposal conditions] that contains contaminants at EPA-established concentrations.<sup>20</sup>

The EPA has evaluated certain wastes to determine whether they possess hazardous characteristics or otherwise trigger the listing criteria. The product of EPA's evaluations are three lists of wastes that the EPA has found to be hazardous.<sup>21</sup> However, there is

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<sup>17</sup>40 C.F.R. § 261.21 (1990).

<sup>18</sup>40 C.F.R. § 261.22 (1990).

<sup>19</sup>40 C.F.R. § 261.23 (1990).

<sup>20</sup>40 C.F.R. § 261.24 (1990).

<sup>21</sup>The lists can be found at 40 C.F.R. Subpart D--List of Hazardous Wastes (1990). The "F" waste list is found at 40 C.F.R. § 261.31 (1990). The "K" waste list is at 40 C.F.R. § 261.32

also a self-testing obligation imposed on the industry to evaluate its waste streams to determine whether they possess hazardous characteristics.<sup>22</sup> Although a waste is not on one of the EPA's lists of hazardous waste, the generator of the waste must still evaluate it to see if it exhibits a hazardous characteristic. If it does, the waste must be managed as a hazardous waste under RCRA.

#### **A. Listed Hazardous Refinery Wastes**

In 1980 the EPA listed the following five refinery wastes as hazardous wastes:

- K048** Dissolved air flotation (DAF) float from the petroleum refining industry.
  
- K049** Slop oil emulsion solids from the petroleum refining industry.
  
- K050** Heat exchanger bundle cleaning sludge from the petroleum refining industry.
  
- K051** API separator sludge from the petroleum refining

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(1990). The discarded commercial chemical list has two parts: a list of acute hazardous wastes at 40 C.F.R. § 261.33(e) (1988) (the "P" waste list) and a list of non-acute ("ordinary") hazardous wastes at 40 C.F.R. § 261.33(f) (1990) (the "U" waste list).

<sup>22</sup>40 C.F.R. § 262.11(c) (1990).

industry.

**K052** Tank bottoms (leaded) from the petroleum refining industry.

These are known as the refinery "K" wastes; they were listed by the EPA effective November 12, 1980.<sup>23</sup> However, at the same time the K048 and K051 wastes were listed, Envirex, Inc., a manufacturer of wastewater treatment equipment, filed a rulemaking petition asking EPA to include other sludges generated by primary waste separation processes.<sup>24</sup> Envirex argued that merely listing sludges from two types of equipment<sup>25</sup> used to separate oil and solids from the wastewater failed to account for other types of systems used to accomplish the same task. Envirex argued that use of systems other than the "API Separator" or "DAF Unit" to achieve the desired oil/water/solid separation would generate the same types of sludge generated from the API and DAF processes, and therefore they should be managed in the same manner.<sup>26</sup>

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<sup>23</sup>*Hazardous Waste Management System; Identification and Listing of Hazardous Waste, 45 Federal Register 74884 (Nov. 12, 1980) (final rule and interim rule); codified at 40 C.F.R. § 261.32 (1990).*

<sup>24</sup>*Hazardous Waste Management System; Identification and Listing of Hazardous Waste, 50 Federal Register 5637 (Feb. 11, 1985) (notice of availability of data and request for comment).*

<sup>25</sup>The dissolved air flotation (DAF) system and the API separator.

<sup>26</sup>*Hazardous Waste Management System; Identification and Listing of Hazardous Waste, 50 Federal Register 5637 (Feb. 11, 1985) (notice of availability of data and request for comment).*

In 1985<sup>27</sup> and 1988<sup>28</sup> the EPA released data on the Envirex petition and requested comments on the issue. However, the EPA did not address the matter until November 2, 1990 when it adopted a final rule<sup>29</sup> adding the following "F" wastes to the list of hazardous wastes:

**F037** Petroleum refinery primary oil/water/solids separation sludge--Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries.<sup>30</sup>

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<sup>27</sup>Hazardous Waste Management System; Identification and Listing of Hazardous Waste, 50 Federal Register 5637 (Feb. 11, 1985) (notice of availability of data and request for comment).

<sup>28</sup>Hazardous Waste Management System; Identification and Listing of Hazardous Waste, 53 Federal Register 12162 (April 13, 1988).

<sup>29</sup>Hazardous Waste Management Systems: Identification and Listing of Hazardous Waste; CERCLA Hazardous Substance Designation--Petroleum Refinery Primary and Secondary Oil/Water/Solids Separation Sludge Listings (F037 and F038), 55 Federal Register 46354 (Nov. 2, 1990) (final rule).

<sup>30</sup>In explaining the scope of the listing, the regulation provides: "Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow." However, the listing expressly excludes:

Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in [40 Code of Federal Regulations (C.F.R.)] § 261.31(b)(2)

**F038**      Petroleum      refinery      secondary      (emulsified)  
oil/water/solids separation sludge--Any sludge and/or  
float generated from the physical and/or chemical  
separation of oil/water/solids in process wastewaters and  
oily cooling wastewaters from petroleum refineries.<sup>31</sup>

As a result of a settlement in a lawsuit between the EPA and an environmental group, the EPA will be evaluating several additional refinery wastes for possible listing as hazardous wastes.<sup>32</sup>

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(including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes . . . .

*Hazardous Waste Management System: Identification and Listing of Hazardous Waste; CERCLA Hazardous Substance Designation--Petroleum Refinery Primary and Secondary Oil/Water/Solids Separation Sludge Listings (F037 and F038), 56 Federal Register 21955, 21959 (May 13, 1991) (interim final rule with request for comments).*

<sup>31</sup>"Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludge generated in DAF units." The following are excluded from the EPA's listing:

Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in [40 C.F.R.] § 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes . . . .

<sup>32</sup>See the discussion of this matter at page 2, footnote 9 of this article.

## **B. Characteristic Hazardous Refinery Wastes**

Even though a waste is not included in the listed waste categories, it still may be classified as hazardous if it exhibits a hazardous characteristic. The person who generates a waste is required to test the waste, using EPA-approved test procedures, to determine whether it exhibits any of the hazardous waste characteristics.<sup>33</sup> The characteristic which is most likely to trigger a hazardous waste finding is the "toxicity" characteristic.

In 1990 EPA adopted a new rule for determining when something meets the "toxicity" characteristic for classifying wastes as hazardous wastes.<sup>34</sup> Referred to as the "Toxicity Characteristics Rule" ("TC Rule"), it generally expands the scope of the toxicity characteristic. The TC Rule is designed to predict whether an unmanaged waste material, placed in a municipal landfill, will leach out defined toxic constituents at environmentally-significant levels and contaminate ground water.<sup>35</sup> This prediction was previously made employing the "Extraction Procedure" or "EP-toxicity" test. Applying the EP-toxicity test methods, an extract of the waste is obtained and then tested to determine if it possesses any of 14 toxic contaminants identified in the National

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<sup>33</sup>40 C.F.R. § 262.11(c) (1990).

<sup>34</sup>*Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Toxicity Characteristics Revisions*, 55 *Federal Register* 11798 (March 29, 1990) ("TC Rule").

<sup>35</sup>See generally TC Rule, 55 *Federal Register* at 11800.

Interim Primary Drinking Water Standards. The contaminant levels specified in the Drinking Water Standards were also used.<sup>36</sup>

The TC Rule expands the EP-toxicity standards by:

(1) Adding 25 organic chemicals to the current list of 14 chemicals.

(2) Establishing regulatory levels for the organic chemicals using health-based concentration thresholds and a modeled dilution/attenuation factor.

(3) Replacing the EP leach test with the Toxicity Characteristics Leaching Procedure ("TCLP").

To determine whether a waste stream exceeds the new TC Rule levels, the generator must obtain a liquid extract from the waste using the TCLP method and then compare the chemical concentrations in the extract to the regulatory levels established by the EPA. The chemicals and regulatory levels are set out in the EPA's

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<sup>36</sup>However, the Drinking Water Standards refer to concentrations at the water source. To account for the dilution and attenuation of the toxic constituents as they travel from landfill to ground water, the Drinking Water Standard concentrations were multiplied by 100 to arrive at the EP-toxicity level. Therefore, if the drinking water concentration is 0.05 mg/L, to arrive at the EP-toxicity waste level you take  $0.05 \times 100 = 5.00$  Mg/L. If the extract exceeds the designated concentration for a toxic constituent, the waste is classified as a hazardous waste and must be managed as such.

regulations.<sup>37</sup> Of particular concern to the petroleum refining industry is the 0.5 mg/L regulatory level for benzene. Also, as noted by the EPA in discussing its TC Rule: "Wastes identified as hazardous under the Toxicity Characteristic will also become hazardous substances under section 101(14) of . . . [CERCLA]."<sup>38</sup>

### **III. COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA)**

Liability under CERCLA attaches when the following events have occurred:<sup>39</sup>

1. There is a release, or threat of a release;
2. Of a hazardous substance;
3. From a facility;
4. Into the environment;
5. Which causes someone to incur response costs.<sup>40</sup>

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<sup>37</sup>See 40 C.F.R. § 261.24 (1990) (Table 1.--Maximum Concentration of Contaminants for the Toxicity Characteristic).

<sup>38</sup>TC Rule, 55 Federal Register at 11804.

<sup>39</sup>The parties who may be liable for a release or threatened release, are discussed at pages 3 to 4 of this article.

<sup>40</sup>CERCLA § 107(a)(4), 42 U.S.C. § 9607(a)(4) (1988).

CERCLA defines "release" to include any "spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing . . . ." <sup>41</sup> Therefore, purely unintentional passive conduct can result in a release through "leaking," "escaping," or "leaching." Including a "threat" of a release permits parties to take action before a release actually occurs.

The release or threat must, however, be from a defined "hazardous substance." As noted previously, hazardous substance is defined to include all hazardous wastes, whether listed by the EPA or found to be hazardous through testing. <sup>42</sup> Therefore, when the EPA recently listed the F037 and F038 refinery wastes as RCRA hazardous wastes, they also, by definition, became CERCLA hazardous substances. <sup>43</sup> It also includes any substance listed as hazardous under the air pollution, water pollution, and toxic chemical

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<sup>41</sup>CERCLA § 101(22), 42 U.S.C. § 9601(22) (1988).

<sup>42</sup>See the discussion of this matter at page 3, footnote 12 of this article.

<sup>43</sup>When the EPA listed oil/water/solids separation sludge as a hazardous waste, it also listed it as a hazardous substance under CERCLA. *Hazardous Waste Management System: Identification and Listing of Hazardous Waste; CERCLA Hazardous Substance Designation--Petroleum Refinery Primary and Secondary Oil/Water/Solids Separation Sludge Listing (F037 and F038)*, 56 *Federal Register* 21955, 21959-21960 (May 13, 1991) (interim final rule with request for comments).

manufacturing laws.<sup>44</sup>

Specifically excluded from the definition of hazardous substance is: "petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under [CERCLA, RCRA, or the other environmental laws]" and "natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel . . . ."<sup>45</sup> To date, this "petroleum exclusion" has been interpreted generously by the courts to exclude gasoline leaking from underground storage tanks--even though it contained the listed hazardous substances benzene, toluene, xylene, ethyl-benzene, and lead. In Wilshire Westwood Associates v. Atlantic Richfield Corp.<sup>46</sup> the court followed an EPA opinion addressing the issue and held: "[T]he petroleum exclusion in CERCLA does apply to unrefined and refined gasoline even though certain of its indigenous components and certain additives during the refining process have themselves been designated as hazardous substances within the meaning of CERCLA."<sup>47</sup>

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<sup>44</sup>For example, before the Clean Air Act was amended, the EPA had listed eight hazardous air pollutants. 40 C.F.R. § 61.01(a) (1990). Therefore, pursuant to § 101(14) of CERCLA, these eight pollutants automatically became CERCLA hazardous "substances." In 1990, Congress amended the Clean Air Act and added 182 new hazardous air pollutants. Clean Air Act Amendments of 1990, Public Law No. 101-549, 104 Stat. 2399, 2532-35 (1990) (amending Clean Air Act § 112(b)). Under CERCLA, these 182 new pollutants automatically became CERCLA hazardous substances.

<sup>45</sup>CERCLA § 101(14), 42 U.S.C. § 9601(14) (1988).

<sup>46</sup>881 F.2d 801 (9th Cir. 1989).

<sup>47</sup>*Id.* at 805.

However, the petroleum exclusion probably will not offer any protection when dealing with oil-contaminated waste streams.

The "facility" requirement is easily met in all cases. CERCLA defines facility broadly to include:

(A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft . . . .<sup>48</sup>

As if this wasn't broad enough, §(B) states further that facility includes "any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located . . . ." <sup>49</sup> However, the release from the facility must be "into the environment."<sup>50</sup> "Environment" is defined as any "surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air" within or under the jurisdiction of the United States.<sup>51</sup>

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<sup>48</sup>CERCLA § 101(9), 42 U.S.C. § 9601(9) (1988).

<sup>49</sup>*Id.*

<sup>50</sup>The environment requirement is imposed by CERCLA § 101(22) where the term "release" is defined as a release "into the environment." CERCLA § 101(22)(A) expressly excludes "any release which results in exposure to persons solely within a workplace . . . ."

<sup>51</sup>CERCLA § 101(8), 42 U.S.C. § 9601(8) (1988).

To trigger the cost-recovery provisions of CERCLA it must be demonstrated that costs were incurred by someone in response to the release or threat of a release. "Response" is defined to include short-term cleanup actions and long-term actions designed to permanently remedy a problem.<sup>52</sup> The requirement that the release or threat of a release "causes" the incurrence of response costs has taken on new importance since courts, to date, have held that there is *no minimum concentration threshold for defining what is a hazardous substance*.<sup>53</sup> Therefore, any detectable amount of a hazardous substance could give rise to liability unless you could demonstrate it did not contribute to the release or, even if it did, that no response was warranted under the circumstances.

There are actually two types of liability risk under CERCLA:

(1) The risk a governmental or a private party that has incurred response costs cleaning up a site will sue under CERCLA to recover all or a portion of the costs from you or your company. This is referred to as a "third-party action," a "cost-recovery action," or a "private right of action" and is brought under CERCLA § 107.<sup>54</sup>

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<sup>52</sup>CERCLA § 101(25), 42 U.S.C. § 9601(25) (1988); see also CERCLA § 101(23) (defining "remove" and "removal") and CERCLA §101(24) (defining "remedy" and "remedial action").

<sup>53</sup>See, e.g., Amoco Oil Co. v. Borden, Inc., 889 F.2d 665, 670 (5th Cir. 1989); Louisiana-Pacific Corp. v. ASARCO, Inc., 735 F. Supp. 358, 362 (W.D. Wash. 1990).

<sup>54</sup>CERCLA § 107(a)(4), 42 U.S.C. § 9607(a)(4) (1988).

(2) The risk that a governmental entity will order you or your company to clean up a release or threat of a release. For example, the EPA, under CERCLA § 106, can issue "such orders as may be necessary to protect public health and welfare and the environment."<sup>55</sup> Instead of spending government funds initially, and then trying to obtain reimbursement under § 107, the EPA simply orders a responsible party to take the necessary action at its own expense. If the party receiving an order fails to act, they risk fines of \$25,000 for each day they fail to comply and they may lose certain CERCLA defenses.<sup>56</sup> If the EPA conducts the required cleanup after a failure to comply with the § 106 order, the EPA can recover its cleanup costs *plus* punitive damages equal to three times the total cleanup costs.<sup>57</sup>

Since the CERCLA stakes are so high, it is essential that all business transactions be carefully planned, structured, and executed to avoid, minimize, or leverage CERCLA liability risks. Planning in this area is difficult. A substance which is deemed non-hazardous today can be classified as hazardous tomorrow. The classification is retroactive to the beginning of time. If you owned a site in the 1800's that created the newly-listed substance, you will be subject to CERCLA's liability scheme to respond to a release or threatened release of the substance.

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<sup>55</sup>CERCLA § 106(a), 42 U.S.C. § 9606(a) (1988).

<sup>56</sup>*Id.* at §(b).

<sup>57</sup>CERCLA § 107(c)(2)(3), 42 U.S.C. § 9607(c)(2)(3) (1988).

#### **IV. CONCLUSION**

Although the legal terrain of hazardous wastes and substances sounds rocky and bleak, there are ways to effectively comply with RCRA while keeping CERCLA liability risk at an acceptable level. The articles that follow discuss various techniques for limiting the generation of hazardous waste, treating wastes to levels that meet RCRA's land disposal restrictions, and responding to known hazardous waste sites and problems.