Chapter Six

CRIMINAL SANCTIONS AND CWA ENFORCEMENT: ECONOMIC CONSIDERATIONS

6.1 Introduction

Economic theory of public enforcement of law addresses four legal issues of particular importance to the CWA: (1) the determination of the effect of full liability, (2) the different definition of full liability under the legal and the economic perspective, (3) the socially desirable choice between fines and imprisonment to deter violations, and (4) the evaluation of the desirability of a fault based liability with respect to strict liability regime. Clear implications about the determination of the effect of full liability is that when the individual gain from committing the harmful activity exceeds the sum of the expected fine and the expected disutility of the imprisonment term, $g > p(f + \lambda t)$, pareto optimality is achieved. It is clear that if the level of the expected fine is less that the optimal fine, the level of care that an individual exercises will be less than the socially optimal level of care, thus if $f < f^*$ then $x < x^*$. This means that the level of care individuals will exercise is not the level socially correct; when deciding on the level of care, individuals will choose too little level of it.

There is a striking difference between the legal and the economic definition of full liability. Under the economic perspective, in a first-best world the optimum is obtained by maximizing social welfare by choosing enforcement expenditures, the level of fine or the term of imprisonment and the standard for imposing liability. First-best care is

therefore $x = x^*$ which can be achieved with either a strict liability regime that sanctions individuals for the actual damages they cause or a fault-based regime that leads to efficient level of care, $x = x^*$. The problem of designing full liability under the legal perspective can be expressed in terms of schedule of assessment, typical, expected or average damages, completely in contradiction, thus, with the economic definition.

Besides the issue in determining the effects of full liability, a second issue addressed in PS's model is the choice of the appropriate use of fines and incarceration sanctions. With respect to CWA enforcement there is a strict contradiction between the economic prescription and legal practice. In fact, in PS's model, it is argued that fines are preferable to prison sentences because fines do not require social resources to implement, while imprisonment does diminish social resources. In fact, the economic prescription is that deterrence should be reached by using the cheaper combination of both sanctions first; that is, to use fines to the maximum feasible extent before possibly supplementing it with an imprisonment term. Under the legal perspective, there is no limitation in using both sanctions together in some specified amount: the appropriate combination is completely left to the judge's discretion within a determinate range. The judge is free to select the "best" combination of fine and imprisonment.

The choice between using a strict liability standard versus a negligence standard is the subject of much discussion in the law and economics literature. If one is concerned about the cost of enforcement, a strict liability standard will generally be less expensive to enforce, as a negligence standard requires additional resources to determine the cause and to litigate over the cause. Moreover, a negligence standard results in a lower expected

penalty to potential violators of stochastic pollution.[1] The two alternative regimes are analyzed together, under the theoretical framework of Polinsky and Shavell first, and then an extension of some issues and the desirability that would emerge by actually imposing a negligence or a strict liability standard will follow.

6.2 Movement toward full liability

In the considered model of Polinsky and Shavell either strict liability or fault-based liability leads to exercise the socially desirable level of care. To efficiently control accident risks, it is necessary to limit the expected damages, allowing society to escape the burden of substantial clean-up costs, and to minimize total costs of taking care. The level of care is chosen such that the marginal costs are offset by marginal reductions in expected damages. Therefore, an efficient policy should promote decision-making that weighs the costs of taking care against the reductions of expected damages.[2]

In Figure 6.1, marginal damages and marginal costs associated with each level of care are shown. The efficient level of care that maximizes net social benefits is x*. The main objective is to choose the optimal level of care at the lowest cost. The efficient control of environmental damages involves the minimization of total costs, including both the costs of pollution damage and taking care costs, in order to have welfare improvement.

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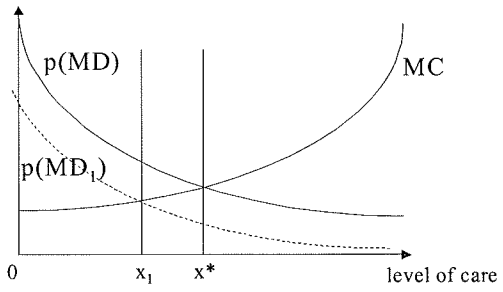
[1] That a negligence standard has an advantage over strict liability when regulating stochastic pollution in the presence of risk aversion, is discussed in Cohen Mark A., "Optimal Enforcement Strategy to Prevent Oil Spills: an Application of a Principal-Agent Model with Moral Hazard", Journal of Law and Economics, 30(1), pp.23-51, 1987.

[2] See Cory Dennis C., "Potentially Polluting Activities and the Control of Environmental Risk: the Arizona Approach to Aquifer Protection", Initiative. The Udall Center for Studies in Public Policy 8, pp.5-11, 1997.

Figure 6.1 Determination of Level of Care



The optimal level of care is found at x^*, the point at which expected marginal damage is equal to the marginal cost of taking care. At x^*, the total cost of taking care is represented by area b, and the amount of pollution damage avoided is represented by the area (a + b), resulting in a net gain of area a.

In the areas of law where the courts have embraced economic reasoning to assist in their determinations, the Learned Hand Formula presents, in a formal fashion, the factors that should be considered in determining the socially efficient level of care. On one side there is the risk of harm, calculated by the harm's severity adjusted for its probability of occurring, pL. This calculation is often referred to as the expected harm. Balanced against the expected harm is the cost to avoid the harm, B: it clearly means that the efficient level of care falls in the point where the expected harm is equal to the cost to avoid harm. After the judgment determining the nature of costs and benefits has been made, the cost-benefit formula promotes economic efficiency in the following way. By balancing harms against benefits, the cost-benefit formula provides incentives to induce situations in which the

benefits outweigh the harms, and disincentives to discourage situations where the harms outweigh the benefits. If these results are aggregate the effect is that benefits are maximized while costs are minimized.[3] Therefore, it is clear that the decision to encourage efficient behavior is granted under both the economic and the legal theories. Although economic efficiency is promoted, its application must intrinsically represent some prior judgment to assess the value of the benefits and the value of the costs. This situation expands the circumstances in which judicial discretion may be found.

As the analysis of the legal cases show, the use of judicial discretion has been much wider in the first application of the sentencing guidelines than later, when the implementation of the federal sentencing guidelines has resulted in a movement toward full liability in the use of judicial discretion. In exercising judicial discretion, the most severe problem is assessing environmental harms: failure to report actual or threatened harm can seriously misrepresent the actual harm, giving, as a direct effect, a wrong estimate of the socially optimal level of care. According to PS's formulation of socially optimal level of care, under strict liability, a risk-neutral individual will commit the harmful activity if and only if his gain from doing so exceeds the sum of the expected fine and the expected disutility of the imprisonment term, $g > p(f + \lambda t)$. Under negligence, an individual will commit the harmful activity when his gain is less than $\hat{g}$, he will be at fault and will be found liable; otherwise he will not be liable. Obviously, if the individual's gain equals or exceeds the fault standard, $\hat{g}$, he will engage in the criminal activity because he will not be found at fault. If, instead, the gain is less than $\hat{g}$,

[3] See White Barbara A., "Risk-Utility and the Learned Hand Formula: a Hand that Helps or a Hand that

the individual will commit the crime if and only if $g > p(f + \lambda t)$ holds. Since, by assumption, it is possible to determine the optimal level of care x^*, the social optimum can be achieved under either a strict liability or a negligence regime. If a strict liability rule is in effect, the injurers must pay for all harms suffered by the victims, whereas with the negligence rule they must pay for harms if and only if their expenditure of effort falls short of the due care level.[4] The beginning principle is that expected liability equals actual damages. But if the court are not able to assess accurately the level of damages, suppose they underestimate damages, economic inefficiency will be observed since the actual level of care will tend to be lower than x^*.

Moving toward a full liability regime implies that the sanctions delineated in the guidelines will be applied, and it will involve an improvement in the determination of the socially optimal level of care and, consequently, a step forward in using estimates of damages that are correct on average.

6.3 Economic and Legal Definitions of Full Liability

It has been implicit so far that if liable parties pay for the actual level of damages they cause, they will act optimally under liability rules.[5] For example, if an individual must pay for the actual damages he causes, his expected liability will equal the expected damages he causes. The principle in most legal systems is that an injurer should pay for the actual level of damages caused, whether they are high or low. It is said that an injurer

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Hides?", Arizona Law Review, 32, pp. 77-136, 1990.

[4] See Klevorick Alvin, "Legal Theory and the Economic Analysis of Torts and Crimes", Columbia Law Review, 85, June 1985, pp. 905-920.

"takes his victim as he finds him": this means that the injurer should pay for the caused damages if it turns out that the victim is affected by a latent aggravating condition (e.g., a thin skull). Similarly, an injurer is responsible only for small damages resulted from his activity.[6] When a plaintiff has received a single injury caused by multiple defendants, it is difficult to see why any of the defendants should be held liable for only a portion of that single injury. By analogy, under the "thin skull" doctrine of tort law, a defendant is held liable for the plaintiff's entire harm, whether or not the defendant intended the injury to become so great.[7] Many courts extend a principle similar to the "thin skull" doctrine to cases of general negligence. These courts hold that, once a defendant's negligence has been established, the foresee-ability of the actual consequences of the defendant's actions is irrelevant in determining liability. Following this logic, it is irrational to reduce a defendant's liability for the plaintiff's total injury simply because another insolvent actor also contributed to the plaintiff's injury. Many courts adopt the notion that strict liability, like negligence, involves a risk utility balance. The legal economists who use the phrase strict liability use it to mean liability without regard to the defendant's negligence. Under this definition a person may be liable despite the fact that the utility might outweigh the risk it presented. The words typical, expected, normal, average, and reasonable damages would have no place in such schemes.

Things are not the same under the legal definition of full liability, which is represented by the schedule of penalty assessed, that is to say by the precise application

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[5] See Shavell Steven, *Economic Analysis of Accident Law*, Harvard University Press, 1987.
[6] See Shavell Steven, supra note at 128.
[7] See Myers Kelly C., "Tort Reform In Arizona: An Analysis Of The Demise Of Joint And Several Liability" Arizona Law Review, 35, pp.719-738, 1993.

of the federal sentencing guidelines. When the resolution results from the decision of a jury, the law behind the case is hidden in the jury room, hidden behind broad, general, jury instructions full of words like "reasonable," "unreasonable," "foreseeable," "remote," "natural," "probable," "cause," and "proximate." Where the judge is the applicable decision-maker, his decision is contained in similarly broad, metaphorical terms.[8] In practice, the use of penalties can be based on either gain or some combination of harm and gain. The harm component of the penalty is based on qualitative descriptions and is not directly related to any quantitative measure of harm. In application, the potential problem is achieving deterrence in general. Notably, individuals will have a reason to commit less harmful rather than more harmful acts if expected liability, and thus, sanctions rise with harm. Deterrence is naturally accomplished if the expected sanction equals harm for all levels of harm.[9] Sanctions for less harmful acts may have to be so low that individuals are not deterred from committing harmful activity, generating underdeterrence, or the schedule of sanctions may have to be so severe to generate overdeterrence. Unfortunately, setting the standard for liability $L = p(MD)(x)$ on a case by case basis is impractical and expensive. The combination of liability standards and broad judicial discretion in damage assessments threatens the social optimum conditions, leading to too small (x_1) or too big level of care (x_2) (see figure 6.2).

The determination of natural resource injury, causation and damages to individuals using contingent valuation method is object of tense criticism. Contingent valuation

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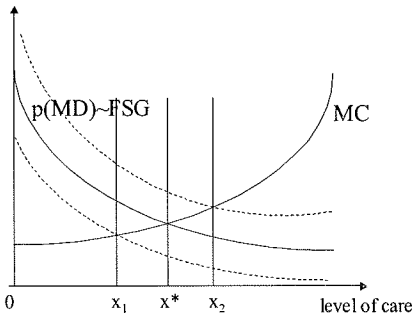
[8] Galligan Thomas C., "The Tragedy in Tort", Cornell Journal of Law and Public Policy, 5, pp. 139-183, 1996.

[9] See Polinsky Mitchell A., Shavell Steven, "The Economic Theory of Public Enforcement of Law", Journal of Economic Literature, 38, pp.45-74, March 2000.

applications, especially those with methodological advances are dramatically improving but the conceptual shortcoming of contingent valuation methods surveys is the impossibility to create a realistic and reliable market in which the nonuse commodity is valuated.

Figure 6.2 Level of Care and Full Liability



Beginning from the early '90s, some events focused interest on contingent valuation and the resulting decisions found that contingent valuation was a reliable method for undertaking estimates of economic damages. Research since then seems to have accelerated the debate over whether contingent valuation can elicit economic choices. The result of this process has been very confused. Most economists outside of environmental economics would likely regard contingent valuation as imprudent. The economists who criticize contingent valuation focus most of their questions on situations where respondents have little experience using the resource and when the source of the economic value is not the result of some in situ use.[10] They think that stated

[10] See Smith Kerry V., "JEEM and Non-Market Valuation: 1974-1998", Journal of environmental Economics and Management, 39, pp. 351-374, 2000.

willingnesses-to-pay from contingent valuation surveys are not measures of nonuse preferences over environmental goods and, thus, reliance on them in either damage assessments or in government decision-making is basically misguided.[11]

In light of the controversy involved, the National Oceanic and Atmospheric Administration appointed a prestigious panel to consider the reliability of contingent valuation studies of nonuse values in damage suits.[12] The panel's Report begins with criticism of contingent valuation. In discussing the inconsistency of some results with rational choice, the Report addresses the need for rationality. In discussing "warm glow" effects, the Report states that contingent valuation responses include a warm glow, and "if it is so, contingent valuation should not be taken as reliable estimates of true willingness to pay".[13] The Report states that the burden of proof of reliability must rest on the survey designers and, unfortunately, they did not elaborate on how to test for reliability. The Report presents a set of guidelines which would define an "ideal" contingent valuation survey and it asserts that studies meeting such guidelines can produce estimates "reliable enough to be the starting point" of a judicial process of damage assessment.[14] There is a history of anomalous results in contingent valuation surveys that seems closely tied to the embedding problem. Although this problem persists in the literature for over a decade, it has not been solved. These flaws show that the

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[11] See Diamond Peter A., Hausman Jerry A., "Contingent Valuation: Is Some Number Better than No Number?", Journal of Economic Perspectives, 8, pp. 45-64, 1994.
[12] Arrow Kenneth, Solow Robert, Leamer Edward, Portney Paul, Radner Roy and Schuman Howard have been the members of the panel for the evaluation of contingent valuation.
[13] Arrow K., Solow R., Leamer E., Portney P., Radner R. and Schuman H., "Report of the NOAA Panel on Contingent Valuation", Federal Register, 58(10), 4601-4614, 1993.
[14] See Diamond Peter A., Hausman Jerry A., supra note at 62.

survey responses are not satisfactory bases for policy and, therefore, contingent valuation methods should not be used for damage assessment.

The consequences of this reasoning may seem to constitute dangerous obstacles to a consistent environmental policy. The presence of these uncertainties produce unpredictability and it makes difficult to choose for socially optimal conditions with any degree of confidence: it is not even possible to know in which direction to modify the level of care if the goal is to move toward an optimum. One alternative route toward optimality may seem to be more practical. Instead of trying to go directly to the optimal level of care that minimize the level of expected damages, for now, a second best policy is preferred, and it could be still possible to design strategies to control environmental risks that are reasonably efficient. One approach could consists of the use of contingent valuation methods and other research that serve as targets to set, as a first approximation, environmental expected damages equal to the schedule of sanctions, that is the federal sentencing guidelines, coupled with the use of judicial discretion to make case by case adjustment in order to estimate the damage that is currently generated. It might be hoped that this would constitute a step to determine the directions to further improvements, considered that the main objectives are to control the level of deterrence and to move toward a potential pareto improvement, not characterize the pareto optimum, since it is very difficult to know both the relevant costs and the incremental damages corresponding to each possible level of care.

6.4 Judicial Discretion: Fine vs. Imprisonment

The theory of optimal enforcement of laws is based on a particular concept of justice: justice as efficiency (maximization of the social planner's objective function resulting from individuals' decision of committing a crime).[15] Most models of optimal enforcement of laws focus on the maximization of social welfare as the objective of public policy. In order to achieve the socially optimum level of deterrence, a fundamental result is implied by the fact that the fine should be maximal since it is supposed to be a costless transfer whereas imprisonment is costly. In application, the problem is very complex. Polinsky and Shavell use a series of simplifying assumptions to show that the optimal fine is the maximal fine and that it is optimal to supplement a fine with an imprisonment term if the maximal fine is not very large and the marginal cost of imprisonment is sufficiently small.[16] Under the assumption of perfect information on behalf of the social planner concerning each individual's wealth, and of costless means of enforcing fines, the optimal fine is the maximal fine.[17] Frequently, fines cannot be imposed costlessly and in some cases cannot be imposed at all. For example, when fines cannot be used to deter, because the appropriate fine exceeds the assets of violators, imprisonment should frequently be employed as the form of penalty. Arguments that could be considered in favor of adoption of jail time are, for example, the presence of repeat offenders, judgment-proof problem,[18] limited liability, size of private assets,

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[15] See Garoupa Nuno, "The Theory of Optimal Law Enforcement", Journal of Economic Survey, 11, pp.267-295, 1997.
[16] See Polinsky Mitchell A., Shavell Steven, "The optimal use of fine and imprisonment", Journal of Public Economics, 24, pp. 880-891, 1984.
[17] Klein Alexander, "Jail or Fine –Let Them Choose", Paper, University of Munich, January 19, 2000.
[18] Descriptive of all persons against whom judgments for money recoveries are of no effect, e.g. persons

responsible corporate officer doctrine[19] and, in general, different conceptions of fairness of sanctions (i.e. risk aversion, liability insurance).[20]

A survey of recent literature suggests that the maximal sanction may be nonoptimal if in the model is taken into account the concern of overcoming the contradiction between the model and the reality: a typical legal system simply does not prescribe maximal fines and this prediction is inconsistent with real-world practice. The common arguments that are considered as explanations for the limited use of fines despite the theoretical predictions are the following. A first argument is that fines could be "unjust" because the wealthy individuals are able to pay fines, whereas the poor serve jail sentences. A second argument against the use of fines is that the typical criminal has extremely low wealth. Fines are more useful for crimes that are committed by the rich, since they have more resources to pay fines. As a result, feasible fines might be so small as to be inefficient as deterrents. Another argument for the use of prisons rather than fines is the value of incapacitation of repeat offenders. The practice of punishing repeat offenders more severely than first offenders demonstrates that by imprisoning individuals for a longer time, society can expect to prevent more crimes during their period of imprisonment than it would do if it imprisoned first offenders, whose propensities are harder to predict, for

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who are insolvent, who do not have sufficient property to satisfy the judgment.

[19] The responsible corporate officer doctrine might convict officers who would not be liable under normal rules; corporate officers are those persons who fill the offices that are provided for in the corporate charter such as president, vice president, general manager and other officials of the corporation.

[20] Classic notions of fairness, such as corrective and retributive justice, typically are omitted from the evaluation of legal rules under the economic framework, whereas these notions are traditionally viewed as of great assessment of law. The essential reason is that, under welfare economics, the notions of fairness are not accorded intrinsic importance is the assumption that they do not directly enter into individuals' well being. For instance, whether punishment is in proportion to the seriousness of a crime is ordinarily assumed not to affect individuals' utilities per se; rather, punishment may affect individuals' well-being through its deterrent or incapacitative effects.

the same period. The same prison resources attain a greater reduction in crime.[21] The fact that an individual has committed previous crimes makes society more confident that he is really guilty of the crime with which is charged. A final argument for the explanation of the limited use of fines is that the government cannot enforce fines except under the threat of prison sentences. Fines are useful when the social externality of the crime is small relative to the enforcement and incarceration costs. Polinsky and Shavell have incorporated notions of the fairness of sanctions into the standard theory of enforcement: a concern for fairness not only has a direct effect on the choice of sanctions but also influences the optimal probability of enforcement.[22]

Combination of fine and imprisonment can be useful, because they allow the social planner to substitute a fine for some portion of the socially costly jail sentence, in order to minimize the enforcement expenditures. In this context, the federal sentencing guidelines represent a strong limitation in judicial discretion use. One negative consequence is that judges cannot tailor punishments to the specific situation of individual criminals.[23]

6.5 Deciding for Imposing Liability

Under the economic theory there are two potential candidates for imposing liability, strict liability and fault-based liability. The basic economic assumption of public enforcement of law's theory is that individuals or society make decisions with the goal of

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[21] See Posner Richard A., "An Economic Theory of the Criminal Law", Columbia Law Review, 85, pp. 1193-1231, 1985.
[22] See Polinsky Mitchell A., Shavell Steven, "The Fairness of Sanctions: Some Implications For Optimal Enforcement Policy", American Law and Economics Review, 2, pp. 223-237, 2000.
[23] See Levitt Steven D., "Incentive Compatibility Constraints as an Explanation for the Use of Prison Sentences Instead of Fines", International Review of Law and Economics, 17, 179-192, 1997.

maximizing their expected utility. In the oversimplified scenario, there is no concern with risk bearing, since parties are presumed to be risk neutral, nor with the size of administrative costs, since legal system is assumed to operate free of such costs, nor with distributional equity, since for the welfare criterion, the benefits are derived by parties from engaging in harmful activities less the cost of crime and less the cost of enforcement. Another assumption is that, by definition, all that an injurer needs to do to avoid the possibility of liability is to exercise due care if he engages in the activity.

Under strict liability, a risk neutral individual will commit the crime if and only if his gain from doing so exceeds the sum of the expected sanctions and, an injurer is assumed to pay for all damages suffered by victims. Under fault-based liability, an individual will be held liable if he committed the harmful activity without taking reasonable precautions to prevent harm: this means that he will be held liable if he committed the harmful activity when his gain is less than the fault standard set at the socially optimal level. The injurer, under negligence, has to pay for damages only if his level of care is less than the due care level. A further assumption is that the level of activity usually is not considered in the formulation of the due care standard; the answer could be that the courts would have difficulty in trying to employ a standard of due care that includes the level of activity.

6.5.1 Negligence and Strict Liability Standards

How would the policy conclusions of the economic theory about the economic efficiency of different liability standards be altered if we relax the model's assumptions?

In fact, if the new assumptions provide imperfect costly information between the regulatory agency and individuals, and litigation or settlement costs, and exit or entry consideration from the sector, it is possible to observe some situations in which efficiency standards may be applied and, to extend the economic analysis to explain the different implications.

Although Polinsky and Shavell have made the simplifying assumption that injurers have perfect information, it is more realistic that the regulated community often has only imperfect knowledge about the expected damages and the cost of taking care. They generally possess only estimates and they might just perceive the level of these variables. Under negligence standard injurers are liable if two conditions are satisfied 1) the injurer must have acted negligently (he must have exercised less than due care) and 2) the injurer's negligence must have caused damages. Thus, if an individual meets the required standard of care ("due care") there will be no liability.

Under strict liability, injurers are liable for damages they cause regardless of the level of care they exercise. Injurers will be induced to choose the socially optimal level of care since they know that they will be held liable for any damage caused by their use of pollutants.

An important assumption under negligence standard is that there will be socially optimal results if the due care is chosen by courts to equal the socially optimal level of care. If this assumption holds, a negligence standard will create incentives for injurers to take socially optimal levels of care to prevent damages, neither beyond the socially optimal level nor below it. Injurers will not take too much care because the additional

care will be costly and will not provide additional benefits, and they will not take too little care because falling below the level of due care will make them liable for environmental damages while prevention cost is a less costly alternative.

The ability of a negligence standard to induce injurers to take optimal levels of prevention is strongly dependent on whether decision makers can correctly set the required level of due care at the socially optimal level.[24] Optimal deterrence is achieved when each potential defendant takes the level of care at which the social marginal cost of care equals the social marginal benefit of care. It is possible that courts incorrectly determine the level of required due care because of the difficulty of obtaining relevant information (i.e. uncertainty about the probability and the magnitude of damages). Courts may also erroneously evaluate an individual's true level of care, finding that he used less care or more care than he actually did. The uncertainty in determining the actual level of care will induce individuals to take more precaution costs.

By definition, if the injurer takes care that equals or exceeds the required level of due care, he will not be found at fault and made liable. Therefore, the victim retains some residual risk and will not be compensated. The reason is that the injurer's level of care will not prevent all damages, but rather only that quantity that is socially desirable to prevent. Since in some cases victims will be damaged and left uncompensated, it turns out to be a serious question the fairness of applying a negligence standard.

Under strict liability expected liability will equal expected damages individuals will determine and take the optimal level of care to prevent environmental damages. Strict

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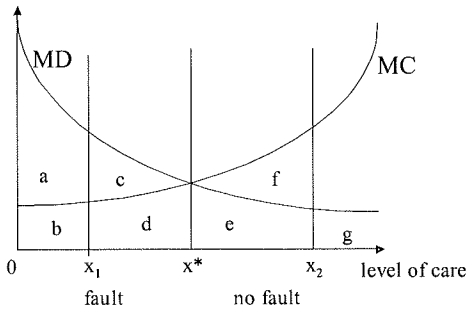
[24] See Mill John, "Agricultural Chemical Contamination of Groundwater: An Economic Analysis of

liability has the advantages over negligence that the problem of establishing the socially optimal level of due care is irrelevant and, there is no need for a court to establish an injurer's actual level of care. Another practical advantage over a negligence standard is represented by the ease of proof. Under a negligence standard farmers will have no incentives to take optimal precautions if they believe that victims will be unable to prove in court that actual care fell below the required level of due care. Strict liability avoids this proof problem because the victims do not have to prove that the level of actual care fell below the due care.

Under strict liability a farmer chooses $x = x^*$ as his level of care. The total cost, defined as the sum of the costs of precaution and external damage costs suffered by the victims, for farmers is given by the sum of the following areas (see figure 6.3), *(b+d)+(e+g)*, where *(e+g)* represents the amount of environmental damages caused by the illegal activity. With a negligence rule a farmer would choose the care of level such as $x = x^*$, and once again the social optimum would be achieved. The total cost for farmers, in this scenario, is represented by the sum of *(b+d)+(e+g)*, where *(e+g)* represents the amount of environmental damages occurred. So far, the society would be indifferent between the negligence rule and strict liability rule as both lead to the same outcomes. Even considering distributional concerns the negligence and strict liability systems would be equivalent.

Alternative Liability Rules", University of Illinois Law Review, 1991, pp. 1135-1167.

Figure 6.3 Strict Liability and Negligence



Suppose now that the Clean Water Act requirements are less than the socially optimal level of care, as actually is the current legal structure of the Act. Under the efficiency point of view, strict liability regime will still be able to yield the socially optimal value of care, while under negligence rule it would no longer be possible to reach the optimal solution. Since the negligence system constrains farmers to satisfy $x = x_1$, there will be a lower value than the optimal. Therefore, a negligence standard cannot do as well in terms of efficiency as a strict liability standard. If, however, the society is concerned about distributional effects, it is possible to observe that under strict liability the level of total cost to farmers, is represented by the sum of the following area *(b+d)+(e+g)* where *(e+g)* correspond to the environmental damages, while under negligence the total cost will be only the *(b)* area and a significant quantity of environmental damages, *(c+d+e+g)* is left uncompensated to victims. In this situation, thus, strict liability is efficient and superior to negligence rule. That is why the optimal way to control harmful activities may be

completely affected by the legal category, strict liability or negligence in which the illegal act is placed.

What is important to analyze now, is how farmers/injurers expect the law to be applied. First of all, setting due care at nonoptimal levels has asymmetric effects. If the level of care is too low, farmers will exercise less than optimal level of care. But if the level is too high, injurers will exercise optimal care.

By interpreting the Clean Water Act's legislative framework and the cases law it is possible to observe how different potential liability regimes can influence the actions of farmers. For example, assuming that it is socially optimal for each injurer to exercise some care, the social optimum or first-best behavior is for the injurer to choose the care level that satisfies the due care. That is, each injurer should simply act at that level of care at which the marginal cost of his caretaking is equal to the expected marginal social benefit of his effort. But what happens if the Clean Water Act requirements have different measures of the socially optimal level of care, say, for example, that they are higher? Since, by assumption, it is possible determine the optimal level of care, the social optimum can be achieved under either a strict liability or a negligence regime. If a strict liability rule is in effect, the injurers must pay for all harms suffered by the victims, whereas with the negligence rule they must pay for harms if and only if the level of care they adopted is not optimal. Under the CWA, negligence is the regulatory norm: for a defendant farmer to be held liable, his action must be determined by a failure in taking the reasonable precautions, such as best management practices, or the level of care necessary to avoid harms. If it were to be based on this economic analysis, what would

the future liability law look like? The most efficient standard would seem to be strict liability. However, is it convenient to move toward a strict liability system?[25] Is this the most cost-effective strategy? Or could it be socially convenient to redefine the structure of the best management practices?

The alternative of holding farmers strictly liable implies that litigation involving agriculture would be initiated whenever some contamination occurs, not solely when farmers fail to exercise due care. The negligence approach has the attractiveness of emphasizing the need for regulatory controls on the day-to-day use. On efficiency grounds, fault-based liability can control pollution risks as well as a strict liability system while involving less frequent and more flexible litigations.[26] Another element of the analysis concerns the issue whether the number of cases could be socially excessive (there will be a litigation explosion?) or perhaps socially inadequate.

The alternative solution could be raising the level of due care, such as raising the standard of best management practices, so that the total volume of damages generated by agriculture will necessarily fall short of the socially optimal level. If the standard level of due care is set to elicit the correct treatment level, the sector's activities will be actually affected.

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[25] For more discussions about the strengths and limitations of using tort law to control environmental and other risks see Rose-Ackerman, "Tort Law as a Regulatory System", American Economic Review, 81, May1991, pp. 54-58; Shavell S., "A Model of the Optimal Use of Liability and Safety Regulation", Rand Journal of Economics, 15, 1984, pp. 271-280, Innes R., "Optimal Liability with Stochastic Harms, Judgment Proof Injuries and Asymmetric Information", International Review of Law and Economics, 19, 1999, pp. 181-203, Kaplow L., Shavell S., "Economic Analysis of Law", Discussion Paper 251, Harvard Law School, 1999.

[26] See Cory Dennis, Livingston M., Northrop H., "Agricultural Contamination of Arizona Groundwater:

6.5.2 Factors Determining a Strict Liability or a Negligence Standard

In legal terms, a fundamental question is who should bear the risk of potential damage. There is no doubt that the individual carrying out an inherently hazardous (or not) activity, nor the victim or society, should bear the risk. This is a conventional justification generally used for favoring strict liability over negligence, since basically liability is viewed as a way of making the polluter pay. The traditional viewpoint about the allocation of risk is that if there is an inherently dangerous activity, the operator should bear the risk of damages, but if there is a "normal" activity, the victim should bear the risk. These outcomes derive from the consideration that strict liability should be imposed for damages caused by dangerous activities, and fault liability for damages caused by normal activities. It is controversial whether liability is the preferred way to obtain insurance coverage for environmental damages. Strict liability in comparison to fault-liability does not offer any additional incentives to take preventive measures.

Before giving some opinion in deciding between the two potential candidates for imposing liability, it is worthwhile to consider the relative economics merits of negligence and strict liability standards. The following table (table 6.1) can be helpful in understanding the different aspects that can play an important role in deciding the most desirable liability regime.

Difficulties for plaintiffs in establishing the defendant's fault also do not justify strict liability. In many cases, the problem for plaintiffs is not establishing fault, but rather proving causation, and strict liability does not alleviate that burden. The issue of proof

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The Case against Liability without Fault", paper presented at the Southwestern Economic Association

should not be confused with the choice between fault and strict liability; evidentiary burdens are a different issue.[27]

Table 6.1 Extensions of PS's Model and the Desirability of Negligence vs. Strict Liability

Assumptions		Desirability of Negligence vs. Strict Liability	
Polinsky and Shavell	***Alternative***	***Negligence***	***Strict Liability***
perfect information	regulatory agency has perfect information	X	
	regulated community has perfect information		X
Regulatory/administrative costs are not considered	costs for issuing permits, observing $x=x_{BMP}$, vary by size		X
Monitoring/enforcement costs are not considered	BMPs inspections, damages detection, damage causation are significant		X
Legal costs are not considered	they are significant and vary by the number of case	X	
	and by the litigation cost per case		X
Incentives for research and development are not considered	cheaper pollution prevention technology		X
exit/entry	discourage pollution		X
	encourage production	X	
political feasibility	cost of tort reform is substantial	X	

Noting that it may be easier for defendants than for plaintiffs to establish causal link between a harmful activity carried out by the defendant and the damage, if, in some

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Annual Conference, Texas, March 2000.

[27] See Bergkamp Luca, "The Commission's White Paper on Environmental Liability: A Weak Case for ans EC Strict Liability Regime", Paper 15-02-2000.

cases, it would be unreasonable to require that the plaintiff prove fault or causation beyond reasonable doubt, a court may shift the burden of the proof to the defendant, once the plaintiff has produced prima facie evidence of fault and causation.[28]

Any liability in excess of fault-liability serves primarily an insurance objective. First party insurance is superior to liability insurance from an insurance efficiency viewpoint. First part insurance is better suited to control the risks associated with any insurance scheme. Disadvantages of third party liability insurance, as compared to first party insurance, include the lack of effective control over adverse selection and moral hazard, problems of retroactively expanding coverage, and the high administrative costs of this system. First party insurance allows the insured to choose the objective of coverage and the terms and conditions of the policy, resulting in a "tailor-made" policy, as opposed to liability's "one-fits-all" approach.[29]

Defenses play an important role in liability law because they protect the limits of liability, thereby controlling moral hazard and adverse selection and ensuring insurance efficiency. Commonly accepted defenses, such as an Act of God, victim fault or consent, and intervention by a third party, are allowed under the Clean Water Act.[30] These defenses blur the distinction between strict liability and negligence. An example of intervention by a third party is the case that an operator caused damage "by an activity that he conducted following a compulsory order given by a public authority". Where a defendant was ordered by the government to do the act that caused the damage, this

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[28] See supra note.
[29] See following note.

defense would clearly apply. The situation where an activity was operated in accordance with permit conditions, but, despite compliance, caused damages, is known as the regulatory compliance defense.

Making the polluter pay for the entire damages he caused would result in more precaution and, thus, in prevention of environmental damages. A strict liability regime might encourage investment in research and development for improving knowledge and technologies more than those created by a fault-based regime. But there is not any empirical evidence that a strict liability standard will generate more incentives for a cheaper pollution prevention technology.

Under an economic perspective, in the short run, efficiency can be reached by either making the injurer strictly liable for all damages or imposing a negligence rule under which the injurer would be liable for damages only if he had not met the standard of due care.[31] The negligence rule is efficient, provided that the standard of due care set by the court is the efficient level of care.[32] Even from a deterrence efficiency viewpoint there is no difference between strict and fault liability; under either regime, individuals will take care if doing so is cheaper than paying for environmental damages. Whether strict liability produces superior deterrence incentives has not any relevant evidence. Recent

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[30] The state of the art defense is specifically permitted under the product liability law. If an operator took all possible preventive measures, and applied state of the art technology and knowledge to prevent environmental damages, but damages nevertheless occurs, that damage is actually unavoidable.

[31] This symmetry between strict liability and negligence does not hold when the injurer can also modify his activity level in a way that can affect expected damages. Strict liability, on the other hand, would provide an incentive for both increased care and decreased use of pollutants, since either of these would reduce expected damages and thus reduce expected liability. In the long run, only strict liability is efficient since the number of injurers is allowed to vary.

[32] See Segerson Kathleen, "Liability for Groundwater Contamination from Pesticides", Journal of Environmental Economics and Management 19, 1990, pp. 227-243.

empirical evidence suggests that strict liability, in comparison to fault-liability, does not result in less spills; in fact, it may cause more spills than fault liability.[33]

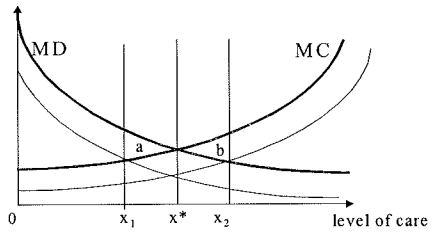
To determine the optimal level of due care, the regulatory agency needs complete and accurate information on the cost of care and the expected cost of damages for each level. But the data necessary to set the optimal level of care will often not be available. Besides, once an accident has occurred, parties have an incentive to misrepresent the actual cost of care and expected cost of damages in order to influence the determination of the level of due care. Strict liability approach is thought to be favored when the potential violators (regulated community) have perfect information about either their costs of accident prevention activities (as seems realistic in many situations) or the damages caused by their violations. Negligence standard is instead favored when the regulatory agency has perfect information since it is possible to determine the socially optimal level of care, so that $x = x^*$. Assuming two different kinds of asymmetric information (1) the regulatory agency (EPA) can determine x^* and (2) the regulated community can determine x^*, it is possible to make the following consideration. Under the first scenario, the actual level of care x_1 will be less than x^*, since farmers will tend to underestimate the expected marginal damages curve (see figure 6.4) and, more realistically, they will have the correct perception of the marginal cost curve. The efficiency costs involved are represented by the a area. By contrast, under the second scenario when farmers are assumed to determine x^*, the actual level of care x_2 will be

[33] See Alberini A., Austin D., "Strict Liability as a Deterrent in Toxic Waste Management: Empirical Evidence from Accident and Spill Data", Journal of Environmental Economics and Management, 38, pp.20-48, 1999.

greater than x^*, since probably the regulatory agency will tend to have the right perception of the expected damages, but will tend to underestimate the expected marginal costs. In this case, the efficiency costs involved are represented by the *b* area shown in the graph below.

Figure 6.4

Strict Liability vs. Negligence with Asymmetric Information



The general principle that can emerge from these considerations is that if the regulatory agency (EPA) has better information, a fault-liability regime is preferable since it turns out to be more efficient. On the other side, if the regulated community has better information, strict liability regime seems to be preferable. A compelling case could be characterized by the fact that the marginal cost curve is known by both the regulatory agency and the regulated community, whereas the expected marginal damages curve is known only by the regulatory agency and not by the regulated community.

If regulatory and administrative costs are considered, several factors could incentive the use of one regime better than the other. Administrative costs include the time and effort spent by injurers, victims and their legal counsel in coming to settlements and in

litigation, while regulatory costs are comprehensive of all that costs involved in issuing permits, observing the actual level of care undertaken by injurers, and obviously they can vary with the size of the firm. Since under strict liability observing the actual level of care related to the best management practices is an irrelevant problem for the purposes of imposing liability, it is likely that the average administrative costs should be higher under the negligence rule. Considerations of monitoring and enforcement costs are characterized, basically, by the same logic. The BMPs inspections, damages detection, damage causation could be significantly important more under the negligence rule than strict liability. Other considerations about the legal expenditures might prefer the negligence rule when considering the fewer number of claims compared to strict liability. Under strict liability a victim will have an incentive to make a claim whenever his losses exceed the costs of making a claim. Under the negligence rule a victim will not have an incentive to make a claim so often because he will also be concerned about establishing the injurer's negligence.[34] A conventional justification for favoring strict over fault-based liability is the difficulty for plaintiffs to establish fault. But this difficulty does not justify strict liability. In fact, in many cases, the problem for plaintiffs is not establishing fault, but rather prove causation, and strict liability does nothing to alleviate that burden.[35]

Considering the entry and exit of firms in the sector, it is well known that in the long run negligence rule is disadvantaged relative to strict liability in the sense that too many firms will enter the sector with unavoidable negative consequences on control of

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[34] See Shavell Steven, *Economic Analysis of Accident Law*, Harvard University, Cambridge:1987.
[35] See Bergkamp Lucas, "The Commission's White Paper on Environmental Liability: a Weak Case for an EC Strict Liability Regime", Paper Draft 15.02.2000, Hunton and Williams, Brussels.

pollution. Under strict liability firms are discouraged to enter since the average cost curve is significantly higher than under negligence. So, in a perfect competitive market, strict liability is more efficient, but in, general, the trade off between having less pollution and encouraging firms in enter the sector has a very crucial function.

From a politically feasible point of view, probably it seems more reasonable to leave agriculture in a negligence standard of liability, considered the strong cultural tradition, rather than address for a tort reform. Naturally this represents a strong encouragement for new farmer to come into the sector. There are many complex issues involved in determining whether a standard of liability is better than another one. The evaluation of moving toward a strict liability regime has to consider, in part, the perceived inadequacy to deter potential injurers and, in part also, the inefficiently method of compensating the victims. But this process is not immune from discouraging considerations, such as the considerable amount of transition costs that would be involved. On balance, the results of this evaluation show that the advantages of moving toward a strict liability standard are not so persuasive, and the alternative of fault-based liability is a feasible solution on efficiency, practical and effectiveness grounds and can satisfactorily control pollution risks.

6.6 Summary

The comparative analysis of negligence and strict liability illustrate that environmental liability can remain part of a general fault–based liability system. Factors that could be considered in favor of a negligence regime are the regulatory agency's

perfect information, the presence of legal costs related to the number of cases, and the entry in the sector encouraging production. On the other hand, factors that could be considered in favor of strict liability are the regulated community's perfect information, the consideration of regulatory and administrative costs, such as costs for issuing permits, for observing the actual level of care, the consideration of monitoring and enforcement costs, such as best management practices inspections, and damages detection, as well as the presence of legal costs related to the litigation cost per case. The exit of firms from the sector represents another factor that tends to prefer strict liability, since in the long run less pollution would be observed.

But any attempt to establish the general theoretical superiority, in efficiency terms, of either of the instruments over the other is destined to failure, since there is no compelling case showing the most desirable liability regime. Therefore, political feasibility represents the only factor that could determine the choice of moving toward a strict liability regime. Issues of distributional justice as well as equity should be considered. Policies adopted to control environmental risks cannot be evaluated only on the basis of efficiency criteria. Both approaches, generally, can get adapted for practical and political feasibility, but the conceptual differences remain a primary source of tension between those focused on economic policymaking and those focused on environmental policymaking. Using the considerations outlined above would sensitize an analyst to the wide range of factors that would determine the political feasibility of either a strict liability or a fault-based regime.

The real question is if society really wants to incur in the substantial transition costs

entailed by a tort reform. An immediate answer should be that if the net benefits related to a strict liability regime less the net benefits related to a fault-based regime are at least greater than the costs implied by a tort reform, then, likely, this represents a strong incentive in moving toward a strict liability approach. This comparison may reveal constructive insights. Critics of the tort system argue that toxic tort litigation produces highly levels of compensation and high transaction costs, and that courts lack the technical competence to deal with health and safety issues when regulatory agencies are in a better position to perform well.[36] Applying a strict liability standard entails an enormous amount of costs, even without considering that litigations would be initiated whenever contamination occurs, not solely when farmers fail to exercise due care. A cogent case can be made that fault-based liability can control pollution risks as well as a strict liability system while entailing less frequent and more tractable litigations.

[36] See Innes Robert, Cory Dennis, "The Economics of Safe Drinking Act", University of Arizona, August 1998.

Chapter Seven

SUMMARY AND CONCLUSIONS

7.1 Summary

The first chapter of this thesis introduces some issues that provide an important framework for understanding the regulatory structure and the sanctioning approach regarding the criminal violations of the Clean Water Act. Recent legal trends demonstrate that prosecution of environmental crimes is particularly difficult not only with regard to companies but also with regard to individuals. In the past, given that low fines were generally applied, it was more profitable for companies to continue to ignore regulations than to reduce pollution. In this context, the federal sentencing guidelines resulted in harsher sentences. This is clearly evident from the comparison of actual cases against what would have resulted under the guidelines, that declaim the main objective of promoting proportionality in sentencing, meaning that more egregious acts receive more severe penalties.

In the second chapter the Clean Water Act (CWA) is discussed. The CWA is the principal U.S. law that protects the enormous treasure represented by water, with its strong regulatory scheme to control and to prevent water pollution. To reach its goal, the Act on one side establishes specific objectives, authorities, and programs and, on the other side, provides violations, compliance remedies and sanctions. The result is a complex system where water quality is achieved through the application of a combination of a technologically up-to-date permitting system with a robust enforcement framework

with administrative, civil and criminal sanctions up to $2 million in fines and 30 years in imprisonment. Obviously, in this context, agriculture plays an important role as water consuming activity and pollution source. In consideration of this, the CWA provides specific agricultural related provisions with controls for high pollutant agricultural activities, like concentrated animal feeding operations, and exemptions that allow carrying out of normal farming activities without incurring sanctions.

The system of sentencing guidelines is discussed in chapter three. This new federal criminal justice system was introduced in the U.S. in the attempt to reduce unwarranted disparity in sentencing and to ensure certainty, proportionality and uniformity of punishment. The system requires federal judges to impose sentences within a range, expressed in months of imprisonment, resulting from the match of the offense level and the defendant's criminal history on the matrix of the sentencing table.

Within the applicable range and following specific criteria the judge can impose a sentence that goes from the sole fine to probation, imprisonment, detention alternatives or a combination of these. To reach the decision, the court has to follow a specific path in which the "guidelines" provide determined factors for the evaluation of the gravity of the criminal offense and the offender's characteristics. To ensure a certain degree of flexibility, the sentencing judge can deviate upward or downward from the guidelines in presence of specific elements that may constitute ground for departures.

The empirical evidence is presented in chapter four. It illustrates legal trends, documenting that fines and total penalties for corporations or organizations, convicted of federal crimes, tended to be higher under the sentencing guidelines than they were

previously. A first plausible reason of this result seems to be that the guidelines have imposed a strong binding constraint on the exercise of judicial discretion, which has caused, as a direct effect, an increase in criminal fines. At the same time, the lack of proportionality in sentencing caused a high rate of uncertainty among regulated operators with consequential behavioral incongruities. From the analysis of the early industrial cases it is possible to observe that the enforcement has been increasingly stringent and consistent with the tendency of the continual increase in criminal penalties. This is further illustrated by the analysis of the more recent industrial cases. Even though more leniency in sentencing is generally observable in agricultural cases compared to the severity in sentencing industrial cases, the more recent cases are characterized by more stringent enforcement. However, the imposition of full liability as delineated in the federal sentencing guidelines is constraint by section 1319 of the Clean Water Act. The statutory limitation of 36 months of imprisonment in the application of the maximum term of imprisonment does not allow full implementation of the federal sentencing guidelines and poses a binding constraint to full application.

Three important observations emerge from the analysis of sanctioning under the CWA. First, the implementation of the federal sentencing guidelines has resulted in a movement toward full liability in the use of judicial discretion, where full liability is defined by the sanctions delineated in the guidelines. Second, liability for violations of the CWA is fault based. Negligent violation of best management practices or discharging without a permit must be proved to impose sanctions of any kind. Third, and finally, sanctions have frequently involved a combination of monetary fines and incarceration as

allowed under federal sentencing guidelines protocols. Each of these practices has significant economic efficiency implications that are discussed in chapters five and six.

In chapter five, the Polinsky and Shavell's analysis of public enforcement under the theory of optimal enforcement is presented. Individual behavior, in general, is characterized by the fact that the individual will commit the criminal act if, and only if, his expected utility from doing so, taking into consideration his benefits and the probability of being captured and sanctioned, exceeds his utility if he does not commit the criminal act. Whether an injurer will be sanctioned depends on the rule for imposing strict liability or fault-based liability. The enforcement authority's problem is to maximize social welfare by choosing enforcement expenditures, or equivalently the probability of detection, the level of fine, the length of imprisonment term, and the rule for imposing liability.

Opportunities for regulatory and tort reform are identified in chapter six, as well as opportunities for increasing the descriptive realism and predictability of public enforcement theory. The comparative analysis of negligence and strict liability illustrates that there are many complex issues involved in determining whether a standard of liability is better than another one. The evaluation of moving toward a strict liability regime has to consider, in part, the perceived inadequacy to deter potential injurers and, in part, the inefficient method of compensating the victims. This process is not immune from discouraging considerations, such as the considerable amount of transition costs that would be involved. On balance, the results of this evaluation show that the advantages of moving toward a strict liability standard are not persuasive, and the alternative of fault-

based liability is a feasible solution on efficiency, practical and effectiveness grounds and can satisfactorily control pollution risks.

7.2 Conclusions

The Environmental Protection Agency is advancing new regulations to address water pollution from concentrated animal feeding operations. If these projected changes are adopted, the number of animal feeding operations (AFOs) subject to point-source pollution regulations could double or triple (Centner, 2000).[265]

Under one proposed regulatory structure, the EPA estimates that more than 39,000 operations would be affected by this proposed structure, with 12,660 operations needing permits because of their size of more than 1,000 animal units. Operations with 300-1,000 animal units would have to apply for a National Pollutant Discharge Elimination System (NPDES) permit or certify to the permit authority that they are not a CAFO based on existing practices. Operations with less than 300 animal units could be designated CFOs on a case-by-case basis. The EPA proposal also seeks to require some processors and integrators to secure NPDES permits under federal co-permitting provisions. The proposed regulation would allow the EPA to regulate nonfarming entities that exercise "substantial operational control" over a CAFO through co-permitting requirements.

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[265] These proposed regulations are the culmination of efforts previously set forth by the EPA and USDA including "Compliance Assurance Implementation Plan for Concentrated Animal Feeding Operations," "Unified National Strategy for Animal Feeding Operations" and "Draft Guidance Manual and Example NPDES Permit for Concentrated Animal Feeding Operations, Final Internal Draft."

In light of this expansive and controversial effort at regulatory reform,[266] it is natural to ask if complementary or synergistic tort reform for sanctioning violators is also desirable. The results of this evaluation suggests not.

Much of the CWA sanctioning provisions, as well as their potential application under the Federal Sentencing Guidelines, is wholly consistent with efficiency prescriptions for enforcing public law. Additionally, the use of incarceration in the absence of maximal fines, and the use of sanctioning table in lieu of a case-by-case assessment of the monetized value of harm are cogently defensible on second-best, fairness and deterrence grounds. Moreover, the practice of CWA enforcement being grounded in considerations of fault instead of strict liability promotes the twin objective of treating criminal violators fairly while encouraging the long-run viability and growth of the agricultural sector.

The "Achilles heel" of the existing CWA enforcement structure may well be the use of discretion, both prosecutorial and judicial. To achieve a tolerable level of deterrence of criminal acts, to promote marginal deterrence, and to incapacitate repeat offenders, it is necessary that criminal violations of the CWA face consistent, predictable criminal sanctions. This requires that the EPA systematically pursues criminal indictments when appropriate, and that sanctions reflecting full liability be imposed when justified.

Critics may well label such an enforcement policy as anti-agriculture, but the charge is unsustainable. Pursuing criminal prosecutions on the basis of negligence or fault treats agricultural violators fairly and promotes the long-run viability of the sector. Vigorous

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[266] In addition to dramatically increasing the number of regulated AFOs, the EPA estimated that the proposed regulations may cost $831-$935 million annually and may reduce aggregate national economic output by nearly $2 billion per year. See Centner (2000) for a discussion of potential impacts.

application of criminal sanctions for significant agricultural violations of the CWA, on the other hand, addresses irresponsible or reckless decision making on the part of a distinct minority of agriculturalists.

Appendix A

THE CLEAN WATER ACT[274]

A.1 Section 1319 Enforcement

United States Code
TITLE 33 - NAVIGATION AND NAVIGABLE WATERS
CHAPTER 26 - WATER POLLUTION PREVENTION AND CONTROL
SUBCHAPTER III - STANDARDS AND ENFORCEMENT

Sec. 1319. Enforcement

- (a) State enforcement; compliance orders
  - (1) Whenever, on the basis of any information available to him, the Administrator finds that any person is in violation of any condition or limitation which implements section 1311, 1312, 1316, 1317, 1318, 1328, or 1345 of this title in a permit issued by a State under an approved permit program under section 1342 or 1344 of this title he shall proceed under his authority in paragraph (3) of this subsection or he shall notify the person in alleged violation and such State of such finding. If beyond the thirtieth day after the Administrator's notification the State has not commenced appropriate enforcement action, the Administrator shall issue an order requiring such person to comply with such condition or limitation or shall bring a civil action in accordance with subsection (b) of this section.
  - (2) Whenever, on the basis of information available to him, the Administrator finds that violations of permit conditions or limitations as set forth in paragraph (1) of this subsection are so widespread that such violations appear to result from a failure of the State to enforce such permit conditions or limitations effectively, he shall so notify the State. If the Administrator finds such failure extends beyond the thirtieth day after such notice, he shall give public notice of such finding. During the period beginning with such public notice and ending when such State satisfies the Administrator that it will enforce such conditions and limitations (hereafter referred to in this section as the period of "federally assumed enforcement"), except where an extension has been granted under paragraph (5)(B) of this subsection, the Administrator shall enforce any permit condition or limitation with respect to any person -

[274] Source: Legal Information Insitute.

        - (A) by issuing an order to comply with such condition or limitation, or
        - (B) by bringing a civil action under subsection (b) of this section.
    - (3) Whenever on the basis of any information available to him the Administrator finds that any person is in violation of section 1311, 1312, 1316, 1317, 1318, 1328, or 1345 of this title, or is in violation of any permit condition or limitation implementing any of such sections in a permit issued under section 1342 of this title by him or by a State or in a permit issued under section 1344 of this title by a State, he shall issue an order requiring such person to comply with such section or requirement, or he shall bring a civil action in accordance with subsection (b) of this section.
    - (4) A copy of any order issued under this subsection shall be sent immediately by the Administrator to the State in which the violation occurs and other affected States. In any case in which an order under this subsection (or notice to a violator under paragraph (1) of this subsection) is issued to a corporation, a copy of such order (or notice) shall be served on any appropriate corporate officers. An order issued under this subsection relating to a violation of section 1318 of this title shall not take effect until the person to whom it is issued has had an opportunity to confer with the Administrator concerning the alleged violation.
    - (5)
        - (A) Any order issued under this subsection shall be by personal service, shall state with reasonable specificity the nature of the violation, and shall specify a time for compliance not to exceed thirty days in the case of a violation of an interim compliance schedule or operation and maintenance requirement and not to exceed a time the Administrator determines to be reasonable in the case of a violation of a final deadline, taking into account the seriousness of the violation and any good faith efforts to comply with applicable requirements.
        - (B) The Administrator may, if he determines (i) that any person who is a violator of, or any person who is otherwise not in compliance with, the time requirements under this chapter or in any permit issued under this chapter, has acted in good faith, and has made a commitment (in the form of contracts or other securities) of necessary resources to achieve compliance by the earliest possible date after July 1, 1977, but not later than April 1, 1979; (ii) that any extension under this provision will not result in the imposition of any additional controls on any other point or nonpoint source; (iii) that an application for a permit under section 1342 of this title was filed for such person prior to December 31, 1974; and (iv) that the facilities necessary for compliance with

such requirements are under construction, grant an extension of the date referred to in section 1311(b)(1)(A) of this title to a date which will achieve compliance at the earliest time possible but not later than April 1, 1979.

- (6) Whenever, on the basis of information available to him, the Administrator finds (A) that any person is in violation of section 1311(b)(1)(A) or (C) of this title, (B) that such person cannot meet the requirements for a time extension under section 1311(i)(2) of this title, and (C) that the most expeditious and appropriate means of compliance with this chapter by such person is to discharge into a publicly owned treatment works, then, upon request of such person, the Administrator may issue an order requiring such person to comply with this chapter at the earliest date practicable, but not later than July 1, 1983, by discharging into a publicly owned treatment works if such works concur with such order. Such order shall include a schedule of compliance.

- (b) Civil actions
  The Administrator is authorized to commence a civil action for appropriate relief, including a permanent or temporary injunction, for any violation for which he is authorized to issue a compliance order under subsection (a) of this section. Any action under this subsection may be brought in the district court of the United States for the district in which the defendant is located or resides or is doing business, and such court shall have jurisdiction to restrain such violation and to require compliance. Notice of the commencement of such action shall be given immediately to the appropriate State.
- (c) Criminal penalties
  - (1) Negligent violations
    Any person who -
    - (A) negligently violates section 1311, 1312, 1316, 1317, 1318, 1321(b)(3), 1328, or 1345 of this title, or any permit condition or limitation implementing any of such sections in a permit issued under section 1342 of this title by the Administrator or by a State, or any requirement imposed in a pretreatment program approved under section 1342(a)(3) or 1342(b)(8) of this title or in a permit issued under section 1344 of this title by the Secretary of the Army or by a State; or
    - (B) negligently introduces into a sewer system or into a publicly owned treatment works any pollutant or hazardous substance which such person knew or reasonably should have known could cause personal injury or property damage or, other than in compliance with all applicable Federal, State, or local requirements or permits, which causes such treatment works to violate any effluent limitation or condition in any permit issued to the treatment works under section 1342 of this title

by the Administrator or a State;
shall be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or by both.

- (2) Knowing violations
  Any person who -
  - (A) knowingly violates section 1311, 1312, 1316, 1317, 1318, 1321(b)(3), 1328, or 1345 of this title, or any permit condition or limitation implementing any of such sections in a permit issued under section 1342 of this title by the Administrator or by a State, or any requirement imposed in a pretreatment program approved under section 1342(a)(3) or 1342(b)(8) of this title or in a permit issued under section 1344 of this title by the Secretary of the Army or by a State; or
  - (B) knowingly introduces into a sewer system or into a publicly owned treatment works any pollutant or hazardous substance which such person knew or reasonably should have known could cause personal injury or property damage or, other than in compliance with all applicable Federal, State, or local requirements or permits, which causes such treatment works to violate any effluent limitation or condition in a permit issued to the treatment works under section 1342 of this title by the Administrator or a State;
    shall be punished by a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than $100,000 per day of violation, or by imprisonment of not more than 6 years, or by both.
- (3) Knowing endangerment
  - (A) General rule
    Any person who knowingly violates section 1311, 1312, 1313, 1316, 1317, 1318, 1321(b)(3), 1328, or 1345 of this title, or any permit condition or limitation implementing any of such sections in a permit issued under section 1342 of this title by the Administrator or by a State, or in a permit issued under section 1344 of this title by the Secretary of the Army or by a State, and who knows at that time that he thereby places

another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. A person which is an organization shall, upon conviction of violating this subparagraph, be subject to a fine of not more than $1,000,000. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment shall be doubled with respect to both fine and imprisonment.

- (B) Additional provisions
  For the purpose of subparagraph (A) of this paragraph -
    - (i) in determining whether a defendant who is an individual knew that his conduct placed another person in imminent danger of death or serious bodily injury -
- (I) the person is responsible only for actual awareness or actual belief that he possessed; and
- (II) knowledge possessed by a person other than the defendant but not by the defendant himself may not be attributed to the defendant;
  except that in proving the defendant's possession of actual knowledge, circumstantial evidence may be used, including evidence that the defendant took affirmative steps to shield himself from relevant information;
    - (ii) it is an affirmative defense to prosecution that the conduct charged was consented to by the person endangered and
      that the danger and conduct charged were reasonably foreseeable hazards of -
- (I) an occupation, a business, or a profession; or
- (II) medical treatment or medical or scientific experimentation conducted by professionally approved methods and such other person had been made aware of the risks involved prior to giving consent;
  and such defense may be established under this subparagraph by a preponderance of the evidence;
    - (iii) the term "organization" means a legal entity, other than a government, established or organized for any purpose,
      and such term includes a corporation, company, association,
      firm, partnership, joint stock company, foundation, institution, trust, society, union, or any other association of persons; and

        - (iv) the term "serious bodily injury" means bodily injury which involves a substantial risk of death, unconsciousness, extreme physical pain, protracted and obvious disfigurement,
          or protracted loss or impairment of the function of a bodily member, organ, or mental faculty.
    - (4) False statements
      Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this chapter or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this chapter, shall upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or by both.
    - (5) Treatment of single operational upset
      For purposes of this subsection, a single operational upset which leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation.
    - (6) Responsible corporate officer as "person"
      For the purpose of this subsection, the term "person" means, in addition to the definition contained in section 1362(5) of this title, any responsible corporate officer.
    - (7) Hazardous substance defined
      For the purpose of this subsection, the term "hazardous substance" means (A) any substance designated pursuant to section 1321(b)(2)(A) of this title, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of title 42, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 U.S.C. 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 U.S.C. 6901 et seq.) has been suspended by Act of Congress), (D) any toxic pollutant listed under section 1317(a) of this title, and (E) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 2606 of title 15.
- (d) Civil penalties; factors considered in determining amount
  Any person who violates section 1311, 1312, 1316, 1317, 1318, 1328, or 1345 of this title, or any permit condition or limitation implementing any of such sections

in a permit issued under section 1342 of this title by the Administrator, or by a State, or in a permit issued under section 1344 of this title by a State,, [1] or any requirement imposed in a pretreatment program approved under section 1342(a)(3) or 1342(b)(8) of this title, and any person who violates any order issued by the Administrator under subsection (a) of this section, shall be subject to a civil penalty not to exceed $25,000 per day for each violation. In determining the amount of a civil penalty the court shall consider the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good-faith efforts to comply with the applicable requirements, the economic impact of the penalty on the violator, and such other matters as justice may require. For purposes of this subsection, a single operational upset which leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation.

- (e) State liability for judgments and expenses
  Whenever a municipality is a party to a civil action brought by the United States under this section, the State in which such municipality is located shall be joined as a party. Such State shall be liable for payment of any judgment, or any expenses incurred as a result of complying with any judgment, entered against the municipality in such action to the extent that the laws of that State prevent the municipality from raising revenues needed to comply with such judgment.
- (f) Wrongful introduction of pollutant into treatment works
  Whenever, on the basis of any information available to him, the Administrator finds that an owner or operator of any source is introducing a pollutant into a treatment works in violation of subsection (d) of section 1317 of this title, the Administrator may notify the owner or operator of such treatment works and the State of such violation. If the owner or operator of the treatment works does not commence appropriate enforcement action within 30 days of the date of such notification, the Administrator may commence a civil action for appropriate relief, including but not limited to, a permanent or temporary injunction, against the owner or operator of such treatment works. In any such civil action the Administrator shall join the owner or operator of such source as a party to the action. Such action shall be brought in the district court of the United States in the district in which the treatment works is located. Such court shall have jurisdiction to restrain such violation and to require the owner or operator of the treatment works and the owner or operator of the source to take such action as may be necessary to come into compliance with this chapter. Notice of commencement of any such action shall be given to the State. Nothing in this subsection shall be construed to limit or prohibit any other authority the Administrator may have under this chapter.
- (g) Administrative penalties
  - (1) Violations
    Whenever on the basis of any information available -
    - (A) the Administrator finds that any person has violated section 1311, 1312, 1316, 1317, 1318, 1328, or 1345 of this

title, or has violated any permit condition or limitation implementing any of such sections in a permit issued under section 1342 of this title by the Administrator or by a State, or in a permit issued under section 1344 of this title by a State, or

- (B) the Secretary of the Army (hereinafter in this subsection referred to as the "Secretary") finds that any person has violated any permit condition or limitation in a permit issued under section 1344 of this title by the Secretary,

the Administrator or Secretary, as the case may be, may, after consultation with the State in which the violation occurs, assess a class I civil penalty or a class II civil penalty under this subsection.

- (2) Classes of penalties
  - (A) Class I

    The amount of a class I civil penalty under paragraph (1) may not exceed $10,000 per violation, except that the maximum amount of any class I civil penalty under this subparagraph shall not exceed $25,000. Before issuing an order assessing a civil penalty under this subparagraph, the Administrator or the Secretary, as the case may be, shall give to the person to be assessed such penalty written notice of the Administrator's or Secretary's proposal to issue such order and the opportunity to request, within 30 days of the date the notice is received by such person, a hearing on the proposed order. Such hearing shall not be subject to section 554 or 556 of title 5, but shall provide a reasonable opportunity to be heard and to present evidence.
  - (B) Class II

    The amount of a class II civil penalty under paragraph (1) may not exceed $10,000 per day for each day during which the violation continues; except that the maximum amount of any class II civil penalty under this subparagraph shall not exceed $125,000. Except as otherwise provided in this subsection, a class II civil penalty shall be assessed and collected in the same manner, and subject to the same provisions, as in the case of civil penalties assessed and collected after notice and opportunity for a hearing on the record in accordance with section 554 of title 5. The Administrator and the Secretary may issue rules for discovery procedures for hearings under this subparagraph.
- (3) Determining amount

  In determining the amount of any penalty assessed under this subsection, the Administrator or the Secretary, as the case may

be, shall take into account the nature, circumstances, extent and gravity of the violation, or violations, and, with respect to the violator, ability to pay, any prior history of such violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require. For purposes of this subsection, a single operational upset which leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation.

- (4) Rights of interested persons
  - (A) Public notice
    Before issuing an order assessing a civil penalty under this subsection the Administrator or Secretary, as the case may be, shall provide public notice of and reasonable opportunity to comment on the proposed issuance of such order.
  - (B) Presentation of evidence
    Any person who comments on a proposed assessment of a penalty under this subsection shall be given notice of any hearing held under this subsection and of the order assessing such penalty. In any hearing held under this subsection, such person shall have a reasonable opportunity to be heard and to present evidence.
  - (C) Rights of interested persons to a hearing
    If no hearing is held under paragraph (2) before issuance of an order assessing a penalty under this subsection, any person who commented on the proposed assessment may petition, within 30 days after the issuance of such order, the Administrator or Secretary, as the case may be, to set aside such order and to provide a hearing on the penalty. If the evidence presented by the petitioner in support of the petition is material and was not considered in the issuance of the order, the Administrator or Secretary shall immediately set aside such order and provide a hearing in accordance with paragraph (2)(A) in the case of a class I civil penalty and paragraph (2)(B) in the case of a class II civil penalty. If the Administrator or Secretary denies a hearing under this subparagraph, the Administrator or Secretary shall provide to the petitioner, and publish in the Federal Register, notice of and the reasons for such denial.
- (5) Finality of order
  An order issued under this subsection shall become final 30 days after its issuance unless a petition for judicial review is filed under paragraph (8) or a hearing is requested under paragraph (4)(C). If such a hearing is denied, such order shall become final 30 days after such denial.

- (6) Effect of order
  - (A) Limitation on actions under other sections
    Action taken by the Administrator or the Secretary, as the case may be, under this subsection shall not affect or limit the Administrator's or Secretary's authority to enforce any provision of this chapter; except that any violation -
    - (i) with respect to which the Administrator or the Secretary has commenced and is diligently prosecuting an action under this subsection,
    - (ii) with respect to which a State has commenced and is diligently prosecuting an action under a State law comparable
      to this subsection, or
    - (iii) for which the Administrator, the Secretary, or the State has issued a final order not subject to further judicial review and the violator has paid a penalty assessed under this subsection, or such comparable State law, as the case may be,
      shall not be the subject of a civil penalty action under subsection (d) of this section or section 1321(b) of this title or section 1365 of this title.
  - (B) Applicability of limitation with respect to citizen suits
    The limitations contained in subparagraph (A) on civil penalty actions under section 1365 of this title shall not apply with respect to any violation for which -
    - (i) a civil action under section 1365(a)(1) of this title has been filed prior to commencement of an action under this
      subsection, or
    - (ii) notice of an alleged violation of section 1365(a)(1) of this title has been given in accordance with section 1365(b)(1)(A) of this title prior to commencement of an action under this subsection and an action under section 1365(a)(1) of this title with respect to such alleged violation is filed before the 120th day after the date on which such notice is given.
- (7) Effect of action on compliance
  No action by the Administrator or the Secretary under this subsection shall affect any person's obligation to comply with any section of this chapter or with the terms and conditions of any permit issued pursuant to section 1342 or 1344 of this title.
- (8) Judicial review
  Any person against whom a civil penalty is assessed under this subsection or who commented on the proposed assessment of such

penalty in accordance with paragraph (4) may obtain review of such assessment -

- (A) in the case of assessment of a class I civil penalty, in the United States District Court for the District of Columbia or in the district in which the violation is alleged to have occurred, or
- (B) in the case of assessment of a class II civil penalty, in United States Court of Appeals for the District of Columbia Circuit or for any other circuit in which such person resides or transacts business,

by filing a notice of appeal in such court within the 30-day period beginning on the date the civil penalty order is issued and by simultaneously sending a copy of such notice by certified mail to the Administrator or the Secretary, as the case may be, and the Attorney General. The Administrator or the Secretary shall promptly file in such court a certified copy of the record on which the order was issued. Such court shall not set aside or remand such order unless there is not substantial evidence in the record, taken as a whole, to support the finding of a violation or unless the Administrator's or Secretary's assessment of the penalty constitutes an abuse of discretion and shall not impose additional civil penalties for the same violation unless the Administrator's or Secretary's assessment of the penalty constitutes an abuse of discretion.

- (9) Collection

  If any person fails to pay an assessment of a civil penalty -
  - (A) after the order making the assessment has become final, or
  - (B) after a court in an action brought under paragraph (8) has entered a final judgment in favor of the Administrator or the Secretary, as the case may be,

  the Administrator or the Secretary shall request the Attorney General to bring a civil action in an appropriate district court to recover the amount assessed (plus interest at currently prevailing rates from the date of the final order or the date of the final judgment, as the case may be). In such an action, the validity, amount, and appropriateness of such penalty shall not be subject to review. Any person who fails to pay on a timely basis the amount of an assessment of a civil penalty as described in the first sentence of this paragraph shall be required to pay, in addition to such amount and interest, attorneys fees and costs for collection proceedings and a quarterly nonpayment penalty for each quarter during which such failure to pay persists. Such nonpayment penalty shall be in an amount equal to 20 percent of

the aggregate amount of such person's penalties and nonpayment penalties which are unpaid as of the beginning of such quarter.

- (10) Subpoenas
  The Administrator or Secretary, as the case may be, may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, or documents in connection with hearings under this subsection. In case of contumacy or refusal to obey a subpoena issued pursuant to this paragraph and served upon any person, the district court of the United States for any district in which such person is found, resides, or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the administrative law judge or to appear and produce documents before the administrative law judge, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.
- (11) Protection of existing procedures
  Nothing in this subsection shall change the procedures existing on the day before February 4, 1987, under other subsections of this section for issuance and enforcement of orders by the Administrator.

A.2 Section 1342 National Pollutant Discharge Elimination System

United States Code
TITLE 33 - NAVIGATION AND NAVIGABLE WATERS
CHAPTER 26 - WATER POLLUTION PREVENTION AND CONTROL
SUBCHAPTER IV - PERMITS AND LICENSES

Sec. 1342. National pollutant discharge elimination system

- (a) Permits for discharge of pollutants
  - (1) Except as provided in sections 1328 and 1344 of this title, the Administrator may, after opportunity for public hearing issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding section 1311(a) of this title, upon condition that such discharge will meet either (A) all applicable requirements under sections 1311, 1312, 1316, 1317, 1318, and 1343 of this title, or (B) prior to the taking of necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this chapter.
  - (2) The Administrator shall prescribe conditions for such permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate.
  - (3) The permit program of the Administrator under paragraph (1) of this subsection, and permits issued thereunder, shall be subject to the same terms, conditions, and requirements as apply to a State permit program and permits issued thereunder under subsection (b) of this section.
  - (4) All permits for discharges into the navigable waters issued pursuant to section 407 of this title shall be deemed to be permits issued under this subchapter, and permits issued under this subchapter shall be deemed to be permits issued under section 407 of this title, and shall continue in force and effect for their term unless revoked, modified, or suspended in accordance with the provisions of this chapter.
  - (5) No permit for a discharge into the navigable waters shall be issued under section 407 of this title after October 18, 1972. Each application for a permit under section 407 of this title, pending on October 18, 1972, shall be deemed to be an application for a permit under this section. The Administrator shall authorize a State, which he determines has the capability of administering a permit program which will carry out the objectives of this chapter to issue permits for discharges into the navigable waters within the jurisdiction of such State. The Administrator may exercise the authority granted him by the preceding sentence only during the period which begins on October 18, 1972, and ends either on the

ninetieth day after the date of the first promulgation of guidelines required by section 1314(i)(2) of this title, or the date of approval by the Administrator of a permit program for such State under subsection (b) of this section, whichever date first occurs, and no such authorization to a State shall extend beyond the last day of such period. Each such permit shall be subject to such conditions as the Administrator determines are necessary to carry out the provisions of this chapter. No such permit shall issue if the Administrator objects to such issuance.

- (b) State permit programs
  At any time after the promulgation of the guidelines required by subsection (i)(2) of section 1314 of this title, the Governor of each State desiring to administer its own permit program for discharges into navigable waters within its jurisdiction may submit to the Administrator a full and complete description of the program it proposes to establish and administer under State law or under an interstate compact. In addition, such State shall submit a statement from the attorney general (or the attorney for those State water pollution control agencies which have independent legal counsel), or from the chief legal officer in the case of an interstate agency, that the laws of such State, or the interstate compact, as the case may be, provide adequate authority to carry out the described program. The Administrator shall approve each submitted program unless he determines that adequate authority does not exist:
  - (1) To issue permits which -
    - (A) apply, and insure compliance with, any applicable requirements of sections 1311, 1312, 1316, 1317, and 1343 of this title;
    - (B) are for fixed terms not exceeding five years; and
    - (C) can be terminated or modified for cause including, but not limited to, the following:
      - (i) violation of any condition of the permit;
      - (ii) obtaining a permit by misrepresentation, or failure to disclose fully all relevant facts;
      - (iii) change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;
    - (D) control the disposal of pollutants into wells;
  - (2)
    - (A) To issue permits which apply, and insure compliance with, all applicable requirements of section 1318 of this title; or
    - (B) To inspect, monitor, enter, and require reports to at least the same extent as required in section 1318 of this title;
  - (3) To insure that the public, and any other State the waters of which may be affected, receive notice of each application for a permit and to provide an opportunity for public hearing before a ruling on each such application;

- (4) To insure that the Administrator receives notice of each application (including a copy thereof) for a permit;
- (5) To insure that any State (other than the permitting State), whose waters may be affected by the issuance of a permit may submit written recommendations to the permitting State (and the Administrator) with respect to any permit application and, if any part of such written recommendations are not accepted by the permitting State, that the permitting State will notify such affected State (and the Administrator) in writing of its failure to so accept such recommendations together with its reasons for so doing;
- (6) To insure that no permit will be issued if, in the judgment of the Secretary of the Army acting through the Chief of Engineers, after consultation with the Secretary of the department in which the Coast Guard is operating, anchorage and navigation of any of the navigable waters would be substantially impaired thereby;
- (7) To abate violations of the permit or the permit program, including civil and criminal penalties and other ways and means of enforcement;
- (8) To insure that any permit for a discharge from a publicly owned treatment works includes conditions to require the identification in terms of character and volume of pollutants of any significant source introducing pollutants subject to pretreatment standards under section 1317(b) of this title into such works and a program to assure compliance with such pretreatment standards by each such source, in addition to adequate notice to the permitting agency of (A) new introductions into such works of pollutants from any source which would be a new source as defined in section 1316 of this title if such source were discharging pollutants, (B) new introductions of pollutants into such works from a source which would be subject to section 1311 of this title if it were discharging such pollutants, or (C) a substantial change in volume or character of pollutants being introduced into such works by a source introducing pollutants into such works at the time of issuance of the permit. Such notice shall include information on the quality and quantity of effluent to be introduced into such treatment works and any anticipated impact of such change in the quantity or quality of effluent to be discharged from such publicly owned treatment works; and
- (9) To insure that any industrial user of any publicly owned treatment works will comply with sections 1284(b), 1317, and 1318 of this title.

- (c) Suspension of Federal program upon submission of State program; withdrawal of approval of State program; return of State program to Administrator
  - (1) Not later than ninety days after the date on which a State has submitted a program (or revision thereof) pursuant to subsection (b) of this section, the Administrator shall suspend the issuance of permits under subsection (a) of this section as to those discharges subject to such program unless he

determines that the State permit program does not meet the requirements of subsection (b) of this section or does not conform to the guidelines issued under section 1314(i)(2) of this title. If the Administrator so determines, he shall notify the State of any revisions or modifications necessary to conform to such requirements or guidelines.

- (2) Any State permit program under this section shall at all times be in accordance with this section and guidelines promulgated pursuant to section 1314(i)(2) of this title.
- (3) Whenever the Administrator determines after public hearing that a State is not administering a program approved under this section in accordance with requirements of this section, he shall so notify the State and, if appropriate corrective action is not taken within a reasonable time, not to exceed ninety days, the Administrator shall withdraw approval of such program. The Administrator shall not withdraw approval of any such program unless he shall first have notified the State, and made public, in writing, the reasons for such withdrawal.
- (4) Limitations on partial permit program returns and withdrawals. - A State may return to the Administrator administration, and the Administrator may withdraw under paragraph (3) of this subsection approval, of -
  - (A) a State partial permit program approved under subsection (n)(3) of this section only if the entire permit program being administered by the State department or agency at the time is returned or withdrawn; and
  - (B) a State partial permit program approved under subsection (n)(4) of this section only if an entire phased component of the permit program being administered by the State at the time is returned or withdrawn.

- (d) Notification of Administrator
  - (1) Each State shall transmit to the Administrator a copy of each permit application received by such State and provide notice to the Administrator of every action related to the consideration of such permit application, including each permit proposed to be issued by such State.
  - (2) No permit shall issue (A) if the Administrator within ninety days of the date of his notification under subsection (b)(5) of this section objects in writing to the issuance of such permit, or
    - (B) if the Administrator within ninety days of the date of transmittal of the proposed permit by the State objects in writing to the issuance of such permit as being outside the guidelines and requirements of this chapter. Whenever the Administrator objects to the issuance of a permit under this paragraph such written objection shall contain a statement of the reasons for such objection and the effluent limitations and conditions which such permit would include if it were issued by the Administrator.

- (3) The Administrator may, as to any permit application, waive paragraph (2) of this subsection.
- (4) In any case where, after December 27, 1977, the Administrator, pursuant to paragraph (2) of this subsection, objects to the issuance of a permit, on request of the State, a public hearing shall be held by the Administrator on such objection. If the State does not resubmit such permit revised to meet such objection within 30 days after completion of the hearing, or, if no hearing is requested within 90 days after the date of such objection, the Administrator may issue the permit pursuant to subsection (a) of this section for such source in accordance with the guidelines and requirements of this chapter.

- (e) Waiver of notification requirement
  In accordance with guidelines promulgated pursuant to subsection (i)(2) of section 1314 of this title, the Administrator is authorized to waive the requirements of subsection (d) of this section at the time he approves a program pursuant to subsection (b) of this section for any category (including any class, type, or size within such category) of point sources within the State submitting such program.
- (f) Point source categories
  The Administrator shall promulgate regulations establishing categories of point sources which he determines shall not be subject to the requirements of subsection (d) of this section in any State with a program approved pursuant to subsection (b) of this section. The Administrator may distinguish among classes, types, and sizes within any category of point sources.
- (g) Other regulations for safe transportation, handling, carriage, storage, and stowage of pollutants
  Any permit issued under this section for the discharge of pollutants into the navigable waters from a vessel or other floating craft shall be subject to any applicable regulations promulgated by the Secretary of the department in which the Coast Guard is operating, establishing specifications for safe transportation, handling, carriage, storage, and stowage of pollutants.
- (h) Violation of permit conditions; restriction or prohibition upon introduction of pollutant by source not previously utilizing treatment works
  In the event any condition of a permit for discharges from a treatment works (as defined in section 1292 of this title) which is publicly owned is violated, a State with a program approved under subsection (b) of this section or the Administrator, where no State program is approved or where the Administrator determines pursuant to section 1319(a) of this title that a State with an approved program has not commenced appropriate enforcement action with respect to such permit, may proceed in a court of competent jurisdiction to restrict or prohibit the introduction of any pollutant into such treatment works by a source not utilizing such treatment works prior to the finding that such condition was violated.

- (i) Federal enforcement not limited
  Nothing in this section shall be construed to limit the authority of the Administrator to take action pursuant to section 1319 of this title.
  - (j) Public information
    A copy of each permit application and each permit issued under this section shall be available to the public. Such permit application or permit, or portion thereof, shall further be available on request for the purpose of reproduction.
  - (k) Compliance with permits
    Compliance with a permit issued pursuant to this section shall be deemed compliance, for purposes of sections 1319 and 1365 of this title, with sections 1311, 1312, 1316, 1317, and 1343 of this title, except any standard imposed under section 1317 of this title for a toxic pollutant injurious to human health. Until December 31, 1974, in any case where a permit for discharge has been applied for pursuant to this section, but final administrative disposition of such application has not been made, such discharge shall not be a violation of (1) section 1311, 1316, or 1342 of this title, or
    - (2) section 407 of this title, unless the Administrator or other plaintiff proves that final administrative disposition of such application has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application. For the 180-day period beginning on October 18, 1972, in the case of any point source discharging any pollutant or combination of pollutants immediately prior to such date which source is not subject to section 407 of this title, the discharge by such source shall not be a violation of this chapter if such a source applies for a permit for discharge pursuant to this section within such 180-day period.
  - (l) Limitation on permit requirement
    - (1) Agricultural return flows
      The Administrator shall not require a permit under this section for discharges composed entirely of return flows from irrigated agriculture, nor shall the Administrator directly or indirectly, require any State to require such a permit.
    - (2) Stormwater runoff from oil, gas, and mining operations
      The Administrator shall not require a permit under this section, nor shall the Administrator directly or indirectly require any State to require a permit, for discharges of stormwater runoff from mining operations or oil and gas exploration, production, processing, or treatment operations or transmission facilities, composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for

collecting and conveying precipitation runoff and which are not contaminated by contact with, or do not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations.

- (m) Additional pretreatment of conventional pollutants not required
  To the extent a treatment works (as defined in section 1292 of this title) which is publicly owned is not meeting the requirements of a permit issued under this section for such treatment works as a result of inadequate design or operation of such treatment works, the Administrator, in issuing a permit under this section, shall not require pretreatment by a person introducing conventional pollutants identified pursuant to section 1314(a)(4) of this title into such treatment works other than pretreatment required to assure compliance with pretreatment standards under subsection (b)(8) of this section and section 1317(b)(1) of this title. Nothing in this subsection shall affect the Administrator's authority under sections 1317 and 1319 of this title, affect State and local authority under sections 1317(b)(4) and 1370 of this title, relieve such treatment works of its obligations to meet requirements established under this chapter, or otherwise preclude such works from pursuing whatever feasible options are available to meet its responsibility to comply with its permit under this section.
- (n) Partial permit program
  - (1) State submission
    The Governor of a State may submit under subsection (b) of this section a permit program for a portion of the discharges into the navigable waters in such State.
  - (2) Minimum coverage
    A partial permit program under this subsection shall cover, at a minimum, administration of a major category of the discharges into the navigable waters of the State or a major component of the permit program required by subsection (b) of this section.
  - (3) Approval of major category partial permit programs
    The Administrator may approve a partial permit program covering administration of a major category of discharges under this subsection if -
    - (A) such program represents a complete permit program and
      covers all of the discharges under the jurisdiction of a department or agency of the State; and
    - (B) the Administrator determines that the partial program represents a significant and identifiable part of the State program required by subsection (b) of this section.

- (4) Approval of major component partial permit programs
  The Administrator may approve under this subsection a partial and phased permit program covering administration of a major component (including discharge categories) of a State permit program required by subsection (b) of this section if -
  - (A) the Administrator determines that the partial program represents a significant and identifiable part of the State program required by subsection (b) of this section; and
  - (B) the State submits, and the Administrator approves, a plan
    for the State to assume administration by phases of the remainder of the State program required by subsection (b) of
    this section by a specified date not more than 5 years after submission of the partial program under this subsection and agrees to make all reasonable efforts to assume such administration by such date.

- (o) Anti-backsliding
  - (1) General prohibition
    In the case of effluent limitations established on the basis of subsection (a)(1)(B) of this section, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 1314(b) of this title subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit. In the case of effluent limitations established on the basis of section 1311(b)(1)(C) or section 1313(d) or (e) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313(d)(4) of this title.
  - (2) Exceptions
    A permit with respect to which paragraph (1) applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant if -
    - (A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify
      the application of a less stringent effluent limitation;
    - (B)
      - (i) information is available which was not available at
        the time of permit issuance (other than revised

regulations,
guidance, or test methods) and which would have justified the
application of a less stringent effluent limitation at the time
of permit issuance; or

- (ii) the Administrator determines that technical mistakes or
mistaken interpretations of law were made in issuing the permit
under subsection (a)(1)(B) of this section;

- (C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which
there is no reasonably available remedy;
- (D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n),
or 1326(a) of this title; or
- (E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities
but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of
pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the
time of permit renewal, reissuance, or modification).

Subparagraph (B) shall not apply to any revised waste load allocations or any alternative grounds for translating water quality standards into effluent limitations, except where the cumulative effect of such revised allocations results in a decrease in the amount of pollutants discharged into the concerned waters, and such revised allocations are not the result
of a discharger eliminating or substantially reducing its discharge of pollutants due to complying with the requirements of
this chapter or for reasons otherwise unrelated to water quality.

        - (3) Limitations
          In no event may a permit with respect to which paragraph (1) applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 1313 of this title applicable to such waters.
    - (p) Municipal and industrial stormwater discharges
        - (1) General rule
          Prior to October 1, 1994, the Administrator or the State (in the case of a permit program approved under this section) shall not require a permit under this section for discharges composed entirely of stormwater.
        - (2) Exceptions
          Paragraph (1) shall not apply with respect to the following stormwater discharges:
            - (A) A discharge with respect to which a permit has been issued under this section before February 4, 1987.
            - (B) A discharge associated with industrial activity.
            - (C) A discharge from a municipal separate storm sewer system
              serving a population of 250,000 or more.
            - (D) A discharge from a municipal separate storm sewer system
              serving a population of 100,000 or more but less than 250,000.
            - (E) A discharge for which the Administrator or the State, as the case may be, determines that the stormwater discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.
        - (3) Permit requirements
            - (A) Industrial discharges
              Permits for discharges associated with industrial activity shall meet all applicable provisions of this section and section 1311 of this title.
            - (B) Municipal discharge
              Permits for discharges from municipal storm sewers -

- (i) may be issued on a system- or jurisdiction-wide basis;

- (ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and
- (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.
    - (4) Permit application requirements
        - (A) Industrial and large municipal discharges
          Not later than 2 years after February 4, 1987, the Administrator shall establish regulations setting forth the permit application requirements for stormwater discharges described in paragraphs (2)(B) and (2)(C). Applications for permits for such discharges shall be filed no later than 3 years after February 4, 1987. Not later than 4 years after February 4, 1987, the Administrator or the State, as the case may be, shall issue or deny each such permit. Any such permit shall provide for compliance as expeditiously as practicable, but in no event later than 3 years after the date of issuance of such permit.
        - (B) Other municipal discharges
          Not later than 4 years after February 4, 1987, the Administrator shall establish regulations setting forth the permit application requirements for stormwater discharges described in paragraph (2)(D). Applications for permits for such discharges shall be filed no later than 5 years after February 4, 1987. Not later than 6 years after February 4, 1987, the Administrator or the State, as the case may be, shall issue or deny each such permit. Any such permit shall provide for compliance as expeditiously as practicable, but in no event later than 3 years after the date of issuance of such permit.
    - (5) Studies
      The Administrator, in consultation with the States, shall conduct a study for the purposes of -
        - (A) identifying those stormwater discharges or classes of stormwater discharges for which permits are not required pursuant to paragraphs (1) and (2) of this subsection;
        - (B) determining, to the maximum extent practicable, the nature and extent of pollutants in such discharges; and
        - (C) establishing procedures and methods to control stormwater discharges to the extent necessary to mitigate impacts on water quality.

          Not later than October 1, 1988, the Administrator shall submit to

Congress a report on the results of the study described in subparagraphs (A) and (B). Not later than October 1, 1989, the Administrator shall submit to Congress a report on the results of the study described in subparagraph (C).

- (6) Regulations
  Not later than October 1, 1993, the Administrator, in consultation with State and local officials, shall issue regulations (based on the results of the studies conducted under paragraph (5)) which designate stormwater discharges, other than those discharges described in paragraph (2), to be regulated to protect water quality and shall establish a comprehensive program to regulate such designated sources. The program shall, at a minimum, (A) establish priorities, (B) establish requirements for State stormwater management programs, and (C) establish expeditious deadlines. The program may include performance standards, guidelines, guidance, and management practices and treatment requirements, as appropriate.

Appendix B

FEDERAL SENTENCING GUIDELINES[275]

B.1 Knowing Endangerment

§2Q1.1. Knowing Endangerment Resulting From Mishandling Hazardous or Toxic Substances, Pesticides or Other Pollutants

(a) Base Offense Level: 24

Commentary

Statutory Provisions: 33 U.S.C. § 1319(c)(3); 42 U.S.C. § 6928(e).

Application Note:

1. If death or serious bodily injury resulted, an upward departure may be warranted. See Chapter Five, Part K (Departures).

Background: This section applies to offenses committed with knowledge that the violation placed another person in imminent danger of death or serious bodily injury.

Historical Note: Effective November 1, 1987.

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[275] Source: United States Sentencing Commission, *2000 Federal Sentencing Guideline Manual*, November 2000.

B.2 Mishandling of Hazardous or Toxic Substances

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§2Q1.2. Mishandling of Hazardous or Toxic Substances or Pesticides; Recordkeeping, Tampering, and Falsification; Unlawfully Transporting Hazardous Materials in Commerce

(a) Base Offense Level: 8

(b) Specific Offense Characteristics

(1) (A) If the offense resulted in an ongoing, continuous, or repetitive discharge, release, or emission of a hazardous or toxic substance or pesticide into the environment, increase by 6 levels; or

(B) if the offense otherwise involved a discharge, release, or emission of a hazardous or toxic substance or pesticide, increase by 4 levels.

(2) If the offense resulted in a substantial likelihood of death or serious bodily injury, increase by 9 levels.

(3) If the offense resulted in disruption of public utilities or evacuation of a community, or if cleanup required a substantial expenditure, increase by 4 levels.

(4) If the offense involved transportation, treatment, storage, or disposal without a permit or in violation of a permit, increase by 4 levels.

(5) If a recordkeeping offense reflected an effort to conceal a substantive environmental offense, use the offense level for the substantive offense.

(6) If the offense involved a simple recordkeeping or reporting violation only, decrease by 2 levels.

Commentary

Statutory Provisions: 7 U.S.C. §§ 136j-136l; 15 U.S.C. §§ 2614 and 2615; 33 U.S.C. §§ 1319(c)(1), (2), 1321(b)(5), 1517(b); 42 U.S.C. §§ 300h-2, 6928(d), 7413, 9603(b), (c), (d); 43 U.S.C. §§ 1350, 1816(a), 1822(b); 49 U.S.C. § 60123(d). For additional statutory provision(s), see Appendix A (Statutory Index).

Application Notes:

1. "Recordkeeping offense" includes both recordkeeping and reporting offenses. The term is to be broadly construed as including failure to report discharges, releases, or emissions where required; the giving of false information; failure to file other required

reports or provide necessary information; and failure to prepare, maintain, or provide records as prescribed.

2. "Simple recordkeeping or reporting violation" means a recordkeeping or reporting offense in a situation where the defendant neither knew nor had reason to believe that the recordkeeping offense would significantly increase the likelihood of any substantive environmental harm.

3. This section applies to offenses involving pesticides or substances designated toxic or hazardous at the time of the offense by statute or regulation. A listing of hazardous and toxic substances in the guidelines would be impractical. Several federal statutes (or regulations promulgated thereunder) list toxics, hazardous wastes and substances, and pesticides. These lists, such as those of toxic pollutants for which effluent standards are published under the Federal Water Pollution Control Act (e.g., 33 U.S.C. § 1317) as well as the designation of hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act (e.g., 42 U.S.C. § 9601(14)), are revised from time to time. "Toxic" and "hazardous" are defined differently in various statutes, but the common dictionary meanings of the words are not significantly different.

4. Except when the adjustment in subsection (b)(6) for simple recordkeeping offenses applies, this section assumes knowing conduct. In cases involving negligent conduct, a downward departure may be warranted.

5. Subsection (b)(1) assumes a discharge or emission into the environment resulting in actual environmental contamination. A wide range of conduct, involving the handling of different quantities of materials with widely differing propensities, potentially is covered. Depending upon the harm resulting from the emission, release or discharge, the quantity and nature of the substance or pollutant, the duration of the offense and the risk associated with the violation, a departure of up to two levels in either direction from the offense levels prescribed in these specific offense characteristics may be appropriate.

6. Subsection (b)(2) applies to offenses where the public health is seriously endangered. Depending upon the nature of the risk created and the number of people placed at risk, a departure of up to three levels upward or downward may be warranted. If death or serious bodily injury results, a departure would be called for. See Chapter Five, Part K (Departures).

7. Subsection (b)(3) provides an enhancement where a public disruption, evacuation or cleanup at substantial expense has been required. Depending upon the nature of the contamination involved, a departure of up to two levels either upward or downward could be warranted.

8. Subsection (b)(4) applies where the offense involved violation of a permit, or where there was a failure to obtain a permit when one was required. Depending upon the nature and quantity of the substance involved and the risk associated with the offense, a departure of up to two levels either upward or downward may be warranted.

9. Where a defendant has previously engaged in similar misconduct established by a civil adjudication or has failed to comply with an administrative order, an upward departure may be warranted. See §4A1.3 (Adequacy of Criminal History Category).

Background: This section applies both to substantive violations of the statute governing the handling of pesticides and toxic and hazardous substances and to recordkeeping offenses. The first four specific offense characteristics provide enhancements when the offense involved a substantive violation. The last two specific offense characteristics apply to recordkeeping offenses. Although other sections of the guidelines generally prescribe a base offense level of 6 for regulatory violations, §2Q1.2 prescribes a base offense level of 8 because of the inherently dangerous nature of hazardous and toxic substances and pesticides. A decrease of 2 levels is provided, however, for "simple recordkeeping or reporting violations" under §2Q1.2(b)(6).

Historical Note: Effective November 1, 1987. Amended effective November 1, 1993 (see Appendix C, amendment 481); November 1, 1997 (see Appendix C, amendment 553).

B.3 Mishandling of Other Environmental Pollutants

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§2Q1.3. Mishandling of Other Environmental Pollutants; Recordkeeping, Tampering, and Falsification

(a) Base Offense Level: 6

(b) Specific Offense Characteristics

(1) (A) If the offense resulted in an ongoing, continuous, or repetitive discharge, release, or emission of a pollutant into the environment, increase by 6 levels; or

(B) if the offense otherwise involved a discharge, release, or emission of a pollutant, increase by 4 levels.

(2) If the offense resulted in a substantial likelihood of death or serious bodily injury, increase by 11 levels.

(3) If the offense resulted in disruption of public utilities or evacuation of a community, or if cleanup required a substantial expenditure, increase by 4 levels.

(4) If the offense involved a discharge without a permit or in violation of a permit, increase by 4 levels.

(5) If a recordkeeping offense reflected an effort to conceal a substantive environmental offense, use the offense level for the substantive offense.

Commentary

Statutory Provisions: 33 U.S.C. §§ 403, 406, 407, 411, 1319(c)(1), (c)(2), 1415(b), 1907, 1908; 42 U.S.C. § 7413. For additional statutory provision(s), see Appendix A (Statutory Index).

Application Notes:

1. "Recordkeeping offense" includes both recordkeeping and reporting offenses. The term is to be broadly construed as including failure to report discharges, releases, or emissions where required; the giving of false information; failure to file other required reports or provide necessary information; and failure to prepare, maintain, or provide records as prescribed.

2. If the offense involved mishandling of nuclear material, apply §2M6.2 (Violation of Other Federal Atomic Energy Agency Statutes, Rules, and Regulations) rather than this guideline.

3. The specific offense characteristics in this section assume knowing conduct. In cases involving negligent conduct, a downward departure may be warranted.

4. Subsection (b)(1) assumes a discharge or emission into the environment resulting in actual environmental contamination. A wide range of conduct, involving the handling of different quantities of materials with widely differing propensities, potentially is covered. Depending upon the harm resulting from the emission, release or discharge, the quantity and nature of the substance or pollutant, the duration of the offense and the risk associated with the violation, a departure of up to two levels in either direction from that prescribed in these specific offense characteristics may be appropriate.

5. Subsection (b)(2) applies to offenses where the public health is seriously endangered. Depending upon the nature of the risk created and the number of people placed at risk, a departure of up to three levels upward or downward may be warranted. If death or serious bodily injury results, a departure would be called for. See Chapter Five, Part K (Departures).

6. Subsection (b)(3) provides an enhancement where a public disruption, evacuation or cleanup at substantial expense has been required. Depending upon the nature of the contamination involved, a departure of up to two levels in either direction could be warranted.

7. Subsection (b)(4) applies where the offense involved violation of a permit, or where there was a failure to obtain a permit when one was required. Depending upon the nature and quantity of the substance involved and the risk associated with the offense, a departure of up to two levels in either direction may be warranted.

8. Where a defendant has previously engaged in similar misconduct established by a civil adjudication or has failed to comply with an administrative order, an upward departure may be warranted. See §4A1.3 (Adequacy of Criminal History Category).

Background: This section parallels §2Q1.2 but applies to offenses involving substances which are not pesticides and are not designated as hazardous or toxic.

Historical Note: Effective November 1, 1987. Amended effective November 1, 1989 (see Appendix C, amendment 205).

Appendix C

OPTIMAL ENFORCEMENT

WITH A VARIABLE PROBABILITY OF DETECTION

C.1 Optimal Enforcement with a Variable Probability of Detection

In this second scenario, as before, first are considered fines, then imprisonment, and finally a combination of the two sanctions. This will allow to have a comprehensive understanding of the solution of the enforcement problem.

C.1.1 Strict Liability

C.1.1.1 Fines Only

When expenditures on enforcement can vary, and individuals are risk neutral, basically, there are many possibilities of combining fine and probability of detection in order to maintain the desirable level of deterrence. In this contest, society would desire to employ the highest possible fine and a correspondingly low probability of detection with the purpose of minimize on the expenditures. Polinsky and Shavell have demonstrated that the optimal probability of detection is such that the expected fine is less than harm, $p(e^*)f < h$, that is to say that some extent of underdeterrence is desirable.

When individuals are risk averse, the optimal fine generally is not at its maximum level.[276] In fact, the use of a very high fine would impose a significant risk-bearing cost on individuals who commit the criminal activity and fines become a socially costly

[276] See Polinsky and Shavell, " in which is analyzed the point that the optimal fine may be less than

sanction rather than a simply reallocation of wealth.[277] That is why, if individuals are risk averse, it's more efficient to use lower fine and higher probability of detection, even though this raises the total enforcement costs.

C.1.1.2 Imprisonment Only

When the expenditures on enforcement are variable, and in the simplest case in which individuals are risk neutrals in imprisonment, the optimal imprisonment term is at its maximum level.[278] So, if the imprisonment term is enlarged and the probability of detection is lowered in order to maintain the expected sanction constant, the individual actions and/or the costs of imposing imprisonment are not affected at all (by construction, the expected term of imprisonment is the same), but enforcement expenditures go down.

When individuals are risk averse in imprisonment, the optimal imprisonment term should be increased, and the probability of detection correspondingly lowered. Therefore, the society's enforcement expenditures could be considerably minimized since the public costs of imposing imprisonment sanctions go down because the expected imprisonment term decreases.

When individuals are risk preferring in imprisonment, conversely, the optimal sanction may be smaller than the maximum level. When the sanction is made higher, the probability of detection that keep deterrence constant can't be lowered in proportional way, denoting that the expected imprisonment term increases. Given that the higher cost

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maximal when individuals are risk averse.

[277] See, A.M. Polinsky and S. Shavell, "*The Economic Theory of Public Enforcement of Law,*" Journal of Economic Literature, Vol. XXXVIII, March 2000, pp. 45-74.

[278] Note that this is the same result that we observed for the optimal fine. When individuals are risk neutral

for imposing imprisonment sanction might exceed the reduction in the total enforcement expenditures, resulting from a lower probability, the optimal prison term might not be maximal. An advantage of lowering the probability of detection is that this involves reductions in enforcement expenditures, while lowering in deterrence implicates no effects on social welfare in terms of gains and harm. Lowering the probability also tends to reduce the costs of imposing imprisonment sanctions because a minor amount of violators are captured.

C.1.1.3 Fines and Imprisonment

When the expenditures on enforcement are considered variable, and fines and imprisonment are used jointly and the probability is chosen optimally, the optimal imprisonment sanction may well not be maximal, even if individuals are risk neutral or risk averse in imprisonment. In fact, assuming that individuals are risk neutral in both sanctions, imprisonment and fines, if the imprisonment term is raised and the probability of detection is lowered in order to keep the expected imprisonment term constant, deterrence decreases because the expected fine goes down. Consequently, if the objective is to maintain deterrence, the probability can't decrease proportionally. But this shows than the expected imprisonment term and the relative costs of imposing it are higher than before. So, only if the reduction in enforcement cost is massive, it is socially desirable to raise the imprisonment sanction. Even though it is more advantageous to rise the imprisonment term and to lower the probability when individuals are risk averse in

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in fines, the optimal fine is at its maximum level.

imprisonment, perhaps, it is still not enough to rise the imprisonment term to its maximum level.[279] That is why, if fines and imprisonment are used together and the probability of detection is allowed to vary, the optimal imprisonment term may not be maximal.

C.1.2 Fault-Based Liability

When expenditures on enforcement are considerate a policy instrument, and as they are allowed to vary, the least expensive way to accomplish compliance with $\hat{g}$ is equal to the highest possible sanction and the lowest probability of detection. The cost of setting the probability is minimized by using the maximal sanction and an equally low probability.

When expenditures on enforcement are variable, negligence rule has the advantage over strict liability that costly sanctions are not imposed, if no mistakes occur. So, when the probability of detection is a policy instrument, there is an additional benefit resulting in lower enforcement expenditures than under strict liability. Explicitly, because sanctions are not imposed under the negligence rule, it is more efficient to use high sanctions, which consent to use a reasonably low probability of detection.

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[279] See Shavell, "*Specific versus general Enforcement,*" Journal of Political Economics, 1991.

Table C.1

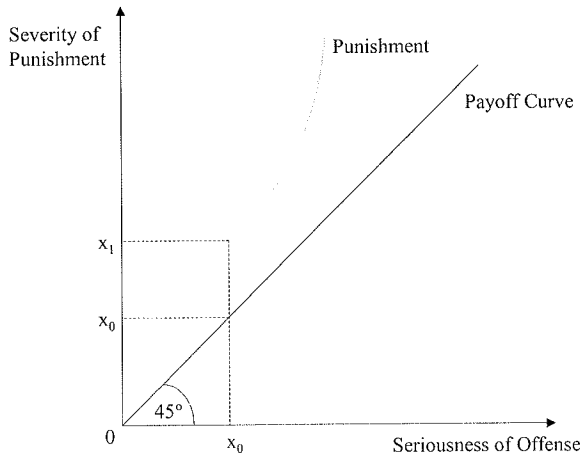
Variable Probability of Detection and Risk Neutral Individuals

	Strict Liability	*Negligence*
Fines	highest possible fine associated with a low probability of detection	the least expensive way to accomplish compliance with $\hat{g}$ is to use the highest possible sanction with the lowest probability of detection
Imprisonment	The optimal term of imprisonment is at its maximum	in negligence rule costly sanctions are not actually imposed
Both	the optimal imprisonment may not be maximal	it is opportune to use high sanctions, associated with a relatively low probability of detection

C.2 Implicit Assumptions of the Model

An important point, on which Polinsky and Shavell focused their attention, is that when enforcement is general the optimal sanction rises with the severity of the damages. If we think in terms that crimes can be ranked by seriousness, and punishments can be ranked by severity, it is possible to see that more severe punishments join more serious crimes.

Figure C.1



Source: Cooter R. Ulen T., Law and Economics, 1988

This principle is also valid if the sanction considered is imprisonment and if is in negligence regime.

In their basic analysis, Polinsky and Shavell have assumed that damages or harms will certainly result from the injurious activity. But, in many situations, harms will result only with a probability. However, the same analysis can be easily applied when harms are accidental. So the general conclusions of the analysis can be applied both when harms occur for sure, and when they occur accidentally. When harm is uncertain there is an additional matter that has to be addressed: a sanction can be imposed either when a dangerous act is committed or when there is an actual occurrence of harm.[280] The basic difference between act-based sanctions and harm-based sanctions may stay in the easiness with which they can be applied. In some cases, act-based sanctions may be easier to impose but can be hard to estimate the expected harm, in some other cases, harm-based sanctions may be more promptly applied and it can be relatively easy to determine the actual harm.

It was implicitly assumed that costs of imposing fines should raise the level of the fine and that if an individual who commit a harmful act is detected a fine would be imposed with certainty. Suppose that the probability of detection is fixed at p, that there is strict liability and that individuals are risk neutral. If there are no costs in imposing fines, the optimal fine is h/p, the harm divided by the probability of detection (as we have seen before). If the enforcement authority sustains a cost when a fine is imposed it is easy to observe that the optimal fine now is:

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[280] Act-based versus harm-based enforcement is discussed in Shavell, "*The Optimal Structure of Law*

$$f^* = h/p + k$$

where k = cost of imposing the fine

Therefore, if an individual commits a harmful act, one of the effects is that society has to bear not only the harm but also the cost k of imposing fines. If the fine is set in this way, the individual's expected fine is $h + pk$, which means that he will commit the harmful act if and only if his gain exceeds the expected total social cost of the act.

Suppose, however, that detection is followed by a second stage during which the state investigates and prosecutes an individual and a fine is imposed only with s probability. The investigation-prosecution costs are another type of variable enforcement cost because they depend on the number of individuals who commit harmful activities. Let

s = cost of the investigation-prosecution stage, and

q = probability of a fine to be imposed after the investigation-prosecution stage.

Now the probability that an individual will pay a fine is given by pq and the expected costs of imposing a fine become $ps + pqk$. The first term is the expected cost of the investigation-prosecution stage, and the second term is the expected cost of imposing the fine. Since an individual will commit a harmful activity if $g \geq pqf$, the optimal fine in this situation is:

$$f^* = h/pq + s/q + k$$

The optimal fine equals the costs sustained by society in consequence of the harmful activity divided by the probability that the violator will have to pay the fine. If the fine is

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Enforcement," Journal of Law and Economics, 36, pp.255-87, 1993.

calculated according to this rule, the expected fine will equal the expected social costs due to an individual committing a harmful activity.[281] In absence of investigation-prosecution costs, instead, the optimal fine was $f^* = h/p + k$.

Another important assumption was that individuals are subject to sanctions only if they are captured, but sometimes parties reveal their own violations to enforcement authorities. For example, firms often report violations of environmental regulations and even criminal notify the authorities of their activity. The basic reason why individuals can prefer self-reporting can be the lower sanction that might be applied.[282] It is socially advantageous also because self-reporting can lower enforcement costs and reduces risk (is advantageous if injurers are risk averse).

C.3 Extensions of the model

In the model was assumed that decision that an individual make is whether to act in a way that causes harm. In many cases, however, an individual also makes a choice about his activity level, in the sense that he chooses at what level to do the harmful act. The activity level socially optimal is such that the marginal utility deriving from doing the activity is just equal to the marginal expected damage caused by the activity. Will choices about the activity levels be socially correct under the two major forms of liability? The answer is that under strict liability, choices will be correct but under negligence rule not. Under strict liability, individuals will choose the optimal level of activity because they

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[281] See A.M. Polinsky and S. Shavell, "*Enforcement Costs and the Optimal Magnitude and Probability of Fines,*" Journal of Law and Economics, vol. XXXV, April 1992.

[282] The basic theory of self-reporting in public enforcement is analyzed in Kaplow and Shavell, "*Optimal Law Enforcement with Self-reporting of Behavior,*"Journal of Political economy, 102, pp. 583-606, 1994.

will pay for all the damages caused. Under negligence regime, individuals generally do not pay for the damage they cause because they will typically act so as not to be found at fault. That is why there is a tendency under negligence regime to choose an excessive level of activity, but not under strict liability. This represents an important advantage of strict liability over negligence.

C.3.1 Errors

In this model can be also considered the presence of the two classic types of errors. In fact, there is the possibility that individuals may be mistakenly found liable for acts they did not commit (a type I error), and that they may be exonerated when they did commit the acts (a type II error). For an individual who has been detected, let:

ε_1 = the probability that an individual who should be liable is by mistake found not liable (a type I error) and

ε_2 = the probability that an individual who should not be liable is by mistake found liable (a type II error).

In the simplest case, assuming liability is strict, the sanction considered is a fine, and individuals are risk neutrals, an individual will commit the harmful act if and only if his gain net of his expected fine, if he will commit it, exceeds what he bears if he will not commit it:

$$g - p(1-\varepsilon_1)f > -p\varepsilon_2 f$$

or equivalently, if and only if:

$$g > (1-\varepsilon_1-\varepsilon_2)pf$$

Both types of error reduce deterrence: $(1-\varepsilon_1-\varepsilon_2)pf$ is declining in bot ε_1 and ε_2. The first type of error reduces deterrence because it lowers the expected fine if an individual violates the law. The second type of error, liability by mistake, also reduces deterrence because it lowers the difference between the expected fine from violating the law and not violating it. Thus, since mistakes reduce the optimal level of deterrence, they tend to reduce social welfare. In particular, to achieve any level of deterrence, it may be necessary to increase the probability of detection or a costly sanction to counterbalance the effect of errors. Considering the optimal choice of fine, if the probability of detection is fixed, the reduction in deterrence caused by errors requires a higher fine to restore deterrence. If both the probability and the fine are policy instruments, the optimal fine remains maximal even with mistakes. However, if individuals are risk averse, the possibility of mistakes affects the optimal fine. When individuals are risk averse, generally the optimal fine is less than maximal: introducing the possibility of mistakes may increase the appeal of lowering the fine because individuals who don't violate the law are subject to the risk of having to pay a fine. Considering the optimal choice of imprisonment and the possibility of mistakes, the optimal term is maximal if individuals are risk neutral or risk averse, but is generally not maximal if they are risk preferring in imprisonment.

An important point is that legal errors can induce individuals to act in socially undesirable ways. In negligence rule, the possibility that an individual will be by mistake found negligent, even when he has met the standard of care, may induce him to exceed the standard in order to reduce this risk; as a result, he may take socially excessive care.

If the individual is risk averse this effect will be magnified.

C.3.2 Settlements

It was assumed that when a violator is detected he would be sanctioned in some way. As a matter of fact, before an individual is found liable during a trial, it is frequent to have an out-of-court settlement. Generally, the settlement takes the form of a plea bargain or agreement, an accord in which the violator pleads guilty in order to reduce charge. The Polinsky and Shavell analysis in considering how plea-bargain affect deterrence and the optimal system of public enforcement, and whether they are socially desirable, ended up with the following results. Settlements reduce deterrence: in fact, if violators desire to plea bargain is because the expected utility of sanctions is smaller for them. Settlements may results in sanctions that are not so adequate for harmful acts as would be for sanctions determined by the judge during the trial. Therefore, the distribution of sanctions may not be as good in deterring individuals.

C.3.3 Marginal Deterrence

Sometimes an individual may consider which of several harmful to commit, for example, whether to release only a small amount of pollutant into a river or a large amount. Particularly, such individual will commit less harmful acts rather than more harmful acts because its expected sanctions rise with harm. Deterrence of a more harmful act because its expected sanction exceeds that for a less harmful act is referred to as

marginal deterrence.[283] Other things being equal, it is socially desirable to create marginal deterrence, in order to deter those who are not deterred from committing harmful acts and to give them a reason to minimize the amount of harm that they will cause. This suggest that sanctions should rise with the magnitude of harm and, therefore, that most sanctions should be less than maximal. Marginal deterrence can be favored by increasing the probability of detection as well as the magnitude of sanctions. It is naturally achieved if the expected sanction equals harm for all levels of harm.

C.3.4 Incapacitation

The crucial point of the considered model is that the menace of sanctions reduces harm by discouraging individuals or by deterring them. But a society has a different way to reduce harm, that is incapacitating individuals, that is to say, remove them from positions in which they are able to cause harm. Actually, imprisonment is the primary incapacitative sanction, but there are several other possibilities: individuals can lose their drivers licenses, businesses can lose their right to operate in certain spheres. What follows is valid to incapacitative sanctions in general. The classical assumption is, as always, that the social goal is to maximize gains from acts less harm, and less the costs of enforcement and sanctions, including the costs of keeping individuals in prison. The optimal sanction is determined by comparing the expected harm, net of gains. If the expected net harm exceeds the costs of imprisonment, individual should be put in prison and kept there as long as this condition holds. It is important to take into consideration

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[283] See Polinsky and Shavell, "*The Economic Theory of Public Enforcement of Law*," 2000.

the fact that the expected harm caused by individuals declines with their age. So, it is often desirable to release older prisoners from jail. And it is also important to note that this logic might imply that a person should be put in jail even if he has not committed a crime. The optimal probability of detection is calculated using a very easy trade-off. Raising the probability will increase the number of captured offenders. The social gain will be, therefore, the difference between the individuals' expected net harm and the cost of their incapacitation. At the same time, raising the probability will increase enforcement costs. This explains why it is optimal to stop raising the probability when the marginal social gain is equal to the marginal cost of raising the probability.

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