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An Agricultural Law Research Article

Regulating Pesticide Pollution in California Under the 1986 Safe Drinking Water and Toxic Exposure Act (Proposition 65)

Part 2

by

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spraying or other applications is not regulated under the Clean Air Act.[167]

Another federal statute with potential jurisdiction over pesticide contamination is the federal Safe Drinking Water Act, ("SDWA").[168] Under the SDWA, the EPA must establish "maximum contaminant levels" ("MCLs") for certain toxic pollutants occurring in drinking water sources.[169] Under FIFRA, these pesticide MCLs can provide a contamination benchmark on which EPA may rely in assessing the need for special review or additional data requests.[170] The usefulness of SDWA to pesticide regulation is limited, however, for several reasons. First, the statute only applies to a limited number of listed pesticide contaminants; thus, it fails to reach many other known surface or ground water contaminants.[171] Second, the SDWA regulates public water systems by measuring concentrations at the tap and not the discharge point, and thus assumes a maximum aggregate total for each pesticide contaminant that is well above what any one discharger would be permitted to release were the MCL allocated among all activities in a given water system. Finally, in setting MCLs, the EPA must consider the economic feasibility of treatment technologies used by public water systems, without consideration of the existence of other technologies with the potential to reduce overall discharges into the water system.[172]

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category for agricultural operations, most currently used toxic pesticides are not listed as hazardous air pollutants under the Act.

167. Pesticides have also escaped regulation under CERCLA. *See* 42 U.S.C. § 9607(i) (1994) ("no person . . . may recover under the authority of this section for any response costs or damages resulting from the application of a pesticide product registered under [FIFRA]").

168. 42 U.S.C. § 330f (1994) et seq.

169. 42 U.S.C. § 300g(1)(A) (1994); 40 C.F.R. § 141.61(c) (2000); *see* BRAD HEAVNER, TOXICS ON TAP: PESTICIDES IN CALIFORNIA DRINKING WATER SOURCES 20 (1990). Under its own Safe Drinking Water Act, California has set MCLs for an additional four pesticides. *See* CAL. HEALTH & SAFETY CODE § 116,365 (West 2000); CAL. CODE REGS. tit. 22, § 64444 (2001). Pesticides for which MCLs have been set by federal and California authorities include such water contaminants as alachlor, atrazine, carbofuran, molinate, thiobencarb and 2,4-D. *Id.*

170. *See, e.g.*, 40 C.F.R. § 158.179(b) (2000) (detection of a pesticide in water at 10% of its MCL must be reported to EPA by registrants).

171. Many pesticides found in California surface or ground waters, including chlorpyrifos, diazinon, diuron, bromacil, methyl bromide, and carbaryl, have no MCLs under either the federal or state Safe Drinking Water Acts. *See* HEAVNER, *supra* note 169, at 11-22. The federal SDWA places the burden squarely on EPA, or state authorities, to establish MCLs, which, in a similar manner to FIFRA, slows implementation of the SDWA.

172. 42 U.S.C. §§ 300g-1(b)(3)(C), 300g-1(b)(4) (1994). Under these sections, MCLs shall be set as close as is feasible to "the level at which no known or anticipated

The Endangered Species Act ("ESA") also has potential regulatory impacts on pesticide use. At least one federal appellate court has held that the continued registration of a pesticide use that jeopardizes the survival of an endangered species constitutes an "unreasonable impact" upon the environment and thus should be canceled.[173] To address the possibility of such impacts, the EPA created the Endangered Species Protection Program in 1988 to protect endangered species from pesticide use. Despite the establishment of this program, however, the EPA has done little to protect endangered species from pesticide use over the last two decades.[174]

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adverse effects on the health of persons occur." "Feasible" is subsequently defined as the best treatment techniques or technology that is "available," under field conditions taking cost into account. 42 U.S.C. § 300g-1(b)(5) (1994).

173. *See, e.g.*, Defenders of Wildlife v. Administrator, Envtl. Prot. Agency, 882 F.2d 1294, 1298-1299 (8th Cir. 1989). This case also found that the registration of a harmful pesticide may constitute a "take" of an endangered species, requiring consultation under Section 7 of the ESA and an incidental take permit under Section 9. *Id.* at 1301-03. The court's decision is consistent with the history of FIFRA's 1972 amendments, which were enacted in large part in response to the adverse effects of pesticides such as DDT on wildlife species. *See* BOSSO, *supra* note 80, at 109-42; Envtl. Def. Fund v. Envtl. Prot. Agency, 465 F.2d 528, 532 (D.C. Cir. 1972); Envtl. Def. Fund v. Envtl. Prot. Agency, 548 F.2d 998 (D.C. Cir. 1976). FIFRA regulations reflect this focus by specifically authorizing EPA to initiate special review for a pesticide that may pose a risk to the continued survival of an endangered species or adversely affect its critical habitat. 40 C.F.R. §§ 154.7(a)(4-5) (2000).

174. EPA's failure to protect endangered species under FIFRA is in large part due to lack of implementation. In 1991, for example, EPA issued "may affect" determinations under Section 7 of the ESA for only thirty-one pesticides out of the hundreds registered for use. *See* Endangered Species Protection Program May Affect Determinations, 56 Fed. Reg. 10,886 (1991). The Fish and Wildlife Service has yet to complete consultation, however, on a single pesticide used in agricultural applications. In 1993 USFWS issued a biological opinion for the 16 vertebrate control agents on the EPA list. *See* USFWS, BIOLOGICAL OPINION, MARCH, 1993: EFFECTS OF 16 VERTEBRATE CONTROL AGENTS ON THREATENED AND ENDANGERED SPECIES (1993) Thus, today the effects of agricultural pesticides on endangered species are largely unknown. *See, e.g.*, Final Rule to List the Topeka Shiner as Endangered, 63 Fed. Reg. 69,008, 69,014, (1998) ("many agricultural chemicals have yet to undergo section 7 consultation and the subsequent Environmental Protection Agency implementation of reasonable and prudent measures to minimize incidental take of listed species."). No doubt the federal lack of follow through on endangered species protection relates to a stated purpose of the Endangered Species Protection Program, "to be responsive to the needs of agricultural production in this country by developing a program that can be readily implemented without unnecessary burden on pesticide users." Endangered Species Act Program, 54 Fed. Reg. 27,984 (1989). In addition to politics, scientific uncertainty also plays a role in preventing protection. Unlike the immediate adverse impacts caused by the organochlorines on wildlife, for example, the impact of today's second and third generation pesticide products is more subtle and difficult to trace. *See, e.g.*, THEO COLBORN ET AL., OUR STOLEN FUTURE (1997); Sharon K. Taylor, Elizabeth S. Williams & Ken W. Mills, *Effects of Malathion on Disease Susceptibility in Woodhouse's Toads*, 35 J. OF WILDLIFE DISEASES 536 (1999); Carey & Bryant, *supra* note 119.

C. Pesticide Use and Regulation in California

In California, the Department of Pesticide Regulation ("DPR")[175] regulates pesticide use under delegated authority from FIFRA.[176] According to the California Food & Agriculture Code, pesticide regulation should protect public health and safety and the environment, assure agricultural workers safe working conditions, ensure proper labeling of pesticides and encourage less harmful alternatives for controlling pests.[177] Thus, a primary statutory directive for DPR is to eliminate the use of any pesticide that endangers the agricultural or non-agricultural environment.[178] To fulfill its statutory mandate, DPR is given broad authority to deny or cancel a registration for any pesticide that creates serious and uncontrollable adverse environmental impacts, even if the pesticide is registered under federal law.[179] As a condition of registration, the DPR may also place appropriate restrictions on the use of a pesticide, including limitations on the quantity, area, and manner of application.[180] Finally, DPR may designate certain pesticides as "restricted

175. DPR took over regulatory authority from the Department of Food and Agriculture in 1991 as part of the reorganization that created the California Environmental Protection Agency.

176. *See* 7 U.S.C. § 136v (1994). Under FIFRA, a state may not permit pesticide sales or uses that are barred under federal law, 7 U.S.C. § 136v(a) (1994), but may impose stricter regulations than those imposed under federal law. *See* Nat'l Agric. Chems. Ass'n v. Rominger, 500 F. Supp. 465, 469 (E.D. Cal. 1980). Under the 1996 Food Quality and Protection Act, however, a state must petition the EPA to set food tolerances stricter than federal standards. *See* 21 U.S.C. § 346a(n) (1996).

177. *See* CAL. FOOD & AGRIC. CODE § 11,501(a)-(f) (West 2001).

178. *See* CAL. FOOD & AGRIC. CODE § 12,824 (West 2001). State law defines "environment" broadly to include "the aggregate of all factors that influence the conditions of life in or about the state . . . which are affected by the use of pesticides." CAL. FOOD & AGRIC. CODE § 14,101 (West 2001). In addition to federal requirements, pesticides must be registered in California. *See* CAL. FOOD & AGRIC. CODE § 12,815 (West 2001). The registration period is 12 months, at which time renewals typically are freely granted. *See* CAL. FOOD & AGRIC. CODE § 12,817 (West 2001); *see also* CAL. CODE REGS. tit. 3, § 6,215 (2001); *see, e.g.*, Department of Pesticide Regulations, Notice of Proposed and Final Decisions, Jan. 3, 2000 (providing notice of DPR's monthly proposed decision to register pesticide products).

179. *See* CAL. FOOD & AGRIC. CODE §§ 12,825, 12,827.5 (West 2001). DPR may cancel or deny a pesticide registration for any of the following reasons: a) "serious uncontrollable adverse effects either within or outside the agricultural environment;" b) adverse environmental impacts outweigh the benefits received; c) less harmful alternatives exist; d) detrimental to beneficial vegetation, or to public health and safety when properly used; e) little value for the intended purpose; or f) false or misleading statements are made about the pesticide product. CAL. FOOD & AGRIC. CODE § 12,825(a)-(f) (West 2001).

180. *See* CAL. FOOD & AGRIC. CODE § 12,824 (West 2001). DPR may also establish specific criteria, including specific performance standards and tests, to evaluate whether a pesticide is having adverse effects on the environment. *Id.*

materials" if they present a danger of harming public health or the environment.[181]

Despite these expansive powers, neither DPR nor its agency predecessors have used the registration requirement as a means to reduce pesticide use in California.[182] Instead, pesticide use continues to rise in California, increasing 40% between the years 1991 to 1998.[183] As is true under FIFRA, the overall lack of data regarding the health effects and environmental fate of specific pesticides represents an enormous obstacle to more comprehensive risk assessment. To remedy this information gap, the state legislature passed the Birth Defect Prevention Act ("BDPA") in 1984. The BDPA requires DPR to inventory all pesticide active ingredients used in California and to assess any toxicological "data gaps" that exist for each ingredient.[184] The BDPA envisioned an orderly procession, in which data gaps would be filled by studies initiated by registrants or by the DPR at registrants' expense.[185] The failure of registrants to submit data on a timely basis, however, resulted in subsequent legislative amendments threatening to suspend any currently registered pesticide for which data gaps existed after March 30, 1996.[186] Despite this mandatory language, however, the BDPA has had no more success than the FIFRA reregistration process

181. CAL. FOOD & AGRIC. CODE § 14,004.5 (West 2001). Subject to limited exceptions, operators proposing to apply such "restricted" pesticides must obtain a permit from DPR, which limits uses to prevent potential injuries. *See* CAL. FOOD & AGRIC. CODE §§ 14,005, 14,006 (West 2001).

182. Annual registration renewal of pesticides in California is mostly automatic, with the exception of DPR's occasional request for additional information.

183. The overall use of pesticides during this time period was 1.5 *billion* pounds and the average annual increase was 7.2 million pounds. KEGLEY, ORME & NEUMEISTER, *supra* note 150, at 6. Pesticide sales increased an average of 12.4 million pounds per year during this time, indicating that actual use may be even higher. *Id.* ("The difference between reported pesticide sales and reported pesticide use shows that a significant fraction of pesticide use in California goes unreported.).

184. *See* CAL. FOOD & AGRIC. CODE § 13,121 *et seq.* (West 2001). "Data gaps" exist for any pesticide that has not been studied for adverse reproductive effects, chronic toxicity, mutagenic effects, neurotoxic effects, oncogenic (tumor-causing) effects, or teratogenic effects. *See* CAL. FOOD & AGRIC, CODE § 13,125(c) (West 2001). The BDPA required DPR's predecessor, the Department of Food and Agriculture (DFA), to identify 200 pesticide active ingredients for which the most significant data gaps occurred. CAL. FOOD & AGRIC. CODE § 13,127(a) (West 2001).

185. *See* CAL. FOOD & AGRIC. CODE § 13,127(a)-(f) (West 2001). California's Department of Pesticide Regulation originally not only had authority under the Act to fill data gaps by conducting its own toxicology, but also could assess the costs to the pesticide registrants. *See* CAL. FOOD & AGRIC. CODE § 13,127(c)(1) (West 2001). This authority has since been superseded by a discretionary statutory charge on registrants for delays in data submissions. *See* CAL. FOOD & AGRIC. CODE § 13,127.6 (West 2001).

186. *See* CAL. FOOD & AGRIC. CODE § 13,127.32 (West 2001).

in eliminating dangerous chemicals from use in California.[187] Similar to the pattern under FIFRA, the predictable outcome has been additional extensions of the statutory deadlines[188] and a tendency on the part of DPR to collect data rather than take regulatory action.[189]

In response to the perceived lack of information regarding the environmental fate of pesticides, the state legislature enacted two additional statutes to protect citizens from contamination to ground water and air.[190] To "prevent further pesticide pollution of the groundwater aquifers . . . which may be used for drinking water supplies," the legislature enacted the Pesticide Contamination Prevention Act ("PCPA") in 1985.[191] The Act requires that where a particular pesticide is found in groundwater as a result of normal agricultural use in accordance with state and federal laws, the state shall cancel the registration of that pesticide unless DPR finds that the levels of pesticide found in the groundwater are not harmful or can be reduced by

187. High risk pesticides used in California include the fumigants metam sodium, methyl bromide, chloropricrin, 1,2-dichloropropene (Telone) and sulfuryl fluoride, the fungicides maneb, captan, chlorothalonil and mancozeb, the herbicides diuron, paraquat dichloride, and molinate, and the insecticides chlorpyrifos, propargite and diazinon. Use of these pesticides increased significantly from 1991 to 1995 and has remained at high levels since that time. *See* KEGLEY, ORME & NEUMEISTER, *supra* note 150, at 20; JAMES LIEBMAN, RISING TOXIC TIDE: PESTICIDE USE IN CALIFORNIA, 1991-1995 (1997), *available at* http://www.igc.org/panna/risingtide/textoftide.html.

188. Deadlines for data submission or suspension were extended by legislative amendments in 1991 and 1996. *See* DEPARTMENT OF PESTICIDE REGULATION, CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, THE BIRTH DEFECT PREVENTION ACT OF 1984: EXECUTIVE SUMMARY OF THE JUNE 1999 REPORT TO THE LEGISLATURE (1999), *available at* http://www.cdpr.ca.gov/docs/dprdocs/sb950q&a/sb950rep99.htm; CAL. FOOD & AGRIC. CODE § 13,127.3 (West 2001) ("[E]xtension of time for submission of the required data."). Pesticides for which data gaps persist have been allowed continued registration under an exemption for qualified federally registered pesticides. *See* CAL. FOOD & AGRIC. CODE §§ 13,161-13,170 (West 2001).

189. DPR did not hesitate to approve the continued use of chlorpyrifos for household products, for example, despite studies that led to some chlorpyrifos uses being banned by EPA under FIFRA. *See supra* note 132 and accompanying discussion. Even where data gaps have been filled, questions remain regarding the limitations of standard toxicity testing in protecting public health and safety. *See supra* note 119 and accompanying discussion.

190. California also regulates food safety by incorporating federal tolerances for pesticide residues on food products while retaining authority to establish more stringent tolerances, through petition to EPA, where stricter standards are justified by compelling local conditions. *See* 21 U.S.C. § 346a(n)(5)(C)(i) (1996). California also has authority to require warnings about the presence of pesticide residues on any food products sold within the state. *See* 21 U.S.C. § 346a(n)(8) (1996).

191. CAL. FOOD & AGRIC. CODE § 13,141(g) (West 2001). Pesticide "pollution" is defined as the introduction of pesticide products "above a level, with an adequate margin of safety, that does not cause adverse health effects." CAL. FOOD & AGRIC. CODE § 13,142(j).

modifying the use of the pesticide so that such use will not "significantly diminish the margin of safety" required to avoid adverse health effects.[192]

To address the problem of pesticide contamination of air, the legislature established the Toxic Air Contaminant ("TAC") program in 1983.[193] Under the TAC program, DPR, in consultation with the state Air Resources Board and OEHHA, identifies certain pesticides that pose a present or potential hazard to human health as "toxic air contaminants."[194] In assessing whether a pesticide poses a potential hazard, the DPR shall consider a number of factors, including the levels of exposure that may cause or contribute to adverse health effects and the range of anticipated risks to humans.[195] A pesticide considered to be a toxic air contaminant shall be subject to additional control measures including, where appropriate, use restrictions or cancellation of registration.[196]

Notwithstanding these statutory mandates, pesticide regulation in California has been largely ineffective in preventing pesticide exposures to California citizens and to the

192. CAL. FOOD & AGRIC. CODE §§ 13,149-13,151 (West 2001). The Director of DPR has authority to overturn the subcommittee's recommendation to cancel a pesticide based on the Director's written determination that no pollution or threat of pollution exists. *See* CAL. FOOD & AGRIC. CODE § 13,150(d)(4) (West 2001).

193. The TAC program was established through two assembly bills, commonly referred together as AB 1807. *See* 1983 Cal. Stat. 1047, § 2; 1984 Cal. Stat. 1380, § 1.

194. CAL. FOOD & AGRIC. CODE §§ 14,021, 14,023(d) (West 2001). When it enacted the TAC program, the legislature was aware that DPR would be under political pressure not to list pesticides as TACs. For that reason, the initial legislation required DPR to incorporate as TACs the 34 pesticides identified as "Hazardous Air Pollutants" (HAPs) under the Clean Air Act. *See* CAL. FOOD & AGRIC. CODE § 14,021(b) (West 2001). Hazardous air pollutants were listed by Congress in the 1990 amendments to the federal Clean Air Act. *See* 42 U.S.C. § 7,412(b) (1994). The legislature intended for the TAC program to regulate and mitigate the effects of use of these federally listed pesticides through monitoring, establishment of standards, and, where appropriate, use restrictions or cancellations of registrations. *See* CAL. FOOD & AGRIC. CODE § 14,024 (West 2001). Despite the wishes of the legislature, however, DPR failed to conduct any of the monitoring required to enforce the statute. Instead, DPR claimed that the statute did not require such monitoring even though, as a result, HAP/TACs were not regulated under the TAC program for years. *See* Letter from DPR to The Honorable Fred Keeley, Assemblyman 8 (Apr. 16, 1997). DPR has since retreated from this untenable legal position. *See* Memo from Ronald Oshima, Department of Pesticide Regulation, to Doug Okumura, Department of Pesticide Regulation, *Procedures to Address the Status of Toxic Air Contaminant Candidates* 5 (Aug. 20, 1998) (stating that HAP/TACs would be included in TAC risk assessment and monitoring program).

195. *See* CAL. FOOD & AGRIC. CODE § 14,023(a) (West 2001).

196. *See* CAL. FOOD & AGRIC. CODE § 14,024 (West 2001).

environment.[197] As is true at the federal level, California's reliance on a license-based approach is a chief reason for this failure. Despite its authority to do so, DPR consistently has declined to impose more stringent restrictions on pesticide

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197. The 1985 PCPA, while initiating at least the beginnings of a state groundwater monitoring program for pesticide pollution, has not led to significant restrictions on groundwater contaminating pesticides used in California. *See* HEAVNER, *supra* note 171, at 30-33. A main problem with the PCPA has been DPR's failure to conduct comprehensive groundwater monitoring for the 63 pesticides listed on the Groundwater Protection List as likely to leach into groundwater. *Id.* at 32-33; *see also* WILLIAM PEASE ET AL., PESTICIDE CONTAMINATION OF GROUNDWATER IN CALIFORNIA 62-70 (1995).

The legislature's attempt through the TAC process to apply a more traditional regulatory approach to aerial drift of toxic pesticides also has mostly failed. Since the program's inception in 1983, DPR has listed only three pesticides as TACs, none of which are widely used in California. Two of these, ethyl and methyl parathion, have already been banned for most uses by the EPA. In comparison, over the same time period, the Air Resources Board listed 19 toxic chemicals as TACs. *See* CALIFORNIANS FOR PESTICIDE REFORM, POISONING THE AIR: AIRBORNE PESTICIDES IN CALIFORNIA 14-18 (1998) [hereinafter POISONING THE AIR]. As this report discusses, DPR published 4 different lists containing approximately 150 "candidate TACs" during this 15 year period, but listed only one chemical. In 1996, DPR published a list of 134 potential TAC pesticides, which were ranked according to the threat posed. *See* DEPARTMENT OF PESTICIDE REGULATION, CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, PESTICIDES FOR EVALUATION AS CANDIDATE TOXIC AIR CONTAMINANTS (1996), *available at* http://www.cdpr.ca.gov/docs/empm/pubs/tac/eh96-01.pdf. Since that time, however, DPR has listed only two pesticides as TACs. *See* Transcript of September 17, 1999 Meeting of the Scientific Review Panel, 142, *available at* www.arb.ca.gov/srp/mt091799.htm.

In evaluating pesticides, DPR has faced huge data gaps regarding pesticide exposures—information required for listing under the TAC program. *See* CAL. FOOD & AGRIC. CODE § 14,023(a) (West 2001). Rather than take the lead on creating such data, however, DPR has dragged its heels. DPR monitoring, conducted on contract by the Air Resources Board, has been sporadic and infrequent. The monitoring that has taken place has been criticized for failing to characterize the actual level of pesticide exposures to citizens living in rural communities. *See, e.g.*, Susan Kegley, *Critique of the Department of Pesticide Regulation's Phase One Lompoc Air Monitoring* (1999) (on file with author). Finally, even when monitoring has revealed relatively high levels of exposures, DPR has routinely failed to take any action. *See, e.g.*, AIR RESOURCES BOARD, CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, REPORT FOR THE APPLICATION AND AMBIENT AIR MONITORING OF CHLORPYRIFOS (AND THE OXON ANALOGUE) IN TULARE COUNTY DURING SPRING/SUMMER, 1996 (1998) (showing consistent detections of chlorpyrifos); Lynton Baker et al., *Ambient Air Concentrations of Pesticides in California*, 30 ENVTL. SCI. & TECH. 1356 (1996) (summarizing Air Resources Board air monitoring results, which indicate detections of numerous airborne pesticides, including dichloropropene, methyl bromide, and metam-sodium, at levels indicating public health concern); AIR RESOURCES BOARD, MOLINATE APPLICATION MONITORING REPORT; (1992) *available at* http://www.cdpr.ca.gov/cgi-bin/byteserver.pl/docs/empm/pubs/tac/tacpdfs/molinate.pdf (showing high levels of molinate in ambient air); *see also* James N. Seiber, Michael M. McChesney & James E. Woodrow, *Airborne Residues Resulting from Use of Methyl Parathion, Molinate and Thiobencarb on Rice in the Sacramento Valley, California*, 8 ENVTL. TOXICOLOGY & CHEMISTRY 577 (1989). Of the pesticides detected in these and many other reports and studies, only methyl parathion has been listed by DPR as a TAC.

registration than those that already exist under federal law.[198] Finally, despite DPR's authority under the BDPA to cancel pesticide registrations for lack of sufficient data, few registrations for current use pesticides have been canceled.[199]

California's dilemma in regulating pesticide pollution is illustrated by the recent efforts to control pesticide runoff to surface waters. Unlike the U.S.E.P.A. under the federal Clean Water Act, the State Water Resources Control Board maintains authority under California's Porter-Cologne Act to regulate non-point sources of water pollution, which include pesticide runoff.[200] Rather than exercising this authority, however, the regional boards have waived waste discharge requirements for agricultural sources of pesticide pollution, deferring instead to the regulatory oversight of DPR to control surface water contamination.[201]

Not surprisingly, DPR regulation has been largely ineffective. Multiple pesticides are often found in California's rivers and streams and toxic pulses of pesticides from stormwater and irrigation runoff are common occurrences.[202] In an attempt to

198. *See* Letter from Rudy Lapurga, Registration Specialist, Department of Pesticide Regulation, California Environmental Protection Agency, to Michael Graf, Altshuler, Berzon, Nussbaum, Berzon & Rubin (Dec. 10, 1999) (on file with the author).

199. See DEPARTMENT OF PESTICIDE REGULATION, *supra* note 188 (noting that of the 200 priority active pesticidal ingredients, only two with actively registered products had been suspended. Approximately 50 other ingredients were no longer registered in California.).

200. *See* CAL. WATER CODE §§ 13260, 13263 (West 1992) (establishing the authority of State Board to establish Waste Discharge Requirements for any source of contamination); Tahoe-Sierra Pres. Council v. State Water Res. Control Bd., 210 Cal. App. 3d 1421, 1432 (1989); 63 Op. Cal. Att'y Gen. 51, 56-57 (1980).

201. Under CAL. WATER CODE § 13269 (West 1992), regional boards may grant waivers to specific types of discharge where such waiver is not against the public interest. Since 1982, the Central Valley Regional Water Quality Control Board ("CVRWQCB") has waived WDRs for stormwater discharge, pesticide rinse waters from applicators, and irrigation return water. *See* CENTRAL VALLEY REGION, CALIFORNIA WATER QUALITY CONTROL BOARD, *supra* note 74, at IV-22.00-IV-23.00; Central Valley Region, California Water Quality Control Board, Resolution No. 82-036 (March 26, 1982). Recently enacted California law subjects all waivers to a 5-year duration, subject to renewal through a public hearing process. Waivers in effect on January 1, 2000 must be renewed or terminated by January 1, 2003. *See* 1999 Cal. Stat. 686 § 2 (amending sections 13269 and 13350 of the California Water Code). It is unclear whether the public hearing process requirement will alter the Board's previous conclusion that WDR waivers for pesticide runoff pollution are in the "public interest."

202. *See* HEAVNER, *supra* note 171, at 39; KEGLEY ET AL., *supra* note 150, at 39-44. The most commonly detected pesticides in California surface waters are atrazine, chlorpyrifos, carbofuran, diazinon, methidathion, molinate, simazine, cyanazine, bromacil, diuron, thiobencarb, metolachlor, and carbaryl. *Id*; Department of Pesticide Regulation, Preliminary Results of Acute and Chronic Toxicity Testing of Surface

remedy this situation, the State Water Resources Control Board has entered into cooperative agreements with DPR that envision eventual water quality regulation by the Regional Boards should DPR regulation prove insufficient to control pesticide discharges.[203] Thus far, however these agreements continue to focus on voluntary best management practices, which have failed to protect California's waters in the past.[204]

Eventually, the water quality requirements of the federal Clean Water Act will force water quality regulators to confront pesticide pollution directly. Under Section 303(d), California is required to establish Total Maximum Daily Loads ("TMDLs") for pollutants which cause the "impairment" of water bodies in California.[205] Currently, numerous water bodies in California, particularly those in the Central Valley, are considered water quality impaired due to pesticide contamination.[206] As pressure

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Water Monitored in the San Joaquin River Watershed, Winter 1998-1999, July 20, 1999, *available at* http://www.cdpr.ca.gov/docs/empm/pubs/ehapreps/154sacto.htm; DORENE MACCOY, KATHRYN L. CREPEAU & KATHRYN M. KUIVILA, DISSOLVED PESTICIDE DATA FOR THE SAN JOAQUIN RIVER AT VERNALIS AND THE SACRAMENTO RIVER AT SACRAMENTO, CALIFORNIA, 1991-1994 (1995).

203. *See* CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, CALIFORNIA PESTICIDE MANAGEMENT PLAN FOR WATER QUALITY (1997) [hereinafter PESTICIDE MANAGEMENT PLAN]; Management Agency Agreement Between the State Water Resources Control Board and the Department of Pesticide Regulation, (1997) (copy on file with author); Sacramento River Watershed Project: Scope of Work for Developing an Organophosphate Pesticide Management Plan for the Sacramento and Feather Rivers, June 28, 1999, *available at* http://www.sacriver.org/subcommittees/op/documents/DETSCO3b.html. [hereinafter *OP Management Plan for Surface Waters*].

204. The principle problem with best management practices has been their voluntary nature and inability to be enforced. *See, e.g.*, Debra L. Donahue, *The Untapped Potential of Clean Water Act Section 401*, 23 ECOLOGY L.Q. 201, 283-84 (1996). The Pesticide Management Plan envisions a four-staged management strategy for protecting surface waters focusing first on outreach, education, and self-regulating compliance with best management practices. If these voluntary measures fail, then DPR and agricultural commissioners may restrict pesticide materials or uses under their FIFRA and state authority. Only if the State or Regional Water Boards find, after conferring with DPR, that these measures are not reasonably protecting water quality does the Pesticide Management Plan allow for regulation of pesticides under the authority of the state Clean Water Act. *See* CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, *supra* note 203, at 15-18.

205. *See* 33 U.S.C. § 1313(d)(1)(C) (1994). Under this section, a TMDL shall be established at a level necessary to implement the applicable water quality standards with seasonal variation and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

206. The Central Valley Regional Water Quality Control Board 1998 Clean Water Act Section 303(d) List identifies numerous water bodies that are "impaired" due to pesticide pollutants, including diazinon, chlorpyrifos, DDT, carbofuran, malathion, methyl parathion, boron, aldrin, dieldrin, chlordane, endrin, heptachlor, heptachlor

mounts on California to establish and enforce TMDLs for pesticide pollutants, one may expect the SWRCB to adopt a more prominent role in regulating pesticide runoff.

Despite this promise, the potential effectiveness of the TMDL process in controlling pesticide pollution is also doubtful. As is true for risk assessment under FIFRA, the establishment and implementation of enforceable TMDL standards is a resource intensive, politically contentious process. To enforce standards, the regional boards must first conduct sufficient monitoring to establish that a water body is "impaired" due to a pesticide, identify the pesticide, then create a management plan which allocates "amounts" of discharge to the sources in the area, including point sources discharging pursuant to NPDES permits. At this time, no TMDL exists for any pesticide, nor are any currently scheduled to be established in the near future, despite a state obligation to adopt TMDLs that dates back to the late 1970s.[207]

The length and uncertainty of the TMDL process undermines its ability to force industry to consider non-chemical approaches to pest control. Even once pesticide TMDLs are established, the difficulties of implementation, dependant as always on budget and political considerations, raise further uncertainty regarding their eventual success in controlling pesticide pollution.[208] Similar to the chemical "leapfrogging" that occurs under FIFRA, by the time enforcement can occur in the TMDL process, pesticide users may have already switched to an equally toxic but less studied pesticide alternative for which no TMDL has been set, but which may pose as yet undiscovered risk to surface

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oxide, hexachlorocyclohexane, endosulfan and toxaphene. CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD, 1998 CLEAN WATER ACT SECTION 303(d) LIST (1998).

207. Under § 303(d) of the Clean Water Act, California was required to begin establishing TMDLs for "impaired" water bodies within 180 days after the EPA's identification of TMDL pollutants, which occurred on December 28, 1978. *See* 33 U.S.C. § 1313(d)(1)(C) (1994); Total Maximum Daily Loads Under Clean Water Act, 43 Fed. Reg. 60,662 (1978).

208. *See, e.g.*, SANTA ANA REGION, CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, STAFF REPORT ON THE REGIONAL WATER QUALITY ASSESSMENT, CLEAN WATER ACT 305(b) REPORT, AND 303(d) LIST UPDATE 3 (1997) ("Schedules for TMDL development after the first two years should be regarded as *very tentative*. Completion will depend significantly upon the availability of funding, availability of staff, watershed stakeholder group priorities, RWQCB Basin Plan amendment priorities, and further evaluation of the need for and feasibility of TMDLs. If additional water bodies are listed in 1998 or subsequent 303(d) review cycles, TMDL schedules may also need to be revised."). Even the EPA envisions that completion of TMDLs for impaired waters will ultimately be "dependent on resource availability and further evaluation of TMDL applicability and feasibility." EPA, 1998 CLEAN WATER ACT SECTION 303(d) LISTING GUIDELINES FOR CALIFORNIA 5 (1997).

waters.[209] In the meantime, the license-based approach implemented by DPR based on "best management practices" will continue to hold sway, leading to continued pesticide pollution and environmental degradation.

III

APPLICATION OF PROPOSITION 65 TO PESTICIDE USE IN CALIFORNIA

Proposition 65 offers a potentially effective alternative to the traditional methods of controlling pesticide pollution in California. As a liability statute enforced by private citizens, Proposition 65 would force pesticide manufacturers and users to confront the reality of pollution costs currently borne by California's citizens and its physical environment. Indeed, it is not at all clear that pesticide use in California would continue at anything close to current rates if these "externalized" costs were instead borne by those selling and using pesticides.[210] This section will analyze the potential of Proposition 65 to alter fundamentally the manner in which California attempts to control pests.

A. Comparison of Proposition 65 and Current Legal Approaches to Controlling Pesticide Pollution in California

As a statutory liability statute, Proposition 65 offers several clear advantages over the federal and state license-based approach to regulating pesticides, and over traditional common law or statutory command and control regulation. These advantages derive from Proposition 65's flexible liability structure, which, combined with its strict, relatively inflexible regulatory standards, place the burden on the pesticide industry and users to show that unintended exposures pose "insignificant" risk to the public. These advantages may be roughly divided into the following categories: 1) harm-based,

209. As discussed, pesticide manufacturers already may be bringing to market a new pesticide product by the time regulatory restrictions come to pass. *See supra* note 161 and accompanying discussion. Such products may pass the registration process based on unreasonable risk, while still posing a threat to surface water quality. As mentioned above, the current testing required for data submission in the FIFRA registration process is not complete with respect to the potential for surface water contamination. *See supra* notes 104-106, 119-120 and accompanying discussion. Even if such data requirements were complete, it would be difficult for the EPA to envision all possible scenarios under which pesticides would actually be used in the field, and the effects of such pesticide applications, over the course of time in a seasonally changing environment in different geographic locations.

210. *See infra* note 221.

preventative safety standards; 2) burden shifting for quantitative risk assessment; 3) private enforcement; and 4) technology forcing liability models. The subsections below will discuss each in turn.

1. Comparison of Proposition 65's Harm-Based Preventative Safety Standards

As a law that imposes liability on private actors for polluting activities, Proposition 65's standards are exceedingly strict, requiring no proof of negligence by the defendant nor ultimate damages to the plaintiff. Moreover, unlike FIFRA, Proposition 65 does not take the economic costs of regulation into account in determining the appropriate level of protection for public health and the environment. Instead, Proposition 65 applies two purely health based standards, the No Significant Risk Level ("NSRL") for carcinogens and the No Observable Effect Level ("NOEL") for reproductive toxicants.[211]

The 1996 Food Quality Protection Act applies comparable health-based standards in regulating pesticide residues on food products.[212] The preventative assumptions of Proposition 65, however, go beyond even FQPA's ambitious standards. For example, where FQPA requires evaluation of a pesticide's cumulative effects only in the rare situations where complete monitoring, toxicological and exposure data exist, Proposition 65 simply assumes the possibility of such effects and applies conservative assumptions to account for this *potential* for harm.[213] For reproductive toxicants, Proposition 65 applies an across the board 1,000 fold safety factor, a protective standard that while legally possible under FQPA is typically not applied except in cases of significant data gaps on toxicity.[214] Finally, no standard in FQPA (nor FIFRA, the SDWA or the Clean Water Act for that matter) comes close to Proposition 65's discharge

211. As discussed, even the MCLs established under the Safe Drinking Water Act account for the economic costs of regulation. *See supra* note 172.

212. *See supra* notes 100, 131-137 and accompanying discussion. For carcinogens, the FQPA standard is actually an order of magnitude higher than that of Proposition 65—one in one million instead of one in one hundred thousand. *See supra* note 128.

213. *See supra* notes 36-58 and accompanying discussion; *infra* notes 349-350 and accompanying discussion.

214. *See, e.g.*, HEALTH EFFECTS DIVISION, OFFICE OF PESTICIDE PROGRAMS, EPA, FQPA SAFETY FACTOR RECOMMENDATIONS FOR THE ORGANOPHOSPHATES (1998). EPA has not recommended any safety factor for most of the organophosphates, and recommended a reduced safety factor of 3 for the majority of those remaining. *Id.* at 16.

prohibition's conservative assumption that a person will be exposed to the daily amount of a listed chemical discharged by a company into a "source of drinking water."[215] In fact, among preventative health standards, Proposition 65's discharge prohibition is unique in the manner that it protects sources of drinking water from toxic contamination.

2. Comparison of Proposition 65's Burden Shift for Quantitative Risk Assessment

Another unique aspect of Proposition 65 is the manner in which it would shift the burden of quantitative risk assessment to the manufacturers and users of pesticide chemicals. As discussed, the legal burden placed on registrants by FIFRA to show that their pesticide products are safe often falls as a practical matter upon the EPA.[216] The burden borne by the agency under FIFRA allows pesticide manufacturers and users to continue applying a harmful pesticide product for years after adverse impacts are first identified.[217] During this time, neither group is required to bear the externalized costs of their manufacturing and use decisions. In contrast, Proposition 65 lays the burden of quantitative risk assessment at the door of those companies wishing to discharge toxic chemicals as a part of their business operations. Under Proposition 65, a detection of

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215. *See* CAL. HEALTH & SAFETY CODE §§ 25,249.9(b)(2), 25,249.10(c), & 25,249.11(d) (West 2000); *supra* notes 59-77 and accompanying discussion.

216. *See supra* notes 123-130. Consider, for example, the detection of a pesticide in air samples surrounding residential areas, and in surface waters considered to be a source of drinking water. Under FIFRA, such a detection might trigger agency action, depending upon the amount detected, the frequency, and the number of personnel and budget EPA, or an implementing state agency such as DPR, could muster to conduct additional monitoring and testing. Assuming that the agency had the resources to assess the toxicity data submitted as part of registration and found them to be incomplete, it could issue a data call-in for additional testing data. If the additional toxicity data and additional monitoring indicated a potentially significant impact on the environment, EPA would have to balance the degree of the threat with the economic interests that favored continued usage. Finally, EPA would have to determine whether to move forward with the special review process and a likely protracted administrative battle over the soundness of EPA's own testing protocols and results. As discussed, it is more likely that EPA would negotiate a series of label restrictions with registrants, which might require revisiting several years later in the event that additional monitoring or new toxicity data reveals a continued threat. *See supra* notes 146-147. Meanwhile, numerous testing data that might indicate additional threats to health or the environment—comprehensive endocrine testing, testing for synergistic effects, testing for secondary, sublethal and chronic effects on humans and wildlife, for example—would either not be required or fall outside of EPA's budgetary capabilities. *See supra* notes 111-130 and accompanying discussion.

217. *See supra* notes 151-154, 160-161 and accompanying discussion.

pesticide exposure or discharge into a source of drinking water directly triggers the Statute's protective provisions.[218] Liability is automatic, unless the defendant can demonstrate, using relevant data and a scientifically valid risk assessment method, that the discharge or exposure was insignificant.[219] A defendant unable to make such a showing is liable for past and present violations.[220] By forcing producers and users of pesticide products to bear the costs of uncertainty, Proposition 65 could force development and use of less harmful alternatives to chemical pest control.[221]

a. Burden of Proof Shift and Scientific Uncertainty

The manner in which a pollution control regime treats the problem of scientific uncertainty is often a good indicator of the level of environmental protection that will be provided. As discussed, under a regulatory "licensing" statute such as FIFRA, EPA faces the formidable task of resolving such uncertainty. Registration carries its own implied presumption of validity, especially given that the quantifiable benefits of maintaining the status quo must, by law, be calculated into the unreasonable impact analysis. As a legal regime, however, FIFRA is not alone in assuming that no harm is occurring unless proven otherwise.

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218. Note that even in the face of incomplete monitoring data, a plaintiff in a Proposition 65 action would be able to rely on modeling that extrapolates the observed detection from a single use to many assumed detections from other similar uses that were not monitored. *See* CAL. CODE REGS. § 12901(g) (2001); *infra* note 335. Thus, the manufacturer or user cannot avoid liability by proclaiming the need for additional field monitoring.

219. *See supra* notes 29-34 and accompanying discussion. If the toxicity data were incomplete, a defendant would be unable to show that the risk was insignificant and thus would be liable. *Id.*

220. As discussed, the statute of limitations for Proposition 65 is continued one year. Accompanying actions under the Unfair Competition Statute, CAL. BUS. & PROFESSIONS CODE § 17200 (West 1997) *et seq.*, may extend this period back 4 years, CAL. BUS. & PROFESSIONS CODE § 1709 (West 1990), although the viability of § 17200 claims after *Kraus v. Trinity Management Services*, 23 Cal. 4th 116 (2000), is questionable.

221. The problem of cost externalization is illustrated by the decision of cotton farmers in California to switch from mechanical methods to control weeds to the use of the pesticide metam sodium, a developmental and reproductive toxicant, based primarily on the cheaper cost of using chemical controls. Were the externalized costs to health and the environment taken into account by the farmers, the use of the pesticide probably would not have been cost effective. *See* David Pearce & Robert Tinch, *The True Price of Pesticides*, *in* BUGS IN THE SYSTEM: REDESIGNING THE PESTICIDE INDUSTRY FOR SUSTAINABLE AGRICULTURE 64 (William Vorley & Dennis Keeney eds., 1998) (describing how typical policy analyses overstate the benefits of pesticide use). For an easily accessible discussion of cost internalization and ecological economics, *see* PAUL HAWKEN, THE ECOLOGY OF COMMERCE: A DECLARATION OF SUSTAINABILITY, 57-90 (1993).

Under the common law, for example, a plaintiff must meet the preponderance of the evidence standard in order to establish that the defendant's activities "caused" plaintiff's injuries or damages.[222] Similarly, most command and control statutes depend upon a regulatory body such as EPA to undertake the job of establishing that concentrations above its selected standard pose a threat.[223] In general, harm-based statutes such as FQPA or the water quality sections of the Clean Water Act confer a greater degree of protection, often adding an additional "safety factor" when confronted with uncertain toxicity or exposure routes.[224] Even for such protective, harm-based statutes, however, EPA retains the burden of justifying its chosen safety factor.

Proposition 65 turns this traditional approach on its head by placing the burden of scientific uncertainty squarely on those parties that utilize potentially harmful substances in their business operations. Once a substance is known to be harmful—and is thus listed under the Statute—it is no longer incumbent upon citizens to establish the degree of harm posed on a case by case basis. In this way, Proposition 65 adopts the precautionary principle and challenges industry to demonstrate to a skeptical public that its activities are truly in the public interest.

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222. The generally accepted jury instruction for the negligence standard of proof states that the "plaintiff has the burden of proving by a preponderance of the evidence of all of the facts necessary to establish all of the essential elements of the claim." In defining the preponderance standard, the instruction goes on to say that "if the evidence is so evenly balanced that you are unable to say that the evidence on either side of an issue preponderates, your finding on that issue must be against the party who had the burden of proving it." BAJI No. 2.60 (8th ed. 1994).

223. Both the Clean Water Act and the Clean Air Act require EPA to establish, with the support of substantial evidence, the standards for individual discharge permits. Industry can and often does challenge such standards; such challenges may delay enforcement and consume inordinate amounts of EPA's resources as it defends its scientific conclusions. *See, e.g.*, Union Elec. Co. v. Envtl. Prot. Agency, 427 U.S. 246 (1976); Cleveland Electric Illuminating Co. v. Envtl. Prot. Agency, 572 F. 2d 1150 (6th Cir. 1978); Rybachek v. United States Envtl. Prot. Agency, 904 F.2d 1276 (9th Cir. 1990).

224. *See* 21 U.S.C. § 346a(b)(2)(C)(ii)(II) (1996) (setting the FQPA safety factor); 33 U.S.C. § 1313(d)(1)(C) (1994) (requiring total maximum daily loads under Clean Water Act to include a "margin of safety which takes into account lack of knowledge concerning relationship between effluent limitations and water quality"); 42 U.S.C. 7409(b) (1994) (requiring that national primary ambient air quality standards protect the public health "allowing an adequate margin of safety").

3. *Comparison of Proposition 65's Private Enforcement Approach*

Proposition 65 passed due in no small part to citizens' perceptions that federal and state regulators were not protecting them from the discharge or release of toxic chemicals by large companies.[225] The drafters of the original initiative utilized this perception and explicitly recognized it in the statutory preamble:

> The people of California find that hazardous chemicals pose a serious threat to their health and well being [and] that state government agencies have failed to provide them with adequate protection.[226]

To address this failure, Proposition 65 allows private parties to bring enforcement actions when state or local governments decline to participate and offers such private enforcers financial incentives of up to 25 % of the statutory penalties (up to $2,500 per daily violation).[227] As a result, private enforcement has been the driving force behind implementation of the statute since its inception, accounting for the majority of actions leading to reduction in the use and discharge of toxic chemicals by companies doing business in California.[228]

Private enforcement under Proposition 65 offers citizens an opportunity unavailable under FIFRA: the ability to bring their own actions to force pesticide manufacturers and users to reduce impacts on human health and the environment.[229] The lack of citizen enforcement under the current regime is particularly noticeable in California, where the DPR's lax enforcement and oversight of pesticide use during the last two decades has been criticized as politically motivated and underprotective of public health and the environment.[230] In

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225. *See, e.g.*, AFL-CIO v. Duekmejian, 212 Cal. App. 3d 425, 441 (1989) ("Proposition 65 clearly reflects the result of public dissatisfaction with the state's efforts at protecting the people and their water supply from exposure to hazardous chemicals.").

226. Initiative Measure, Proposition 65, Section 1 (Nov. 4, 1986).

227. *See* CAL. HEALTH & SAFETY CODE § 25,192(a)(2) (West 2000). A successful plaintiff may also recover attorney's fees and costs under California's provision for cases resulting in public benefit. CAL. CODE OF CIVIL PROCEDURE § 1021.5 (West 2001).

228. *See supra* note 17.

229. In passing the 1972 Amendments to FIFRA, Congress considered but rejected the idea of a citizen enforcement provision. *See* Fiedler v. Clark, 714 F.2d 77, 79 (9th Cir. 1983).

230. *See, e.g.*, Liebman, *supra* note 187, at 5; KEGLEY ET AL., *supra* note 150, at 19-20; HEAVNER, *supra* note 171, at 32-41; CALIFORNIANS FOR PESTICIDE REFORM, *supra* note 197, at 14-18. In many ways, the limited actions taken by DPR to minimize pesticide pollution offer a perfect illustration of the type of agency nonenforcement Proposition 65 seeks to remedy.

contrast, citizen enforcement under Proposition 65 does not depend upon the political will and available resources of an enforcing agency such as EPA or DPR. Instead, private enforcers, offered the possibility of civil penalties and fees, bring cases with or without state or local agency participation, and without the political influences upon regulatory discretion that often accompany agency enforcement.[231]

In failing to provide for citizen enforcement, FIFRA distinguishes itself from other major federal environmental statutes such as the Clean Air Act, the Clean Water Act and the Endangered Species Act.[232] The absence of citizen involvement in FIFRA's enforcement process is not altogether surprising, however, given that neither of FIFRA's enforcement options, civil penalties for use or labeling infractions or restriction/cancellation through the special review process, are in any way suited for citizen involvement. Use or label infractions require agency expertise and experience to identify and pursue. The special review process invokes a complicated, discretionary risk-benefit determination more appropriate for the delegated powers of an administrative agency.

In contrast, Proposition 65's tort-based liability approach creates a simplified enforcement scheme that is ideal for citizen participation. Under Proposition 65, a citizen need only demonstrate an unlawful discharge or exposure; there are no permits or variances to examine, no complicated pollution control technology or methodology to analyze. If a listed chemical is detected, the possibility of liability arises, and the burden of proof regarding safety is shifted to the company.[233]

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231. While the Attorney General's office retains significant oversight authority, limitations on resources prevent the AG from handling all but a percentage of the actions that are brought. *See* Weil Testimony, *supra* note 16, at 5 (stating that the majority of litigation is done by private parties); *AG Brief*, *supra* note 14, at 6 (noting that the Attorney General has limited resources and thus private participation is vital to the enforcement of the statute.) In certain cases, the Attorney General's office may join in a private action in order to retain oversight control over the private enforcement, or may bring its own suit to displace a private party action of which the AG does not approve. *See infra* note 352.

232. *See* 16 U.S.C. § 1540(g) (1994) (Endangered Species Act); 33 U.S.C. § 1365(a)(1) (1994) (Clean Water Act); 42 U.S.C. § 7604 (1994) (Clean Air Act).

233. Indeed, Proposition 65 has been characterized by the appellate courts as a "legislative battering ram" that would "tear through the exasperating tangle" of traditional government process. *See* AFL-CIO v. Duekmejian, 212 Cal. App. 3d 425, 430 (1989). The ease with which citizen enforcers can participate in this process is a credit to Proposition 65's simplified design, but it also raises a larger issue about whether a statute with such blunt instruments of implementation can function as an effective but fair method of pollution control amidst today's complex regulatory environment. This important question will be discussed in the last section.

4. Comparison of Proposition 65's Liability Model As Technology Forcing

Proposition 65's greatest strength lies in its ability to force companies to internalize the costs of releasing toxic chemicals into the environment, thereby creating incentives to eliminate toxics in the production process. As applied to pesticide use, this aspect of Proposition 65 is especially noteworthy since FIFRA is particularly weak in the area of technology forcing. As discussed previously, FIFRA does not effectively force pesticide manufacturers and users to internalize the costs of pesticide use on human health and the environment. Instead, the detection of an exposure or discharge merely triggers inquiries into whether labeling and uses were lawful, or whether there is a need to initiate the preliminary rounds of special review. While the ultimate loss of a pesticide registration is costly, a manufacturer can usually stave off such a result for many years, during which time pesticide users merely switch to the next pesticide coming off the production line.[234]

FIFRA's inability to reduce pesticide use is directly related to its structure as a licensing statute. In licensing pesticide products for commercial use, FIFRA focuses on the broad, policy-based question of whether a pesticide's environmental risks are acceptable when balanced against the benefits it confers in controlling pests. In contrast, Proposition 65 avoids this larger issue. Proposition 65 does not undergo risk-benefit analysis, nor does it confer authority to ban a pesticide use or to change or restrict labeling or usage. Proposition 65 asks a simpler question: whether there is liability based on an unlawful discharge or undisclosed exposure. Once liability is established, Proposition 65 confers authority on enforcers to seek injunctive

234. For example, in announcing the implementation of restrictions on chlorpyrifos use for certain agricultural crops, the EPA provided a list of registered chemical alternatives including such toxics as esfenvalerate, permethrin, endosulfan, methomyl, carbaryl, azinphos methyl, phosmet, and dimethoate. *See* OFFICE OF PESTICIDE PROGRAMS, U.S. EPA, REGISTERED CHEMICAL ALTERNATIVES FOR CHLORPYRIFOS, *available at* http://www.epa.gov/pesticides/op/chlorpyrifos/alternatives.htm (updated Aug. 12, 2000). Where no such alternative pesticides exist, it is unlikely that EPA could even begin to consider cancellation due to the high resulting "benefits" that would then accrue to the sole pesticide in its field. *See, e.g.*, Love v. Thomas, 858 F.2d 1347, 1363 (9th Cir. 1988) (reversing EPA's decision to cancel use of pesticide dinoseb due to perceived crop losses); *see also* Jeff Swiatek, *Farm Bureau Sounds Alarm If 2 Insecticides Are Banned: Study Predicts Higher Food Prices, Lower Crop Yields If EPA Ends Use of 2 Chemical Classes*, INDIANAPOLIS STAR, May 13, 1999, at C07 (discussing consequences of banning organophosphates and carbamates).

relief and/or civil penalties against the specific activities causing the unlawful discharge or exposure. In this manner, Proposition 65 defers to the pesticide manufacturer or user the question of how best to eliminate the unlawful pollution.[235] As a result, it creates incentives for corporations to avoid liability by developing the technology necessary to eliminate discharges and exposures.

By taking the decision of how or whether a pesticide shall continue to be used out of the hands of the regulatory agency, Proposition 65 could trigger a much broader debate within the regulated community over the most cost-effective manner to control pests. For manufacturers, the possibility of liability creates immediate incentives to develop alternative chemicals that are less toxic and less prone to affecting non-targets. More importantly, pesticide users faced with potential liability for non-point source pesticide pollution will immediately consider a whole range of pest control techniques, including the possibility of dispensing with chemical pesticides altogether where non-chemical alternatives prove to be cost effective.[236] It is this potential which makes Proposition 65's application to pesticides most intriguing since current pesticide laws place little to no pressure on pesticide users—as opposed to pesticide manufacturers—to develop safer technologies. By requiring users to internalize the costs to society of pesticide pollution, Proposition 65 creates the possibility of radically altering pesticide use patterns in California.

B. Proposition 65 and Pesticide Regulation in the 21st Century

Despite its success in curbing the use of toxic chemicals in other industrial sectors, Proposition 65's impact on the widespread and increasing use of pesticides in California remains limited for two reasons. First, many pesticide chemicals, though suspected carcinogens or reproductive toxicants, have not yet been listed under the Statute and thus fall outside Proposition 65's statutory protections. Second, in many respects

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235. Indeed, Proposition 65 allows companies to continue exposing persons to toxic pesticides provided they give a warning to those exposed. *See* CAL. HEALTH & SAFETY CODE § 25,249.6 (West 2000). *See infra* note 338 and accompanying discussion.

236. The same pattern occurs when a user is required to provide warnings to local citizens regarding exposures. There is a "cost" to providing such warnings, which, while difficult to measure, historically has carried sufficient weight to alter manufacturing and use patterns for other products or technologies. *See, e.g.*, Rechtschaffen, *supra* note 34, at 341-48; Michael Barsa, *California's Proposition 65 and the Limits of Information Economics*, 49 STAN. L. REV. 1223, 1246 (1997).

the law is still unsettled as to exactly how Proposition 65 would apply to toxic contamination and exposures caused by pesticides. This section will explore the issues presented by the application of Proposition 65 to pesticide use in California by focusing on three vital questions: whether the pesticide chemical is covered by the Statute, who is potentially liable under the Statute and which actions may give rise to liability.

1. Application of Proposition 65 to Pesticide Use in California

a. Listing of Pesticides as Proposition 65 Chemicals

Proposition 65 only provides protection from toxic chemicals that are listed under the Statute as known to the state to cause cancer or reproductive toxicity.[237] In an attempt to avoid the failure characteristic of other regulatory schemes that relied on the administrative agency to determine which chemicals would be regulated,[238] the drafters of Proposition 65 required OEHHA's predecessor, the Health and Welfare Agency, to establish an initial list of carcinogenic or reproductively toxic chemicals by March 1, 1987. At a minimum, the list was to include all substances listed as hazardous under the California Occupational Health and Safety Act of 1973.[239] To ensure continued vigilance in adding new chemicals, the Statute further requires the list to be revised and republished at least once per year thereafter.[240] To streamline the listing process, the Statute

237. *See* CAL. HEALTH & SAFETY CODE §§ 25,249.5, 25,249.6 (West 2000).

238. During its first twenty years of Clean Air Act enforcement, for example, EPA never listed any toxic chemicals as hazardous air pollutants. Ultimately, Congress was forced to create its own list in the 1990 Clean Air Act Amendments. *See* 42 U.S.C. § 7412 (1994). Similarly, with the Clean Water Act, it was not until EPA finally applied across-the-board technology-based controls to toxic pollutants that any effective regulation was accomplished. *See, e.g.*, NRDC v. Train, 8 ERC 2120 (D.D.C. 1976); Publication of Toxic Pollutant List, 43 Fed. Reg. 4108, 4109 (1978); 46 Fed. Reg. 2266 (1981); Removal of Dichlorodifluoromethane and Trichlorofluoromethane From the Toxic Pollutant List Under Section 307(a)(1) of the Clean Water Act, 46 Fed. Reg. 10723 (1981). Even so, effluent limitations for the 126 "priority pollutants" chosen by EPA were not completed until 1987, 15 years after the enactment of the Clean Water Act.

239. *See* CAL. HEALTH & SAFETY CODE § 24,249.8(a) (West 2000). These chemicals, referred to in CAL. LABOR CODE §§ 6382(b)(1) and 6382(d), included carcinogens and reproductive toxicants listed by two highly regarded organizations, the U.S. National Toxicology Program and the U.N. International Agency for Research on Cancer. AFL-CIO v. Duekmejian, 212 Cal. App. 3d 425, 432-433 (1989). This base listing was not established, however, until the Health and Welfare Agency was sued by environmental groups. *Id.*

240. *See* CAL. HEALTH & SAFETY CODE § 24,249.8(a) (West 2000).

sets forth three methods under which chemicals may be added: 1) if the state's experts find that "it has been clearly shown" to cause cancer or reproductive toxicity;[241] 2) if a body considered to be "authoritative" by the state agency has formally identified the chemical as causing cancer or reproductive toxicity;[242] or 3) if a California or federal agency has required it to be identified as causing cancer or reproductive toxicity.[243]

Despite the best efforts of the drafters, the listing of chemicals under Proposition 65 has been a stingy process. From the outset, agency officials attempted to limit the scope of Proposition 65's coverage, initially refusing, for example, to list chemicals based on animal testing despite the clear statutory directive to the contrary.[244] The state's "qualified experts" also failed to list any "authoritative" bodies in the early years of the Statute, eventually changing course only after environmental and labor groups brought suit.[245] Even with the adoption of regulations, listing of chemicals has proceeded slowly, with only approximately 50 pesticides, many of which are not heavily used, listed under the Statute in its 14 year history.[246] As a result, the majority of high use toxic pesticides applied today in California are not listed under Proposition 65.[247]

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241. CAL. HEALTH & SAFETY CODE § 24,249.8(b) (West 2000).

242. *Id.* The purpose of the "Authoritative Bodies" listing mechanism is to enable the State to benefit from the accumulated knowledge of other institutions that are recognized as expert in the identification of carcinogens and reproductive toxicants, thus avoiding reinvention of the scientific wheel. *See* Final Statement of Reasons, 22 CAL. CODE REG., Div. 2 at 4-4. In addition, the authoritative bodies listing mechanism permits the State's appointed experts to focus their work on chemicals not yet thoroughly evaluated. *Id.* at 4-5, 8.

243. *See* CAL. HEALTH & SAFETY CODE § 25,249.8(b) (West 2000).

244. *See, e.g.*, CAL. HEALTH & SAFETY CODE § 25,249.8(a) (West 2000). This position was rejected in *AFL-CIO*. 212 Cal. App. 3d at 435. In addition, the Health and Welfare Agency originally attempted to exempt food products covered under the Federal Food, Drug and Cosmetic Act from the scope of Proposition 65. This position was rejected in *AFL-CIO v. Deukmejian, No. 502541*. Settlement Agreement, AFL-CIO v. Deukmejian, No. 502541 (December 23, 1992).

245. *See* Order Granting Plaintiffs' Motion for Summary Adjudication, AFL-CIO.v. Duekmejian, No. 359223 (Sacramento Super. Ct., April 3, 1989). Thereafter the State designated U.S. EPA., the National Toxicology Program, the International Agency for Research on Cancer, the National Institute for Occupational Safety and Health, and the FDA as authoritative bodies. *See* CAL. CODE REGS. tit. 22, §§ 12306(l)-(m) (2001).

246. This includes approximately 35 pesticides listed as known carcinogens and another 20 listed as reproductive toxicants (with several pesticides listed as both). The list includes a number of comparatively low risk pesticides such as creosote, mineral oil, silica areogel, and nicotine.

247. These include such widespread toxic chemicals as diazinon, molinate, chlorpyrifos, chloropicrin, sulfuryl fluoride, diuron, paraquat dichloride, simazine, naled, EPTC, dimethoate, and prometryn. In addition, the Proposition 65 listings of the two most heavily used pesticides in California, methyl bromide and metam

The limited number of pesticides listed can be traced to several factors. First, the protective provisions of the Statute do not cover neurotoxic pesticides for which carcinogenic and/or reproductive effects have not been identified. Neurotoxicants are potentially developmental toxicants if they disproportionately or specifically target the developng brain. Unfortunately, most known neurotoxicants have not been studied for developmental toxicity.[248]A second factor derives from the burden placed on agencies to establish that a particular chemical meets the listing criteria under a particular statutory regime.[249] Based on the statutory language that a chemical must be "clearly shown" to be toxic, OEHHA adopted a high standard for listing.[250] This threshold opens the door for industry to introduce voluminous amounts of "conflicting" data, which OEHHA must wade through at the pre-listing stage to determine whether a particular chemical meets the "clearly shown" standard.[251] Ironically, this

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sodium, may be, for two reasons, less far-reaching than meets the eye. First, as a result of intervention by the agricultural lobby, methyl bromide is listed only as a structural fumigant under the Statute and not for general agricultural use. *See Farmers Relieved of Duty to Provide Prop. 65 Warnings, Days Before Deadline*, 8 PROP 65 NEWS, Jan. 1994, at 3 (quoting David Roe characterizing OEHHA's decision as "the result of 'pure political muscle on the part of the ag folks'"). Second, since MITC, the immediate break-down product of metam sodium, is *not* listed under Proposition 65, it is unclear whether the recent listing of metam sodium as a reproductive toxicant has any force and effect under either the Discharge Prohibition or the Warning Requirement.

248. Gina Solomon, pers. comm. The neurotoxicants include the organophosphate and carbamate pesticides.

249. This burden historically has been difficult for agencies to meet. *See supra* note 238 (describing EPA's experience under Clean Air and Clean Water Act); *supra* note 194 (describing DPR's failure to list pesticides under TAC program).

250. The legislative history of Proposition 65 indicates that the voters were told chemicals would be listed only if there was "clear and rigorous scientific evidence to the satisfaction of the state's qualified experts." Charles Ivie et al., *"Clearly Shown:" An Exacting Standard for Scientific Determination Under Prop. 65: Part II*, 11 PROP 65 NEWS, Aug. 1997, at 10-14 (quoting Californians Against Toxic Chemical Hazards, Fact Sheet and California Toxics Initiative 1 (1986), and arguing that the "clearly shown" standard is analogous to the "clear and convincing" standard required under federal law).

251. The high listing threshold allows manufacturers to block potential listings by introducing uncertainty into the risk assessment process and then arguing for the need for more studies. *See, e.g.*, Office of Environmental Health Hazard Assessment, Response to Comments of June 30, 1998 on molinate from Zeneca Ag Products, October 27, 1999 (responding to Zeneca's argument that reproductive and developmental effects of molinate are limited to rodents and not human beings); Letter from Lynn Bergeson *et. al.*, representing the Metam Sodium Task Force, to Cynthia Oshita, OEHHA, (Oct. 21, 1997) (urging OEHHA not to list metam sodium as a carcinogen or reproductive toxicant); Letter from Edward G. Weil, Deputy Attorney General, to Christopher Pederson, Altshuler, Berzon, Nussbaum, Berzon & Rubin (Sept. 14, 1999) (on file with author) (responding to inquiry regarding OEHHA's

time and resource consuming process defeats a central statutory purpose of placing the burden of establishing safety on the manufacturer or user.

Notwithstanding the high listing threshold, however, the slow pace of listing pesticides may well be attributed in large part to the charged politics of pesticide regulation in California. During the 1990s, for example, OEHHA devoted substantial resources to prioritizing "candidate" chemicals, including many pesticides, while listing comparatively few under the Statute.[252] Furthermore, OEHHA declined to take any action on 65 chemicals—many of them pesticides widely used in California—identified as reproductive toxicants by the EPA as part of their 1994 Toxic Release Inventory ("TRI") until finally spurred to do so by legal action.[253] Even with the force of judicial oversight, however, many of the most toxic and widely used TRI pesticides remain unlisted under Proposition 65.[254] OEHHA has defended its refusal to adopt the EPA's findings by arguing that the requirements for listing under Proposition 65 differ from EPA's listing criteria.[255] To bolster this argument, OEHHA has adopted a narrow definition of "reproductive effect," which differs from EPA's definition by excluding effects on post-natal (after birth) development.[256] Based on this narrow reading of the Statute,

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failure to list the TRI pesticides molinate and diazinon by noting that "[c]omplex, relevant scientific issues . . . were raised for both molinate and diazinon, and a large body of scientific data on molinate was submitted").

252. *See* William Pease, *OEHHA Priority Process Invites Game Playing*, 11 PROP 65 NEWS, July 1997, at 14; Rick Lovett, *Prioritization Process Allows Stalling, EDF Says*, 10 PROP 65 NEWS, Dec. 1996, at 9; Rick Lovett, *Senate Questions OEHHA Independence*, 11 PROP. 65 NEWS, April 1997, at 15.

253. *See* Notice of Motion for Writ of Mandate and Memorandum of Points and Authorities in Support of Motion for Writ of Mandate, Natural Res. Def. Council et. al. v. Wilson, (Sacramento Super. Ct., March 9, 1998) (No. 97CS01886); *see also* Western. Crop Prot. Ass'n v. Davis, 80 Cal. App. 4th 741 (2000) (denying agricultural pesticide users' challenge to a state agency's listing of TRI chemicals through the authoritative bodies process). The EPA's Toxic Release Inventory 1994 Amendment was promulgated pursuant to the federal Emergency Planning and Community Right to Know Act, 42 U.S.C. § 11001 et. seq., a statute similar to Proposition 65 in its emphasis on communicating information to the general public about its proximity to toxic chemicals.

254. These include such widely used pesticides as diazinon, simazine, naled, EPTC and molinate.

255. *See* Letter from William Soo Hoo, Chief Counsel, OEHHA, to Gina Solomon and Gail Feuer, NRDC (Mar. 31, 1997).

256. *See* Letter from William Soo Hoo, Chief Counsel, OEHHA, to Gina Solomon, NRDC, and David Roe, EDF (June 11, 1997). OEHHA's narrow definition is based on language of the Proposition 65 Preamble that refers to concerns regarding "birth defects." Initiative Measure, Proposition 65, Section 1(a) (Nov. 4, 1986). OEHHA's legal conclusion runs counter to the scientific recommendations of its own staff and to generally agreed-upon principles of toxicology, which consider developmental

OEHHA has refused to list TRI pesticides where it is unclear whether the TRI listing was due to pre or post-natal impacts.[257]

The political nature of the listing process is hardly surprising, given the regulatory shift that occurs once a chemical is listed. For industry, the listing process provides the single opportunity to debate the wisdom of regulation before the burden shifting provisions of the Statute are triggered and businesses forced to prove that particular chemical exposures or discharges are "safe."[258] Listing is also the last point at which the state is able to reassert its traditional power and authority over the regulatory process, before the citizen-friendly provisions of the Statute come into play. Indeed, for certain high profile pesticides, the state has at times appeared ready to forgo listing altogether as a concession to the economic importance of the pesticide use and the uncertainties of "citizen-enforced" regulation under Proposition 65.[259] OEHHA's decision to exclude post-natal

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toxicity to be a central component of reproductive toxicity. *See* Reproductive and Cancer Hazard Assessment Section, OEHHA, *Consideration of Postnatal Exposures in Identification of Reproductive Toxicants*, Apr. 7, 1995 ("The definition used by USEPA and others, which includes the effects of postnatal exposures on all aspects of development (not only the reproductive system) is compatible with the Criteria for Recommending Chemicals as 'Known to the State to Cause Reproductive Toxicity' adopted by the DART Identification Committee."); Guidelines for Developmental Toxicity Risk Assessment, 56 Fed. Reg. 63,798-63,826 (1991) (defining "developmental toxicity" as part of reproductive toxicity and including adverse effects from pre- and postnatal exposures.).

257. Standard developmental toxicity testing uses a "continuous breeding protocol" in which exposure continues prior to breeding, during gestation, throughout lactation and after weaning. When adverse impacts fail to occur at birth, but manifest soon thereafter, there is no way to attribute the effects to prenatal vs. postnatal exposures. Because of this ambiguity, OEHHA decided not to list several TRI reproductive toxicants under Proposition 65, including naled, dimethoate, fenoxycarb, and propachlor, based on its inability to determine whether the exposures causing the adverse developmental effects occurred prior to or after birth. Personal Communication with Gina Solomon, Senior Scientist, Natural Resources Defense Council.

258. In contrast, under other statutes, industry may debate the wisdom of proposed risk standards for chemicals even after such chemicals have been listed, thus further delaying the implementation of regulation, often for years. *See, e.g.*, Richard Dahl, *A National Proposition 65?*, 9 PROP 65 NEWS, Dec. 1995 (describing industry incentives to delay risk assessment under other federal statutes); Applegate, *supra* note 84, at 312-316 (describing risk assessment delays under Toxic Substances Control Act).

259. At the time of this writing, molinate, a high use pesticide commonly found in air and surface water samples, still has not been listed under Proposition 65 despite the EPA's identification seven years ago of this chemical as a reproductive toxicant. *See* Addition of Certain Chemicals, 59 Fed. Reg. 1788-1843 (1994). In January 2001, OEHHA found that diazinon, another high use pesticide identified by EPA in 1994 as a reproductive toxicant, did not meet Proposition 65's listing criteria. OEHHA's decision was based on its finding that the EPA's 1994 listing had relied on studies

developmental toxicants from Proposition 65's regulatory scope is a further indication that the regulatory community is still unwilling to fully implement the public's mandate to be protected from toxic chemical exposure.[260] Whether this reluctance to apply the Statute to pesticide use will change in the years ahead will be a primary factor determining the effectiveness of Proposition 65 in combatting pesticide contamination.[261]

b. Proposition 65's Liability Models for Pesticide Pollution

One of Proposition 65's central innovations is its ability to include both pesticide manufacturers and pesticide users within its regulatory scope.[262] This is accomplished through a flexible liability structure that does not distinguish among potential sources of toxic chemicals in allocating liability,[263] but instead reaches any activity causing an unlawful discharge or exposure.[264] The Statute is similar to common law tort in focusing on the end result of a defendant's action regardless of the nature of the originating source.[265] This end-result focus

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that OEHHA deemed to be outside the EPA administrative record, and thus not reviewable by OEHHA according to the Third District Court of Appeal's holding in *Western. Crop Prot. Ass'n v. Davis*, 80 Cal. App. 4th 741 (2000). *See* Office of Environmental Health Hazard Assessment, *Candidates for Proposition 65 Listing via the Authoritative Bodies Mechanism Found Not to Meet the Scientific Criteria (22 CCR Section 12306(g): Diazinon (CAS 333-41-5)*, (2001) (copy on file with author).

260. It is highly doubtful that citizens would have voted to protect themselves from chemicals that cause adverse effects to a developing fetus, but not from chemicals causing similar effects to a nursing infant or developing child.

261. *See infra* notes 352-356 and accompanying discussion.

262. As discussed, the Proposition 65 regulations, by categorizing workplace exposures as actionable, also create a third category of liability for employers who oversee workplaces in which pesticides are used. *See* CAL. CODE REGS. tit. 22, § 12601(c) (2001). The standards for communicating Proposition 65 warnings to agricultural workers are controlled by the Pesticides and Worker Safety requirements. CAL. CODE REGS. tit. 3, § 6700 *et seq.* (2001); CAL. CODE REGS. tit. 22, § 12601(c)(1)(C) (2001). *See supra* note 95.

263. The Statute exempts from liability sources of contamination traceable to the actions of small businesses, public entities, or operators of public water systems. *See* CAL. HEALTH & SAFETY CODE § 25,249.11(b) (West 2000).

264. *See supra* notes 89-91 and accompanying discussion.

265. Proposition 65 and tort law are also distinguishable. The Statute does not, for example, require a showing of actual injury to establish liability either under the discharge prohibition or the warning requirement. Thus, unlike a common law tort action, causation under Proposition 65 is established merely by demonstrating exposure or discharge. The importance and difficulty in proving damages in common law tort actions is illustrated by the Woburn toxics case (the subject of Jonathan Harr's book A CIVIL ACTION (1996)), in which a primary contested issue was whether the toxic chemicals discharged by the defendant companies into drinking water wells were actually the cause of the cancer cluster occurring among children in the neighborhood. *See* ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY:

helps Proposition 65 to avoid some of the difficulties encountered by more conventional pollution statutes with non-point source discharges of hazardous pollutants.[266]

In an effort to provide some structure to Proposition 65's broad scope, the regulations adopt three different liability models to protect public health, which correspond generally to the common law theories of products liability and nuisance and to the statutory law of occupational exposure.[267] This article will focus on Proposition 65's liability models based on products liability and nuisance.[268] Both of these models are relatively unexplored, yet highly relevant to Proposition 65's ability to control non-point source pesticide pollution.

The tort doctrine of strict products liability offers a useful model for the regulation of pesticide manufacturers. Under the product liability model, pesticide manufacturers will be liable if the foreseeable use of their pesticide product leads to unlawful discharges or exposures, regardless of whether they "controlled" the manner or timing of pesticide application. A pesticide manufacturer would also be liable under Proposition 65 even where users failed to follow the explicit labeling instructions—a fact that would normally excuse registrants from any

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NATURE, LAW, AND SOCIETY 255 (2d ed. 1998); *see also* Rutherford v. Owens-Illinois, Inc., 16 Cal. 4th 953, 968 (1997) (holding that a plaintiff most show that exposure to the defendant's product was, in reasonable medical probability, a substantial factor in causing or contributing to the plaintiff's risk of developing cancer.).

266. Compare Proposition 65, for example, with the federal Clean Water Act, which prohibits the "discharge" of any pollutant but limits the term "discharge" to "any addition of any pollutant to navigable waters *from any point source.*" 33 U.S.C. § 1362(12) (1994) (emphasis added). The term "point source" is later defined as "any discernible, confined and discrete conveyance . . . ", 33 U.S.C. § 1362(14) (1994); *see also* 42 U.S.C. §§ 7411(a), 7412(a) (1994) (limiting regulation of hazardous air pollutants to defined stationary sources); *infra* note 294..

267. Under the federal Occupational Safety and Health Act, state occupational health and safety warnings are preempted unless established in conformance with a federally approved state plan. *See* 29 U.S.C. § 667 (1994); 29 C.F.R. § 1910.1200 (2000). As a result of a lawsuit brought by a coalition of labor and environmental groups, Proposition 65's occupational exposure standards and enforcement scheme were included in California's Occupational Safety and Health Plan, which subsequently received federal approval on June 2, 1997. *See* Cal. Labor Fed'n v. Cal. Occupational Safety & Health Standards Bd., 221 Cal. App. 3d 1547 (1990); CAL. CODE REGS. tit. 8, § 5194(6) (2001). For pesticides, an employer may communicate the Proposition 65 occupational warning by complying with any approved method under the Pesticides and Worker Safety requirements. CAL. CODE REGS. tit. 3, § 6700 *et seq.* (2001) (authorized by CAL. FOOD & AGRIC. CODE § 12,981 (West 2001)); *see* CAL. CODE REGS. tit. 22, § 12601(c)(1)(C) (2001).

268. This Article will not address the occupational exposure liability model since that model is already implemented by state occupational safety and health law. *See supra* notes 262, 267.

responsibility under FIFRA—where such failure was a foreseeable, though not proper, use of the product.[269]

In contrast, for pesticide users the conventional nuisance model is appropriate. Under this model, companies that utilize pesticides will be liable for discharges or releases caused as a result of activities over which they exercise control, either through contractual relationship or land ownership.[270] Thus, for example, agricultural users would be potentially liable under Proposition 65 for such standard pesticide pollution as drift from a spraying operation or non-point source water pollution runoff. By focusing on the impact of the discharge rather than the type of source, Proposition 65's nuisance model solves the challenge of non-point source pollution common to pesticide applications.

(1) Pesticide Manufacturer Liability Under Proposition 65

Proposition 65's product liability model derives from the warning requirement, which incorporates traditional consumer product warning requirements.[271] Consumer product warnings are unremarkable; other regulatory programs have required such warnings on products as a condition of doing business. By explicitly addressing consumer products, however, Proposition 65 draws commercial manufacturers into its liability scheme, subjecting such companies to a statutory, environmental and public health-based, regulatory framework for the first time. Any doubts about the scope of this requirement were put to rest by *American Standard*, in which manufacturers of commercial

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269. *See infra* notes 283-286. *See* CAL. FOOD & AGRIC. CODE § 13149 (West 2001) (requiring DPR to determine whether groundwater pollution is due to improper practices or due to the inherent qualities of the pesticide). A defendant still may avoid liability if the injury was caused by a superseding act of a third party. However, where the product "defect" is one of several "concurrent" causes of injury, the manufacturer will still be liable. *See* Soule v. General Motors Corp., 8 Cal. 4th 548, 573 n.9 (1994).

270. *See, e.g.*, Alcaraz v. Vece, 14 Cal. 4th 1149, 1159 (1997); Preston v. Goldman, 42 Cal. 3d 108, 117 (1986); Contreras v. Anderson, 59 Cal. App. 4th 188, 197 (1997); Donchin v. Guerrero, 34 Cal. App. 4th 1832, 1839 (1995); *see also* 42 U.S.C.§ 7412(a)(9) (1994) (defining "owner or operator" under the Clean Air Act); 33 U.S.C. § 1316 (1994) (defining "owner or operator" under the Clean Water Act); Wells Fargo Bank v. Goldzband, 53 Cal. App. 4th 596, 605 (1997); *infra* notes 289-298, 303-304 and accompanying discussion.

271. *See* CAL. HEALTH & SAFETY CODE § 25,249.11(f) (West 2000) (including consumer protection warnings in the definition of a warning). The regulations elaborate on this statutory language by specifically defining a "consumer products exposure" as "an exposure which results from a person's acquisition, purchase, storage, consumption, or other reasonably foreseeable use of a consumer good, or any exposure that results from receiving a consumer service." CAL. CODE REGS. tit. 22, § 12601(b) (2001).

plumbing products were found to be in potential violation of the discharge prohibition for selling products that, when used as intended, discharged lead into sources of drinking water.[272]

The Supreme Court's assumption that manufacturers are potentially liable parties under Proposition 65 generally raised no eyebrows; the regulations already envisioned a product liability model and manufacturers of consumer products had previously been found liable under the Statute.[273] What was different in this instance were the Supreme Court's holdings that manufacturers could be liable under Proposition 65's discharge provision for introducing products that pollute sources of drinking water into the stream of commerce, and that manufacturers could be liable not only to direct consumers of a product but also to third parties who might be exposed through the foreseeable use of such product. In essence, *American Standard* treats consumer products as mobile "facilities," cast into the stream of commerce but subject to emission or effluent standards similar to those applied to polluting "sources" under the Clean Air or Clean Water Acts. In thus finding a manufacturer liable for selling products that violate environmental regulatory standards—as opposed to causing direct injuries to consumers—*American Standard* is unprecedented in American environmental jurisprudence.[274]

(a) Products Liability Model

California's strict products liability doctrine offers what is in many ways a highly useful precedent in evaluating consumer product liability under Proposition 65. This is hardly surprising, considering the shared purpose of the two laws: to shift the societal costs of harmful products away from consumers and back to manufacturers, who are in an inherently better position to avoid such risks.[275] Strict product liability also shares

272. People ex rel. Lungren v. Superior Court (American Standard), 14 Cal. 4th 294, 306 (1996).

273. These included manufacturers of paint strippers, typewriter correction fluids, paints, solvents, resins, cigars, pipe tobacco, leaded wine glasses, ceramic tablewear and nail polish. *See, e.g.*, AG Prop. 65 List.

274. The closest analogues are consumer product regulation under the Consumer Product Safety Act, 15 U.S.C. § 2051 *et. seq.* (1994) and the Federal Food, Drug and Cosmetic Act, 21 U.S.C. § 301 *et. seq.* (1994). These federal statutes do not regulate releases of chemicals, however, but instead set product standards that must be met in the manufacturing process.

275. Compare, for example, a central purpose behind the development of strict product liability—"to insure that the costs of injuries resulting from defective products are borne by the manufacturers that put such products on the market rather than by the injured persons who are powerless to protect themselves,"

Proposition 65's market-driven approach to improving product safety.[276] Both laws achieve these goals by relieving the plaintiff of some of the onerous burdens imposed by less protective laws such as negligence or command and control environmental statutes.[277] As a result, many businesses—in some cases entire industries—have moved to safer products, with fewer toxic inputs.[278]

Under the product liability model, manufacturers of commercial products, including pesticides, may also be liable for unlawful discharges or exposures. Strict products liability imposes liability based on a "defendant's participatory connection, for his personal profit or other benefit, with the injury-producing product and with the enterprise that created consumer demand for and reliance upon the product."[279] In order for product liability to attach, a plaintiff must establish that the product was defective and that the "defect" proximately caused the plaintiff's injury.[280] Product liability under Proposition 65 is best analogized to product liability actions based on "design defects,"[281] in which products create unlawful discharges or

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Greenman v. Yuba Power Products, Inc., 59 Cal. 2d 57 (1963) —with Section 1 of Proposition 65's preamble, in which the "people of California find that hazardous chemicals pose a serious threat to their health and well-being, that state government agencies *have failed to provide them with adequate protection* (emphasis added). Initiative Measure, Proposition 65, Section 1 (Nov. 4, 1986). The people's belief that, with respect to toxics, they were powerless in the face of unaccountable corporations, leads to Section 1(d) of the Preamble, in which the people declare their rights to "shift the cost" of hazardous waste reduction and cleanup "more onto offenders and less onto law-abiding taxpayers." *Id.* at section 1(d).

276. *See* Roe, *supra* note 30; Mancuso v. S. Cal. Edison Co., 232 Cal. App. 3d 88, 98 (1991). An additional reason justifying strict product liability is to spread the risk of loss among all who use the product. *See id.* at 98. This policy could have some application to the manner in which the discharge prohibition could be said to place especially strict restrictions in order to guarantee the safety of water sources for particular problem areas. This policy would not apply, however, to the warning requirement due to the overwarning effect. *See* Rechtschaffen, *supra* note 34, at 355-58.

277. In addition to eliminating the requirement that plaintiffs show negligence, strict products liability places the burden of proof on the defendants, once a plaintiff makes a prima facie showing that the injury was proximately caused by the product's design, to show that a product is not defective under the risk-benefit test. Campbell v. General Motors Corp., 32 Cal. 3d 112, 119 (1982); Barker v. Lull Engineering Co., 20 Cal. 3d 413, 431-432 (1978).

278. *See infra* notes 485-487and accompanying discussion.

279. Kassel v. Remington Arms Co., 24 Cal. App. 3d 711, 725 (1972); *see also Mancuso*, 232 Cal. App. 3d at 99; *supra* notes 102-105 and accompanying discussion.

280. *See, e.g., Barker*, 20 Cal. 3d at 427; Cronin v. J.B.E. Olsen Corp., 8 Cal. 3d 121, 133-34 (1972).

281. There are two basic types of defects under strict products liability law: defects due to accidents or irregularities in the manufacturing process, known as

exposures as a natural consequence of their design and marketing strategy.[282] Pesticide products are thus "defective" in design under Proposition 65 if they cause unlawful discharges, or exposures to persons without warning, when used in a reasonably foreseeable manner.[283]

Under strict product liability law, the "foreseeable" use of a product is a broader standard than its "intended" use.[284] The Proposition 65 regulations adopt this common law approach, defining a "consumer product exposure" as one that results from a "reasonably foreseeable use of a consumer good, or any exposure that results from receiving a consumer service."[285] The

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"manufacturing defects," and defects inherent in the design of the product, known as "design defects." In general, a manufacturing defect is readily identifiable as a product that differs from the manufacturer's intended result or from other identical units of the same product line. *Barker*, 20 Cal. 3d at 429; *see also* Lewis v. Am. Hoist & Derrick Co., 20 Cal. App. 3d 570, 580 (1971) (holding that when a product comes off the assembly line in a substandard condition, it has incurred a manufacturing defect). In contrast, a "design defect" cannot be identified by simply comparing the injury producing product with other "normal" units. Instead, a product will be defective in design if it failed to perform as safely as an ordinary consumer would expect when used in a reasonably foreseeable manner (this is referred to as the consumer expectation test), or if the risk of danger inherent in the challenged design outweighs the benefits of such design (referred to as the risk-benefit test). *See, e.g.*, *Barker*, 20 Cal. 3d at 429-30.

282. The plumbing components in People ex. rel. Lungren v. Super. Ct. (Am. Standard, Inc.), 14 Cal. 4th 294 (1996), provide a good example of a design defect. The components were defective because they leached lead as a natural consequence of their designed leaded brass content. In contrast, a "manufacturing defect" under Proposition 65 would result from a particular batch of a product with an unintended defect—individual food products containing unusually high levels of a toxic chemical, for example—that caused damages.

283. *See* CAL. HEALTH & SAFETY CODE §§ 25,249.5, 25,249.6 (West 2000); CAL. CODE REGS. tit. 22, § 12601(b) (2001); *Barker*, 20 Cal. 3d at 429. Similar to Proposition 65, a "warning defect" case under strict product liability law requires the plaintiff to show that the defendant had actual or constructive knowledge of the product danger. *See, e.g.*, Carlin v. Super. Ct., 13 Cal. 4th 1104, 1117 (holding that, unlike strict liability for design defects, failure to warn strict liability does not subject manufacturers to liability for flaws in their products they have not, and could not have, discovered); Anderson v. Owens-Corning Fiberglass Corp., 53 Cal. 3d 987, 994-95 (1991). Products that are "defective" for causing unlawful discharges are likewise similar to products with straightforward design defects; the presence or absence of a warning does not determine liability. Hansen v. Sunnyside Prods., Inc., 55 Cal. App. 4th 1487, 1517 (1997). Proposition 65's discharge prohibition differs from products liability law for design defects, however, since it requires actual or constructive knowledge on the part of the manufacturer to establish liability. *See id.* at 1517-18 (noting that actual or constructive knowledge on the part of the manufacturer is not required to establish liability for a pure design defect).

284. *See, e.g.*, *Cronin*, 8 Cal. 3d at 126; *Barker*, 20 Cal. 3d at 426 n.9 ("design and manufacture of products should not be carried out in an industrial vacuum but with the recognition of the realities of their everyday use").

285. CAL. CODE REGS. tit. 22, § 12601(b) (2001). The term "consumer products exposure" is intended to have "broad application," applying to both standard

Statement of Reasons clarifies that this provision was not meant to be limited to reasonably "intended" exposures, but rather any exposures that might be "anticipated."[286] A "knowing" discharge or exposure under the product liability model thus refers to the manufacturer's constructive knowledge of how a product will be used once it is released into the marketplace.[287] If the use of a product was foreseeable, standard causation analysis, utilizing the "substantial factor" test, determines liability.[288]

From a regulatory perspective, pesticides are different from most pollutants, since they are manufactured as toxins to be intentionally introduced into the physical environment. In this arena, Proposition 65's product liability model is well designed to fill the jurisdictional regulatory void over pesticide manufacturer activity left open by the command and control statutes. In so applying strict regulatory standards to pesticide products, Proposition 65 accomplishes what no other statute, including FIFRA, is able to achieve.

(2) Pesticide User Liability under Proposition 65

Liability analysis under Proposition 65's nuisance model is best informed by legal doctrines developed under common and

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consumer goods and industrial goods purchased by business. Statement of Reasons for CAL. CODE REGS. tit. 22, § 12601(b), at 8-9.

286. Statement of Reasons for CAL.CODE REGS. tit. 22, § 12601(b). at 9.

287. Statement of Reasons for CAL. CODE REGS. tit. 22, § 12601(d), at 39-40.

288. *See* Soule v. General Motors Corp., 8 Cal. 4th 548, 572-73, 573 n.10 (1994). The substantial factor test states that if a plaintiff's injuries would not have occurred in the absence of the product defect, such defect will typically be considered a substantial contributing factor. *See id.*; Doupnik v. General Motors Corp., 225 Cal. App. 3d 849, 860-64 (1990); *see also* Self v. General Motors Corp., 42 Cal. App. 3d 1, 10 (1974) (holding that the defendant was entitled to a jury instruction that the placement of a fuel tank in the plaintiff's vehicle could not have been a substantial factor in causing plaintiff's injuries if such injuries would have occurred as a result of the accident no matter where the fuel tank was located). A defendant may still avoid liability if the injury was caused by a superseding act of a third party. *Soule*, 8 Cal. 4th at 573 n.9; *see also Doupnik*, 225 Cal. App. 3d at 863 (holding that the intervening negligent act of a third party is not a superseding cause where the act was a normal response to the defendant's conduct and was not extraordinarily negligent.). However, where the product "defect" is one of several "concurrent" causes of injury, the manufacturer will still be liable. The doctrine of "concurrent causes" holds that when two or more tortious acts combine, each contributing significantly to a single ultimate harm, *each* act is deemed a substantial and legal cause of injury, making each concurrent tortfeasor fully liable. *See Soule*, 8 Cal. 4th at 573 n.9; 6 B.E. WITKIN, SUMMARY OF CALIFORNIA LAW § 970 (9th ed. 1988); *see also* Rutherford v. Owens-Illinois, Inc., 16 Cal. 4th 953, 976-77 (1997) (holding that a plaintiff may prove concurrent causation in asbestos cases by showing that exposure to a defendant's product substantially contributed to the aggregate dose of asbestos to which the plaintiff was exposed).

statutory nuisance laws that impose liability on those whose activities unreasonably interfere with the interests of third parties.[289] Under these doctrines, a defendant will be liable for a hazard arising from a use of property if the defendant exercised some degree of "control" over the activity giving rise to the hazard.[290] The scope of this liability includes activities that a defendant had the *ability* to control, whether or not such control was actually exercised.[291] Proposition 65's nuisance model likewise bases liability on a business's ability to "control"

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289. The RESTATEMENT (SECOND) OF TORTS defines "public nuisance" as "an unreasonable interference with a right common to the general public." RESTATEMENT (SECOND) OF TORTS § 821B. In *Leslie Salt Co. v. San Francisco Bay Conservation & Dev. Comm'n*, 153 Cal. App. 3d 605, 618-619 (1984), the court noted that "environmental legislation that represents the exercise by government of the traditional power to regulate public nuisances . . . does not expressly purport to depart from or alter the common law, [and] will be construed in light of common law principles bearing upon the same subject." *See also* People ex. rel. San Francisco Bay Conservation & Dev. Comm'n v. Smith, 26 Cal. App. 4th 113, 125 (1994); CAL. HEALTH & SAFETY CODE § 41,700 (West 2000) (stating that the state air pollution-nuisance statute prohibits persons from discharging "from any source" air contaminants which "cause injury, detriment, nuisance or annoyance . . . to the public").

290. *See, e.g.*, Donchin v. Guerrero, 34 Cal. App. 4th 1832, 1839 (1995) (holding that a landlord is liable for dangerous dogs that escaped from his premises if the landlord had the ability to control the presence or activity of dogs on property). Premises liability cases base the defendant's liability for injuries caused by dangerous condition of property upon that defendant's exercise of *control* over the property. *See, e.g.*, Preston v. Goldman, 42 Cal. 3d 108, 117 (1986); Alcaraz v. Vece, 14 Cal. 4th 1149, 1159 (1997); Contreras v. Anderson, 59 Cal. App. 4th 188, 197 (1997). For statutory sources of premise liability, see the Clean Air Act, 42 U.S.C. § 7412(a)(9) (1994)(defining a responsible "owner or operator" as "any person who owns, leases, operates, *controls*, or supervises a stationary source") (emphasis added), and the Clean Water Act, 33 U.S.C. § 1316 (1994) (including a similar definition). *See* Wells Fargo Bank v. Goldzband, 53 Cal. App. 4th 596, 605 (1997) (observing that definitions of responsible operator "clearly envision someone who exercises some form of control or active involvement in the drilling, maintaining or operation of the well").

291. *Leslie Salt Co.*, 153 Cal. App. 3d at 622 (holding that the defendant's liability flows from the "principle that the private right to control land carries with it certain strictly enforceable public responsibilities"); Tolan v. State ex. rel. Dep't of Transp., 100 Cal. App. 3d 980, 984 (1979) (holding that the crucial element for liability is not ownership per se but rather that the defendant had "control, in the sense of power to prevent, remedy or guard against a dangerous condition") (quoting *Low v. City of Sacramento*, 7 Cal. App. 3d 826, 833-834 (1970)); People v. Southern Pac. Co. 150 Cal. App. 2d Supp. 831, 834 (1957) (holding that the statutory nuisance provision for air pollution, CAL. HEALTH & SAFETY CODE § 41,700, placed a duty to control pollution on property owner or occupier.); Dennis v. City of Orange, 110 Cal. App. 16, 24-25 (1930) (holding a landlord liable for a nuisance created by a tenant's gravel excavation where the nuisance existed at a time when the landlord had the opportunity or power to abate it and failed to do so); *see also* United States v. Law, 979 F.2d 977, 979 (4th Cir. 1992) (holding that the defendants had a duty to control waste discharge under the Clean Water Act even for pollutants they had not created).

activities giving rise to an unlawful discharge or exposure. Under Proposition 65's nuisance model, pesticide users will be liable for pesticide applications that lead to unlawful discharges or exposures to the extent they exercised "control" over the application activity, either through control of the land on which the pesticide was applied or through control of the activity itself.

The nuisance liability model encompasses all sources of toxic release under the common control of a single business. As discussed above, Proposition 65 is not concerned with the source of a discharge or exposure, but instead with the end destination of the released toxic chemical.[292] This approach is in sharp contrast to more traditional command and control environmental statutes which address the ultimate impact of emissions only indirectly. Such statutes define the contours of a regulated "facility"[293] or mandate specific effluent limitations from particular discharge points such as a sewage pipe or a smoke stack,[294] but if a party is in compliance with its discharge permit,

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292. The Proposition 65 regulations characterize an "environmental exposure" as one "which may foreseeably occur as [a] result of contact with an environmental medium," such as air or water. CAL. CODE REGS. tit. 22, § 12601(d) (2001). "Environmental exposures include all exposures which are not consumer products exposures, or occupational exposures." *Id.*

293. *See, e.g.*, 42 U.S.C. § 7412(a)(1) (1994) (defining a "major source" as "any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more any combination of hazardous air pollutants"). A "stationary source" is defined as "any building, structure, facility or installation which emits or may emit any air pollutant." 42 U.S.C. § 7411(a)(3) (1994). In general, federal courts have given the EPA wide discretion in defining what constitutes a "facility" for purposes of rulemaking and enforcement. *See* Nat'l Mining Ass'n v. United States Envtl. Prot. Agency, 59 F.3d 1351, 1358 (D.C. Cir. 1995) (holding that EPA has latitude to adopt definitions of 'major source' that are different from those used in other programs) (citing Alabama Power Co. v. Costle, 36 F.2d 323, 397-398 (D.C. Cir. 1979)); *see also* Mobil Oil Corp. v. Envtl. Prot. Agency, 871 F.2d 149, 152 (D.C. Cir. 1989) (supporting EPA's determination under RCRA that "facility" involved is the individual management unit rather than the waste management complex as a whole).

294. Under the Clean Water Act, for example, discharges are measured from a specific "point source," which is defined as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14) (1994). As one might expect, the Clean Water Act has had difficulty in controlling pollution runoff that cannot be traced to a specific "point source."
The Clean Air Act distinguishes between "point source" and "fugitive" emissions. 42 U.S.C. § 7602(j) (1994). Fugitive emissions are defined by EPA as emissions from a stationary source "that could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening." National Emissions Standards for Hazardous Air Pollutants for Source Categories: General Provisions, 59 Fed. Reg. 12,408, 12,433 (1994); 40 C.F.R. § 63.2 (2000). Fugitive emissions may or may not be counted as

the potential damage caused does not give rise to liability.[295] Under these statutes, how one measures "discharge" is thus crucial since it determines compliance with the operating permit.

In contrast, in a Proposition 65 exposure case, the relevant measurement is the ultimate daily exposure of toxic chemicals to an individual.[296] Similarly, in a Proposition 65 discharge case, as discussed above, the relevant measurement is the daily "amount" of toxic chemical that "enters a source of drinking water."[297] Which smokestack or which discharge pipe emitted the toxic chemical is essentially irrelevant, so long as they all fall under the "control" of the same party.[298] As discussed in the next section, this aspect of Proposition 65 is key to its ability to navigate through the non-point pollution sources characteristic of pesticide drift and runoff.

(3) Comparison Between Pesticide Manufacturer and Pesticide Use Liability Under Proposition 65

Proposition 65's consumer product model and its nuisance model differ in how they allocate liability to a business activity. As discussed, a business violates Proposition 65 under the consumer product model of liability by introducing into the stream of commerce a product that, when used in a foreseeable manner, discharges a toxic chemical into a source of drinking water or exposes persons to a toxic chemical without any warning.[299] Under the consumer product model, a defendant's

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part of a facility's total emissions, depending upon the statutory context. *See, e.g., Nat'l Mining Ass'n*, 59 F.3d at 1359; *Alabama Power Co.*, 36 F.2d at 368-370. *See also* Alliance of Small Emitters/Metals Industry v. SCAQMD, 60 Cal. App. 4th 55, 57 (1997) (addressing a 1991 South Coast Air Quality Management District pollution control strategy based on installing specific control systems on individual pieces of equipment and factory processes).

295. *See* 33 U.S.C § 1342(k) (1994) (stating that compliance with NPDES or SPDES permit constitutes compliance with Section 301 of the Clean Water Act for purposes of enforcement); E. I. du Pont de Nemours & Co. v. Train, 430 U.S. 112, 138 n.28 (1977) ("The purpose of [Section 402(k)] seems to be . . . to relieve [permit holders] of having to litigate in an enforcement action the question of whether their permits are sufficiently strict"); Atlantic States Legal Foundation v. Eastman Kodak, 12 F.3d 353, 357-358 (2d Cir. 1993) (holding that the shield provision of Clean Water Act applies even to pollutants not listed on NPDES permit).

296. *See* CAL. HEALTH & SAFETY CODE § 25,249.6 (West 2000).

297. CAL. HEALTH & SAFETY CODE § 25,249.9(b)(1) (West 2000).

298. Numerous Proposition 65 enforcement cases have been brought alleging environmental exposures from stationary sources. *See*, AG Prop. 65 List, *supra* note 17 (listing enforcement cases); Statement of Reasons for 22 Cal. Code Reg. § 12601, at 40 ("environmental exposures can result from the . . . operation of a chemical production or manufacturing facility.").

299. *See supra* notes 262-298 and accompanying discussion.

liability arises from its profit oriented, participatory connection with the defective product and the enterprise that created consumer demand and reliance.[300] A manufacturer of a consumer product that discharges or exposes persons to a toxic chemical need not "control" the activity that gives rise to a violation, since the introduction into commerce—the "creation" of the product defect—is sufficient to warrant liability.[301] Conversely, under Proposition 65, retail businesses in the chain of commerce that may have some "control" over the sale of a product, but which have not played a significant role in the creation or marketing of the product itself, will not be liable.[302]

Under the nuisance model, the opposite is true.[303] Nuisance liability does not turn on which party "created" the nuisance-like condition, but rather on which party "controlled" the activity directly giving rise to the offending nuisance. The California Supreme Court noted this distinction in *Preston v. Goldman* when it ruled that prior landowners could not be held responsible for dangerous conditions they may have created on the property in the past, but over which they no longer had any control:

> Despite plaintiff's attempts here to distinguish his case as one in which the liability alleged is not based upon the [defendant's] status as landowners but rather as the creators of a negligent condition, this analysis does not bear up under scrutiny. While principles regarding negligence in manufacturing chattels [cite] have in some instances been extended to negligent conditions on land, there has been no wholesale importation of one set of rules to the other context. Instead, the general rule on nonliability has been applied to conditions on the land created by the predecessor landowner,

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300. Kassel v. Remington Arms Co., 24 Cal. App. 3d 711, 725 (1972).

301. *See* People ex. rel. Lungren v. Super. Ct. (Am. Standard, Inc.), 14 Cal. 4th 294, 306 (1996) (holding that manufacturers are potentially liable under Proposition 65, even though they have no control over plumbing products after they are sold); *see also* Yanase v. Automobile Club of So. Cal., 212 Cal. App. 3d 468, 477 (1989) ("[I]nvolvement in the chain of commerce, as distinguished from the concept of control of the premises, is fundamental to the concept of products liability."); Fortman v. Hemco, 211 Cal. App. 3d 241, 251-52, 254 (1989) (if one is part of the overall production and marketing enterprise, he may not escape liability by arguing he had no control over the defect); Hansen v. Sunnyside Products Inc., 55 Cal. App. 4th 1497, 1516 (jury's focus [in a product liability case] is "properly directed to the condition of the product itself, and not to the reasonableness of the manufacturer's conduct") (quoting Barker v. Lull Engineering Co., 20 Cal. 3d 413, 434 (1978)).

302. *See, e.g.*, CAL. HEALTH & SAFETY CODE § 25,249.11(f) (West 2000) (stating that a retail seller is not obligated to provide warning except where the retail seller itself is responsible for introducing a listed chemical into the consumer product in question).

303. *See supra* notes 128--131 and accompanying discussion.

with the landowner's role as "creator" taking a secondary place.[304]

Applying the nuisance model to exposures arising from consumer products is based on the faulty assumption that manufacturers are liable for exposures to product consumers but not for "environmental exposures" to third parties. This approach, however, is unsupported by the regulations, which do not limit "consumer product" exposures to consumers or preclude manufacturers from liability for "environmental" exposures caused through the sale of their products.[305] As evidenced by the *American Standard* decision, product liability under the discharge prohibition clearly may arise for "environmental" type discharges, without regard to whom is ultimately "exposed" to the contaminated drinking water source.[306] Further support for a blanket standard based on exposure is provided by common products liability law, which,

304. Preston v. Goldman, 42 Cal. 3d 108, 117 (1986) (emphasis added). Other cases have followed this distinction, noting that a nuisance claim may not lie for damages due to a defective product. City of San Diego v. United States Gypsum Co., 30 Cal. App. 4th 575, 585-586 (1994) (refusing to allow a nuisance claim against asbestos manufacturer for injuries due to asbestos-containing building materials); Town of Hookset Sch. Dist. v. W.R. Grace Co., 617 F. Supp. 126, 133 (D.N.H. 1984) (holding that a defendant's acts as a manufacturer, as opposed to a property owner, cannot establish a nuisance action). Two other cases involving past hazardous waste releases have held businesses potentially liable for "nuisances" on property they no longer controlled. *See* Selma Pressure Treating Co., Inc. v. Osmose Wood Preserving Co. of Am., Inc., 221 Cal. App. 3d 1601, 1619, n.7 (1990) (holding that equipment suppliers and installers were liable for creating a nuisance of hazardous waste spillage on property they did not own or control); Mangini v. Aerojet-General Corp. 230 Cal. App. 3d 1125, 1137 (1991) (holding that prior tenants may be liable for creating a continuing nuisance of hazardous waste on a property, even after they no longer had a possessory interest in the property). *Gypsum* distinguished both *Mangini* and *Selma Pressure* by noting that these cases had simply held defendants liable for creating a nuisance, which could be considered continuing into the present, at some time in the past. *Gypsum*, 30 Cal. App. 4th at 586-587. This approach is also consistent with federal and state hazardous waste laws that subject prior landowners and operators to present liability for hazardous waste cleanup. *See, e.g.*, 42 U.S.C. § 9601 *et. seq* (1994).

305. An "environmental exposure" results from "contact with an environmental medium, including, but not limited to ambient air, indoor air, drinking water, standing water, running water, soil, vegetation, or manmade or natural substances, either through inhalation, ingestion, skin contact or otherwise." CAL. CODE REGS. tit. 22, § 12601(d) (2001). Since third parties are not product "consumers," *see* CAL. CODE REGS. tit. 22, § 12601(b) (2001), exposures to third parties are more appropriately characterized as "environmental exposures."

306. One may assume that the "consumers" of the brass plumbing products at issue in *Am. Standard* were largely home builders or plumbers, rather than residential homeowners. The consumer or third party exposure analysis in this case is arguably dicta, since the discharge provision protects "sources of drinking water" for *all* California citizens.

while understandably focusing on injuries to consumers, also holds manufacturers liable for injuries to third parties caused by use of their products.[307]

The nuisance model, when used alone, allows manufacturers to escape liability for discharges or exposures since manufacturers never *control* the uses to which their products are put, including those that violate Proposition 65. Exclusive application of the nuisance model to manufacturers would defeat a central purpose of the Statute—to inform citizens when they are being exposed to toxic chemicals.[308] The statutory structure of Proposition 65 justifiably assumes that the manufacturer possesses the most complete knowledge of the dangers of its products. By relieving a manufacturer of its warning obligations, the nuisance model would create a potential loophole in the chain of liability. In short, the party with the best access to relevant product information (the manufacturer) would be under no duty to disseminate it so long as the "exposures" are to third parties and not the product consumer and user. Since product users would be left uninformed, they likewise would be under no duty to provide warnings to third parties.[309]

In contrast to the nuisance model, the consumer product model requires that manufacturers bear responsibility for the toxic emissions caused by the foreseeable uses of their products once they are released into commerce. In an exposure case, depending upon the circumstances, manufacturers may fulfill their obligation by providing warnings to users of their

307. Barret v. Super. Ct., 222 Cal. App. 3d 1176, 1187 (1990); Elmore v. Am. Motors Corp. 70 Cal. 2d 578, 586 (1969) (holding that manufacturers are liable for injuries caused by their defective products not only to the purchaser or user of such product, but also to injured bystanders as well).

308. The Statute preamble declares the people's right "to be informed about exposures to chemicals that cause cancer, birth defects or other reproductive harm." The ballot argument in favor of Proposition 65 states: "Proposition 65 also tells businesses: Don't expose us to any [listed] chemicals without first giving us a clear warning. We each have a right to know, and to make our own choices about being exposed to these chemicals." Reiner, Torres & Newman, *supra* note 7. *See also* Rechtschaffen, *supra* note 34, at 318-19.

309. Proposition 65's "knowing and intentional" requirement includes constructive knowledge of generally known and accepted scientific facts. *See supra* notes 18-20 and accompanying discussion; *see also* Anderson v. Owens-Corning Fiberglass Corp., 53 Cal. 3d 987, 995-96 (1991) (holding that a "failure to warn defect" includes risks of which defendant should have been aware given the generally recognized and available scientific knowledge). Despite the constructive knowledge standard, however, it is easy to imagine many situations in which a facility operator will have significantly less information than the manufacturer regarding the potential toxic emissions from consumer products used at its facility.

products,[310] or to potentially affected third parties through newspaper publications or other widespread media methods.[311] Requiring manufacturers to comply with Proposition 65's provisions regarding third party exposures fulfills a corollary purpose, to compel manufacturers to move away from products that expose persons to toxic chemicals. Clearly this is true for potential violations of the discharge prohibition, since manufacturers must reformulate their products if they wish to continue to do business in California. Perhaps not surprisingly, the warning requirement can likewise effect such a change by providing consumers with information regarding toxic and non-toxic products, thereby subjecting manufacturers to various public pressures to reduce toxic exposures.[312]

c. *Application of Proposition 65 to Pesticide Pollution*

The two main areas of pesticide pollution are discharges of pesticide runoff into surface and/or ground water, and pesticide drift from aerial spraying.[313] Proposition 65 would apply to each of these types of pollution in different ways.

(1) Application of Proposition 65's Discharge Prohibition to Pesticide Contamination

Proposition 65's discharge prohibition forbids releases of toxic chemicals into sources of drinking water. As discussed above, for risk assessment purposes the measurement of the "amount" of pesticide "discharged" is made at the point where

310. Product liability law allows manufacturers to provide warnings to an intermediary consumer or user that may be in a better position to disseminate information to third parties regarding the risks of a particular product. *See, e.g.*, Brown v. Super. Ct., 44 Cal. 3d 1049, 1061-62 (1988), (holding that a manufacturer's duty to warn of risks from prescription drugs runs to the physician, not to the patient); *see also* Carlin v. Super. Ct., 13 Cal. 4th 1104, 1116 (1996); Groll v. Shell Oil Co., 148 Cal. App. 3d 444, 449 (1983); Carmichael v. Reitz, 17 Cal. App. 3d 958, 994 (1971). As an example, in the diesel facility cases the manufacturers could have provided warnings to alert operators that their facilities might have to make certain operational changes to avoid unlawful environmental exposures, or otherwise alert neighboring communities, in compliance with Proposition 65.

311. *See* CAL. CODE REGS. tit. 22, § 12601(d)(1) (2001).

312. *See* Barsa, *supra* note 237. Barsa quotes the California EPA's Proposition 65 Review Panel's Summary of Issues, which stated that "Proposition 65's principal success has been in the altering of behavior by industry in the area of source reduction," and that "Proposition 65 has compelled businesses to know more about their products and has generally resulted in an increase in industry's preventative behavior." *Id.* at 1242 n.118; *see also* Dennis Pfaff, *"Revolution" is Seen in Toxic Exposures*, 12 PROP 65 NEWS, Sept. 1998, at 20.

313. *See supra* notes 197, 202-203, 206.

the pesticide enters into a source of drinking water.[314] By focusing on the "amount" discharged, and not the ultimate concentration of the pesticide in the water body, Proposition 65 applies a significantly stricter measurement standard than those of other statutes protecting water resources.[315]

In California, pesticide discharge to sources of drinking water, which include most surface water and ground water resources in the State,[316] is relatively common. Pesticide discharges into streams and rivers located in the Central Valley, for example, are regularly detected where appropriate monitoring is conducted.[317] In similar fashion, detections of pesticides in groundwater in California have been reported in numerous instances.[318] Typically, groundwater contamination is detected as a pesticide concentration in the groundwater reservoir. Such a detection may not provide immediate information as to the source or nature of the discharge. To establish manufacturer liability, a plaintiff may potentially overcome this causation challenge by tracing the chemical formula of the pesticide to the

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314. *See supra* notes 59-71 and accompanying discussion.

315. As discussed, FIFRA adopts a cost-benefit analysis in determining whether pesticidal impacts on surface water are "unreasonable." *See supra* notes 96-100. The SDWA requires public water systems to implement treatment technologies to control certain listed toxic contaminants, but does not regulate individual dischargers. Finally, under the Clean Water Act, TMDLs are established at a level necessary to implement applicable water quality standards (including a margin of safety to account for uncertainty), but only on a chemical-by-chemical basis. Thus, where the diluted level of a pesticide in water is not itself considered to be toxic, no TMDL will be required, even if such surface water contains multiple contaminants. *See* CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD, STAFF REPORT: EXPLANATION OF RECOMMENDED CHANGES FOR 1998 CLEAN WATER ACT SECTION 303(d) LIST 5 (1998) (recommending removal of carbofuran, malathion, and methyl parathion from a list of impairment contaminants since concentrations of these pesticides in the Sacramento River had not exceeded available criteria). In contrast, Proposition 65's discharge provision, by not allowing for such dilution, addresses the aggregate presence of other contaminants in the water body.

316. The Proposition 65 regulations define the term "water" to include both surface and groundwater. CAL. CODE REGS. tit. 22, § 12201(e)(1) (2001).

317. *See* HEAVNER, *supra* note 169, at 39; KEGLEY ET AL., *supra* note 150, at 39-44. *See supra* note 202. Monitoring surface water discharges is made easier by the regular pulses of pesticide runoff that drain from the same applications every year. *See, e.g.*, S.Y. Panshin, J.L. Domagalski & N.M. Dubrovsky, *Pesticide Concentrations in Surface Water as a Function of Agricultural Land Use in Five Small Watersheds, Western San Joaquin Valley, California*, 75 EOS: TRANSACTIONS OF THE AM. GEOPHYSICAL UNION (Supp.) 246 (1994) (showing a correlation between agricultural application and pesticide detections).

318. *See* HEAVNER, *supra* note 159, at 11-15. The California current use pesticides most frequently detected in groundwater are simazine, diuron, atrazine, and methyl bromide, in addition to degradation products ACET, Deethyl atrazine, TPA, and DACT. *Id.* at 11.

registrant of the pesticide.[319] For users and/or applicators, discovery into local hydrology and local pesticide uses will likely reveal the potential sources of the contamination. At that point, each user/applicator utilizing the detected pesticide within the groundwater watershed could be found jointly and severally liable under common law theories of shared or alternate liability.[320]

The establishment of the daily "amount" of listed chemical discharged into the source of drinking water is a potentially greater proof challenge, particularly for groundwater contamination, which is normally caused by slow subsurface leaching at a rate that is difficult to monitor. The drafters of Proposition 65 anticipated this problem by adding language in Section 25249.5 that prohibits discharges "onto or into land where such chemical passes or probably will pass into any source of drinking water."[321] The regulations clarify that such discharges include aerial spraying of pesticides that immediately will be deposited on land.[322] Finally, the Proposition 65 regulations allow a plaintiff to use accepted methods of modeling to establish that a discharge into or onto land will probably pass into a drinking water source.[323]

Under this language, a plaintiff theoretically would not need to detect actual pesticide contamination of a drinking water source, but instead merely the fact of a pesticide release onto land or into air, and the "probability" of potential

319. Under the Pesticide Contamination Prevention Act, DPR is required to determine whether the contamination was caused by proper or improper application techniques. *See* CAL. FOOD & AGRIC. CODE § 13149 (West 2001). If DPR finds that contamination was due to proper application, the pesticide manufacturer is liable under the product liability model. If the pesticide application is found to have been improper, a factual question would remain as to whether the manner of pesticide use was nonetheless "foreseeable." *See supra* notes 284-287 and accompanying discussion.

320. *See* Rutherford v. Owens-Illinois, Inc., 16 Cal. 4th 953, 968-977 (1997); Summers v. Tice, 33 Cal. 2d 80, 84-87 (1948). The degree to which these theories could be applied would depend on whether a plaintiff could establish that each application contributed at least some part to the overall groundwater contamination.

321. CAL. HEALTH & SAFETY CODE § 25,249.5 (West 2000). Under the regulations, "probably will pass" is defined as "more likely than not will pass." CAL. CODE REGS. tit. 22, § 12201(e)(2) (2001). The Statement of Reasons explains that this definition was derived from the preponderance of the evidence standard generally used in civil litigation. Statement of Reasons, CAL. CODE REGS. tit. 22, § 12201 Amendment, at 4.

322. CAL. CODE REGS. tit. 22, § 12401(e)(3) (2001) ("Discharge or release into water or onto or into land" includes a "discharge or release to air that is directly and immediately deposited into water or onto land.").

323. CAL. CODE REGS. tit. 22, § 12901(f) (2001).

contamination.[324] Faced with this possibility, the agricultural industry successfully lobbied the State to pass a regulation establishing that a proper application of a pesticide not considered to be a groundwater contaminant shall be presumed not to pass into a source of drinking water.[325] Thus, for a subset of pesticides, a plaintiff in a Proposition 65 action must still establish that a source of drinking water has actually been contaminated.[326] The Proposition 65 Ballot is clear, however, that agriculture was not meant to be granted exemptions under the Statute.[327] Thus, the regulatory Statement of Reasons confirms that once such contamination has been detected, the presumption that a particular pesticide will not migrate into a source of drinking water is no longer available.[328]

(2) Application of Proposition 65's Warning Requirement to Pesticide Contamination

Proposition 65's warning requirement applies to any exposure of an individual to a listed chemical. Exposures may be

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324. Thus, with appropriate models in place, a plaintiff could make its case by simply comparing local pesticide use patterns with pesticide detections in ground or surface water.

325. CAL. CODE REGS. tit. 22, § 12405 (2001). In order to qualify for this exemption, a pesticide must have met all data requirements not been found to be a likely groundwater contaminant under the Pesticide Contamination Act. The is because "an economic poison which has been studied under the Pesticide Contamination Prevention Act (PCPA) and not been placed on the Groundwater Protection List established under the PCPA will probably not migrate to groundwater." Statement of Reasons, Section 12405 at 4.

326. A plaintiff can use modeling to extrapolate the daily "amount" discharged, based on a detectable concentration of a pesticide in a groundwater body, given additional information regarding the identity of users and the frequency of such uses. *See* CAL. CODE REGS. tit. 22, § 12901(f) (2001).

327. Arthur C. Upton, Norman W. Freestone & Albert H. Gersten, *Rebuttal to Argument Against Proposition 65*, CALIFORNIA BALLOT PAMPHLET: GENERAL ELECTION 55 (Nov. 4, 1986) ("Proposition 65 treats farmers exactly the same as everyone else - no tougher, no easier.")

328. Statement of Reasons, CAL. CODE REGS. tit. 22, § 12405, at 4, 6 (stating that if the chemical in question has "passed" into a source of drinking water, this regulation does not apply; the agency revised an earlier version to clarify that "it expressly relates only to the question of whether a discharge or release '*probably will pass*' to a source of drinking water"); *see id.* at 9 ("The presumption . . . applies only where there is a *suspicion* that a chemical will pass into a source of drinking water, not where is actually has passed.") (emphasis added). Indeed, a review of the entire Statement of Reasons for the final version of CAL. CODE REGS. tit. 22, § 12405 demonstrates the intent of the drafters was to preclude liability for agricultural users based on the "mistaken" premise that "any discharge of a chemical *onto the ground* will always result in a significant amount of a listed chemical reaching a ground-based source of drinking water." *Id.* at 8 (emphasis added).

through air, food products, drinking water,[329] dermal exposure and, especially for babies or infants, oral exposures caused by mouthing behavior after coming into contact with contaminated dust or soil particles.[330] In areas of California with heavy pesticide use, cumulative exposures to residents through each of these mediums are common.[331]

The most typical exposure requiring a warning would be from aerial pesticide drift.[332] Where monitoring has occurred in California, pesticides have been routinely detected in air samples, often miles away from their source.[333] Despite these detections, however, current regulatory enforcement of pesticide air pollution is largely non-existent.[334] The application of Proposition 65's Warning Requirement has the potential to change that situation.

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329. The preventative standards of the discharge prohibition typically would moot the need for a warning under Proposition 65, since any contamination to drinking water that would require a warning would already be prohibited under the discharge prohibition. As an example, consider a daily discharge of 50 micrograms of a listed substance into a source of drinking water. To measure liability, the discharge prohibition assumes that an individual will be exposed to that amount *in drinking water*, even where the actual exposure may be only a fraction of that total. This analysis could change to the extent the drinking water exposure was part of a cumulative, multi-media exposure from a common source.

330. WALLINGA, *supra* note 106, at 14-15; GINA M. SOLOMON & LAWRIE MOTT, NATURAL RESOURCES DEFENSE COUNCIL, TROUBLE ON THE FARM: GROWING UP WITH PESTICIDES IN AGRICULTURAL COMMUNITIES, 14-16 (1998), *available at* http://www.nrdc.org/ health/kids/farm/farminx.asp. To the extent exposures from different media emanate from a single source of contamination, they may be considered cumulatively.

331. *See, e.g.*, SOLOMON, *supra* note 330, at 11-16; Nancy J. Simcox et al., *Pesticides in Household Dust and Soil: Exposure Pathways for Children of Agricultural Families*, 103 ENVTL. HEALTH PERSP. 1126 (1995). To prove an exposure under Proposition 65, a plaintiff must use an accepted "method of analysis" to detect a pesticide in a medium of exposure (such as air or water or household dust). The Proposition 65 regulations assume that an individual will be exposed to a certain daily amount of common environmental media such as air or water. For other media of exposure such as dust, soil, or clothing, a plaintiff would have to establish the "amount" of exposure by proving through an accepted scientific method the daily rate of an individual to these media. A plaintiff's burden in establishing exposures through such relatively unconventional routes can be difficult to meet, especially when there is no generally accepted "method of analysis" to measure predicted exposures. *See* CAL. CODE REGS. tit. 22, § 12901(f) (2001); *supra* notes 24-26 and accompanying discussion.

332. *See* Norma Grier, *Why Pesticide Spraying Means Drift*, 7 J. PESTICIDE REFORM 6 (1998).

333. *See supra* note 197; Clifford P. Rice & Sergei M. Chernyak, *Marine Arctic Fog: An Accumulator of Currently Used Pesticide*, 35 CHEMOSPHERE 867 (1997).

334. Aerial drift of pesticides has been largely neglected due to the lack of comprehensive monitoring and DPR's failure to list any actively used pesticides as Toxic Air Contaminants under the TAC program. *See supra* notes 194, 197 and accompanying discussion.

Under Proposition 65, once monitoring has detected pesticides in ambient air, a plaintiff may rely on standard air modeling techniques, used by state agencies such as the Air Resources Board, to create an isopleth plume of airborne contaminants.[335] From this air contaminant model, a plaintiff may estimate how many persons have been exposed and the extent of the corresponding warning requirement. As noted by several commentators, the key to effective warnings under Proposition 65 is the degree of information actually conveyed by such warnings.[336] This may be a concern for the pesticide industry, which prefers secrecy regarding both the chemical contents of its pesticide products and the timing of pesticide applications in the field.[337] To be effective, however, a warning should identify the pesticide being used, the identity of the business or businesses responsible for such exposure, and the nature of the pesticide's toxicity. Moreover, pesticide users should be required to disclose the timing of their applications to allow the public to avoid such toxic exposures should it choose to do so.

In contrast to pesticide discharges into drinking water sources, pesticide releases into air and other media are permitted under Proposition 65, as long as a warning is given to those persons exposed. However, the negative publicity associated with providing a warning will in many situations achieve the same result as a prohibition.[338] It is likely that a strongly worded warning combined with information on the timing of the application would create widespread public opposition to aerial spraying of toxic pesticides.[339] Pesticide users wishing to avoid alerting local residents that they are being

335. CAL. CODE REGS. tit. 22, § 12901(f) (2001); *see, e.g., James A. Westbrook, Air Dispersion Models: Tools to Assess Impacts from Pollution Sources*, NAT. RESOURCES & ENV'T 546, 549 ("most Proposition 65 exposure analyses follow standard EPA and/or California modeling guidance").

336. *See, e.g.*, Rechtschaffen, *supra* note 34, at 320-67; Barsa, *supra* note 236.

337. *See, e.g.*, 7 U.S.C. § 136h (1994) (addressing "protection of trade secrets and other information"). Currently there is no requirement that pesticide users provide any notice to nearby residents of a pesticide application. Randy Segawa, DPR, personal communication.

338. This fact has been noted by several commentators. *See, e.g.*, Rechtschaffen, *supra* note 34, at 341-55; Barsa, *supra* note 236.

339. Proposition 65 warnings are not preempted by FIFRA's uniform labeling requirements for pesticide products, so long as the warnings are not required as part of labeling. *See* Chemical Specialties Manufacturers Association, Inc. v. Allenby, 958 F.2d 941, 945-949 (9th Cir. 1992). Manufacturer and user warnings for environmental exposures to pesticides under Proposition 65 are communicated through signs, newspaper announcements or mailed notices and thus would not be preempted. *See* CAL. CODE REGS. tit. 22, § 12601(d)(1)(A)-(C) (2001).

exposed to carcinogenic or reproductively toxic pesticides will have additional incentives to avoid pest control techniques that lead to such exposures.

IV

ISSUES FOR THE FUTURE

In many ways pesticides represent a unique regulatory phenomena. Designed to be highly toxic, a pesticide is released into the physical environment with the specific purpose of killing other living organisms. Surprisingly, although pesticides can potentially contaminate several different environmental media,[340] environmental regulatory statutes have historically taken a hands-off approach, leading to a significant disparity in levels of regulation between pesticide use and other potentially polluting industrial activities.[341] Instead, the primary vehicle for regulating pesticides has been the licensing-based approach of FIFRA, which is implemented in California by DPR.

This article demonstrates the flaws in a license-based approach to regulating pesticide use. Licensing statutes such as FIFRA mire society in endless risk assessment, fail to allocate fairly the risks of uncertainty, and lack effective incentives for evaluation of non-toxic alternatives. In recent years there have been indications that the regulatory agencies may finally be agreeing with this assessment. In California, at least, small but definite steps are being taken to regulate pesticide use as simply another industrial activity, subject to the same environmental standards as any other potential source of pollution.[342] While command and control of pesticide use may thus be just around the corner, there are still reasons to doubt the eventual success of the purely regulatory approach. Similar to a license-based approach, standard setting under the command and control approach is highly susceptible to arguments regarding cost and technical feasibility.[343] This is especially true given that the

340. *See supra* notes 202, 206; David Pimental & Lois Levitan, *Pesticides: Amounts Applied and Amounts Reaching Pests*, 36 BIOSCIENCE 86 (1986).

341. For a health-conscious society, the normal reaction to the release of such a chemical would be outrage, and a strong and relatively forceful regulatory scheme, such as those used to regulate toxics under the Clean Air and Clean Water Acts, or under hazardous waste statutes CERCLA and RCRA. For pesticide use, however, the regulatory response has been, at best, ambiguous.

342. This movement is best illustrated by the recent efforts of DPR and the State Water Resources Control Board to work together in regulating pesticide contamination of surface water. *See supra* note 203 and accompanying discussion.

343. A good example is provided by the federal and state Safe Drinking Water Acts. Because they incorporate cost and technical feasibility concerns, MCLs are

burden of establishing harmful pesticide discharge or exposure levels under command and control statutes still lies with the regulating community and not with pesticide users or manufacturers. In the charged political atmosphere that quickly surrounds any attempt to restrict pesticide use, it seems unlikely that tough, technology-forcing standards for pesticide pollution will be implemented any time in the near future. If and when such standards are set, it is further doubtful that citizens will be given any role in monitoring and enforcing statutory violations. Instead, successful implementation will depend on the degree to which the state agencies maintain sufficient budgets and policy direction in the face of intense lobbying pressure from industry.[344]

Lurking amidst this rather bleak forecast is Proposition 65, which fortuitously avoids the big picture "policy" debates that normally slow traditional regulation to a standstill. The Statute does not, for example, mandate funds for alternative pest control technology, nor does it require a reduction in use for the most toxic pesticides. Instead, the Statute sets forth the conditions - no discharge and no undisclosed exposures - under which pesticide use may continue, if it is to continue, into this new century. While the very existence of Proposition 65 is no doubt disconcerting to the chemical and agricultural industries, the basic premises of the Statute, that toxic pesticides should not be discharged into drinking water sources and that people should not be unknowingly exposed to pesticide chemicals, is reasonable. Indeed, citizens would likely be surprised to learn the extent to which pesticide use in California fails to meet these basic requirements.

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typically less restrictive than the purely health-based maximum contaminant level goals (MCLGs) or public health goals established for policy guidance. *Compare* 40 C.F.R. §§ 141.11 - 141.12 (2000) *with* §§ 141.50 - 141.51. *See* CAL. CODE REGS. tit. 22, § 64444 (2001); CAL. HEALTH & SAFETY CODE §§ 116,275(f), 116,365(c) (West 2000). Even with purely health-based standards, such as the water quality standards of the Clean Water Act or the reference exposure levels for toxic air contaminants in California, feasibility concerns have the potential to delay implementation for years. *See supra* notes 197, 203-204 and accompanying discussion (noting that the Toxic Air Contaminant Program generally is not enforced with regard to pesticide contamination.); *supra* notes 310-312 and accompanying discussion (noting the tendency of TMDL implementation to be delayed by cost feasibility concerns.)

344. *See supra* note 252; Rick Lovett, *Senate Questions OEHHA Independence*, 11 PROP 65 NEWS, Apr. 1997, at 15 (containing OEHHA scientist John Froines testimony that "[t]he delays we now have are unconscionable"); Rick Lovett, *Wilson's Prop. 65 Track Record Poorer than Deukmejian's, Berkeley Prof. Says*, 10 PROP 65 NEWS, Feb. 1996, at 3.

As this article has indicated, the application of Proposition 65 to pesticide use in California would create strong incentives on the part of manufacturers and users to reduce pesticide pollution. Pesticide users in particular would, for the first time, have real economic reasons to explore, and adopt where feasible, less toxic and less chemically intensive methods of eliminating pests. Despite these benefits, however, the question of whether Proposition 65 will force safer methods of pest control in the years to come is still unclear. Proposition 65 demands a wholesale adoption of the precautionary principle on a day-to-day basis. It requires businesses to internalize the costs of pesticide pollution into their own cost benefit balance. In sum, Proposition 65 may call our collective societal bluff as to whether we are serious about eliminating toxic pollution. In doing so, Proposition 65 creates controversy for the simple reason that the value we place on pesticide use, as with many economically important activities, is less than clear.

In part, the difficulty in adopting the precautionary principle as a basis of regulation is due to the same uncertainty that hinders the implementation of well meaning but ultimately ineffective environmental legislation. For Proposition 65, the issue can be framed through the lens of ecological economics and cost internalization. If we decide, for example, that pesticide users and manufacturers should internalize the external costs of their operations, is Proposition 65 the proper vehicle to make that happen? Clearly this issue is debatable. The Statute is certainly subject to the criticism that it goes too far.[345] Several provisions, including the measurement of daily discharge under the discharge prohibition, for example, or the mandatory 1000-fold safety factor applied to reproductive toxicants, are susceptible to the charge that Proposition 65 sets the "costs" side of the equation too high, thus distorting the economic "cost-internalization" calculation. According to this line of reasoning, the high costs imposed by Proposition 65 prevent even relatively benign businesses from conducting operations in California, to the ultimate detriment of society.

The easy answer to this charge is to consider how Proposition 65 has actually fared in practice when applied to various industries. In the lead discharge cases, for example, far from driving away business, Proposition 65 single-handedly induced the plumbing industry to adopt lead-free products in

345. *See, e.g.*, Jansen, *supra* note 16; Margulies & Graves, *supra* note 16; Coughlin & Murray, *supra* note 55.

less than 10 years.[346] While other examples illustrate the power of Proposition 65 to force industries to adopt non-toxic alternatives,[347] no example exists to date in which Proposition 65 has shut down a productive and beneficial industry in California.

The ability of Proposition 65 to move industry away from toxics does not answer the broader question, however, of whether such movement is in every case socially desirable. In considering this more fundamental issue, two analyses are suggested. First, it is clear that Proposition 65 is much more than simply a set of highly protective standards over which reasonable minds might disagree. Many aspects of the Statute, including its liability models, burden shifting and simplified citizen enforcement provisions, fill regulatory niches often left vacant by more traditional statutory approaches. As this article has illustrated, the advantages offered by Proposition 65's regulatory approach are particularly striking when applied to pesticide activities, which have thus far managed to evade most forms of direct regulation. Indeed, in the area of pesticide regulation it is hard to argue that Proposition 65's citizen-driven, direct liability approach would not be a significant improvement over current policies.

The question of whether Proposition 65's highly protective standards are ultimately necessary or even beneficial is, of course, a more difficult analysis, intertwined as it is with the uncertainties surrounding toxic risk assessment. Even from a pure risk assessment perspective, the Statute appears at times to stretch the boundaries of common sense. Why, for example, should risk be measured at the point a toxic discharge enters a far away source of drinking water—a stream in the Central Valley for example—if we know that no person will be directly consuming the water contained within? Why should we assume that an individual who is exposed to drift from a carcinogenic pesticide will be exposed to that chemical for 70 years instead of the occasional exposures that are more likely to occur over that person's lifetime? If these are not realistic scenarios then is not

346. *See* Rechtschaffen, *supra* note 73.

347. These include elimination of lead from ceramic tableware, calcium supplements and mini-blinds, removal of trichloroethylene (a known carcinogen) from typewriter correction fluids such as liquid paper, and the numerous successful air cases involving the negotiated reductions—as a means to avoid the warning requirement—of toxic chemicals including chloroform, methylene chloride, ethylene oxide, lead, and diesel exhaust from polluting facilities. *See, e.g.*, Weil Testimony, *supra* note 16, at 5-7; AG Prop. 65 List; Freund, *supra* note 17, at 343-47.

Proposition 65's statutory mandate simply the latest example of regulatory overkill?[348]

To answer these questions, it is necessary to consider that the Proposition 65 regulations impose liability on a business only for discharges or exposures caused by its own activities and not for those of other business operations.[349] Thus, if ten different users are applying pesticides in a manner that results in discharges into nearby streams, or exposes nearby residents to aerial drift, each will be liable only for the amount resulting from its own activity, despite an overall impact to the stream or person that may be 10 times the amount contributed by each individual business. Multiply these figures by the number of chemicals contained in the soup of contaminants that human activities create on a daily basis and the conservative assumptions of Proposition 65 begin to appear more sensible.[350] In sum, Proposition 65 takes a stab at assessing the incremental costs of many different polluting activities on a cumulative basis. To be sure, it is a rough approximation, but in many respects its conservative assumptions are more realistic than other regulatory schemes that purport to offer comprehensive risk assessment while limiting their risk analysis to individual chemicals.

Another way to consider Proposition 65's highly protective standards is in the familiar context of burden shifting. Essentially, Proposition 65 places two burdens on industries wishing to release toxic chemicals as part of their business operations. First, as discussed, the Statute shifts the burden to industry to establish that detectable discharges or exposures do not pose a significant risk according to the specific risk criteria set forth in the statute.

Similar to other protective statutory regimes, however, Proposition 65 also imposes a second, invisible burden on businesses that release listed chemicals. Under this burden, risk assessment is conducted within a statutory context that implicitly considers the many sources of toxic chemicals released in our modern industrial society. The business that discharges a listed chemical into a source of drinking water, or exposes persons to such chemical, must thus defend its action according

348. *See, e.g.*, Rick Lovett, *Science Mostly Ignored in Prop. 65 Enforcement, Corash Tells SOT*, 10 PROP 65 NEWS, May 1996, at 12.

349. *See* CAL. CODE REGS. tit. 22, §§ 12721(a), 12821(a) (2001). This principle was repeated in the initiative's ballot arguments and clarified in the regulations.

350. *See supra* notes 106-107 regarding health impacts of low level contaminant combinations.

to risk criteria that acknowledge that there are many sources of toxic discharge in our physical environment. Seen from this perspective, a challenge to Proposition 65's preventative standards is ultimately a challenge to this second burden, the burden, one could say, of the industrial age. The innovation of, and the controversy surrounding, Proposition 65 derives from its choice to lay this second burden at the feet of industry, rather than the general public.

The issue of whether Proposition 65 ultimately makes for good policy is particularly relevant as applied to pesticide use in California. The strength of the pesticide and agricultural lobbies, combined with a vague and perhaps incorrect public perception that intensive pesticide use is essential to the supply of low-cost, quality food products, make any direct challenge to the status quo politically difficult.[351] Thus far, the strength of the pesticide lobby has prevented direct regulation under both the Clean Air and Clean Water Acts. Instead, pesticide regulation has been sequestered within the narrow policy arena of FIFRA, in which products are evaluated through a world view that assumes intensive-chemical approaches to pest control.

On this skewed playing field, Proposition 65 has thus far fared no better, and perhaps worse than other statutes in controlling pesticide pollution. At the time of this writing, no significant Proposition 65 action has been successfully brought against polluting pesticidal activities in California. Clearly, the significant bottleneck in implementing Proposition 65's protective provisions remains the listing of chemicals under the Statute. Once a chemical is listed, the State loses, to a degree, its traditional regulatory discretion as to how to implement statutory intent. Seen from this perspective, the State's reluctance to apply Proposition 65 vigorously to pesticide use in California is hardly surprising, since to do so would appear to concede jurisdiction over pesticide regulation to citizen enforcers, subject only to the authority of the Attorney General or local district attorneys to join in the case.[352]

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351. *See, e.g.*, George Soares, Proposition 65 and California Agriculture: Avoiding the Wreck 1-7 (May 20, 1999) (unpublished manuscript, on file with author) (arguing that Proposition 65 represents a real threat to production agriculture and related industries in California).

352. In practice, the Attorney General's Office believes it has the authority to intervene in and settle cases it believes not to be in the public interest. *See AG Brief*, *supra* note 14, at 7 (informing the court that AG would take control of the case away from a private plaintiff where the Attorney General judged that the private plaintiff was not acting in the public interest.); Weil Testimony, *supra* note 16, at 8 ("[I]n a number of cases, involving nail polish, lead wine bottle caps, and crystalline silica in

This article has attempted to demonstrate that the state's reluctance to implement Proposition 65 may in the long run be short sighted. Proposition 65 would not end the use of pesticides in California, but would focus immediate attention on those uses which contaminate drinking water sources or cause exposures to individuals. As to exposures, Proposition 65 requires only that a warning be provided by the parties responsible. Thus, if Proposition 65 were to cause certain pesticide uses or chemicals to be discontinued, it would be due to uncontrollable toxic discharges or due to exposures that a company for publicity reasons did not wish to disclose. These do not appear to be unreasonable operating conditions to place, at this late date, on any industrial activity.

Aside from the justifiable health protections offered by the Statute, there are practical reasons for applying Proposition 65 to pesticide use in California. For most public interest organizations working on pesticide issues, a central policy goal is to move pest control technologies away from the use of toxic chemicals. Typically, these organizations argue for government mandated reduction in the use of the most toxic pesticides and concurrently, mandatory implementation of non-chemical pest control technologies, usually some form of integrated pest management.[353] The problem for these organizations, and for society, is that there is no current regulatory mechanism through which such a transition is likely to take place.

The unique aspects of pesticide use raise particular doubt that such a transition can occur, even if current regulatory approaches were to be fully implemented. As discussed, regulation of pesticides differs from traditional command and control strategies in that the focus of regulation is not an incidental "byproduct" of a manufacturing process, but rather the fate of the actual "product" after it has been released into the

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building products, the Attorney General has effectively taken over particular matters to assure that they are handled appropriately."). To provide the Attorney General with the necessary notice regarding private enforcement, recent amendments to Proposition 65 require private parties to provide notice to the Attorney General of "events in their cases" and of the terms of any settlement. *See* CAL. HEALTH & SAFETY CODE § 25,249.8(e)-(f) (West 2000). At the time of this writing, the authority of the Attorney General to intervene and settle an ongoing private enforcement action is untested.

353. *See* ENVIRONMENTAL WORKING GROUP, WHAT YOU DON'T KNOW COULD HURT YOU: PESTICIDES IN CALIFORNIA'S AIR 5 (1999); KEGLEY, ORME & NEUMEISTER, *supra* note 150, at 3-5, 10-11; HEAVNER, *supra* note 169, at 8; CALIFORNIANS FOR PESTICIDE REFORM, *supra* note 197, at vi. These "policy recommendations" are routinely ignored by the regulatory community.

environment. In evaluating the potential of different policy approaches to force technology towards cleaner, non-toxic forms, the consequence of this difference could be striking. Consider that technology forcing in the area of pest control does not aim to "regulate" industry as much as to phase out an entire industrial sector that has thus far reaped incalculable financial benefit by maintaining the status quo of intensive pesticide use. Clearly this is a tall order for FIFRA, given its licensing structure based upon the continued use of chemical pest control. Nor is there any precedent in which command and control approaches such as the Clean Water or Clean Air Acts have achieved such a result.[354] It is, in fact, highly unlikely that such traditional approaches will be successful in creating "cleaner" pollution control technologies for the simple reason that pesticide manufacturer and related lobbying groups will assuredly oppose with all their power the implementation of any "alternative technology" mandate that does not offer the same types of commercial possibilities as their patented chemical pesticide products.[355]

While Proposition 65 may not offer an automatic solution to this problem, it certainly provides a more promising approach. Proposition 65 does not set policy, but instead establishes incentives that have the potential to change the behavior of pesticide manufacturers *and* users. Theoretically, many users have no vested interest in continuing to use pesticides, and small incentives might persuade them to limit their use. For these actors, pesticide contamination is an incidental byproduct of the process of controlling pests. By forcing users to internalize the costs of such contamination, Proposition 65 creates immediate incentives to consider other options.

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354. The best analogy would be the Clean Air Act's gradual attempts to move automobiles away from gas-powered engines to electric, hydrogen or other clean technologies. The oil industry is similar to the pesticide industry in the sense that technology forcing regulation threatens its industrial base. Two distinctions between these examples are that: 1) oil is used in a number of different industries and for different uses, whereas pesticides do not have utilitarian use besides the control of pests; and 2) car manufacturers, unlike many industrial agricultural operations, may conceive more easily of a clean alternative to the current production method. Even with these distinctions, however, the technology forcing mandates of the Clean Air Act, despite thirty years in existence and despite the fact that feasible alternative technologies have been available for decades, have not yet been able to force a transition away from gas powered automobiles.

355. One exception to this is the emerging field of biotechnology, which may provide pesticide manufacturers with an apparently less toxic alternative that may still be patented and sold for profit to agricultural users.

CONCLUSION

Ultimately, Proposition 65 has the ability to bring pesticide use into the 21st century of industrial regulation. Indeed, at a time when virtually any other industrial activity is heavily regulated, with strict monitoring and disclosure requirements, pesticide use has managed to go its own way. Under the guise of trade secret laws, pesticide manufacturers can avoid disclosure of the actual contents of their pesticide products. Further, in California, no notice is required prior to pesticide applications, nor is such information even available upon request. Such secrecy is of course antithetical to a fundamental premise of Proposition 65, that citizens should be apprised of the toxic chemicals to which they are being exposed.

The application of Proposition 65 would substantially alter this status quo. While the ultimate impact of Proposition 65, were it to be fully applied to pesticide use in California, is difficult to predict, it seems likely that the most toxic pesticides with propensities towards contamination would be restricted or eliminated from use. Such restrictions would in turn trigger greater support on the part of pesticide users, state agencies and citizens for research and development into alternate forms of pest control. At that point, despite the incentive mechanisms laid in place, Proposition 65 guarantees no particular outcome. It is possible that the application of the Statute to pesticide use could in the long run accelerate a transition to genetically engineered food crops, with its host of policy and ethical challenges. In the alternative, the increased awareness of citizens regarding pesticide exposures as a result of the Statute could lead to an explosion of the growing organic farming industry.[356] In the end, the only certainty is that Proposition 65 could eliminate pesticide discharges into drinking water sources and undisclosed exposures to citizens. This is a result that all Californians should be able to live with.

356. *See, e.g.*, Joel Bourne, *The Organic Revolution*, AUDUBON, Mar.-Apr. 1999, at 64.