STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Petition of STINNES-WESTERN CHEMICAL CORPORATION For review and petition for stay of Order No. 86-34, Waste Discharge Requirements of the California Regional Water Quality Control Board, San Francisco Bay Region. Our File No. A-438.	ORDER NO. WQ 86-16

BY THE BOARD:

On May 21, 1986, the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Board) adopted waste discharge requirements (site cleanup requirements) Order No. 86-34, to address pollution problems at a chemical packaging and distribution facility. The order names Great Western Chemical Company, the current landowner, and Stinnes-Western Chemical Corporation, a successor in interest to a previous landowner, as responsible parties. On June 20, 1986, the State Board received a petition from Stinnes-Western (petitioner) requesting review and stay of the Regional Board Order. Since we will address the petition for review on its merits, we do not need to reach the issues of the stay request.

I. BACKGROUND

Great Western Chemical Company currently owns and operates a chemical packaging and distribution facility in the City of Milpitas in Santa Clara County. The previous landowner, Western Chemical and Manufacturing Company, bought the undeveloped land in 1969 and constructed a chemical packaging

facility on the property. Western Chemical sold the facility in December 1978 to Great Western Chemical Company. Western Chemical Company was acquired by Stinnes-Western Chemical Corporation (petitioner) on February 5, 1980 pursuant to a stock purchase agreement. Large amounts of chemicals are currently handled and also were handled by petitioner's predecessor, Western Chemical, on the site. Eight 7,500 gallon underground tanks have been and are being used to store various alcohols and ketones such as acetone, butanone (also known as methyl ethyl ketone or MEK), butyl cellosolve, ethylene glycol, and isopropanol (and toluene for six months in 1982.)

Adjacent to the underground tanks were four above ground 6,000 gallon tanks. These tanks were removed by Great Western in 1984 and 1985. The above ground tanks were used to store chlorinated hydrocarbon solvents. The hydrocarbons included 1,1,1-trichloroethane (TCA), trichloroethene (TCE) and tetrachloroethene (PCE). A continuous concrete slab was located beneath the aboveground tanks, and above the eight underground tanks.

A portion of the concrete slab has a small curb around it in the above ground tank area to drain stormwater runoff and spills into a concrete sump. This sump does not have double containment, and now has cracks in the concrete and possibly a separation of wall joints. The rest of the slab is sloped to drain rainfall runoff into the yard drain in the parking lot. Because of the elevations of the slab and the parking lot asphalt, runoff from the slab would have to drain into the yard drain along with runoff from the loading dock area. There is no indication in the record that any berms were placed around the overall raised concrete slab to prevent runoff of chemicals and rainfall.

In response to the Regional Board's May 1982 Underground Leak Detection Program Questionnaire, Great Western implemented an investigation in

December 1982 to determine if solvent tanks or piping had leaked. Organic solvents were detected in the soil and groundwater on-site. High concentrations of chlorinated solvents and toluene are present in the soil and groundwater near the underground and above ground tanks. For example, soil core samples at the tank farm contained 11,000 parts per billion (ppb) TCE; 6,800 ppb TCA; 2,100 ppb PCE and other organic solvents.

Additional studies have shown that a solvent plume extends laterally from the tank area off site more than 2,250 feet to the northwest and vertically for a depth less than 60 feet from the ground surface. Significant groundwater pollution has occured. As shown in the following table, pollutant concentrations have exceeded Department of Health Services action levels by large margins throughout the plume. The maximum historical concentrations are listed in the table. The results from the date of February 20, 1985 are shown as a typical example:

TABLE 1

GROUNDWATER CONTAMINATION

COMPOUND	MAXIMUM CONCENTRATIONS (in ppb)		DEPT. OF HEALTH SERVICES ACTION LEVEL[1] (ppb)	RMCL (ppb)	MCL* (ppb)
	2/20/85	HISTORICAL			
1,1,1-trichloroethane (TCA)	240,000	530,000	200	200	200
trichloroethene (TCE)	140,000	670,000	5	0	5
tetrachloroethene (PCE)	45,000	250,000	4	0*	---
dichloromethane (methylene chloride)	13,000		40	---	---
1,1-dichloroethene (DCE)	5,600		6	7	7
1,2-trans-dichloroethene	10,300		16	---	---
toluene	4,500		100	---	---
acetone	12,000		---	---	---
butanone	2,300		---	---	---

* proposed

[1] California Department of Health Services "Action Levels" are health-based criteria which are not enforceable standards but are intended as guidelines. RMCLs or "recommended maximum contaminant levels" are established by EPA. RMCLs are strictly health-based and are set at a level at which no known or anticipated adverse human health effects will occur. MCLs or "maximum contaminant levels" are required to be set by EPA as close to RMCLs as feasible, after taking into account the technology treatment techniques and cost of achieving the standard for drinking water. Both RMCLs & MCLs are promulgated pursuant to the Safe Drinking Water Act (42 USC §300f et seq.)

With this background, we shall now turn to the contentions made by petitioner. We note that the adoption of the Order is not at issue here, but only whether Stinnes-Western was properly named as a discharger. While we will differentiate between the actions of Western Chemical and Stinnes-Western, we

consider Stinnes-Western, as a successor in interest, to be ultimately responsible for any action of Western Chemical.

II CONTENTION AND FINDINGS

1. Contention: There is insufficient evidence in the record to establish that Western Chemical, (petitioner's predecessor in interest) discharged waste.

Finding: Our review of the Regional Board record shows a number of different factors which, taken as a whole, lead us to conclude that petitioner was properly named a responsible party.

At the outset, we note that all parties agree that Western Chemical and Great Western handled the same chemicals at the site. These are the same chemicals which have been found in soils and groundwater at the site.

Underground Tank Leakage

This groundwater and soil contamination may have occurred several different ways, or combination of ways. One way is leakage of the underground tanks. Very high concentrations of chemicals are found in soils and groundwater immediately downgradient of the underground tank farm. Soil borings adjacent to the underground tanks show concentrations of both toluene and volatile organics. Similarly, our experience with underground tanks has shown that many of them leak.[1] While petitioners allege that the tanks were

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[1] For example, a recent report by the Environmental Protection Agency (EPA) estimates 35% of underground motor fuel tanks leak. While the underground tanks here are not motor fuel tanks, the leakage percentage is probably very similar. See "Underground Motor Fuel Storage Tanks: A National Survey." Volume 1, EPA 560/5-86-013, May 1986.

properly tested and built to Underwriters Laboratories standards at the time of installation, (approximately 1970-1971) there is no indication in the record showing that any subsequent testing of the tanks or the connecting pipes and hosing was ever done. Certainly, the tanks were not built to today's standards requiring double containment and leak detection systems. Of interest is the type of chemicals found in the soils adjacent to the underground tanks. The underground tanks were used primarily for alcohols and ketones, although declarations submitted by petitioner state for at least one period in 1971, a chlorinated solvent was stored in an underground tank. Both toluene and chlorinated organics are found in the soil by the underground tanks. There is a large quantity of acetone and butanone in the underlying groundwater.

Above Ground Handling Practices

Another way contamination could have occurred is during above ground handling practices. Specific instances are discussed in three declarations.[2]

Petitioner submitted the sworn declaration of Gareld Johns, former president and owner of two-thirds of the outstanding common stock of Western Chemical, and the sworn declaration of Ted Cluff, former Secretary and owner of

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[2] Petitioner alleges that the Regional Board based its conclusion that Stinnes-Western had discharged waste entirely upon hearsay. We do not agree. Our regulations explicitly allow hearsay testimony to be admitted, although it is insufficient in and of itself to support a finding. As discussed infra, the Regional Board had numerous bases for its action. We note both petitioner and Great Western submitted sworn declarations, and Great Western had witnesses available at the Regional Board hearing for questioning. Petitioner could have questioned the witnesses, but chose not to do so. We believe the Regional Board properly looked at all declarations but did not base a finding solely on them.

one-third of the outstanding common stock of Western Chemical. Great Western submitted the sworn declaration of Jack Hartsook, a former employee of Western Chemical.

Two declarations specifically mention a spill of PCE, estimated by Hartsook to have occurred in 1974, and to be from 500-600 gallons, and by Cluff to be from 300-400 gallons. Cluff indicates that the leakage was into a concrete containment area, and was then pumped back into drums. As noted earlier, the concrete above ground sump does not have double containment and now has cracks in the concrete and a possible separation in the wall joints.

As we will discuss further in regard to other discharges of chemicals onto the concrete slab, concrete is not impermeable. Spillage will inevitably result in some solvent reaching the ground through the concrete. The permeability of the concrete greatly increases when cracks are present. Cracks are certainly present now, and we note that at least small cracks are always present in concrete.[3] Thus, we find that the acknowledged spill of PCE inevitably resulted in some unquantified amount of material reaching the ground.

The Hartsook declaration also makes reference to several drumming practices of Western Chemical which would have resulted in the discharge of chemicals. Specifically, Hartsook declares that during the drumming process, wherein 54 gallon drums located on a flat concrete slab were filled with chemicals, some dripping or runoff from the hose would go onto the concrete

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[3] See, e.g. William B. Kayes, "Construction of Linings for Reservoirs, Tanks and Pollution Control Facilities.", John Wiley and Sons, 1977 and "Petrology of Concrete Affected By Cement--Aggregate Reaction", Duncan McConnell et al., Geological Society of America, November 1950, p. 232, et seq.

slab. Further, Hartsook declares that after the drumming process was completed, the wet hose was laid flat on the concrete slab to dry out or situated to drain by gravity. During the draining process, the chemical would drip from the hose onto the slab. A third item noted by Hartsook and confirmed by Cluff is that on occasion some of the 54 gallon drums used by Western Chemical would leak chemicals onto the concrete slab. As a result of these leaks, chemical products had to be repacked for proper storage. We note that the drums were manually filled, generating a significant danger of over topping.

While both Cluff and Johns declare that Western Chemical handled and stored chemicals in accord with safe handling practices of the chemical industry, the specific allegations above are not irrebutably refuted. For example, in regard to the drumming process, Cluff admits that a small amount of solvents were spilled, but specifically states "...the transfer of solvent chemicals does not occur in a totally closed system. Insignificant volumes of solvent may escape from the system. However, any small amount of such solvent quickly evaporates due to the volatile nature of the solvents involved and does not contaminate the surface, subsurface or groundwater." (Cluff declaration at paragraph 15.)

We are concerned what "insignificant" may mean, given the extremely low action levels for these chemicals. Additionally, we note that solvent does not necessarily quickly evaporate. Small quantities of solvent inevitably will seep througn concrete, as discussed above.

The Cluff declaration also speaks to the procedure used by Western Chemical when drums were found to be leaking or if a small amount of solvent were spilled, noting that spills either drained into the containments, or were

absorbed by absorbent clay. "Any spill so small that it could not be absorbed would escape through evaporation" (Cluff at paragraph 16.)

In our view, what these declarations essentially say is that discharge of chemicals did occur, in numerous instances during the drumming process and due to leaking drums and because of the acknowledged PCE spill. We do not believe this material could have all "evaporated". Further, because of the nature of concrete and the "containment" system used by Western Chemical, some subsurface discharge would inevitably have occurred.

Additional Considerations

In our review of the record, we note several other factors supporting the naming of Stinnes-Western as a discharger. The Regional Board, in its response, has explicitly referred to chemical handling practices standard to the industry at the time Western Chemical owned the site. The Regional Board states that it has found these past standard practices to be insufficient to protect the environment from chemical pollution. The Regional Board further notes that typically chemical handling practices in the past did unknowingly allow adverse environmental impacts to occur.[4]

We take administrative notice of the Regional Board's experience and expertise in this area. The Regional Board has regulated similar companies for

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[4] Indeed, the Regional Board cites the Cluff and Johns declarations, arguing that the envionmentally unsafe handling practices are still thought to be appropriate by Cluff ("Insignificant volumes of solvent may escape from the system"). Further, the Regional Board notes the Johns declaration at paragraph 11, which does not deny the PCE spill, but alleges that no such spill "resulted in an adverse environmental impact". As we noted earlier, given the very low action levels for these chemicals, today we are concerned with <u>any</u> discharge.

many years. Currently, the Regional Board is engaged in overseeing numerous cleanup operations resulting from improper and inadequate handling of hazardous materials on sites.

Another factor discussed by the Regional Board is that of rainfall runoff resulting in a discharge. Based upon the site maps in the record, any spills or leaks of chemicals during a rainfall would be transported by rainfall runoff to the yard drain and from there to a storm drain leading to an unlined trench. Chemicals would percolate into the soil and groundwater from the trench.

Finally, we reviewed the characteristics of the solvent plume itself. The plume extends almost half a mile. We note that the gradient of the plume, at 0.007 (7 feet drop in groundwater elevation per 1000 feet distance) is not particularly steep. Use of the Darcy's Law standard equation for determining the movement of materials through soil and groundwater[5] shows that the time of travel of the chemicals was at least two years and up to 60 years.

While no quantitative statement can be made regarding whether the plume began during Western Chemical's ownership, we note that the plume has travelled a long distance and it is reasonable to assume that it began prior to December 1978.

2. Contention: The Regional Board did not apply the proper standard of proof in determining that Stinnes-Western was properly named a responsible party.

Finding: Petitioner spends extensive time discussing the issue of which of two standards of review tests, the "substantial evidence test" or the

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[5] Darcy's Law, an established mathematical relationship in hydrogeology, allows one to determine groundwater velocity between various points, by use of the hydraulic conductivity, gradient and porosity.

"preponderance of the evidence" test, the Regional Board should have applied. However, given our own review of the record and the facts in this case, and the conclusion we reached above, we believe the appropriate question is the standard of review we should apply when reviewing a Regional Board action.

As all parties acknowledge, we dealt with this very issue in previous Board Order No. WQ 85-7. In the Matter of the Petition of Exxon Company, USA (hereafter Exxon).

In Exxon we addressed the question of what standard of review we should apply when reviewing a Regional Board action. We discussed whether we should uphold a Regional Board action if there is any possible basis for the action or whether we should exercise our independent judgment as to whether the action was reasonable. We concluded that while we can independently review the Regional Board record, in order to uphold a Regional Board action, we must be able to find that the action was based on substantial evidence. In Exxon we determined that the mere disputed payment of taxes for possibly three years was not sufficient or substantial evidence upon which to base a finding of responsibility given Exxon's unrefuted explanation that the payments had been erroneously made.

Clearly, this is not the situation here. Our finding above that Stinnes-Western is properly named a responsible party is based on numerous facts and the record as a whole. As we did in Exxon, we reviewed the record and in this case, determined that there is substantial evidence to name petitioner.

This is consistent with the test we set forth in Exxon. We note further that Exxon also dealt with a groundwater pollution problem with disputed ownership and liability issues. In Exxon we stated at 11-12:

"Generally speaking it is appropriate and responsible for a Regional Board to name all parties for which there is reasonable evidence of responsibility, even in cases of disputed responsibility. However, there must be a reasonable basis on which to name each party. There must be substantial evidence to support a finding of responsibility for each party named. This means credible and reasonable evidence which indicates the named party has responsibility."

The standard that we set forth in Exxon, and have applied here is the same standard of review that would be utilized by a reviewing court. For example, the very recent case of United States v. State Water Resources Control Board (1986) 182 Cal.App.3d 82, 227 Cal.Rptr. 161 analyzes the Board's role in quasi-judicial matters. The court held that review for this type of adjudicatory action is governed by the standards of the Code of Civil Procedure Section 1094.5. In reviewing the Board's actions, the court looked for substantial evidence, requiring a search of the record for a "reasonable factual basis". The court quoted with approval an earlier case, Bank of America v. State Water Resources Control Board (1974) 42 Cal.App.3d 198 at 208, 116 Cal.Rptr. 770, which set forth a similar standard.

United States v. State Water Resources Control Board also explicitly recognizes the Board's expertise regarding water resources: "Nevertheless, deferential latitude should be accorded to the Board's judgment involving valuable water resources." (227 Cal.Rptr. at 176)

Similarly, we recognize the Regional Board's judgment in matters involving water resources and water quality. The Regional Board has had experience dealing with many similar groundwater contamination cases and has developed considerable expertise in evaluating causation and responsible parties.

Our review of the record, discussed above, and the Regional Board's judgment, has convinced us that there is a requisite reasonable factual basis for naming Stinnes-Western as a responsible party. In weighing the evidence, we particularly take notice that this case involves petitioner's predecessor in interest, who actively engaged in chemical packaging activities on the site. We believe there is credible and reasonable evidence that spills did occur while the prior landowner both owned and occupied the site.

Furthermore, we take notice of the public policy considerations in such a case. As we discussed in Exxon, fewer parties named in an order may well mean no one is able to clean up a demonstrated water quality problem. To the extent possible, we believe that multiple parties should properly be named in cases of disputed responsibility. This is consistent with the federal approach as articulated in the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, 42 USC §9601 et seq.). CERCLA provides that present owners and operators and owners and operators at the time of disposal of hazardous substances are responsible parties for purposes of allocating costs in a cleanup.

Our approach today, and historically, is also consistent with state policy. The Governor's Task Force on Toxics, Waste and Technology, May 1986, Final Report specifically recommends that the state explicitly define "responsible party" in the same way as CERCLA for the purpose of site cleanup. The Report notes, at p. 104 that this would help reduce the substantial uncertainty over who may be held responsible for cleanup costs.

3. Contention: The Regional Board improperly failed to allow petitioner the opportunity to inspect the site and review the proposed remedial plan.

Finding: We note at the outset that the Regional Board has no jurisdiction or authority to allow petitioner to inspect the site. Further the record shows that the Regional Board attempted to involve Stinnes-Western in this matter since January 1986. The Regional Board apparently was first informed by Great Western in December 1985 that Great Western believed Stinnes-Western to be responsible. The Regional Board generally will give approximately 60 days to companies responding to technical requests from the Regional Board staff. In this case, the Stinnes-Western consultants had at least 90 days to review the data. Stinnes-Western obtained copies of the Regional Board files on March 3, 1986.

We note that Great Western and Stinnes-Western are currently in litigation with each other. We do not want to delve into the myriad of assertions and counterassertions by each party as to whether Stinnes-Western had access to the site. In any event, Stinnes-Western now informs us that it has now been permitted on the site and should have a complete copy of the record. We would hope that the parties could continue to work out some access arrangement.

The Regional Board has been quite cooperative during our pending review of this matter and has extended due dates for proposals required under the order until after we have ruled on the petition. The Regional Board has explicitly noted that the time extension may affect the petitioner's ability to comply with another due date, and stated that staff will take this delay into consideration. We believe this to be the proper approach. The Regional Board, which has been working with this case and with the parties for some time, should determine if any extensions of time are needed to allow the petitioner to comply with the order.

III. SUMMARY AND CONCLUSIONS

1. Significant groundwater contamination has occurred both on and off the site.

2. Looking at the Regional Board record as a whole, we conclude that petitioner was properly named a discharger. A number of factors support this conclusion, including:

a. Soil contamination of chemicals known to be stored in the underground tanks has been found adjacent to the tanks.

b. Chemical discharges occurred above ground. Spills happened during the drumming process and because of leaking drums. A large PCE spill occurred. Concrete would not have contained these spills.

c. Historical standard practices of the chemical industry as noted by the Regional Board have generally been insufficient to protect the environment from chemical pollution.

d. Any spills during rainfall would have led to discharges.

e. It is reasonable to assume that the large chemical plume began prior to December 1978.

3. Using the test we set forth in a previous Board order, we find that the Regional Board action was based on substantial evidence.

4. The Regional Board should make any changes it believes necessary in the time schedule due to the limited site access previously available to petitioner.

IV. ORDER

The Regional Board Order No. 86-34 is hereby affirmed.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 18, 1986.

AYE: W. Don Maughan, Chairman
Edwin H. Finster, Member
Eliseo M. Samaniego, Member
Danny Walsh, Member

NO: None

ABSENT: Darlene E. Ruiz, Vice Chairwoman

ABSTAIN: None

Maureen Marche'
Administrative Assistant to the Board