IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

DONNA AVILA, *et al.*,

Plaintiffs,

v.

WILLITS ENVIRONMENTAL REMEDIATION TRUST, *et al.*,

Defendants.
_____/

No. C 99-3941 SI

ORDER GRANTING DEFENDANTS' MOTION TO STRIKE DECLARATION OF DR. LEVIN

SUMMARY

On September 14, 2007, the Court heard argument on defendants' motion to strike the declaration[1] of Dr. Alan Levin on the ground that his testimony fails to meet the standards for admissibility and reliability under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). After consideration of the parties' voluminous papers and arguments, the Court hereby GRANTS defendants' motion for the reasons set forth below.

In summary, the Court finds that there is no factual or scientific support for Dr. Levin's opinion that the *prima facie* plaintiffs were exposed to dioxins and PCBs, or that any of the plaintiffs' claimed injuries were caused by such exposure. There is *no* testing data showing any level of dioxins at the Remco site, and the testing for PCBs showed no levels above the United States Environmental Protection Agency remediation goals. Blood tests performed on four plaintiffs – one *prima facie* plaintiff and three other plaintiffs – show that 80% of the dioxin congeners tested for were *not* detected,

[1] The motion is directed to the February 13, 2007 report prepared by Dr. Levin and attached as Exhibit 1 to the Comb declaration (Docket No. 861). The report is in the form of a declaration under penalty of perjury, but has frequently been referred to by the parties as Dr. Levin's "affidavit."

and that the levels of dioxins that were detected are not unusual and are statistically similar to populations examined in major, authoritative studies. Similarly, Dr. Levin's claim that the plaintiffs were exposed to trichloroethylene or other volatile organic chemicals through a groundwater plume is pure speculation and contradicted by more than 1000 test samples collected over the years by the Willits Environmental Remediation Trust.

BACKGROUND

I. Required *prima facie* showing

The fifth amended complaint alleges that plaintiffs have suffered personal injuries as a result of toxic chemicals emitted from the former Remco Hydraulics facility located in Willits, California. Defendant Whitman's predecessor, for whose conduct Whitman is being charged in this action, ceased ownership and operation of the Remco facility in 1977, and defendant Pneumo Abex's predecessor, for whose conduct Pneumo Abex is being charged, ceased ownership and operation of the Remco facility in November 1988. Fifth Amended Complaint ("FAC") ¶¶ 15-16.

Earlier in this litigation, defendants requested that the Court order two groups of plaintiffs – those who had never lived in Willits and those who had only lived in Willits after November 1988 – to submit a *prima facie* showing of exposure and medical causation ("*prima facie* plaintiffs"). By order filed December 9, 2004, the Court granted defendants' request. The Court noted that this litigation began in 1999, and that given the length of time that had elapsed and the complexity of the issues, it was reasonable to require those two groups of plaintiffs to make such a *prima facie* showing. *See* December 9, 2004 Order at 2.

Case Management Order No. 4 ("CMO No. 4"), dated March 1, 2005, specifically set forth what information and evidence these plaintiffs must provide to defendants in support of their claims. CMO No. 4 required that each of the *prima facie* plaintiffs submit percipient and expert declarations setting forth "all facts" supporting such plaintiff's claimed exposure to hazardous substances discharged or released by defendants' predecessors, including the documents and witnesses to support each of those facts. CMO No. 4 at 3. In addition, the Court required a written statement "from a physician, medical and/or other expert" stating "a description of each injury, illness or condition for which such Plaintiff

seeks recovery in this action," "the identity of the chemical to which such Plaintiff was exposed," a "statement that there is a reasonable medical probability that the exposure caused each injury, illness or condition referred to above," and a "statement of the scientific and medical basis upon which the expert's opinion is based." *Id*. at 3-4. In Scheduling Order No. 6, filed on October 16, 2006, the Court set a December 2006 deadline for these plaintiffs to present their *prima facie* case as required by CMO No. 4. By order filed December 6, 2006, the Court granted plaintiffs' request to extend this deadline, and set a new deadline of February 15, 2007.

II. Dr. Levin's declaration

Plaintiffs provided their percipient and expert declarations to defendants by February 15, 2007. Dr. Alan Levin is plaintiffs' medical expert, and he states that he is a physician/scientist/attorney. *See* Levin Decl. at 1.[2] Despite the fact that this case has been litigated for over seven years as one involving alleged exposure to hexavalent chromium, Dr. Levin does not provide any opinion on hexavalent chromium. Instead, Dr. Levin addresses a new theory of exposure and causation involving dioxins,[3] and to a lesser extent polychlorinated biphenyls (PCBs). Dr. Levin's core opinion as set forth in his declaration is as follows,

> The uncontroverted and documented evidence of the fact that halogenated hydrocarbon industrial waste products were intentionally and accidentally burned at the Remco sites over the years makes it scientifically impossible to conceive that dioxins and PCBs were not emitted. Stated more succinctly, there is no plausible scientific excuse to ignore the unquestionable presence of dioxins on the Remco contamination sites.

Levin Decl. at 2. Dr. Levin did not conduct any soil, air or water tests at or around the Remco site, nor

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[2] Dr. Levin testified at his deposition that since 1992, 90% of his professional activity has been as a lawyer, and 10% has been as a medical doctor. Levin Depo. 32:22-33:15. Dr. Levin was originally contacted to be a lawyer in this case. *Id*. at 23:11-25:2.

[3] "Dioxins" refers to a group of chemical compounds that share certain chemical structures and biological characteristics. Several hundred of these compounds exist and are members of three closely related families: the chlorinated dibenzo-*p*-dioxins (CDDs), chlorinated dibenzofurans (CDFs) and certain polychlorinated biphenyls (PCBs). Sometimes the term dioxin is also used to refer to 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD). Source: EPA, National Center for Environmental Assessment, "What are dioxins, frequently asked questions," at http://www.cfsan.fda.gov/~lrd/dioxinqa.html, last visited 2/5/08. Dr. Levin testified at his deposition that he was the first person to raise the possibility of dioxins at the Remco site because "it's chemically impossible not have dioxin there." Levin Depo. at 25:16-17.

does he cite any studies showing dioxin in or around the Remco site. Dr. Levin states,

> In the past, environmental contamination sites and human dosages were estimated by epidemiology, air/water modeling, and spot analyses of selected geographical locations often performed years after the contamination occurred. These analyses are mere statistical estimates of populations and are fraught with procedural and interpretation error. Modern chemistry and molecular biology have rendered this manner of environmental contamination site assessment obsolete.

Id. at 2. Instead, Dr. Levin had the blood of four plaintiffs – three of whom are not *prima facie* plaintiffs – analyzed for the presence of dioxin "congeners." Dr. Levin explains,

> Industrial contaminants such as halogenated hydrocarbons, diobenzo-dioxins, dibenzo-furans (dioxins) and polychlorinated biphenols (PCBs) are families of chemicals which share major structural characteristics but differ in many minor aspects. These differences include but are not limited to the number, the location and the spatial orientation of certain atoms, such as chlorine, on the backbone of the compound. These different chemicals are called congeners of the major structural chemical. Licensed toxicology laboratories in the United States and Europe conventionally measure for 17 different dioxin congeners and 12 different PCB congeners.

Id. at 2-3. Dr. Levin describes the results of the testing on the "Blood Test Plaintiffs"[4] as follows:

> [F]our unrelated adults who lived in four separate locations around the Remco contamination sites have the same dioxin and PCB congener profile signatures in their serum. . . . Since the Remco contamination site is the only proven source of these chemicals, it is more probable than not that this congener profile signature is characteristic of the Remco Plant operations. This profile signature is consistent with burning of halogenated hydrocarbons [] but was different from both background and populations exposed to known contamination from the Dow Chemical Plant in Midland, Michigan. When extrapolated back over 2 halflives (the burning of industrial waste may have ended in 1988 although many residents testify the burning continued to 1990), a very conservative extrapolation, at the time the burning may have ended all of these adults had concentrations of dioxins in their serum above the 95 percentile of background during the time the Remco plant was in operation. . . .

Id. at 3-4.[5]

Dr. Levin asserts that the Blood Test plaintiffs' blood results can be extrapolated to the 57 *prima facie* plaintiffs, and that the blood tests show that all *prima facie* plaintiffs were exposed to "excessively high levels" of dioxins. Dr. Levin also opines that exposures to an unknown amount of a combination

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[4] Plaintiffs tested the blood of Donna Avila, Charles Nickerman, Dorothy Liles, and Deanna Deaton. Only Dorothy Liles is a *prima facie* plaintiff. The blood samples were sent to the Eno River Laboratory in North Carolina for analysis. See Comb Decl., Ex. 7.

[5] The methodology Dr. Levin used to arrive at the "congener profile signature" is discussed in greater detail *infra*.

of chemicals (dioxins, TCE (trichloroethlyene[6]) and certain other volatile organic chemicals ("VOCs")) caused the injuries of 41 *prima facie* plaintiffs. Dr. Levin states that none of these chemicals is alone responsible for such injuries, but rather it is the combination of exposures that caused the injuries.

LEGAL STANDARD

Federal Rule of Evidence 702 provides that expert testimony is admissible if "scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702. Expert testimony under Rule 702 must be both relevant and reliable. *Daubert v. Merrell Dow Pharms., Inc*., 509 U.S. 579, 589 (1993). When considering evidence proffered under Rule 702, the trial court must act as a "gatekeeper" by making a preliminary determination that the expert's proposed testimony is reliable. *Elsayed Mukhtar v. Cal. State Univ., Hayward*, 299 F.3d 1053, 1063 (9th Cir. 2002), *amended by* 319 F.3d 1073 (9th Cir. 2003).

As a guide for assessing the scientific validity of expert testimony, the Supreme Court provided a nonexhaustive list of factors that courts may consider: (1) whether the theory or technique is generally accepted within a relevant scientific community, (2) whether the theory or technique has been subjected to peer review and publication, (3) the known or potential rate of error, and (4) whether the theory or technique can be tested. *Daubert*, 509 U.S. at 593-94; *see also Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999). The Ninth Circuit also has indicated that independent research, rather than research conducted for the purposes of litigation, carries with it the indicia of reliability. *See Daubert v. Merrell Dow Pharmaceuticals, Inc*., 43 F.3d 1311, 1317 (9th Cir. 1995) ("*Daubert* II"). In particular, using independent, pre-existing research "provides objective proof that the research comports with the dictates of good science" and is less likely "to have been biased by the promise of remuneration." *Id*. If the testimony is not based on "pre-litigation" research or if the expert's research has not been subjected to peer review, then the expert must explain precisely how he went about reaching his conclusions and

[6] The chemical compound TCE is a chlorinated hydrocarbon commonly used as an industrial solvent. The parties have generally referred to TCE as "trichloroethlyene," as will the Court. The International Union of Pure and Applied Chemistry (IUPAC) refers to the compound as "trichloroethene," and this alternative terminology is used by certain of the experts.

point to some objective source – a learned treatise, the policy statement of a professional association, a published article in a reputable scientific journal or the like – to show that he has followed the scientific method, as it is practiced by (at least) a recognized minority of scientists in his field. *Id*. at 1318-19 (*citing United States v. Rincon*, 28 F.3d 921, 924 (9th Cir. 1994)); *see also Lust v. Merrell Dow Pharmaceuticals, Inc*., 89 F.3d 594, 597 (9th Cir. 1996). The proponent of the evidence must prove its admissibility by a preponderance of proof. *See Daubert*, 509 U.S. at 593 n.10.

DISCUSSION

I. Defendants' motion to strike the declaration of Dr. Alan Levin

Defendants challenge Dr. Levin's declaration/report (Comb Decl. Ex. 1, Docket No. 861) on numerous independent grounds. As a general matter, the Court notes that plaintiffs' opposition fails to address many of defendants' arguments, and instead repeatedly asserts the *ipse dixit* that Dr. Levin is qualified to render his opinions because he is qualified. After careful examination of Dr. Levin's declaration, the Court concludes that Dr. Levin's declaration should be stricken because his opinions do not meet the requirements of Federal Rule of Evidence 702.[7]

A. Dr. Levin did not consider or distinguish between pre- and post-1988 emissions, rendering his opinions irrelevant to the issues affecting the *prima facie* plaintiffs

Defendants contend that Dr. Levin's conclusions as to the *prima facie* plaintiffs are irrelevant because Dr. Levin made no distinction between substances released from the Remco plant before December 1988, for which defendants are potentially liable, and substances released after November 1988, for which defendants have no liability. Dr. Levin's declaration states in relevant part, "The industrial activities which produced the environmental contamination began in the 1950s and continued through until 1995." Levin Decl. at 2. At his deposition, Dr. Levin admitted that he did not consider

[7] The Court also sustains defendants' objections to certain of plaintiffs' declarations and exhibits, and addresses those objections *infra*. As a general matter, however, the Court notes that even if plaintiffs' declarations and exhibits were timely filed and considered by the Court, they would not change the analysis or disposition of this order, as none of the declarations or exhibits cure the deficiencies in Dr. Levin's declaration. In addition, as discussed in detail *infra*, plaintiffs' objections to portions of the reports of Dr. Adriaens and Dr. Guzelian lack merit, and the Court finds that both of these experts are qualified to render their opinions.

when any hazardous substance was released in rendering his causation opinions:

> Q: Are you able to identify whether chemicals that the plaintiffs at issue in your February 15th report were exposed to were released from the facility before or after December of 1988?
>
> A: No, I can't.
>
> Q: And did you consider that issue at all in rendering your report?
>
> A: No.

See Levin Depo. at 106:12-19. Dr. Levin also testified that he did not consider whether plaintiffs' alleged exposures were caused by the Remco plant as opposed to other sources:

> Q: Plaintiffs who were born between – prior to 1995 that are part of this – your February 15th report, what percentage of their exposures were caused by emissions from then operating activities at the facility as opposed to prior releases that somehow got into the environment?
>
> [Objection]
>
> A: I don't know.
>
> Q: Did you consider that issue at all?
>
> A: No.
>
> Q: Do you think that kind of determination can be made?
>
> A: I don't know. I'm here for causation and not liability.

Id. at 107:2-16.

> Q: Do you have an opinion whether Judith Alvarez was exposed to hazardous substances from the Remco facility for which you contend that either Whitman Corporation or Pneumo Abex specifically are responsible?
>
> A: No, I don't have an opinion.
>
> Q: Do you have an opinion on that issue for any of the 57 [*prima facie*] plaintiffs at issue in this case?
>
> A: No, I don't.
>
> Q: For any of the 57 [*prima facie*] plaintiffs at issue in this case, are you able to state what percentage of their exposures to the chemicals listed on Page 2 of your report were released from the Remco facility prior to December 1988 as opposed to after December 1988?
>
> A: No.

Id. at 108:21-109:11.

The Court agrees with defendants that Dr. Levin's failure to consider and distinguish between pre-1988 and post-1988 emissions renders his opinions irrelevant. Plaintiffs do not attempt to explain or justify Dr. Levin's failure to consider this issue. The Court's December 9, 2004 Order required the *prima facie* plaintiffs to show that (1) they were exposed to substances released by the predecessor of either defendant, i.e., released before 1988, and (2) that such exposure caused their injuries. *See* December 9, 2004 Order at 2-3; CMO No. 4 at 3. Because Dr. Levin did not consider and segregate out pre-1988 emissions, there is no basis to conclude to a reasonable degree of medical certainty that chemicals released while defendants' predecessors owned the Remco facility were more probably than not the cause of any *prima facie* plaintiffs' claimed injuries. *See Daubert*, 509 U.S. at 592 ("Evidence that has no relationship to any of the issues of the case is irrelevant and does not satisfy rule 702's requirement that the testimony be of assistance to the jury.").

B. Dr. Levin did not follow accepted scientific principles in analyzing the Blood Test plaintiffs' blood

Defendants also contend that Dr. Levin did not follow accepted scientific principles when he analyzed the four Blood Test plaintiffs' blood. The Eno River Labs results did not detect 53 of the 68 dioxin congeners tested; Charles Nickerman had non-detects for 15 of 17, Donna Avila and Deanna Deaton had non-detects for 14 of 17, and Dorothy Liles had non-detects for 12 of 17. *See* Comb Decl. Ex. 7. For each of the undetected congeners, Dr. Levin assumed that these congeners were in fact present at the detection limit. Dr. Levin then converted each of the congener results, including the uniform non-detects, to a "lipid-adjusted" basis. Dr. Levin did not ask Eno River Labs to analyze each individual's lipid levels. Instead, Dr. Levin assumed that all four plaintiffs had an identical lipid level of 1000 mg/dL. After assuming that each of the undetected congeners was actually present at the limit of detection, and after converting the results to a uniform "lipid-adjusted" basis, Dr. Levin compared those results to two key studies, the University of Michigan Dioxin Exposure Study (UMDES) and the National Health and Nutrition Examination Survey (NHANES), and concluded that the Blood Test plaintiffs had a higher level of dioxin in their blood than the comparison groups.

Dr. Levin also asserts that the four Blood Test plaintiffs share a "signature congener profile"

indicative of a exposure from a single source, which he claims is the Remco site. Dr. Levin's declaration states,

> [F]our unrelated adults who lived in four separate locations around the Remco contamination sites have the same dioxin and PCB congener profile signatures in their serum. . . . Since the Remco contamination is the only proven source of these chemicals, it is more probable than not that this congener profile is characteristic of the Remco Plant signature.

Levin Decl. at 3. In particular, Dr. Levin states that the "presence" of one *undetected* congener, 2,3,7,8-TCDD, is indicative of a single source. *Id*. at Ex. C ("Conclusion").

There are several fatal problems with Dr. Levin's methodology. As defendant's expert Dr. Peter Adriaens explains,

> To properly compare the results from the four individuals with the data presented in the UMDES and NHANES studies, the same assumptions have to be made, and similar normalization procedures need to be followed. In chemical analysis, the LOD [limit of detection] is the minimum amount of a particular component that can be determined by a single measurement with a stated confidence level. Statistically, the LOD is the level at which the measurement has a 95% probability of being greater than zero. Hence, these measurements have to be treated as "non-zero" for statistical analysis. Typically, either LOD divided by 2, or LOD divided by the square root of 2 are used. Second, lipid adjustment is non-trivial, because analytical laboratories provide only cholesterol content, which is only a fraction of total lipid content. Using the actual values of lipid content and the same LOD treatment as in the UMDES and NHANES studies, the TEQ [toxic equivalency] of the four Willits residents were recalculated and compared to both published studies.
>
> Results: Based on my recalculation of the concentration and the toxic equivalency (TEQ) of the blood levels in the four individuals in accordance with standard procedures, the Willits residents fall within expected ranges of dioxin exposure with concentrations reflective of age-driven bioaccumulation.

Adriaens Report at 9-10. Put differently, "the Willits residents are statistically not different from the U.S. background population (NHANES) or referent populations in the UMDES or ATSDR studies. The levels of dioxins in the blood of the Willits residents do not indicate an exposure from specific sources of dioxin emission, industrial or otherwise defined." *Id*. at 16. By improperly assuming that the non-detected congeners were actually present at the limit of detection, Dr. Levin substantially exaggerated the importance of the non-detects. *Id*. at 11. Relatedly, and as explained by Dr. Adriaens, because Dr. Levin's treatment of non-detects and lipid adjustment was markedly different from the methods used by UMDES and NHANES, Dr. Levin's comparison of the Blood Test plaintiffs' results with those

studies is inappropriate. *Id*. at 12.[8]

Dr. Adriaens also demonstrates that, when proper scientific methodologies are used, the Blood Test plaintiffs do not share a "signature congener profile." As Dr. Adriaens explains, signature profiling cannot be performed where more than 35-50% of the congeners being examined are non-detects. Adriaens Report at 25, 29. Here, 80% of the dioxin congeners were non-detects. In addition,

> Pattern analysis for dioxins/furans in blood has to be based on more than one congener (TCDD) to be able to establish causality with a specific exposure pathway or source of dioxins. The analysis of blood patterns in the four individuals is particularly confounded because of the fact that most congeners, including TCDD, were below the LOD. . . .
>
> Result: As the result of the proper adjustments, the blood pattern in the residents, inasmuch as can be derived from nondetects and out-of-calibration range concentrations, is in line of that expected from background contamination, which tends to be dominated by octaCDD, heptaCDD, and HexaCDD. There is no argument to be made that TCDD in the blood (which was a nondetect) is in any way related to a single point source.

Id. at 20.

Plaintiffs failed to specifically respond to any of these criticisms, and neither plaintiffs nor Dr. Levin have submitted *any* scientific literature or authority supporting Dr. Levin's methodology. Instead, plaintiffs defend Dr. Levin's analysis by citing his credentials, and by simply asserting that Dr. Levin's methods are "generally accepted." As the Supreme Court has held, "nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered." *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) (holding district court did not abuse its discretion in excluding medical causation expert where expert's conclusions based on speculation); *see also Daubert v. Merrell Dow Pharmaceuticals*, 43 F.3d 1311, 1320 (9th Cir. 1995) ("[P]laintiffs rely entirely on the experts' unadorned assertions that the methodology they employed comports with standard scientific procedures. . . . they neither explain the methodology the experts followed to reach their conclusions nor point to any external source to

[8] Plaintiffs attempt to justify Dr. Levin's treatment of non-detects by asserting that Dr. Levin was just doing "what the Eno River Labs people told us." Levin Depo. at 233:13-16. Regardless, plaintiffs have not submitted *any* support for the proposition that it is proper to use the detection limit as the proxy for non-detects in blood serum, and indeed the Eno River Labs scientist who conducted the testing admitted that Eno River Labs' methodology tabulates the maximum possible TEQ, and that neither the EPA nor WHO endorse this methodology. Comb Decl. Ex. 14 (Chandramouli Depo. at 58:16-59:21).

validate that methodology. . . . Under *Daubert*, that's not enough.").

C. Dr. Levin did not tie any supposed dioxin exposure to the Remco site

Dr. Levin's declaration/report asserts "[t]he uncontroverted and documented evidence of the fact that halogenated hydrocarbon industrial waste products were intentionally and accidentally burned at the Remco sites over the years makes it scientifically impossible to conceive that dioxins and PCBs were not emitted." Levin Decl. at 2. Dr. Levin states that he interviewed two former Remco employees, Charles Nickerman and Robert Frey, and that he discussed "the burning of chemicals in barrels and pits with many long term Willits residents, including Mrs. Donna Avila and Mrs. Megan Keltner, both of whom lived in houses which shared a property line with the Remco plant." Levin Decl. at 1.

There are numerous problems with Dr. Levin's opinion that the Remco site is a source of dioxins. First and foremost, it is undisputed that there is *no actual evidence* that dioxins are or have been present at the Remco site. Dr. Levin testified at his deposition that he did not test the soil, air or water at the Remco site, and he admitted that he "has not seen any testing data from the Willits area that identifies dioxins as having been found in or around the Remco facility." Levin Depo. at 58:11-13; *see also id*. at 57:8-12, 72:21-73:4, 70:14-18. Moreover, as Dr. Adriaens notes, although there have been numerous investigations on the environmental contamination at the Remco site since 1981, dioxins were never analyzed for nor detected in any of the samples collected at the site. *See* Adriaens Report at 6. The Willits Environmental Remediation Trust explained to plaintiffs' lawyers in a November 29, 2006 letter why the Trust did not test for dioxins:

> Regarding your inquiry as to environmental testing for dioxins, the Willits Trust carefully considered whether to sample and analyze for dioxin during preparation of the Remedial Investigation/Feasibility Study (RI/FS) Workplan (discussed in more detail later in this letter). However, based on a review of available information, including information on historic operations at the Remco Facility, the Willits Trust concluded that sampling for dioxins was not warranted.
>
> The U.S. E.P.A. considers most of the dioxins in our environment to be produced by non-industrial sources, such as residential wood burning and emissions from diesel-powered vehicles. . . . [D]ioxins are ubiquitous in the environment and testing for them is scientifically reasonable only if operations at a site are likely to have produced dioxins. Industrial processes which can result in the formation of dioxin include chlorine bleaching of pulp and paper, as well as certain types of chemical manufacturing and processing. None of these industrial processes are known to have occurred at the Remco facility. The burning of fuels (such as wood and oil) is also a potential source of dioxins,

> PCBs, and polycyclic aromatic hydrocarbons (PAHs) in the environment, however no such waste incineration activities have been documented at the Remco Facility.
>
> The Willits Trust is aware of testimony of one former Remco employee that solvents were used to burn trash at Remco, but the solvents used at Remco (e.g., TCA and PCE) are not chemicals which could be used as a source of fuel for burning waste due to their high flash points (i.e., they are chemicals which are non-flammable). The Willits Trust did, however, consider the potential that diesel or waste petroleum hydrocarbon products may have been used to occasionally burn waste at the Remco Site. To evaluate this possibility, the Willits Trust conducted a comprehensive evaluation of the distribution of petroleum hydrocarbons (as both diesel and motor oil), PAHs (many of which are chemicals which are generated during the process of burning petroleum hydrocarbon products such as diesel fuel), and PCBs (which can result from the burning of waste oils). As summarized in the RI report, no levels of PCBs or PAHs were detected in soils at the Remco Facility above their respective U.S. E.P.A. Preliminary Remediation Goals ("PRGs"). This supports the conclusion that any burning of wastes, even if it did occur, did not result in a release of PAHs, PCBs, or dioxins at levels of concern at the Remco Facility.

Letter by Trustee Dr. Anne M. Farr to plaintiffs' lawyers Tesfaye Tsadik and William Simpich, dated November 29, 2006 (quoted in Guzelian Report at 25-26). In short, Dr. Levin's opinion that burning of industrial waste created dioxins is based on pure speculation, not "sufficient facts or data" as required by Rule 702.

Second, Dr. Levin's claim that "burning of industrial waste" at the Remco site created dioxins is factually unsupported. Dr. Levin's declaration states he interviewed Robert Frey about burning of industrial waste at the Remco site; however, Dr. Levin admitted in his deposition that he did not actually interview Mr. Frey, and instead relied on a declaration from Mr. Frey. Levin Depo. at 158:1-9. Mr. Frey's declaration does *not* state that he witnessed any burning at the Remco site, Comb Decl. Ex. 3 (Frey Depo. Ex. 4), and in fact Mr. Frey testified that he never saw any burning at the Remco site and that there were no flames in the "concrete tub" described in his declaration. *Id*. Ex. 3 (Frey Depo. at 19:22-20:6; 55:6-13). Mr. Frey's declaration does state when he worked at Remco (as a carpenter) that "chemicals were dumped into a concrete tub and electric heaters reduced the chemicals," and that on one occasion "a large amount of trichloroethylene was dumped in the tub . . . [and] a gas cloud formed . . . ." Frey Decl. at 1. Similarly, although Dr. Levin's declaration asserts that he interviewed Charles Nickerman about burning at Remco, Mr. Nickerman testified that he spoke with Dr. Levin for five minutes or less: "Just my name and where did you work, I worked at Remco and I think that was it." Comb Decl. Ex. 4 (Nickerman Depo. at 163-65). Although Mr. Nickerman's declaration states that

hazardous materials were "cooked and burned" and that there was an "explosion" in the "concrete pit," Mr. Nickerman testified that he never saw any open burning at Remco, that there was no explosion or fire, and that he never saw any flames in the concrete pit. *Id*. at 217, 221.

Dr. Levin's declaration also states that he spoke to two individuals – Megan Keltner and Donna Avila – about burning at the Remco site. However, Ms. Keltner testified that she never spoke with Dr. Levin about burning, and that she has never personally witnessed any burning at the site. Comb Decl. Ex. 6 at 33, 41, 43-44. Donna Avila testified that she told Dr. Levin about three incidents of burning at Remco: she observed two 55-gallon drums with something unknown burning in them on one day in 1986, two 55-gallon drums with something unknown burning in them on one day in 1987, and wood pallets and "greasy" boards being burned on one day in 1987. *Id*. Ex. 5 at 93-96, 100-101, 105-07, 111-15, 127.[9]

Assuming this testimony to be true, Dr. Levin does not have any scientific expertise to state that these activities could or did result in the creation of toxicologically-significant amounts of dioxins. Plaintiffs have not identified any special training or knowledge regarding metal working industries which would allow Dr. Levin to opine that the activities at the Remco plant "must" have created dioxins. In contrast, Dr. Adriaens asserts in his report that neither heating waste liquids nor burning chlorinated solvents alone will create dioxins. Adriaens Report at 29-31. Dr. Adriaens states that "[t]he only process that could have generated dioxins is the burning of TCE-contaminated planks, however, the amounts produced would not be distinguishable from background dioxins from combustion (automobiles, long range transport, etc.). The patterns (signature) would be very similar to that of background combustion, and not distinguishable from background signatures (i.e. dominated by octaCDD and heptaCDD)." *Id*. at 30.

In their opposition, plaintiffs cite portions of Dr. Levin's deposition during which he identified two documents which purportedly "prove" that chrome plating facilities are recognized by the EPA as

[9] Dr. Levin also testified that approximately 20 "long term Willits residents" told him that they remembered burning at the Remco site. Levin Depo. at 159. However, Dr. Levin could not remember any of these individuals' names, nor did he have any notes of these conversations, and thus to the extent his opinion is based on these unspecified conversations, it is unreliable. *See Foster v. City of Fresno*, 392 F. Supp. 2d 1140, 1156 (E.D. Cal. 2005) (finding expert opinion unreliable because, *inter alia*, opinion was based on conversation with person whose name and affiliation expert could not remember).

a source of dioxins. As an initial matter, the Court notes that Dr. Levin's declaration stated that the source of the dioxin was burning of industrial waste products at the Remco site, *not* chrome plating processes. *See* Levin Decl. at 2. In any event, neither of the documents cited by plaintiffs proves that plaintiffs' alleged exposure to dioxins came from the Remco site. The first document (Exhibit 33 to the Levin deposition) is an extract from the ATSDR Dioxin Profile which cites to a provision of the Clean Water Act regulations, 40 C.F.R. § 413.02. Section 413.02, in turn, lists 2,3,7,8-TCDD as one of over 100 possible components of wastewater coming from electroplating activities. Section 413.02 is not "proof" that 2,3,7,8-TCDD is found in chromium electroplating generally, or that this dioxin was created and released at the Remco site specifically. Moreover, as stated above, 2,3,7,8-TCDD was a non-detect in all four of the Blood Test plaintiffs.

With regard to the second document (Exhibit 24 to the Levin deposition), plaintiffs assert that in it the EPA also "identified chrome-plating facilities like the Remco plant as a significant source of dioxin emissions." This document, titled "Database of Sources of Environmental Releases of Dioxin-Like Compounds in the United States," does *not* state that chrome plating results in the creation of dioxins, and indeed chrome plating is not mentioned in the document. Dr. Levin also acknowledged that this exhibit "doesn't specifically mention chrome plating" as a source of dioxin. Levin Depo. at 278:17-280:16.

D. Dr. Levin did not eliminate other sources of potential dioxin exposure

Defendants also contend that Dr. Levin did not rule out other potential sources of dioxin exposure, and instead simply assumed that any dioxin exposure "must" have come from the Remco plant. Defendants have submitted a report prepared by the U.S. Department of Health and Human Services which states, *inter alia*,

> CDDs [Chlorinated dioxins] (TCDD, PeCDD, HxCDD, HpCDD, OCDD) are ubiquitous in the environment. Although all of the sources of processes that contribute to CDDs in the environment have not been identified, CDDs are known to be formed in the manufacture of chlorinated intermediates and pesticides, during smelting of metals, in the incineration of municipal, medical, and industrial wastes, and from the production of bleached wood pulp and paper. CDDs are also found in emissions from the combustion of various other sources, including coal-fired or oil-fired power plants, wood burning, and home heating systems. . . . CDDs also occur in other combustion products (e.g., cigarette smoke), automobile exhaust from cars running on leaded gasoline with

> chlorine scavengers and to a lesser extent from cars running on unleaded gasoline and diesel exhaust.

Toxicological Profile for Chlorinated Dibenzo-p-Dioxins, U.S. Dep't of Health & Human Servs., Agency for Toxic Substances & Disease Registry (Dec. 1998) (internal citations omitted), attached as Comb Decl. Ex. 8 (hereafter "ATSDR Dioxin Profile"). Food is the greatest source of dioxins in humans, accounting for between 80 and 90% of the average American's daily intake. *Id*. at 381.

Dr. Levin testified that he investigated alternative dioxin sources as follows: "We went around the area [in Willits] and looked for industrial plants . . . [and] . . . the capacity of other places to cause dioxins and I didn't see any." Levin Depo. at 131:7-13. Dr. Levin also apparently assumed that there were no other sources of dioxin in Willits because he was not aware of any studies documenting the presence of dioxin in Willits: "I looked around and I saw no evidence of any other processes that would be producing dioxin that had a study . . . but there's only one study." *Id*. at 122:16-123:3.

Defendants have submitted evidence of the following past and present activities in the Willits area that are known sources of dioxins, none of which were considered by Dr. Levin: (1) the Frank Howard Memorial Hospital, located 200 yards from the Remco site, operated a medical waste incinerator on-site for more than a decade through 1998; (2) burn barrels; (3) a crematorium; and (4) traffic fumes. *See* Caldarola Decl., Ex. A, B, C, F, G. Although plaintiffs assert in their opposition that Dr. Levin considered these sources, Dr. Levin's deposition testimony shows otherwise. *See* Levin Depo. at 131:2-6, 139:24-140:11 (not aware of medical waste incinerator); *id*. at 135:14-20 (did not consider dioxin exposure from traffic). Dr. Levin also did not consider the Blood Test plaintiffs' (or any *prima facie* plaintiffs') diet, exposure to cigarette smoke, or other exposure factors. *Id*. at 129:5-13.

In fact, as defendants have shown, each of the Blood Test plaintiffs had numerous other potential sources of dioxin exposure. Cigarette smoke is a recognized source of dioxin exposure, Comb Decl. Ex. 8 (ATSDR Dioxin Profile at 392), and Deanna Deaton has been a heavy smoker since she was 15 years old (since 1979 – 28 years), and has lived with her husband, who smokes, since 1985. Comb Decl. Ex. 12 (Deaton Depo. at 7:19-20, 45:24-50:7). Charles Nickerman has smoked in the past and lived with smokers. *Id*. Ex. 4 (Nickerman Depo. at 134:11-138:15). Dorothy Liles was exposed to second-hand smoke when she lived with her husband for 50 years and later with her children. *Id*. Ex. 11 (Liles Depo.

at 32:1-34:20). In addition, although Dr. Levin acknowledged that burning wood in fireplaces and stoves can create dioxins, Levin Depo. at 132:7-9, he did not consider the facts that Ms. Liles and Mr. Nickerman heated their homes by burning wood, Comb Decl. Ex. 11 (Liles Depo. at 28:16-29:16); *id.* Ex. 4 (Nickerman Depo. at 15:6-22, 20:13-15, 23:20-21, 37:12-17), or that Ms. Deaton worked for three years at a Burger King over the flame broiler and frequently had lunch with her husband at a lumber mill that burned scrap lumber. *Id*. Ex. 12 (Deaton Depo. at 36:25-38:25, 72:13-75:23). Ms. Avila lived across the street from the Howard Hospital medical waste incinerator for six months and lived near major freeways before moving to Willits. *Id*. Ex. 5 (Avila Depo. at 25:6-22, 31:21-32:24, 36:7-24, 40:12-41:9, 44:24-45:16, and Depo. Ex. 3, 4, 6). Mr. Nickerman lived for many years in a trailer park adjacent to a highway and drove diesel trucks. *Id*. Ex. 4 (Nickerman Depo. at 28:2-15, 33:6-23, 44:11-15, 51:7-20, 63:20-24).

As Dr. Levin acknowledged in his deposition, "dioxins are ubiquitous in the environment," "everybody is exposed to dioxins on a daily basis at some level," and "levels of dioxins in people increase as they get older," *Id*. at 123:4-12. Dr. Levin's failure to consider and rule out other sources of potential dioxin exposure renders his opinion that the Remco site is the "only proven source" of plaintiffs' purported exposure speculative and unreliable.

E. The Blood Test plaintiffs are not representative of the *prima facie* plaintiffs

Defendants contend that even if Dr. Levin's conclusions about the Blood Test plaintiffs' blood results were valid, there is no scientific or factual basis to conclude that the Blood Test plaintiffs are representative of the other *prima facie* plaintiffs. Defendants note that three of the Blood Test plaintiffs lived in Willits before December 1988 (unlike any *prima facie* plaintiff), one worked at Remco before 1988 (unlike any *prima facie* plaintiff), all are considerably older than the *prima facie* plaintiffs (and age is the primary determinant of dioxin levels in blood), the sole *prima facie* plaintiff tested is 80 years old while the remaining *prima facie* plaintiffs are 22 years old or less, and all have different residences and work histories.

Plaintiffs have not attempted to establish that the Blood Test plaintiffs are representative of the *prima facie* plaintiffs, and they do not address this issue in their opposition. As required by the Court's

previous orders, the plaintiffs who had either never lived in Willits, or had only lived in Willits after 1988, were required to make a *prima facie* showing of exposure and medical causation. It defies logic that plaintiffs would attempt to make their *prima facie* showing based on testing the blood of three individuals who are not *prima facie* plaintiffs. Using the blood results of individuals who lived in Willits for long periods of time or who actually worked at the Remco facility while defendants' predecessors were operating it provides no information regarding whether the *prima facie* plaintiffs might have been exposed to measurable amounts of chemicals after defendants' predecessors ceased operating the facility.

With regard to the one *prima facie* plaintiff whose blood was tested – Dorothy Liles – plaintiffs do not provide any basis for concluding that Ms. Liles' blood results can be extrapolated to the other *prima facie* plaintiffs. Ms. Liles is 80 years old while the remaining *prima facie* plaintiffs are 22 years old or less, Motion to Strike, Ex. A, and "[t]he most important factor related to levels of dioxins in people is age." UMDES at 2 (Comb Decl. Ex. 9). Ms. Liles moved to Willits when she was 64 years old. Motion to Strike, Ex. A. Ms. Liles' blood test results could very well reflect a lifetime of exposure to dioxin sources wholly unrelated to her relatively short residency in Willits. Ms. Liles' blood test results are not probative in any way of the dioxin blood levels for the rest of the significantly younger *prima facie* plaintiffs.

F. Dr. Levin does not have a reliable factual basis to opine that each *prima facie* plaintiff was actually exposed to "Remco dioxins"

Aside from the blood testing on Dorothy Liles, Dr. Levin did not conduct any analysis of any other *prima facie* plaintiff. Instead, Dr. Levin listed the dates and locations of the *prima facie* plaintiffs' residences in Willits (or where they visited for those who never lived in Willits), and in some cases, states that the individual participated in activities at other "known" exposure locations without any information regarding time or duration. As an initial matter, the Court notes that many of the *prima facie* plaintiffs claim exposure from "off-site locations" on which the Court has already granted summary judgment. *See* Motion to Strike, Ex. B. In the Court's March 24, 2004 order, the Court found that plaintiffs had failed to present any evidence from which a reasonable juror could find that any

Remco hazardous substances were disposed of at such sites. *See* March 24, 2004 Order Granting Defendants' Motion for Summary Judgment as to Allegations of Off-Site Disposal. Dr. Levin's opinions as to these *prima facie* plaintiffs is based on inadmissible evidence, and therefore not based on "sufficient facts or data" as required by Rule 702.

For all of the *prima facie* plaintiffs, Dr. Levin opines that dioxin in the water and soil is "volatile" and "comes up from the soil through the breathing zone of the individual and then into – into their bodies." Levin Depo. at 101:5-10. Dr. Levin provides no scientific support for his theory that dioxins volatize up through soil and water to be inhaled. Dr. Levin is neither a hydrologist or a geologist, and his resume does not indicate any training or expertise in the transport of dioxins. Levin Depo. at 320:15-18; Levin Decl., Ex. A. More importantly, Dr. Levin's theory is not supported by the science regarding the physical properties of dioxins in the environment. Groundwater is not a transport mechanism for dioxins, and dioxins are very nonvolatile. Dr. Adriaens states in his response to Dr. Levin's volatility theory:

> The fate pathways of dioxins are governed by the physical-chemical properties of these chemicals, particularly the fact that they are very insoluble, extremely nonvolatile, very resistant to degradation, and therefore bioaccumulative. The implication of these properties is that dioxins do not migrate with water via aquifers, but mainly through atmospheric transport, followed by deposition on soil via wet or dry weather mechanisms. Once deposited on soil, volatilization is a minor migration pathway, as they are associated with particulate matter.

Adriaens Decl. at 36 (internal citation omitted); s*ee also id*. at 36-39 (providing detailed explanation); Comb Decl. Ex. 8 (ATSDR Dioxin Profile at 407 ("[Dioxins] are characterized by low water solubilities"); 400 ("[Dioxins] are unlikely to leach underlying groundwater"); 405 ("[V]olatization from the water column is not expected to be a very significant loss process for the TCDD through OCDD congeners as compared to adsorption to particulates.").

G. Dr. Levin's opinion that the *prima facie* plaintiffs were exposed to TCE and other VOCs is not factually or scientifically supported

Dr. Levin asserts that dioxin is a marker for exposure to TCE and other VOCs from the Remco

site, and that those exposures, in combination with the dioxins, caused plaintiffs' injuries.[10] Dr. Levin opines that these plaintiffs were exposed to TCE and VOCs through soil gas volatization from the groundwater and soil. Levin Depo. at 101:5-14. Dr. Levin first claims that studies have shown TCE and other VOCs present in the *prima facie* plaintiffs' living and playing areas:

> Various studies performed on the site in 1998 to 2006 (some 2 to 10 years after cessation of operations) have shown large geographic areas of the patients' regular living and playing environments in which toxic volatile organic chemicals including halogenated hydrocarbons in concentrations (doses) far above those for which State and Federal guidelines mandate remediation to protect the health of 30 year old healthy workers. (Preliminary Removal Site Evaluation Report, Versar, Inc. 1998, Public Health Assessment, CDH 206). These dose limits are substantially above the doses that are considered safe for children and fetuses. (exhibit B-EPA Safe Water Standards).

Levin Decl. at 3.

This theory is factually and scientifically incorrect. As an initial matter, Dr. Levin *does not have any data* showing the presence of any VOCs in the blood of any *prima facie* plaintiff or Blood Test plaintiff. Levin Depo. at 95:25-96:2 ("Q: Do you have any actual testing data for any [*prima facie*] plaintiff of any chemical other than dioxin? A: No. . . .").

Dr. Levin also misrepresents the facts regarding the size and scope of the plume. The studies relied on by Dr. Levin establish that the plume where levels of TCE and/or VOCs in the groundwater exceed the EPA's maximum concentration level for drinking water is very small, barely extending beyond the edge of the Remco site to the near side of Franklin Avenue and part of Highway 101, and not, as Dr. Levin claims, "large geographic areas." *See* Comb Decl. Ex. 16 (WERT RI Report, Figures 5-11-5-18); Ex. 17 (WERT BRA, Figures 4-9-4-11); Ex. 28 (GeoSyntec Report at 5-1 to 5-2); Wannamaker Decl. Ex. 5 (Base Map). Defendants presented unrefuted evidence that most of the *prima facie* plaintiffs never lived or spent any time near the actual plume. Wannamaker Decl. ¶¶ 8-10, Ex. 5. Dr. Levin does not explain how these plaintiffs could have been exposed to VOCs from the plume.

Even for those *prima facie* plaintiffs who claim to have lived or spent time on or near the plume,

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[10] The number of *prima facie* plaintiffs affected by Dr. Levin's analysis is something of a moving target. Altogether, there are 57 *prima facie* plaintiffs – i.e., plaintiffs who never lived in Willits, or only moved there after 1988. Of these, Dr. Levin opined that 41 had injuries caused by chemicals emitted from the Remco site. Of these, 28 presented no evidence of ever living or otherwise spending time on the TCE/VOC plume. Of the remaining 13, four did not live on the plume, but only visited family members there periodically. The other nine lived on or near the plume after 1988.

Dr. Levin does not explain how any VOCs from the groundwater migrated through the soil and resulted in toxicologically significant exposures. Four *prima facie* plaintiffs never lived on Franklin Avenue, and only periodically visited family members who lived on that street.[11] Dr. Levin does not explain how periodic visits could have resulted in exposures sufficient to cause the claimed injuries. More importantly, tests performed in two residences located on the plume – at Donna Avila's house located at 67 Franklin Avenue and Emily Keltner's house at 37 Franklin Avenue – showed that most VOCs were non-detects, and the VOCs that were detected were not found at an unusual range for indoor air. Guzelian Report at 39-41. Dr. Guzelian explains,

> Residential sampling has been conducted for VOCs in Willits, including the addresses of 67 Franklin Avenue . . . on 11-99; 37 Franklin Avenue . . . on 11-99 and 3-00; and the Luna Apartments #9 on 11-99 . . . . For most VOCs sampled for, none were detected; VOCs that were detected were not found at an unusual range for indoor air (e.g., see Wallace, 1991; Pellizzari et al., 1986). More recent data likewise indicate no current exposure to site-related VOCs in Franklin Avenue homes. A letter from Geomatrix Consultants, Inc. to the California Regional Quality Control Board dated 5-20-05 stated that "Air data collected on the Franklin Avenue properties on April 21, 2005 indicate that VOCs present in the subsurface at the Remco Facility are not present in indoor air at 61, 67, and 71 Franklin Avenue at concentrations exceeding California risk-based screening levels. The low levels of VOCs detected within Franklin Avenue residences are likely related to possible sources within the houses."

Id. at 39-40. Dr. Levin admits that he has not conducted any modeling or testing to determine whether VOCs in the groundwater escaped into the atmosphere as soil gas to which any individual could later be exposed. Levin Depo. at 95:25-96:2, 187:10-13.

Furthermore, even if Dr. Levin had a basis to conclude that the *prima facie* plaintiffs were exposed to TCE and other VOCs from the Remco site, he does not have a basis to conclude that those exposures were toxicologically significant. Dr. Levin asserts that the *prima facie* plaintiffs were exposed to sufficient doses because the groundwater concentrations exceeded certain EPA drinking water standards, known as the Maximum Contamination Levels ("MCL"). Levin Decl. at 3; Levin Depo. at 361:24-362:5. However, as Dr. Levin has recognized, MCLs are set by the EPA at levels as close as possible to Maximum Contaminant Level Goals ("MCLGs"). Levin Decl., Ex. B at n.1 (COTT 00264). MCLGs are "non-enforceable public health goals" that define the "maximum level of a

[11] These plaintiffs are Alexia Rodriquez, Alonna Rodriguez, Artura Rodriguez, and Mario Rodriguez. Levin Decl. at 61-80.

contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety." *Id*. Thus, MCLs are set lower than any amount associated with any adverse health effect.

Dr. Levin also opines that the presence of dioxins in the plaintiffs' blood is an indicator of TCE and other VOCs:

> In the Remco exposure, dioxins entered the plaintiffs' bodies at the same time that the other volatile organic chemicals entered. Due to their short half lives in the human body, the other chemicals, such as the PCBs, TCE, PCE have left the body while the lipid soluble dioxins remain. The relative concentration of environmental dioxins to the total VOCs in the general industrial pollution mix is such that, more probably than not, the levels of VOCs to which these patients were exposed are logs above the dioxin levels. The elevated dioxin level with its signature profile proves that these patients were exposed to and had high levels of VOCs from the Remco Contamination site in their bodies.

Id. at 4. However, as discussed above, Dr. Levin has no data showing the presence of dioxins in the soil at the Remco site, and thus he has no basis to compare "relative concentration of environmental dioxins to the total VOCs in the general industrial pollution mix" or to conclude that VOC exposure levels were "logs above" the dioxin levels.

H. Dr. Levin's opinion that exposure to dioxins, TCE and VOCs caused the *prima facie* plaintiffs' injuries is without scientific support

Dr. Levin asserts that "[e]ach and every patient evaluated in this report has been exposed to toxic chemical contaminants from the Remco sites at doses sufficiently high enough to cause the injuries reported." Levin Decl. at 3. Dr. Levin opines that as a result of exposure to these chemicals, 40 *prima facie* plaintiffs suffer from "immune dysregulation," and one *prima facie* plaintiff (Dorothy Liles) suffers from non-Hodgkin's Lymphoma. Dr. Levin conceded that he could not testify to a reasonable degree of medical certainty that any of the chemicals, on their own, could have or did cause any of the *prima facie* plaintiffs' claimed injuries. *See* Levin Depo. at 389:15-390:9 (e.g., "Q: So you cannot conclude to a reasonable degree of medical certainty that any of the plaintiffs' exposures to dioxin caused their injuries? A: Correct."). Instead, Dr. Levin claims that the combination of these chemicals

caused plaintiffs' claimed injuries. *Id*. at 389:7-14.[12]

However, Dr. Levin has not provided any scientific support for his opinion that a combination of chemicals caused plaintiffs' injuries. None of the articles or other documents cited by Dr. Levin in his declaration mentions the combination of chemicals at issue here, or concludes that a combined exposure to these chemicals can cause any of the injuries claimed here. Dr. Levin admitted at his deposition that no regulatory agency or peer-reviewed scientific study has concluded that a mix of chemicals at issue here is capable of causing immune dysregulation. Levin Depo. at 78:14-79:19. Dr. Levin's failure to provide any scientific support for his combination theory, coupled with his admission that the individual components could not and did not cause the claimed injuries renders his ultimate causation opinions inadmissible.[13]

II. Evidentiary objections

A. Defendants' objections

Defendants have objected to the following documents filed by plaintiffs: (1) a July 26, 2007 supplemental Declaration of Alan S. Levin (Docket No. 935); (2) an August 9, 2007 Declaration of Joe Holt (Docket No. 933 Ex. 4); (3) an August 8, 2007 Declaration of Dr. Rash Ghosh (Docket No. 933 Ex. 11); (4) a copy of Sections 4 and 5 of the Montgomery Watson "Draft Remedial Investigation Report" dated December 2001 ("Draft RI") (Docket No. 933 Ex. 1); (5) the Findings of Fact and Conclusions of Law from *People v. Remco*, C 96-283 FMS (Docket No. 933 Ex. 3); (6) a copy of Plaintiffs' Second Amended Responses to Defendants' Fifth Set of Interrogatories (Docket No. 933 Ex.

[12] As discussed above, Dr. Levin does not have any evidence that the *prima facie* plaintiffs were actually exposed to any of the chemicals, either individually or in some combination.

[13] Furthermore, the ATSDR's Dioxin Profile, which Dr. Levin agreed was a reliable and authoritative document, concludes that "no consistent exposure-related immunological effects have been observed in human populations exposed to levels of CDDs [i.e., dioxins] several orders of magnitude higher than background exposure." Comb Decl. Ex. 8 (ATSDR Dioxin Profile at 8); *see also id*. at 43-44 (discussing studies that showed no indications of immune disease even among populations with high dioxin levels). In the sole study cited by the ATSDR that did show an immunological effect in humans from exposure to dioxins, the only group that showed a statistically significant increase in infectious disease were persons with 2,3,7,8-TCDD levels in excess of 1000 pg/g. *Id*. at 42. Even the Blood Test plaintiffs' improperly elevated TCDD levels were only 4.0 pg/g and 5.0 pg/g. In addition, Ms. Liles was a non-detect for TCDD, the only form of dioxin that has been identified as a known carcinogen. *See* Comb Decl. Ex. 15 (IARC Monograph at 343, 423).

5); and (7) Plaintiffs' Second Amended Response to Defendants' Fifth Set of Requests for Production, along with 443 pages of attached documents (Docket No. 933 Ex. 6).

(i) July 26, 2007 supplemental declaration of Dr. Levin

The Court finds that Dr. Levin's July 26, 2007 supplemental declaration is improper and inadmissible for numerous reasons. Plaintiffs' attempt to characterize Dr. Levin's July 26, 2007 supplemental declaration as "rebuttal" lacks merit, since much of this second declaration contains statements of opinion and explanations of methodology that could and should have been included in Dr. Levin's original *prima facie* declaration. To the extent Dr. Levin's declaration is truly responsive to defendants' papers, it is riddled with improper legal argument and inappropriate ad hominem attacks on defendants' counsel and expert witnesses. For example, Dr. Levin asserts that defendants' witnesses used "illegal" data,[14] and charges that their arguments are "delusional." *See also, e.g.*, July 26, 2007 Levin Decl. at 17-18 ("Dr. Guzelian's report is fraught with unsupported assumptions, inaccuracies and outright falsehoods. The Guzelian report is written in an attempt to trick the Court into thinking that his reasoning is more than simple fanciful speculation and my reasoning is less than conservative, accepted medical/scientific methodology."). To the extent that Dr. Levin relies on the "Versar map," his opinions are flawed for the reasons stated below in subsection (iii). Accordingly, the Court STRIKES Dr. Levin's July 26, 2007 supplemental declaration.

(ii) August 9, 2007 declaration of Joe Holt

The Court also STRIKES the declaration of Joe Holt, signed August 9, 2007, as an untimely and improper attempt to bolster plaintiffs' *prima facie* showing. Mr. Holt states that he worked as a machinist at the Remco plant from 1986-88, and he makes numerous statements regarding the operation

[14] Dr. Levin and plaintiffs' contention that defendants used "illegal" blood analysis data is unfounded. Plaintiffs assert that defendants had tests performed at an "unnamed and illegal clinical laboratory." However, the Goswami Declaration explains all of the circumstances surrounding the testing, and states that the blood samples were sent to Alta Analytical Laboratory, and that this laboratory was re-named Vista Analytical Laboratory. Goswami Decl. ¶¶ 4-7. Plaintiffs have not submitted any evidence showing that the laboratory is "illegal" or otherwise lacks proper federal certification.

of machines at the plant during this time period. *See* Holt Decl. ¶¶ 2-8 (describing, *inter alia*, types of materials and tools used at plant and stating that he saw smoke and smelled fumes during various activities) (attached as Tsadik Decl. Ex. 4). Mr. Holt's declaration cannot be fairly characterized as rebuttal evidence; Dr. Levin's February 15, 2007 declaration does not make any reference to Mr. Holt, and none of the *prima facie* plaintiffs' declarations identify Mr. Holt as supporting any fact set forth therein. Instead, Mr. Holt's declaration contains new evidence that should have been submitted by the February 15, 2007 deadline. Moreover, even if the Court considered Mr. Holt's declaration, Mr. Holt does not lay a foundation for many of the statements contained in paragraphs 4 and 8 regarding the temperatures at which the machines operated.

(iii) August 10, 2007 declaration of Dr. Rash Ghosh

The Court STRIKES as untimely the declaration of Dr. Rash Ghosh (Tsadik Decl. Ex. 11). Plaintiffs filed the Ghosh declaration on August 10, 2007. Although Dr. Ghosh purports to solely provide opinions about Dr. Levin's opinions, Dr. Ghosh in fact provides a host of expert opinions directly related to plaintiffs' *prima facie* showing. For example, Dr. Ghosh's declaration states that it is "highly probable" that "the plaintiffs' residence, their children and other sensitive populations including schools, outdoor spaces, the food manufacturing, the shopping centers, hospitals and the senior citizen's home [are] above the contaminated plume emanating from the Remco site," Ghosh Decl. ¶ 7(e); opines about the toxicology of chemicals found in the plume, *id*. ¶ 8; discusses vapor intrusion, *id*. ¶ 9; opines that plaintiffs have been exposed to vaporized volatile organic compounds, *id*. ¶ 11; and opines that the indoor air survey done in November 1999 and April 2005 "are somewhat misleading and may not be scientifically valid." *Id*. ¶ 16. All of Dr. Ghosh's opinions could and should have been provided by the February 15, 2007 deadline. Plaintiffs never identified Dr. Ghosh as a witness relevant to their *prima facie* showing, and the Court finds that it would be highly prejudicial to defendants if plaintiffs were permitted to supplement their *prima facie* showing six months after the deadline.

Furthermore, even if the Court considered the Ghosh declaration, the Court finds that many of Dr. Ghosh's opinions would be excluded because they are speculative, not based on sufficient facts or data, and/or beyond his expertise. For example, Dr. Ghosh provides numerous opinions about

groundwater contamination based upon the Draft Remedial Investigation Report, dated December 2001 ("Draft RI"). Dr. Ghosh did not consider either the Final Remedial Investigation Report, dated April 2002, or the 2006 Baseline Risk Assessment ("BLRA"), both of which are publicly available and include additional years of sampling data, and are final reports. Dr. Ghosh does not show why it is sound or reliable to base his opinions on preliminary data rather than final data.

Dr. Ghosh's reliance on the "Versar map" is even more problematic. The "Versar map" refers to Figure 9 of the preliminary report put together by Versar, Inc. in 1999, and is entitled "Well Survey Area Showing Approximate Areas of Potential Concern Requiring Additional Investigation." Tsadik Decl. Ex. 2 (Levin Depo. Ex. 25 at Fig. 9). On the map, the "areas" are shown with "?" around the darkened "areas of potential concern." Figure 9 does not contain any actual data upon which a scientist could credibly rely. Furthermore, the "areas of potential concern" incorporate detections of hexavalent chromium in the groundwater, not just VOCs, which were detected in a much smaller area. *Id.*

As another example of the speculative nature of Dr. Ghosh's report, Dr. Ghosh opines that the groundwater plume extends farther than the plume identified in the BLRA. The Final Remedial Investigation Report and BLRA show that the area where TCE and/or VOCs are present in the groundwater under and near the Remco site at levels that exceed the EPA's maximum concentration level ("MCL") for drinking water is much smaller than Dr. Ghosh opines. *See* Comb Decl. Ex. 16 (WERT RI Report, Figures 5-11-5-18); Ex. 17 (WERT BRA, Figures 4-9-4-11); Ex. 28 (GeoSyntec Report at 5-1 to 5-2); Wannamaker Decl., Ex. 5 (Base Map). Dr. Ghosh does not have any data to support this opinion, and he did not collect or analyze any groundwater samples in any of the areas where he predicts there is contamination (despite the Willits Trust's failure to find any such contamination). The Court also notes that for many of his opinions, Dr. Ghosh simply states that Dr. Levin is "correct," without providing any independent reasoning. Not only are such bare opinions unhelpful, but it is also unnecessary for Dr. Ghosh to evaluate the credibility of Dr. Levin's opinions and testimony.

(iv) Portions of Draft Remedial Investigation Report

Defendants object to Exhibit 1 of the Tsadik Declaration, which is a copy of Sections 4 and 5

of the Montgomery Watson "Draft Remedial Investigation Report," dated December 2001 ("Draft RI"). The Court finds that this draft report is inadmissible hearsay. *See Smith v. Isuzu Motors*, 137 F.3d 859, 862-63 (5th Cir. 1998) (affirming exclusion of memoranda reflecting preliminary opinions of agency staff members and finding that documents did not qualify as "public records" under FRE 803; *United Air Lines, Inc. v. Austin Travel Corp.*, 867 F.2d 737, 743 (2d Cir. 1989) (finding district court did not abuse its discretion in excluding interim government reports).

(v) Findings of fact and conclusions of law in *People v. Remco*

Defendants object to Exhibit 3 of the Tsadik Declaration, which is a copy of the findings of fact and conclusions of law from *People v. Remco*, C 96-283 FMS. Plaintiffs generally assert that these findings of fact and conclusions of law have a collateral estoppel effect in this case because the parties and issues were the same. However, plaintiffs have not shown that the specific issues litigated in *People v. Remco* are the same as those at issue in connection with plaintiffs' *prima facie* showing of exposure and causation. Accordingly, the Court finds that the doctrine of collateral estoppel does not apply. In addition, plaintiffs request that the Court take judicial notice of the findings of fact and conclusions of law from *People v. Remco*, C 96-283 FMS. The Ninth Circuit has held that courts may not take judicial notice of findings of fact from other cases, *Wyatt v. Terhune*, 315 F.3d 1108, 1114 (9th Cir. 2003), and accordingly the Court DENIES the request.

(vi) Plaintiffs' second amended responses to fifth set of interrogatories

Defendants object to Exhibit 5 of the Tsadik Declaration, which is a copy of plaintiffs' Second Amended Responses to Defendants' Fifth Set of Interrogatories. To the extent plaintiffs have submitted these interrogatory responses for the truth of the matter asserted, the Court finds that the responses are hearsay.

(vii) Plaintiffs' second amended response to fifth set of requests for production

Defendants object to Exhibit 6 of the Tsadik Declaration, which is a copy of plaintiffs' Second Amended Response to Defendants' Fifth Set of Requests for Production, along with 443 pages of

attached documents. This exhibit is improper for several reasons. First, plaintiffs' discovery response and the attached documents were not identified in any of the percipient causation declarations or in Dr. Levin's declaration, and thus this exhibit is an untimely attempt to bolster plaintiffs' *prima facie* showing. Moreover, plaintiffs' discovery response (as opposed to the attached documents) is hearsay. Finally, plaintiffs' papers do not refer to specific documents contained in Exhibit 6, but rather generally cite the exhibit as a whole. The Court is not required to search through 443 pages of documents in an effort to find the relevant documents. *See Carmen v. San Francisco Unified Sch. Dist.*, 237 F.3d 1026, 1030-31 (9th Cir. 2001). The Court also SUSTAINS the specific hearsay objections raised by defendants to portions of the deposition testimony of Gerald Bailey, Gary Crothers, and Robert Quever.

(viii) Deposition transcript of Steve Lewis

Finally, defendants object to Exhibit 9 to the Tsadik Declaration, which is the deposition transcript of Steve Lewis. As with the previous exhibits, plaintiffs did not identify Steve Lewis in any of the *prima facie* plaintiffs' declarations, nor did Dr. Levin identify Mr. Lewis in his declaration. As such, the Court finds that Mr. Lewis's deposition transcript is untimely evidence in support of plaintiffs' *prima facie* showing, and STRIKES this exhibit.

B. Plaintiffs' motion to strike certain portions of defendants' declarations

Plaintiffs move to strike portions of the expert reports submitted as declarations by Dr. Peter Adriaens (Docket No. 858) and Dr. Philip Guzelian (Docket No. 859). Plaintiffs contend that Dr. Adriaens does not have the expertise necessary to analyze the Blood Test plaintiffs' test results, or provide numerous opinions regarding dioxins and dioxin exposure. Plaintiffs contend that Dr. Guzelian provided "misleading assumptions" about the absence of any evidence showing dioxins at the Remco site, that Dr. Guzelian "makes extraordinary arguments" about medical causation, that his exposure analysis is flawed, and that Dr. Guzelian "turns a blind eye to the dangers of TCE."

The Court finds that plaintiffs' contentions lack merit, and that both of defendants' experts are qualified to render their opinions. As stated in Dr. Adriaens' report, Dr. Adriaens holds an M.S. in Bioengineering and a Ph.D. in Soil and Environmental Science. Dr. Adriaens' research and educational

background includes environmental exposure assessment, and he has a "20-year research track in the analysis, fate and transport modeling, and remedial design of dioxin- and PCB-contaminated environments." Adriaens Report at 2. He has published numerous peer-reviewed articles, conference papers, book chapters, reports and abstracts on dioxins. *Id*., Appendix A.

Of particular significance here, Dr. Adriaens is currently one of five co-investigators on the University of Michigan Dioxin Exposure Study ("UMDES"), which is recognized to be authoritative.[15] The UMDES group headed by Dr. Adriaens is "responsible for the entire soil and vegetation sampling campaign, the incineration deposition modeling, dioxin pattern fingerprinting, and contributes to the overall exposure modeling of populations from environmental (soil, vegetation, water, food, etc.) dioxins, furans and PCBs." *Id*. at 2-3. These are all the same issues that Dr. Adriaens discusses in his report. Dr. Adriaens states that in forming his opinions in this case, he relied on his "experience in the UMDES, which constitutes one of the largest [studies] of its kind pertaining to these chemicals, using soil, house dust, and blood serum data, as well as food and behavior survey data." *Id*. at 5. Dr. Adriaens also relied on "information on the National Health and Nutrition Examination Survey (NHANES)," the U.S. Center for Disease Control's studies of health and nutritional status of U.S. adults and children, and also "consulted the Agency for Toxic Substances and Disease Registry ('ATSDR') toxicological profiles on dioxins, and peer-reviewed literature on pharmacokinetics, fingerprinting, and fate and transport." *Id*. Dr. Adriaens' lengthy and extremely detailed report discusses and analyzes data, and Dr. Adriaens supports his critiques and conclusions with numerous citations to scientific studies.

Dr. Guzelian is an M.D., Clinical Professor of Medicine and the recently retired Chief of the Section of Medical Toxicology at the University of Colorado. Dr. Guzelian outlined the appropriate scientific method for determining chemical causation, provided an analysis of Dr. Levin's causation methodology, and provided his own independent causation opinion. Plaintiffs' challenges to Dr. Guzelian are largely argumentative attacks on his opinions, claiming, for example that Dr. Guzelian "makes the extraordinary argument that 'there are very few, if any, medical conditions that are caused only by chemical exposure.'" Plaintiffs' Motion to Strike at 15 (citing Guzelian Report at 19). Plaintiffs

[15] Dr. Levin testified that the UMDES is authoritative. Levin Depo. at 181:14-20.

do not explain or argue why this statement is extraordinary, and instead conclusorily assert that if Dr. Guzelian had "systematically assemble[d] and assess[ed] literature . . ., he would not have come to this conclusion." *Id*. at 15-16. Such unsupported arguments are typical of plaintiffs' motion to strike the Guzelian and Adriaens reports. As with Dr. Adriaens, Dr. Guzelian explains his opinions in detail, and grounds his conclusions in data and with citations to scientific studies and literature.

Plaintiffs' motions to strike are DENIED.

CONCLUSION

For the foregoing reasons and for good cause shown, the Court hereby GRANTS defendants' motion to strike Dr. Levin's February 13, 2007 declaration. (Docket No. 851). The Court DENIES plaintiffs' motion to strike certain testimony proferred by Professor Adriaens and Dr. Guzelian. (Docket No. 889). The Court DENIES plaintiffs' request for judicial notice. (Docket No. 944).

IT IS SO ORDERED.

Dated: February 6, 2008

SUSAN ILLSTON
United States District Judge