UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

CITY OF SEATTLE,

Plaintiff,

v.

MONSANTO COMPANY, *et al.*,

Defendants.

Case No. C16-107-RAJ-MLP

ORDER

I. INTRODUCTION

This matter is before the Court on: (1) Defendants Monsanto Company, Solutia Inc., and Pharmacia LLC's ("Defendants" or "Monsanto") "*Daubert* Motion to Exclude the Expert Testimony of Lisa Rodenburg" (Defs.' Mot. (dkt. # 634)); and (2) Plaintiff City of Seattle's ("City") "Motion to Exclude Proposed Expert Testimony by John Woodyard" (Pl.'s Mot. (dkt. # 621)). The parties have filed responses (Pl.'s Resp. (dkt. # 666); Defs.' Resp. (dkt. # 737)), replies (Defs.' Reply (dkt. # 724); Pl.'s Reply (dkt. # 700), and a surreply (Pl.'s Surreply (dkt. # 731)) on the respective motions. The Court heard oral argument from the parties on August 21, 2023. (Dkt. # 773.)

Having considered the parties' submissions, oral argument, the balance of the record, and the governing law: (1) Defendants' Motion (dkt. # 634) is DENIED; and (2) the City's Motion (dkt. # 621) is GRANTED in part and DENIED in part, as further explained below.

II. BACKGROUND

This case arises out of Defendants' manufacture and sale of polychlorinated biphenyls ("PCBs"). Through this lawsuit, the City seeks to hold Defendants liable for PCBs that have escaped from their use in industrial and commercial applications into the Lower Duwamish Waterway ("LDW") and the City's stormwater and drainage systems. (*See* Second Am. Compl. (dkt. # 267) at ¶¶ 5-15.) The City's sole remaining cause of action alleges Defendants intentionally manufactured, distributed, marketed, and promoted PCBs in a manner that created a public nuisance harmful to the health and free use of the LDW and the City's stormwater and drainage systems. (*Id.* at ¶¶ 91-108.) Defendant Pharmacia LLC (a/k/a "Old Monsanto") was the sole producer of PCBs in the United States from the 1930s until they were banned by Congress in 1977. (*Id.* at ¶ 38.)

The City's complaint alleges Old Monsanto knew its PCBs would get into the environment and waterbodies, such as the LDW, through their ordinary use, and that Old Monsanto's knowledge was based in part on its sales of PCBs to businesses near the LDW and its own use of PCBs at its vanillin plant that operated adjacent to the LDW. (Second Am. Compl. at ¶¶ 61-79.) The City alleges it has incurred past costs, and will incur future costs, for investigation and remediation of the LDW, its source control efforts in the LDW, and for the design and construction of a stormwater treatment plant to reduce PCBs from one drainage basin adjacent to the LDW. (*Id.* at ¶¶ 8, 10, 15, 104-05.)

Based on these allegations, the following experts have been set forth by the parties to testify regarding PCB identification and byproduct PCBs:

A. Dr. Rodenburg

Dr. Rodenburg is the City's expert on PCB identification. (*See* DeBord Decl., Ex. A (dkt. # 636-1) at 1-2.) Dr. Rodenburg is a Professor of Environmental Science at Rutgers and has a Bachelor of Arts in chemistry from Wittenberg University and a Ph.D. in Environmental Engineering from Johns Hopkins University. (*Id.*) Dr. Rodenburg has studied PCBs since 1998 and has substantial experience in measuring PCBs in environmental samples and in interpreting PCB data. (*Id.*)

Dr. Rodenburg's scholarship "pioneered the use of factor analysis" to determine sources of PCBs in ecosystems that may have multiple sources of PCB contamination and/or display weathering processes. (DeBord Decl., Ex. A at 1.) Per her analysis, Dr. Rodenburg utilizes Positive Matrix Factorization ("PMF") with data sets in which all 209 PCB congeners have been measured to determine PCB sources as well as the processes that affect PCBs once out in the environment.[1] (*Id.*) Her collected work has been cited over 1000 times and includes specific studies on the Delaware River, the New York/New Jersey harbor, the Portland Harbor, the Spokane River, and the Green-Duwamish River. (*Id.* at 1-2.)

In this case, Dr. Rodenburg issued an expert report in November 2021 titled "Fingerprinting of PCB congener patterns in samples from the [LDW]." (*See* DeBord Decl., Ex. A.) In her report, Dr. Rodenburg used PMF and Multiple Linear Regression ("MLR") to

[1] Per Dr. Rodenburg's report, PMF is a tool developed in the early 1990s that was originally applied to air quality data. (DeBord Decl., Ex. A at 1.) She notes in the last 30 years, it has been used more widely to examine all types of pollutants. (*Id.*) The EPA has developed its own versions of PMF (EPA PMF 3.0 and 5.0). (*Id.*) PMF2 software by Paatero and Tapper was used by Dr. Rodenburg for her report. (*Id.* at 10.)

determine whether environmental sampling data taken from the LDW was more similar to an Aroclor produced by Monsanto versus a byproduct PCB source.[2] (*Id.* at 10, 23.)

As part of her PMF analysis, Dr. Rodenburg loaded sampling data from different environmental compartments (air, sediment, surface water, tissue, storm drain solids/stormwater, otter scat, and groundwater) into a PMF program that generates PCB "factors" or "fingerprints," which represent PCB patterns within the sampled data. (DeBord Decl., Exs. A at 5, 10-11, B (Rodenburg Seattle Dep. (dkt. # 636-2) at 82:9-21); C (Rodenburg Spokane Dep. (dkt. # 636-3) at 127:24-128:12).) To identify a PCB source, Dr. Rodenburg compared the PMF fingerprints to Aroclor and byproduct PCB patterns both visually and using MLR. (DeBord Decl., Exs. A at 11-14, 23-25, B (Rodenburg Seattle Dep. at 83:8-25, 87:5-88:20, 307:11-22).) The MLR analysis measures the strength of the match between the sampling fingerprint and known Aroclor or byproduct PCB patterns, resulting in a "R^2" value. (*Id.*)

Based on the given R^2 value, Dr. Rodenburg interpreted the likelihood that the data sample was an Aroclor, or a byproduct PCB, given specific R^2 cutoff values. (DeBord Decl., Exs. A at 12-14, 23-25, B (Rodenburg Seattle Dep. at 85:25-86:7).) For her report, Dr. Rodenburg employed R^2 cutoff values of: (1) approximately 0.8 to represent an unweathered single Aroclor; and (2) between approximately 0.4 and 0.8 as representing a weathered Aroclor. (*Id.*, Ex. A at 13.) In addition to calculating an R^2 value, Dr. Rodenburg visually examined fingerprints to determine whether they contained congeners characteristic of Aroclor or non-Aroclor sources. (*Id.*)

[2] "Byproduct PCBs" are PCBs inadvertently created through different manufacturing processes, including the synthesis of organic or inorganic pigments, certain processes involving heat, carbon, and chlorine, or by combustion/incineration. (*See* DeBord Decl., Ex. A at 14-15; *see also id.*, Exs. C (Rodenburg Spokane Dep. at 43:6-14, 51:4-6, 57:12-58:25, 61:4-63:25), D (Rodenburg San Diego Dep. (dkt. # 636-4) at18:21-25:5).)

Per her report, Dr. Rodenburg opines that Aroclors produced by Monsanto, and not byproduct PCBs, are the dominant source of PCBs to all seven of the environmental compartments of the LDW that she examined. (DeBord Decl., Ex. A at 3, 16-25.) She opines that greater than 95% of the total PCB contamination present in the LDW can be sourced to Monsanto's Aroclors. (*Id.* at 3.) Specifically, Dr. Rodenburg concluded Aroclors encompass: (1) over 99% of PCBs in LDW sediment, LDW surface water, groundwater that drains into the LDW, and organism tissue from the LDW; (2) 99% of PCBs in otter scat gathered on the banks of the LDW; (3) over 95% of PCBs in storm drain solids and storm water samples from stormwater drainage pipes connected to the LDW; and (4) at least 87% of PCBs in samples of air deposition from near the LDW. (*Id.* at 4, 16-25.)

B. Mr. Woodyard

Mr. Woodyard is a registered Professional Engineer specializing in environmental cleanup consulting. (Goutman Decl., Ex. A (dkt. # 738-1) at 2, 105-113.) He holds a master's degree in mechanical engineering from the University of Illinois and has over 40 years of experience as a consulting engineer and remedial contractor specializing in PCB regulation, management, disposal, and cleanup. (*See id.*)

Based on Mr. Woodyard's professional experience, and his review of City documents, reports addressing PCB use, the investigation, disposal, and cleanup of the LDW, PCB regulations, and site visits (Goutman Decl., Ex. A at 81-104), Mr. Woodyard's expert report opines in sum that:

> 1. [The U.S. Environmental Protection Agency ("EPA")] and other regulatory bodies have controlled every aspect of manufacture, sale, use, safe handling, cleanup, and disposal of PCBs since 1979.
>
> 2. EPA and other regulatory bodies have established PCB levels they deem safe for products in use, in food, and in the environment.

> 3. Since at least 1977 the City of Seattle has been engaged with EPA and other regulatory bodies over PCBs and has received and solicited advice regarding PCBs from professional associations since 1978.
>
> 4. EPA and other regulatory bodies have overseen and continue to oversee the cleanup of PCBs at sites along the LDW watershed to levels they deem safe.
>
> 5. The PCBs that reached the LDW include by-product PCBs, an important current and future PCB source to the LDW that were not manufactured by Monsanto and are continually being discharged by numerous sources, including the City of Seattle.
>
> 6. There is no evidence that PCBs in building products are a significant source of PCBs in the environment or the LDW.

(*Id.* at 2-3.)

Mr. Woodyard was also retained by Defendants as a rebuttal expert to review and rebut Dr. Rodenburg's opinions. (Goutman Decl., Ex. Q (dkt. # 738-17) at 1.) In sum, Mr. Woodyard's rebuttal report provides that: (1) "By-product PCBs are present in the LDW"; (2) "The presence of by-product PCBs in the LDW is grossly underestimated by Dr. Rodenburg"; and (3) "Numerous statements made in in support of Dr. Rodenburg's opinions and analysis are either uncited or disputed by the facts." (*See id.*)

III. DISCUSSION

A. Legal Standards

Federal Rule of Evidence 702 provides in relevant part:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. For expert testimony to be admissible under Rule 702, it must satisfy three requirements: (1) the expert witness must be qualified; (2) the testimony must be reliable; and (3) the testimony must be relevant. *See Daubert v. Merrell Dow Pharms., Inc.* ("*Daubert I*"), 509 U.S. 579, 589-91 (1993). The proponent of expert testimony has the burden of establishing that the admissibility requirements are met by a preponderance of the evidence. *Id.* at 592 n.10; *see also Lust v. Merrell Dow Pharms., Inc.*, 89 F.3d 594, 598 (9th Cir. 1996).

Before admitting expert testimony into evidence, the Court acts as a "gatekeeper" in determining its admissibility under Rule 702 by ensuring the testimony is both "relevant" and "reliable." *United States v. Ruvalcaba-Garcia*, 923 F.3d 1183, 1188 (9th Cir. 2019) (citing *Daubert I*, 509 U.S. at 597). Expert testimony is relevant where "the evidence logically advance[s] a material aspect of the party's case." *Estate of Barabin v. AstenJohnson, Inc.*, 740 F.3d 457, 463 (9th Cir. 2014) (internal quotations and citation omitted), *overruled on other grounds by United States v. Bacon*, 979 F.3d 766 (9th Cir. 2020) (en banc). Testimony is reliable where it has "a reliable basis in the knowledge and experience of the relevant discipline." *Id.* (quoting *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 149 (1999)).

The Supreme Court has noted the reliability inquiry is a "flexible one," and while the Supreme Court has suggested several factors helpful in determining reliability, trial courts are generally given "broad latitude in determining the appropriate form of the inquiry."[3] *United States v. Wells*, 879 F.3d 900, 934 (9th Cir. 2018) (quoting *Kumho Tire*, 526 U.S. at 150); *see also Messick v. Novartis Pharm. Corp.*, 747 F.3d 1193, 1196 (9th Cir. 2014) (finding Rule 702

[3] In relevant part, *Daubert I* suggested several reliability factors a trial court may examine to determine the reliability of expert testimony, including: (1) whether a theory or technique can be tested; (2) whether it has been subjected to peer review and publication; (3) the known or potential error rate of the theory or technique; (4) the existence and maintenance of standards and controls; and (5) whether the theory or technique enjoys general acceptance within the relevant scientific community. *Daubert I*, 509 U.S. at 592-94; *see also Mukhtar v. California State Univ., Hayward*, 299 F.3d 1053, 1064 (9th Cir. 2002).

should be applied with a "liberal thrust" favoring admission) (quoting *Daubert I*, 509 U.S. at 588); *United States v. Hankey*, 203 F.3d 1160 (9th Cir. 2000) (Rule 702 is "construed liberally" in considering admissibility of testimony based on specialized knowledge).

Furthermore, the reliability inquiry favors admission of testimony as "[s]haky but admissible evidence is to be attacked by cross examination, contrary evidence, and attention to the burden of proof, not exclusion." *Primiano v. Cook*, 598 F.3d 558, 564 (9th Cir. 2010) (citing *Daubert I*, 509 U.S. at 596). The reliability inquiry test does not seek to measure "the correctness of the expert's conclusions but the soundness of [his or her] methodology," and therefore, when an expert meets the standards established by Rule 702, "the expert may testify[,] and the fact finder decides how much weight to give that testimony." *Pyramid Techs., Inc. v. Hartford Cas. Ins. Co.*, 752 F.3d 807, 814 (9th Cir. 2014) (quoting *Primiano*, 598 F.3d at 564-65).

B. Dr. Rodenburg

Defendants move to exclude Dr. Rodenburg because she "employed various statistical sleights of hand which rigged her analyses to ensure environmental sampling data would resemble Aroclor rather than byproduct PCB sources." (*See* Defs.' Mot. at 2.) Defendants specifically contend the data underlying Dr. Rodenburg's opinions is unreliable and that her methodology inaccurately describes the LDW's condition. (*Id.* at 4-8.) Defendants further argue Dr. Rodenburg's R^2 cutoff values provided by her methodology are unreliable.[4] (*Id.* at 8-10.)

The Court will examine Defendants' contentions in turn:

[4] If not entirely excluded, Defendants request Dr. Rodenburg's opinions be limited to those derived: (1) only from data obtained within the LDW; (2) through a comparison of sampling data with mixtures of both Aroclor and all relevant byproduct PCB sources and congeners; and (3) interpreted using R^2 cutoff values subjected to peer review or otherwise generally accepted within the scientific community. (Defs.' Mot. at 10.)

i. Motion to Strike

As an initial matter, the City on surreply moves to strike certain exhibits provided in a declaration by Defendants with Defendants' reply in support of its motion to exclude Dr. Rodenburg as improper new evidence. (*See* Pl.'s Surreply.) On reply, Defendants filed a declaration containing two PowerPoint presentations by Dr. Rodenburg as well as a transcription of a September 25, 2017 PCB webinar by Dr. Rodenburg. (*See* Second DeBord Decl. (dkt. # 725), Exs. A-C.) These materials were submitted by Defendants based on their contention that Dr. Rodenburg's report contradicts opinions offered in non-litigation contexts: that the presence and ubiquity of byproduct PCBs are the "main problem" facing municipalities like the City. (*See* Defs.' Mot. at 1-2; Defs.' Reply at 1, 4.)

The City argues that both PowerPoint presentations and the webinar introduce new evidence Defendants have had in their possession for years and should have otherwise submitted with its motion had they intended to rely on it. (Pl.'s Surreply at 2.) The City argues it is otherwise deprived of an opportunity to respond given Defendants' "sandbag" with new evidence. (*Id.*)

"'It is not acceptable legal practice to present new evidence or new argument in a reply brief.'" *United Specialty Ins. Co. v. Shot Shakers, Inc.*, 2019 WL 199645, at *6 (W.D. Wash. Jan. 15, 2019), *aff'd*, 831 F. App'x. 346 (9th Cir. 2020) (quoting *Roth v. BASF Corp.*, 2008 WL 2148803, at *3 (W.D. Wash. May 21, 2008)). Given the Court's examination of Defendants' submitted exhibits on reply, it appears the PowerPoint presentations and webinar submitted by Defendants were previously provided as exhibits to a deposition of Dr. Rodenburg that took place on February 7, 2018, in a separate and unrelated matter involving Defendants. (*See* Second DeBord Decl. at ¶¶ 2-4.) Given these materials have been in Defendants' possession for some

time, Defendants should have submitted such exhibits with their motion if intending to rely upon them as a basis for excluding Dr. Rodenburg's expert testimony.

Nevertheless, though the City argues it has been deprived of an opportunity to respond, the City's surreply provides a substantive rebuttal to Defendants' submission of these materials. (*See* Pl.'s Surreply at 2-3.) Specifically, the City argues that even if the Court considered Defendants' new evidence, none of the documents undermine her opinions offered in this case nor demonstrate any improper discrepancy with positions she has offered in non-litigation contexts. (*Id*.)

The Court agrees. Defendants' cited portion from Dr. Rodenburg's webinar specifically concerned the City of Spokane and its own issues with byproduct PCBs. (Second DeBord Decl., Ex. C (Rodenburg Tr. at 52:13-53:10) ("[T]hey can go after Aroclor-type sources . . . But that's not [the City of Spokane's] main problem. Their main problem is PCB-11 [from] pigments.").) Immediately after Dr. Rodenburg's comments about the City of Spokane, she identified the LDW as being primarily polluted by Aroclors. (*Id.* at 53:20-54:1 ("[S]ome of these places, like, especially, like the Green-Duwamish River, you see that you've got the green, the blue, and the purple bars. Those are all Aroclors. So the Green-Duwamish River is totally contaminated by Aroclors.").) Moreover, Dr. Rodenburg's remarks in academic presentations that byproduct PCB congeners have been found in several locations across the United States, and that they can contribute to water pollution, does not necessarily undermine her opinion in this case that Aroclors remain the primary source of PCB contamination in the LDW. (*See* Second DeBord Decl., Exs. A at 17-40, B at 10-11, 23.)

Because the City's surreply responds to Defendants' submission of materials on reply, the City's motion to strike Defendants' attached exhibits is denied.[5]

ii. Representative PCB Data

Defendants argue that Dr. Rodenburg relied extensively on environmental sampling data taken from outside of the LDW, and therefore, her selected data is not representative of conditions within the LDW. (Defs.' Mot. at 4-5.) Defendants argue Dr. Rodenburg also failed to identify any analysis undertaken to determine whether the data she employed from outside the subject area of the LDW was representative of conditions within the LDW. (*Id.* at 4.) Defendants request Dr. Rodenburg's opinions at least be confined to those concerning data obtained from within the relevant LDW area. (*Id.* at 5.)

The City responds the data underlying Dr. Rodenburg's analyses is reliable because most of the data was collected and vetted in connection with a study by the Washington Department of Ecology ("Ecology") that took place before this litigation. (Pl.'s Resp. at 4.) The City further responds that though some of the data is taken from outside of the LDW, the data employed by Dr. Rodenburg remains relevant to her opinions due to the tidal nature of the LDW.[6] (*Id.* at 9.)

Pursuant to Rule 702(b), the requirement that expert testimony be based on "sufficient facts or data" only requires the Court to engage in "an analysis of the sufficiency of underlying

[5] Based on the Court's review of Defendants' attached exhibits, the Court also agrees with the City that Dr. Rodenburg has not provided an opinion in this case that is inconsistent with her noted remarks in non-litigation contexts.

[6] On reply, Defendants respond that: (1) the tidal qualities of the LDW would have no impact on certain sampling data (*e.g.,* atmospheric deposition); (2) Dr. Rodenburg did not know whether any tidal qualities would impact storm drain or stormwater data at issue; and (3) a tidal system would have no logical impact on otter scat or organism tissue. (Defs.' Reply at 3 n.1.) As such, Defendants argue five of the seven environmental compartments examined by Dr. Rodenburg would not be impacted by the City's tidal rationale. (*Id.*)

facts or data that is quantitative rather than qualitative." *United States v. W.R. Grace*, 455 F. Supp. 2d 1148, 1152 (D. Mont. 2006); *see also* Fed. R. Evid. 702 Advisory Committee's Note to 2000 Amendments. The requirement "is not intended to authorize a trial court to exclude an expert's testimony on the ground that the court believes one version of the facts and not the other." *W.R. Grace*, 455 F. Supp. 2d at 1152.

Dr. Rodenburg's opinions pertain to the LDW, which consists of river miles ("RM") 0.0 to 5.0 of the Duwamish River. (DeBord Decl., Ex. B (Rodenburg Seattle Dep. at 91:19-92:19, 96:2-10).) Per her report, the data Dr. Rodenburg relied upon included several environmental samples taken from areas outside of RM 0.0 to 5.0. (*See, e.g.,* DeBord Decl., Ex. A at 18 (noting only 6 out of 146 sediment samples were taken between RM 0.7 and 5 within the LDW, with an additional 18 from the Harbor Island Area), 19 (noting that out of 201 surface water samples, "60 were from the Harbor Island area and 10 were from RM 3.3, within the LDW").) Conversely, many of the environmental compartments analyzed by Dr. Rodenburg also comprised data solely from the relevant area of the LDW.[7] (*See, e.g.,* DeBord Decl., Ex. A at 20 ("[O]f the 128 [tissue] samples included in the PMF input, all were obtained from the LDW."), 21 (All 74 storm drain solid and storm water samples included in the PMF input "are considered to be in the LDW."), 22 ("Of the 44 samples included in the PMF input, all were collected in areas that drain into the LDW.").)

Most of the data Dr. Rodenburg relied upon came from a previous study by Ecology regarding the Green-Duwamish River watershed, which Dr. Rodenburg participated in before being retained in this case. (DeBord Decl., Ex. A at 3.) The data relied upon by Dr. Rodenburg was described in that study:

[7] At oral argument, the City represented that when considered in total, 59 percent of Dr. Rodenburg's considered data samples was comprised of data from within the LDW. (Dkt. # 776 at 45:3-48:9.)

> Ecology has, therefore, funded a PCB Congener Study in two phases. Phase 1 provided an introduction to PCBs. During Phase 1, Leidos compiled a database of available PCB congener data in the Green-Duwamish River watershed (Leidos 2016). These data included approximately 1,400 samples analyzed for a subset or full suite of PCB congeners in various media, including sediment, tissue, surface water, storm drain solids, stormwater, and air deposition samples.
>
> The objective of Phase 2 was to conduct PCB source evaluation using multi-variate statistical analysis ("fingerprinting") for the purpose of recommending one or more PCB congeners, suites of congeners, homologs, or Aroclor(s) to be included in the [pollutant loading assessment] modeling efforts, and to provide information on potential PCB sources to LDW sediments and surface water. Positive matrix factorization (PMF) was selected as the statistical technique used for this study. An initial data assessment was conducted (Leidos and Rodenburg 2017), which refined the data sets to be used in the PMF model and determined that at least some available data from all five environmental compartments (air, surface water, sediment, storm drains, and biological tissues) were suitable for use[.]

(Mueller Decl., Ex. A (dkt. # 667-1) at 1.) Dr. Rodenburg also employed additional water and sediment data that became available after she completed her analysis for Ecology. (DeBord Decl., Ex. A at 3-4, 23-25.) Per her report, Dr. Rodenburg noted the data she employed for her report:

> [W]ent through careful quality assurance procedures, not only during the initial collection of the data, but also during the storage, management, and transmission of the data. In addition, we conducted a careful analysis of the uncertainty in the results and concluded that the results were reliable for most media, including sediment, tissue, atmospheric deposition, and stormwater/storm solids. The one medium for which the results were not reliable was water, due to a limited amount of data. This is no longer a concern [for this report] because additional water samples were analyzed for this report.

(*Id.* at 3-4.)

Dr. Rodenburg's alleged failure to sample data exclusively from the relevant area of the LDW is not a basis to exclude her opinion. Defendants do not claim the data Dr. Rodenburg used for her report was inaccurate, erroneous, or otherwise corrupted, but that it is instead not the best data to have employed for an accurate analysis of the relevant LDW area. (*See* Defs.' Resp. at 4-5.) As noted above, the data relied upon by Dr. Rodenburg was largely sourced from studies

Dr. Rodenburg participated in prior to this litigation of the Green-Duwamish River (*see* Mueller Decl., Ex. A at 1), and she acknowledges in her report that further reliability analysis was undertaken of the different environmental compartments utilized in her report (*see* DeBord Decl., Ex. A at 3-4). Dr. Rodenburg testified she performed an analysis to determine whether the results of the data within the LDW were consistent with the broader sampled data by comparing the PMF model's output to samples taken within the LDW. (Mueller Decl., Ex. B (Rodenburg Seattle Dep. (dkt. # 667-2) at 306:14-307:6) ("I looked at the PMF results very carefully, and I looked at the R^2 value . . . to ensure that the samples that were specifically taken from within the LDW had good R^2 values, meaning a good match between the model and the data. And consistently across all the compartments, that was true. The R^2 values were very high, usually in excess of 0.9.").) For instance, Dr. Rodenburg's report provides that the newer water and sediment data samples from the LDW provided similar R^2 results to that of the broader sampled data. (*See* DeBord Decl., Ex. A at 23 (finding congener patterns were similar between broader sampled data and newer LDW surface water data sets (R^2 values ranging from 0.911 to 0.997), which "suggests that there has been no substantial change in the types of PCB sources to the Duwamish River surface water between the original Green-Duwamish project and 2018"), 25.)

Defendants note that publications concerning the prior studies relied upon by Dr. Rodenburg note a limitation of use as the authors "relied on verbal and written information provided by secondary sources" and "made no independent investigations concerning the accuracy or completeness of the information relied upon." (Defs.' Mot. at 4 (citing DeBord Decl., Ex. E (dkt. # 636-5) at 2).) But Defendants' cited study later provides a much more extensive and detailed discussion of the studies' data acquisition, collection, and management process outside of this initial limitation of use advisory. (*See* DeBord Decl., Ex. E at 87-125.)

All in all, Defendants' countervailing considerations regarding whether the data relied on for Dr. Rodenburg's opinions provides an accurate depiction of the LDW and its conditions is not a basis for exclusion. *See City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1053 (9th Cir. 2014) ("Facts casting doubt on the credibility of an expert witness and contested facts regarding the strength of a particular scientific method are questions reserved for the fact finder."). Dr. Rodenburg's sampling of data from areas outside the relevant RM of the LDW, any impacts of the "tidal nature" of the LDW on the sampled data, and any noted limitations on the accuracy or completeness of the data relied on from the prior studies go to the weight of her opinions. Defendants can address such issues with Dr. Rodenburg during cross-examination. *See Bluetooth SIG, Inc. v. FCA US LLC*, 468 F. Supp. 3d 1342, 1349 (W.D. Wash. 2020) ("[T]he factual basis of an expert opinion goes to the credibility of the testimony, not the admissibility, and it is up to the opposing party to examine the factual basis for the opinion in cross-examination." (internal quotations and citation omitted)).

The Court therefore declines to exclude Dr. Rodenburg's opinion as not being founded on sufficient facts or data.

iii. Methodology and Data Exclusion

Next, Defendants argue Dr. Rodenburg failed to consider the full mass of byproduct PCB sources to the LDW, ignoring data contrary to her opinions, and thus, her opinions are not the product of a reliable methodology. (Defs.' Mot. at 5-8.) Defendants request Dr. Rodenburg's opinions be limited to those based on a comparison of sampling data to a mixture of Aroclor and all relevant byproduct PCB sources and congeners found within the LDW. (*Id.*)

Specifically, Defendants argue Dr. Rodenburg compared PCB "fingerprints" to sets of data and conditions that do not reflect real-world conditions to reinforce her opinions. (Defs.'

Mot. at 5-6.) Defendants note the Aroclor and byproduct PCB patterns Dr. Rodenburg selected assumed that sampling data was comprised entirely of Aroclors, or a mixture of Aroclors, or byproduct PCBs from either silicone or pigments; but excluded sampling data comprised of a mixture of Aroclors *and* byproduct PCB sources. (*Id.* at 5-6.) By failing to consider whether sampling data is comprised of a mixture of Aroclor and byproduct PCB sources, Defendants argue Dr. Rodenburg's methodology excludes significant byproduct PCB mass within the sampling data while still attributing certain analyzed data sample solely to an Aroclor source.[8] (*Id.* at 6-7.)

Defendants additionally note Dr. Rodenburg excluded additional byproduct PCB mass as a "data validation" step before running her PMF program, further undercounting byproduct PCB mass and overstating Aroclor contributions to the LDW. (Defs.' Mot. at 7.) Last, Defendants argue Dr. Rodenburg undercounts byproduct PCB contributions to the LDW by considering only four congeners—PCBs 11, 206, 208 and 209—from only two sources —silicon and pigment. (*Id.* at 7-8.) Defendants note more than 130 other individual byproduct PCB congeners have been identified that Dr. Rodenburg omits from her analysis. (*Id.*)

The City counters that Defendants' criticism of Dr. Rodenburg's data exclusion is mistaken because such data exclusion is in fact required by the PMF analysis for reliable results. (Pl.'s Resp. at 8, 10-11.) The City contends Defendants' suggestion that Dr. Rodenburg intentionally excluded byproduct PCB mass is wrong because "it is not possible to determine whether the source of excluded PCB mass was [Aroclor] or byproduct" in nature as "most of the

[8] On this issue, Defendants argue that Dr. Rodenburg excluded 40% of aggregate PCB mass from surface water data, 24% from groundwater data, 55% from otter scat data, 12% from air deposition data, 8% from storm drain data, 6% from sediment data and 4% from tissue data. (*See* DeBord Decl., Ex. B (Rodenburg Seattle Dep. at 198:18-22, 199:5-200:15, 201:9-13, 205:25-206:5).)

PCB congeners that have been identified as potentially associated with byproduct PCBs are also contained in Monsanto's Aroclors." (*Id.* at 8.) The City further argues that significant quantities of byproduct PCB sources "have been found in vanishingly few locations" and have been found to be "a significant source of PCBs to the environment in a very small number of cases." (*Id.* at 12.)

As detailed in background above, Dr. Rodenburg employed a two-step methodology to determine the source of PCBs to the various analyzed environmental compartments and whether the PCBs present in the data samples were produced by Monsanto or were inadvertent/byproduct PCBs created as the result of other manufacturing processes. (*See* DeBord Decl., Ex. A at 10-14.) To do so, Dr. Rodenburg performed a factor analysis using PMF to generate PCB "fingerprints" detected in the data samples before interpreting the "fingerprints" using MLR or visual inspection. (*Id.*) On this subject, her report notes:

> The PMF approach looks for patterns that exist in the data. It does not 'look' for Monsanto's Aroclors. The PMF approach can quantify the fraction of a given congener that comes from different sources, for example from Monsanto's Aroclors versus non-Aroclor sources, and it does not make the assumption that no weathering of the PCB fingerprints has taken place. Instead it produces fingerprints of congeners that co-vary and have been found to be present in most of the samples. The user can then compare these fingerprints to the congener patterns of Monsanto's Aroclors to determine whether they are similar.

(*Id*. at 10.)

As later discussed in her report, Dr. Rodenburg notes "in order for the PMF program to reliably identify sources, it needs to have an adequate quantity of data and the data needs to be of sufficient quality." (DeBord Decl., Ex. A at 11.) Because the PMF program requires a sufficient quantity and quality of data, Dr. Rodenburg recognizes the PMF program requires data with "a relatively low proportion of non-detects to yield reliable results" (*id.*), which therefore requires excluding data samples with a high number of non-detects (*see e.g.*, *id.* at 19 ("[T]he number of

non-detects in the surface water samples made it necessary to limit the data set to a relatively low number of peaks, and inadvertent PCBs were excluded from the PMF input for this reason.").

Dr. Rodenburg's exclusion of certain data to limit the number of non-detects to allow the PMF analysis to identify PCB sources did not intentionally exclude byproduct PCBs nor render her methodology unreliable. As acknowledged in both her report and testimony, excluding some portion of PCB mass is necessary for the validity of Dr. Rodenburg's PMF analysis. Dr. Rodenburg's report provides a detailed account of why certain PCB mass was excluded as well as the efforts she employs to identify non-Aroclor PCB sources where Aroclors and non-Aroclor PCB sources "are moving together in the environment" by comparing the R^2 values as well as examining the fingerprints visually. (*See* DeBord Decl., Ex. A at 10-14.) Dr. Rodenburg testified it is also not possible to determine whether the source of any of the excluded PCB mass was Monsanto's PCBs or byproduct PCBs. (Mueller Decl., Ex. B (Rodenburg Seattle Dep. at 206:24-207:2 ("[W]hether those congeners are inadvertent or Monsanto's Aroclors, I cannot tell you"), 208:14-23 ("In the case of samples or congeners that [] have been discarded, you can assume that the discarded mass reflects the same mixture of Aroclor and non-Aroclor sources as the mass that was kept in the model.")).) In addition, Dr. Rodenburg testified the data exclusion required by her methodology is employed by other scientists in this area to identify PCB sources in the environment. (*Id.* (Rodenburg Seattle Dep. at 304:16-305:3).) In short, absent the exclusion of certain PCB mass, Dr. Rodenburg's method would provide inconclusive and unreliable results.

Moreover, though Defendants suggest Dr. Rodenburg undercounts byproduct PCB contributions to the LDW by considering only four byproduct PCB congeners from pigments and silicone (PCB 11, 206, 208, 209), Dr. Rodenburg explained in her report why she only

considered those byproduct PCB congeners given her research and experience that they are the only congeners that meaningfully contribute to PCB contamination in the environment. Dr. Rodenburg's report acknowledges the impact of byproduct PCBs as a significant source of PCB contamination in the environment in only two cases: (1) a case involving yellow pigment from diarylide yellow (PCB 11) found in the New York/New Jersey Harbor in 2002; and (2) another case from the production of titanium dioxide/white pigment (PCBs 206, 208, 209) in the Delaware River in 2007. (*See* DeBord Decl., Ex. A at 11, 14-15.) Since 2007, Dr. Rodenburg notes she has identified silicone-derived PCBs (PCB 68) as the only other relevant source of byproduct PCBs to environmental contamination, but caveats her recent work suggests such PCBs are introduced in data sampling merely due to the silicone products used in collection of the samples. (*Id.*)

Defendants point to Dr. Rodenburg's testimony that she agreed that, by considering only 4 out of 130 potential byproduct congeners, her methodology could result in an "underestimation of byproduct sources" within the LDW. (*See* DeBord Decl., Ex. B (Rodenburg Seattle Dep. at 264:15-265:4).) However, Dr. Rodenburg immediately testified any potential underestimation of byproduct PCB congeners was lessened because she "looked at the PMF results." (*See id.* at 265:3-4; *see also* DeBord Decl., Ex. A at 13 ("In the same way that I calculate an R^2 value to evaluate the similarity of a PMF-generated factor to Monsanto's Aroclors, I also calculated R^2 values for the comparison of PMF-generated factors to non-Aroclor sources.").) She also examined such fingerprints visually. (*See* DeBord Decl., Ex. A at 12 ("I have always visually examined fingerprints to determine whether they contain congeners that are characteristic of Monsanto's Aroclors or, alternatively, non-Aroclor sources."), 13). Dr. Rodenburg's report sufficiently provides why she considered byproduct PCB contributions from the only four

congeners she has determined to be significant to PCB environmental contamination and how she identified such byproduct PCBs based on her review of PMF results and visual examination of non-Aroclor sources. In any case, such undercounting of other PCB congeners can be "challenged in some objective sense" by Defendants on cross-examination. *City of Pomona*, 750 F.3d at 1047 (quoting Fed. R. Evid. 702 Advisory Committee's Note to 2000 Amendments).

Ultimately, Defendants' challenges to Dr. Rodenburg's methodology for how she arrived at her conclusions based on how she conducts data sampling, go to the weight, and not the admissibility, of her testimony. *See Primiano*, 598 F.3d at 564 (citing *Daubert I*, 509 U.S. at 596). As noted by the City, Defendants' claims are highly similar to the critiques leveled at the government's environmental chemistry expert in *United States v. Sanft*, 2021 WL 5278766 (W.D. Wash. Nov. 13, 2021). In that case, the government's expert analyzed pH measurements in sewers and concluded the results were consistent with chemical profiles expected from drum-reconditioning facilities. *Id.* at *1. Defendants argued the chemical profiles were too similar to profiles from other industries to draw such conclusions, specifically faulting the expert's report for "failing to exclude other sources of high pH liquid" because the wastewater profile for the drum reconditioning industry is "so generic that it could easily apply to wastewater from other types of industrial facilities." *Id.*

The Honorable Richard A. Jones determined the government expert's report was ultimately reliable because the expert had relied on collected samples based in part on EPA reports "grounded in scientific principles" to determine the expected chemical profiles. *Sanft*, 2021 WL 5278766 at *2 (citing *Wendell v. GlaxoSmithKline LLC*, 858 F.3d 1227, 1232 (9th Cir. 2017)). In pertinent part, the Court noted that while "[d]efendants may disagree with Dr.

Lowry's opinions and challenge the accuracy of the evidence supporting his conclusions, [] their challenge goes to the weight of his testimony, not its admissibility." *Id.*

Likewise, because the Court finds Dr. Rodenburg's methodology and its data exclusion sufficiently "grounded in the methods of science" for the opinions she offers in this case, *see Wendell*, 858 F.3d at 1232, the Court declines to exclude her opinion on the basis that it arbitrarily excludes byproduct PCB mass or consideration of other specific byproduct PCB congeners. *See Kennedy v. Collagen Corp.*, 161 F.3d 1226, 1230-31 (9th Cir. 1998) (citation omitted) ("Disputes as to the strength of [an expert's] credentials, faults in his use of [a particular] methodology, or lack of textual authority for his opinion, go to the weight, not the admissibility, of [his] testimony").

iv. R^2 Cutoff Values

Last, Defendants challenge Dr. Rodenburg's MLR determinations regarding the strength of R^2 comparison between the PCB fingerprints and known patterns of Aroclor and byproduct PCB sources. (Defs.' Mot. at 8-10.) Defendants state Dr. Rodenburg employed R^2 cutoff values of her own creation which are arbitrary, not subjected to peer-review, and contradicted by authoritative literature Dr. Rodenburg cites favorably outside this lawsuit. (*Id.* at 8-9.) Alternatively, Defendants request Dr. Rodenburg's opinions be confined to those based on R^2 values generally accepted within the scientific community.[9] (*Id.* at 10.) The City counters the R^2 cutoff values relied upon for Dr. Rodenburg's opinions are peer-reviewed, approved, and not a basis to find her opinion inadmissible. (Pl.'s Resp. at 12.)

[9] Defendants provide that had Dr. Rodenburg used a R^2 cutoff of 0.9 to determine the presence of Aroclor PCBs, only 21.4% of the environmental compartments considered would have been deemed Aroclors. (Defs.' Mot. at 9 (citing DeBord Decl., Ex. G (dkt. # 636-7).)

As noted above, per Dr. Rodenburg: (1) an R^2 value of 0 to 0.4 indicates sampling data contained a highly weathered Aroclor or a non-Aroclor source; (2) 0.4 to 0.8 indicates a weathered Aroclor; and (3) 0.8 to 1.0 indicates an unweathered Aroclor. (DeBord Decl., Exs. A at 12-14, B (Rodenburg Seattle Dep. at 88:21-91:9).) In a published study from 2020, Dr. Rodenburg used the same R^2 cutoff values. (*See id.*, Ex. A at 12; *see also* Mueller Decl., Ex. C (dkt. # 667-3) at 3 ("In an investigation of PCB fingerprints in the Duwamish River, the State of Washington used a scale in which an R^2 of 0.8 or greater indicated an 'unweathered' Aroclor and an R^2 between 0.4 and 0.8 indicated a weathered Aroclor.").) However, Defendants note in another published study from 1987 that Dr. Rodenburg cites to in her report, an R^2 value of 0.9 or greater was found to be necessary to determine whether a sample contained PCBs, and that study rejected an R^2 value of 0.725 as insufficient. (*Id.*, Ex. A at 24; *see also* Ex. B (Rodenburg Seattle Dep. at 140:2-142:2).)

Dr. Rodenburg's R^2 values have been circulated in the relevant scientific community and are sufficiently reliable. As cited to in her report, Dr. Rodenburg employed the same R^2 values in published and peer-reviewed work from 2020. (*See* Mueller Decl., Ex. C at 3.) In any case, the appropriate R^2 values to be used can also be "challenged in some objective sense" by Defendants on cross-examination. *City of Pomona*, 750 F.3d at 1047 (quoting Fed. R. Evid. 702 Advisory Committee's Note to 2000 Amendments). Defendants' challenge therefore goes to the weight of her testimony, and not its admissibility. *See Sanft*, 2021 WL 5278766 at *2 ("Defendants may disagree with [an expert's] opinions and challenge the accuracy of the evidence supporting his conclusions, [but] their challenge goes to the weight of his testimony, not its admissibility.").

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C. Mr. Woodyard

Next, the City seeks to exclude all of Mr. Woodyard's expert and rebuttal opinions. (*See* Pl.'s Mot.) The City argues that: (1) Mr. Woodyard's first and second opinions summarize irrelevant evidence; (2) Mr. Woodyard's third and fourth opinions should be excluded as not relevant to the City's public nuisance claim or Defendants' defenses, and (3) Mr. Woodyard's fourth opinion "is based on fiction." (*Id.* at 4-7.) The City additionally contends Mr. Woodyard's fifth and sixth opinions on the source of byproduct PCBs are not based on sufficient facts or data, nor the product of reliable principles and methods, and that he is unqualified to submit a rebuttal report to Dr. Rodenburg. (*Id.* at 7-11.)

The Court will examine the City's contentions in turn:

i. Opinions One and Two

The City first argues that Mr. Woodyard's opinions summarize irrelevant governmental regulations from EPA and other regulatory agencies, with which he lacks expertise, and that the general regulation of PCBs is not relevant to the City's public nuisance claim. (Pl.'s Mot. at 4-5.) The City further contends that, at most, Mr. Woodyard's first and second opinions offer improper legal conclusions. (*Id.* at 5.)

Defendants counter Mr. Woodyard's first and second opinions are relevant because he can aid the jury's understanding of regulatory documents based on his 40 years of experience applying EPA regulations and coordinating with the EPA on its interpretation and application of those regulations. (Defs.' Resp. at 2-4.) Defendants further argue his first and second opinions are relevant to the City's public nuisance claim because they consider whether Defendants'

conduct in manufacturing and selling PCBs can be considered a nuisance under Washington law and the City's conduct in terms of what it knew about PCBs.[10] (*Id.* at 4.)

As noted above, expert testimony is relevant if it "logically advance[s] a material aspect of the party's case." *Estate of Barabin*, 740 F.3d at 463; *see also Daubert v. Merrell Dow Pharms., Inc.* ("*Daubert II*"), 43 F.3d 1311, 1315 (9th Cir. 1995). Expert testimony is not excluded for relevancy where "it speaks clearly and directly to an issue in dispute in the case, and . . . it will not mislead the jury." *Daubert II*, 43 F.3d at 1321 n.17. For a public nuisance claim, the City must establish conduct constituting a nuisance. *See Miotke v. City of Spokane*, 101 Wn.2d 307, 309, 331 (Wash. 1984), *abrogated on other grounds by Blue Sky Advocs. v. State*, 107 Wn.2d 112 (Wash. 1986). As such, the City bears the burden of proving the unreasonableness of Monsanto's conduct. *See Lakey v. Puget Sound Energy, Inc.*, 176 Wn.2d 909, 923 (Wash. 2013) (citations omitted) (noting that the reasonableness of a defendant's conduct in a nuisance action is determined by "weighing the harm to the aggrieved party against the social utility of the activity"); *see also* Wash. Civil Pattern Jury Instruction 380.03.

Mr. Woodyard's summary of EPA and other regulatory agencies rules and procedures is not relevant nor helpful to the jury to assess the City's public nuisance claim in this case. (*See* Goutman Decl., Ex. A at 7 ("EPA and other regulatory bodies have controlled every aspect of the manufacture, sale, use, safe handling, cleanup, and disposal of [PCBs] since 1979."), 14 ("EPA and other regulatory bodies have established safe PCB levels for products in use, in food,

[10] Defendants additionally argue several of the City's experts invoked the 2014 EPA Record of Decision in their respective reports, and that Mr. Woodyard should be permitted to explain the regulatory processes underpinning that Record of Decision. (Defs.' Resp. at 4.) However, Mr. Woodyard's first and second opinions do not substantively discuss the 2014 Record of Decision or its processes. (*See* Goutman Decl., Ex. A at 7-30.) Mr. Woodyard also repeatedly testified he did not rely upon the 2014 Record of Decision for his opinions. (Woerner Decl., Ex. A (Woodyard Dep. (dkt. # 622-1) at 40:4-6, 41:15-24, 42:9-12, 44:3-11).)

and in the environment.").) Mr. Woodyard has not worked for the EPA nor as a government regulator. (*See* Woerner Decl., Ex. A (Woodyard Dep. (dkt. # 622-1) at 10:9-18).) In instances like this, courts have excluded experts where the expert presented a historical summation with no specialized expertise or experience in evaluating such documents. *See e.g.*, *Pooshs v. Phillip Morris USA, Inc.*, 287 F.R.D. 543, 550 (N.D. Cal. 2012) (excluding expert who summarized archival tobacco industry documents because she was "not qualified as an expert in researching document archives").

Even if the regulatory documents referenced by Mr. Woodyard were within his area of expertise, Mr. Woodyard does not clearly express any opinion in these portions utilizing his expertise. Instead, it appears Mr. Woodyard provides a general recitation of surrounding regulations and facts about PCBs but fails to offer resulting opinions as to the EPA's and other regulatory bodies' historical roles in managing PCBs. (*See* Goutman Decl., Ex. A at 7-30.) As such, Mr. Woodyard's first and second opinions do not apply his stated expertise "beyond the common knowledge of the average layperson" to summarize regulatory documents. *See Moses v. Payne*, 555 F.3d 742, 756 (9th Cir. 2009).

Furthermore, to the extent Mr. Woodyard's first and second opinions do offer opinions, he offers only legal conclusions. (*See e.g.,* Goutman Decl., Ex. A at 9 ("The Toxic Substances Control Act of 1976 authorizes EPA to regulate the manufacture, sale, use, safe handling, cleanup, and disposal of PCBs."), 23 ("Monsanto's PCB land disposal recommendations and warnings to customers were consistent with industry practice at the time."), 29 ("Monsanto's decision not to install PCB solids incineration capability in 1977 was reasonable based on the lack of proven technology."). "It is well established that experts may not give opinions as to legal conclusions." *Cypress Ins. Co. v. SK Hynix Am., Inc.*, 2019 WL 634684, at *2 (W.D. Wash. Feb.

14, 2019) (citing *Crow Tribe of Indians v. Racicot*, 87 F.3d 1039, 1045 (9th Cir. 1996) ("Expert testimony is not proper for issues of law.")). Consequently, any opinion Mr. Woodyard would offer regarding whether Monsanto's conduct was authorized by applicable governmental regulations would constitute an improper legal conclusion. This issue is also before the Honorable Richard A. Jones as an issue of law in Defendants' pending motion for summary judgment. (*See* dkt. # 326 at 48-58; dkt. # 442 at 65-71.)

Mr. Woodyard's first and second opinions are therefore excluded.

ii. Opinions Three and Four

Next, the City contends that Mr. Woodyard's third and fourth opinions are irrelevant to the City's public nuisance claim or Defendants' defenses. (Pl.'s Mot. at 6.) Defendants respond these opinions go to the "City's knowledge and conduct regarding PCBs" and that the EPA's oversight is relevant to whether the City "has and continues to suffer due to costs of investigating and cleanup of alleged PCB contamination in the LDW." (Defs.' Resp. at 5.)

Opinions 3 and 4 speak to: (1) the City's relationship with the EPA; (2) the EPA's and others', including the Occupational Safety and Health Administration, Ecology, and electric utility professional organizations, advice regarding PCB; and (3) regulatory oversight of the cleanup of the LDW. (*See* Goutman Decl., Ex. A at 32-63.) Mr. Woodyard's third and fourth opinions generally provide that EPA has controlled, regulated, and provided the City information on the hazards and proper disposal of PCBs, and that the City has received and solicited advice from several outside organizations regarding PCBs since 1978. (*See id.*) These opinions therefore address aspects of the City's own conduct, the City's knowledge regarding the risks of PCBs, and matters of causation that remain at issue in this case. *Estate of Barabin*, 740 F.3d at 463; *Daubert II*, 43 F.3d at 1321 n.17.

As such, Mr. Woodyard's third and fourth opinions are relevant to addressing whether Defendants' conduct constituted a public nuisance and how liability should be apportioned. *See Alaska Rent-A-Car, Inc. v. Avis Budget Grp., Inc.*, 709 F.3d 872, 883 (9th Cir. 2013) ("The district court is not tasked with deciding whether the expert is right or wrong, just whether his testimony has substance such that it would be helpful to a jury."). At a minimum, Mr. Woodyard's third and fourth opinions remain relevant to Defendants' affirmative defenses, *i.e.*, causation, comparative fault, allocation of liability, and/or apportionment of damages. (*See* Answer (dkt. # 270) at 28-49; *see also* Order (dkt. # 581) at 5.)

iii. Slip 4

The City contends that part of Mr. Woodyard's fourth opinion opining the City is responsible for PCB discharges to the "Slip 4" area of the LDW is "based in fiction" given his reliance on only a portion of produced sales records and should thus be excluded. (Pl.'s Mot. at 6-7.) Defendants respond that the totality of sales records do not establish that the PCBs shipped to Boeing by Monsanto "would have been used or discharged in the [Slip 4] area." (Defs.' Resp. at 5-6.)

As part of his fourth opinion, Mr. Woodyard suggests the City is responsible for PCB discharges to the "Slip 4" area of the LDW because Boeing did not purchase the sort of PCBs that were located there. (*See* Goutman Decl., Ex. A at 53-56.) To form this opinion, Mr. Woodyard testified he examined two years of Boeing's PCB purchase sales data from 1959 and 1960, which revealed sales of Aroclor 1254 (Woerner Decl., Ex. A (Woodyard Dep. at 106:23-107:4)), but not Aroclor 1242, which was found at the North Boeing Field site. (Goutman Decl., Ex. P (Woodyard Dep. at 160:15-162:4).)[11] However, the City avers, and Defendants do

[11] Mr. Woodyard's report appears to omit any specific citation to the examined sales records. (*See* Goutman Decl., Ex. A at 54-56 n.359-375.)

not dispute, that sales records produced to Defendants from several other years demonstrate Boeing in fact purchased Pydraul containing Aroclor 1242. (*See* Woerner Decl., Exs. C (dkt. # 622-3), D (dkt. # 622-4).)

Mr. Woodyard's fourth opinion is not supported by the available data. Though Mr. Woodyard's fourth opinion acknowledges Boeing's PCB contributions to the Slip 4 contamination (*see* Goutman Decl., Ex. A at 53-56), Mr. Woodyard failed to account for the totality of sales records in leveling his inference that remaining PCB contamination at Slip 4, despite Boeing's remediation efforts, came as a result of the City. *See Whisnant v. United States*, 2006 WL 2861112, at *2 (W.D. Wash. Oct. 5, 2006) ("[C]ourts have also found the following factors relevant in assessing the reliability of expert testimony . . . whether the expert has adequately accounted for obvious alternative explanations."). Despite Defendants' contention that the existence of such sales records does not definitively establish that those PCBs were discharged by Boeing in the Slip 4 area (*see* Defs.' Resp. at 6), Defendants' position improperly shifts the admissibility burden of this portion of Mr. Woodyard's opinion to the City. *See Lust*, 89 F.3d at 598. The "Slip 4" portion of Mr. Woodyard's fourth opinion is therefore excluded.

iv. Opinions Five and Six

The City argues Mr. Woodyard's fifth and sixth opinions on the source of byproduct PCBs are not based "on sufficient facts or data" and are not "the product of reliable principles and methods." (Pl.'s Mot. at 7-9.)

Testimony may be excluded under Rule 702(d) where there is "too great an analytical gap between the data and the opinion proffered" to support inclusion of the testimony. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997); Fed. R. Evid. 702 Advisory Committee's Note to 2000 Amendments (noting relevant factors include "[w]hether the expert has unjustifiably extrapolated

from an accepted premise to an unfounded conclusion"). An expert must therefore bridge the analytic gap with more than bald assertions. *City of Pomona*, 750 F.3d at 1049; *see also Provident Life & Accident Ins. Co. v. Fleischer*, 18 F. App'x 554, 556 (9th Cir. 2001) (excluding expert's testimony where report "did little more than baldly state" a conclusion, "offer[ed] absolutely no foundation for the conclusion," and did "not explain what, if any, scientific studies or principles support[ed] that conclusion.").

1. Opinion Five

The City first contends Mr. Woodyard's fifth opinion is not based on sufficient data because he did not analyze samples of PCBs in the LDW and determine they were byproduct PCBs, but instead, provides that because byproduct PCBs exist and are becoming more common, they are becoming the predominant PCB found in the LDW. (Pl.'s Mot. at 8.) The City argues he should not be permitted to testify that the City is "continually" discharging byproduct PCBs into the LDW where his evidence fails to back that proposition. (*Id.*) Defendants argue Dr. Rodenburg herself agrees byproduct PCBs have been found in the LDW and note Mr. Woodyard provided several pieces of evidence of their general presence in consumer and commercial products and in wastewater and stormwater discharges. (*See* Defs.' Resp. at 6-7 (citing Goutman Decl., Ex. O (dkt. # 738-15)).)

Mr. Woodyard provides in his fifth opinion that many consumer and commercial products contain byproduct PCBs and that most of these products are available to consumers in the LDW. (*See* Goutman Decl., Ex. A at 65-66.) As noted by Defendants, outside of citing to Dr. Rodenburg's own studies of byproduct PCBs and her prior deposition testimony, Mr. Woodyard cites to Ecology's publication on "Polychlorinated Biphenyls in General Consumer Products," for the proposition that, "the EPA has identified 200 chemical processes with a potential for

generating byproduct PCBs . . . .” (Goutman Decl., Ex. A at 66 n.463; *see also id.*, Ex. G (dkt. # 738-7) at 3.) He also identifies a study by the City of Spokane, which found byproduct PCBs present in numerous products used by municipalities. (Goutman Decl., Ex. A at 66 n.465; *see also id.*, Ex. H (dkt. # 738-8) at 33.)

After identifying these sources of byproduct PCBs, Mr. Woodyard opines that “common consumer and municipal products containing by-product PCBs are still being used in the LDW watershed.” (Goutman Decl., Ex. A at 69.) For this proposition, Mr. Woodyard cites Ecology’s findings in studies in 2016 and 2014 investigating the presence of byproduct PCBs in consumer products and notes the studies found most of the products tested contained detectable levels of byproduct PCBs. (*Id.* at 69-70 (citing *id.*, Ex. G).) He further notes, based on the City of Spokane study, that byproduct PCBs were detected in a variety of products purchased by the City of Spokane, “including paints, deicers, firefighting foam, vehicle wash soap, pesticides/herbicides, motor oil, dust suppressants, and asphalt products.” (*Id.* at 70 (citing Goutman Decl., Ex. H).) Based on the City’s Rule 30(b)(6) deposition testimony in this case that similar products were purchased and used by the City, Mr. Woodyard avers byproduct PCBs are entering the LDW in part due to the City’s actions. (*See id.* at 70.)

Here, Mr. Woodyard offers sufficient factual support for the general prevalence of byproduct PCBs and his fifth opinion’s conclusion. Though the City takes issue with the fact that Mr. Woodyard did not analyze data samples of PCBs in the LDW to determine they were byproduct PCBs, he need not conduct his own independent investigation or analysis to infer their presence in the LDW based on their prevalence in consumer and commercial uses. *See Daubert I*, 509 U.S. at 592 (“An expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation.”).

Mr. Woodyard's fifth opinion also does not present "too great of an analytical gap" between the data offered (*i.e.*, that byproduct PCBs are being produced and found in numerous consumer products), and his opinions proffered (*i.e.*, byproduct PCBs are now becoming the predominant PCB found in the environment; byproduct PCBs are "continually being discharged by numerous sources" into the LDW because consumer and municipal products containing them are being used in the LDW, including by the City). *See Joiner*, 522 U.S. at 146; *City of Pomona*, 750 F.3d at 1049. The City may disagree with Mr. Woodyard's conclusions on this issue based on his cited evidence, but such challenges go to the weight of his testimony, not its admissibility. *See Primiano*, 598 F.3d at 564 (citing *Daubert I*, 509 U.S. at 596); *Sanft*, 2021 WL 5278766 at *2.

2. Opinion Six

The City argues Mr. Woodyard's sixth opinion is not reliable because his conclusion that there is no evidence PCBs in building products are a significant source of PCBs in the LDW is connected only through the "ipse dixit" of his expertise. (Pl.'s Mot. at 8-9.) Defendants respond that the City merely disagrees with Mr. Woodyard's conclusion that there is no evidence PCBs in building products are a significant source of PCBs in the environment and LDW. (Defs.' Resp. at 8-9.)

For his sixth opinion, Mr. Woodyard opines there is "no evidence that PCBs in building products are a significant source of PCBs in the environment or the LDW." (Goutman Decl., Ex. A at 3, 70.) In sum, Mr. Woodyard bases this conclusion on his understanding of the chemical properties of PCBs, specifically finding that: (1) PCBs in open use applications, such as caulk, were designed to remain in those applications, and loss rates of PCBs from open uses were low; (2) only a fraction of PCBs lost from open use applications, such as caulk, would make it to the

LDW; (3) PCBs that potentially volatilized from caulk had higher vapor pressure and more readily degradable congeners; and (4) that recent research shows "PCB bioavailability" from paint chips in the environment is "extremely low." (*See* Goutman Decl., Ex. A at 70-72.) From this, Mr. Woodyard opines contributions of PCBs from open use sources to the LDW is negligible as PCBs sales from such sources were phased out and due to the 15 to 20-year lifespan of caulk. (*Id.* at 72.)

Despite providing the chemical properties of PCBs and how their use in building products would result in negligible PCB contamination contributions, Mr. Woodyard's sixth opinion does not go on to cite to any specific scientific studies conducted in the LDW demonstrating the negligible impact of PCB-containing building products nor qualify how building product contributions are not a "significant source" for PCB contamination in the LDW. Instead, his sixth opinion cites to the lack of EPA regulatory requirements to remove PCB containing building materials once discovered. (*See* Goutman Decl., Ex. A at 72-74.) He opines that though there is evidence PCB-containing building products are present in the LDW and "past their useful life and prone to deterioration," there is no evidence they are constantly escaping or were released from caulk, paint, and similar materials. (*Id.* at 74.)

Curiously, Mr. Woodyard goes on to cite several examples where PCBs from building products were in fact detected in the LDW. (*See* Goutman Decl., Ex. A at 74-80.) For instance, Mr. Woodyard predominantly cites to an Ecology commissioned study in 2011 that sampled paint and caulk from 31 buildings located within the LDW and found PCBs detected in the paint and caulk samples. (*See id.* at 75, 79-80.) He notes the study concluded "the paints [in the commercial/industrial buildings sampled] contain relatively high concentrations of PCBs" but avers that it did so incorrectly due to the EPA regulatory standards. (*Id.*) Mr. Woodyard also

goes on to list the detection of PCBs in building materials at several other sites located in the LDW, including the former Rainier Brewery, King County Youth Services Center, North Boeing Field, Boeing Plant 2, and the Port of Seattle's Terminal 117, with some of the referenced sampling finding PCB levels above the EPA regulatory limit. (*See id.* at 75-78.)

Mr. Woodyard's sixth opinion therefore presents "too great of an analytical gap" between the data offered regarding the chemical properties of PCBs and the cited LDW building product studies and his opinion proffered that PCBs from building products are not a significant source of PCBs in the LDW. *See City of Pomona*, 750 F.3d at 1049 ("It is where expert opinion is 'connected to the existing data only by the ipse dixit of the expert' that there may be 'too great an analytical gap between the data and the opinion proffered' to support inclusion of the testimony.") (internal citation and quotations omitted). Mr. Woodyard's sixth opinion is excluded.

v. Rebuttal Opinion

Finally, the City argues Mr. Woodyard is not qualified to rebut Dr. Rodenburg. (Pl.'s Mot. at 9-11.) The City notes that, in contrast to Dr. Rodenburg's construction and application of peer-reviewed methods to analyze PCB samples available in the LDW, Mr. Woodyard has no experience to quantify the amount of byproduct PCBs in the LDW, has never employed PCB fingerprinting to determine PCB sources, nor offers any competing method to identify PCB sources. (*Id.*)

Defendants argue that Mr. Woodyard's 40 years of experience consulting on PCB management, disposal, and cleanup sufficiently qualifies him to rebut Dr. Rodenburg. (Defs.' Resp. at 9-10.) Defendants further offer that Mr. Woodyard has "regularly conducted chemical fingerprinting" throughout his experience as an engineer. (*Id.* at 10.)

An expert is considered qualified to testify if the expert has "sufficient specialized knowledge to assist the jurors in deciding the particular issues in the case." *Kumho Tire*, 526 U.S. at 156. Because Rule 702 "contemplates a *broad conception* of expert qualifications," only a "*minimal foundation* of knowledge, skill, and experience" is required. *Hangarter v. Provident Life & Accident Ins. Co.*, 373 F.3d 998, 1015-16 (9th Cir. 2004) (internal quotations and citation omitted; emphasis in original).

In his rebuttal report, Mr. Woodyard largely summarizes and cites to Dr. Rodenburg's previous deposition testimony, her issued reports on PCBs, as well as Dr. Rodenburg's prior articles on PCBs, to opine Dr. Rodenburg erroneously downplays the contribution of byproduct PCBs to the LDW. (*See* Goutman Decl., Ex. Q.) Based on his cited sources, Mr. Woodyard identifies Dr. Rodenburg's use of PMF analysis as faulty because of its bias toward identifying Aroclors. (*Id.* at 7-9.) In sum, Mr. Woodyard provides Dr. Rodenburg's opinions are unreliable *inter alia* because:

> Dr. Rodenburg's conclusions are flawed due to the way in which she went about her analysis. She began by massaging the sampling data by eliminating possible non-Aroclor congeners, assumed the results were Aroclors for the purpose of running her PMF analysis, and then creating arbitrary R2 threshold values that validated her hypothesis. I do not take issue with the use of PMF, only with the biasing of the input data and the resulting misinterpretation of the output.
>
> Absent a fair treatment of the data, her PMF-based conclusions that legacy PCBs are dominant in the LDW watershed are unfounded and unreliable, because the PMF model as she applied it was biased by her initial assumption that the PCBs found were from Aroclors and not byproduct PCBs.
>
> In addition, most of the data used in Dr. Rodenburg's analyses were derived from environmental sampling outside the LDW and she failed to use all of the data from the relevant area.

(*Id.* at 9.)

On this issue, though Mr. Woodyard has significant experience consulting as an engineer and remedial contractor on PCB regulation, management, disposal, and cleanup (*see* Goutman Decl., Ex. A at 105-113), his PCB management experience lacks the minimal foundation of knowledge, skill, and experience to qualify him to identify flaws in Dr. Rodenburg's PCB identification methodology. Nor is it clear from his rebuttal report how he relies on his PCB experience to identify the alleged errors in Dr. Rodenburg's report.

Based on the record before the Court, Mr. Woodyard does not have any experience identifying PCB sources through chemical fingerprinting, any specific or specialized experience with PMF and MLR analysis, nor does his rebuttal report offer an alternative methodology for identifying Aroclors from byproduct PCBs. (*See* Goutman Decl., Exs. A at 105-113, Q; *see also* Woerner Decl., Ex. A (Woodyard Dep. at 147:21-23, 149:1-6, 231:15-22).) And though Defendants claim Mr. Woodyard has "regularly conducted chemical fingerprinting," Defendants fail to provide any support for that contention (*see* Defs.' Resp. at 9-10) nor does Mr. Woodyard's rebuttal report itself evince any basis for his experience with PCB fingerprinting identification (*see* Goutman Decl., Ex. Q). Mr. Woodyard has also testified that "he does not know what chemical fingerprinting analysis" is (*see* Woerner Decl., Ex. A (Woodyard Dep. at 137:9-13)), that he has no analytical laboratory experience with PCBs (*see id.* at 139:15-25), and that he ultimately has no opinion or an alternative number with respect to Dr. Rodenburg's conclusion that greater than 95% of the total PCB contamination present in the LDW can be sourced to Monsanto's Aroclors. (*See id.* at 147:7-23, 148:21-149-6).)

Mr. Woodyard's identified flaws in Dr. Rodenburg's opinions based on her previous deposition testimony, academic articles, and authored reports are more appropriately addressed

by Defendants during Dr. Rodenburg's cross-examination.[12] *See Primiano*, 598 F.3d at 564 (citing *Daubert I*, 509 U.S. at 596); *Sanft*, 2021 WL 5278766 at *2. The City's Motion to exclude Mr. Woodyard's rebuttal opinion is therefore granted.

IV. CONCLUSION

For the foregoing reasons: (1) Defendants' Motion (dkt. # 634) is DENIED; and (2) the City's Motion (dkt. # 621) is GRANTED in part and DENIED in part.

The City's Motion is denied as to Mr. Woodyard's third, fourth, and fifth opinion, but otherwise granted to exclude his first, second, "Slip 4" portion of his fourth, sixth, and rebuttal opinions. The City's motion to strike Defendants' attached exhibits (dkt. ## 725-1, 725-2, 725-3) submitted with their reply to their motion regarding Dr. Rodenburg is DENIED.

The Clerk is directed to send copies of this Order to the parties and to the Honorable Richard A. Jones.

Dated this 13th day of September, 2023.

MICHELLE L. PETERSON
United States Magistrate Judge

[12] The City provides that Defendants' other rebuttal experts for Dr. Rodenburg, including Robert Karls, Scott Recker, and Dr. Jennifer Wilkie, are also available to rebut Dr. Rodenburg's opinion, and "have more pertinent expertise." (*See* Pl.'s Mot. at 9 n.47; *see also* dkt. ## 344-12 at 2-3, 678-1 at 3.)