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October 9, 2008

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**VIA E-MAIL**

Ms. Arthur-Jean Williams  
USEPA  
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Arlington, VA 22203

Ms. Angela Somma  
National Marine Fisheries Service  
Office of Protected Resources  
1315 East-West Highway  
13<sup>th</sup> Floor  
Silver Spring, MD 20910

Re: October 2, 2008 meeting regarding draft Biological Opinion and Reasonable and Prudent Alternatives/Measures

Dear Ms. Williams and Ms. Somma:

Dow AgroSciences, LLC (“DAS”) and Makhteshim Agan of North America, Inc. (“MANA”) appreciated the opportunity to meet with you on October 2. This letter addresses the issues DAS and MANA raised at that meeting.

NMFS’ stated focus of the meeting was to hold a dialogue between the applicants, EPA and NMFS, concerning possible Reasonable and Prudent Alternatives (“RPAs”), should NMFS make a jeopardy finding. While DAS and MANA welcome all opportunities to discuss any aspect of the draft BiOp with NMFS and/or EPA, as we explained at the meeting, it is inappropriate at this time to begin to formulate RPAs when NMFS has not yet reviewed essential and available pertinent scientific and commercial information. Thus, there is no appropriate basis for drawing a jeopardy conclusion. Nonetheless, we once again sought at this meeting to help bring the NMFS staff up to date on the pertinent facts and science.

DAS and MANA understood NMFS to explain that, notwithstanding that NMFS has not had the opportunity to review the several volumes of relevant information that DAS and MANA have provided in the public comment period and described at our late August meeting, NMFS is focusing on diazinon and



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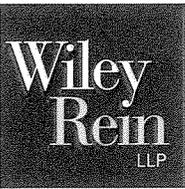
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chlorpyrifos' potential effect on salmonid prey and, in particular, on a single aquatic invertebrate species. However, MANA and DAS consider this focus on salmonid prey to determine possible threshold levels for RPAs inappropriate because it ignores a considerable amount of relevant scientific information and overemphasizes the effect that possible reductions in the quantity of a single food source might have on salmonids.

DAS and MANA scientists thus made several points at the October 2 meeting that relate to NMFS' approach to developing RPAs and the BiOp. These included the following:

- NMFS has focused on incorrect endpoints for assessing indirect toxicity towards salmonids. As mentioned above, NMFS appears to be focusing on the indirect effect diazinon and chlorpyrifos have on salmonid prey and, in particular, aquatic invertebrates. Salmonids feed on a variety of aquatic invertebrate and the LC50s of these species vary in sensitivity by nearly five orders of magnitude. Looking at only one species of these aquatic invertebrates leads to erroneous conclusions concerning salmonid survival.
- NMFS has overemphasized the impact a single aquatic invertebrate has on salmonid food sources. A plethora of toxicity data confirm that diazinon and chlorpyrifos are much less toxic to many species of salmonid prey. Additionally, by focusing only on aquatic invertebrates, NMFS ignores other food organisms for early life stage salmonids, such as terrestrial insects and larval fish. The elimination of a single salmonid food source should not adversely affect salmon populations.
- NMFS has failed to appropriately deal with areas of uncertainty. NMFS indicated the possible use of an "uncertainty" factor to account for untested stressors. NMFS can resolve many of these uncertainties by analyzing the correct data. Using an arbitrary "uncertainty" factor will simply result in a drastically reduced and unnecessary threshold.
- NMFS has failed to look at mesocosm studies, which provide valuable information pertinent to the BiOp. For instance, the results of one mesocosm study were summarized by EPA in Garber, K. et. al., "Risks of



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Diazinon Use to the Federally Listed California Red Legged Frog (*Rana aurora draytonii*) Pesticide Effects Determination,” Environmental Fate and Effects Division, Office of Pesticide Programs, July 20, 2007. This study showed that fish exposed to diazinon exhibited no direct or indirect effects, even though there were significant fluctuations in aquatic macroinvertebrates. Chlorpyrifos mesocosm studies, which report on the direct toxicity to individual species, population dynamics and community interactions, also have been ignored.

- NMFS has failed to look at many studies addressing the effect diazinon or chlorpyrifos has on aquatic invertebrates. At the October 2 meeting, MANA provided a diazinon risk assessment to NMFS: Giddings, et. al., “Ecological Risks of Diazinon from Agricultural Use in the Sacramento-San Joaquin River Basins, California,” *Risk Analysis*, 20(5), 2000, pp. 545-572. This assessment cites a number of microcosm and mesocosm field studies that show the impact diazinon has on certain species of aquatic invertebrates. The study found no indirect effects occurred for bluegill sunfish, which have a similar LC50 to salmonids, due to a reduction in food supply. Similarly, no direct or indirect effects on bluegill sunfish were observed in a series of outdoor pond microcosms treated with chlorpyrifos at maximum concentrations less than or equal to 1 µg/L. See Giddings, et. al., “Fate of Chlorpyrifos in Outdoor Pond Microcosms and Effects of Growth and Survival of Bluegill Sunfish,” *Environ Toxicol Chem*, 16(11), 1997, pp. 2353-2362. We heard no suggestion whatsoever that these analyses have yet been considered by NMFS.
- NMFS has relied too heavily on AgDrift exposure modeling, which does not reflect actual environmental concentrations expected in agricultural landscapes. For instance, the Spray Drift Task Force uniform protocol field experiment was designed to have a consistent high wind speed, with spray deposition measured directly downwind in an area close to the treated field/orchard and no drift barriers present. The aerial model used for simulating aerial applications incorporated the same factors of wind speed and direction, proximity and lack of drift barriers. In real landscapes, however, the norm is to have variable wind speed and direction, distributions of proximity distances relative to treatment site

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and location of surface water bodies and include vegetative barriers, particularly riparian strips. Thus, the AgDrift Model overemphasizes the amount of drift input into salmonid habitats.

At the October 2 meeting, DAS and MANA also raised the issue of the fast-approaching deadline for NMFS to release the BiOp – October 31, 2008. NMFS agreed to this deadline in a Stipulated Settlement Agreement dated July 30, 2008. DAS and MANA have provided NMFS with several volumes of information as well as numerous references to even more material. At the October 2 meeting, NMFS asked several questions that revealed a lack of understanding of these materials or their significance. NMFS is unlikely to be able to adequately review and synthesize all available information by the October 31, 2008 deadline. If necessary, DAS and MANA are willing to renew their offer to provide a statement to the Court explaining the need for that extension. If NMFS does not obtain an extension, it seems unlikely that NMFS will be able to produce a scientifically sound BiOp.

DAS and MANA are willing to continue working with EPA and NMFS in further developing both the RPAs and the BiOp.

Sincerely,



David B. Weinberg  
*Counsel to Dow AgroSciences, LLC  
and Makhteshim Agan of North America, Inc*

cc: Ephie Gur  
Scott Rawlins  
Robert Everich  
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Michael Shaw  
Joh Fitt  
Ken Racke  
David Menotti  
Patrick Donnelly