



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON D.C., 20460

**MEMORANDUM**

**Date: July 16, 2007**

**SUBJECT:** Response to error-only comments and transmittal of the Revised Environmental Fate and Ecological Risk Assessment Chapter and Revised Drinking Water Exposure Assessment in Support of Phase III of the Reregistration Eligibility Decision on Acrolein  
PC Code: 000701  
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**THROUGH:** Elizabeth Behl, Branch Chief  
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**TO:** Amaris Johnson, Chemical Review Manager  
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This memo addresses the error only comments made by Baker Petrolite on “Assessment of Drinking Water Exposure from Acrolein” (D320999) and Environmental Fate and Ecological Risk Assessment for the Reregistration of Acrolein (D320991). Errors identified by the Baker Petrolite and accepted as such by EFED have been addressed in the revised drinking water memo and risk assessments without other further response or discussion in this mem. Comments that were not accepted, and those requiring additional discussion are addressed below.

**Comments on the Drinking Water Assessment (D320999)**

The following comments on the drinking water assessment were not addressed as they do not identify errors in the document but refer to matters regarding interpretation of the data or the conduct of the assessment.

*“Most drinking water systems are not at the terminal point of a canal system”*

*“What about degradation to CO<sub>2</sub>? Additionally, 3-hydroxypropanal is not stable. BPC believes it is inaccurate to think you will keep forming acrolein. Our differential pulse polarography verifies the point.”*

*“It is important to point out that “hydration” is another major route of dissipation.”*

*“The process of going into other canals is not a discharge point.”*

*Referring to the Kern County Irrigation Study: “BPC has conducted numerous studies utilizing the DPP method, and our detection level is well established.”*

The following comments on the drinking water assessment concerned data that had been reviewed, but the reviews had not yet been forwarded to the registrant. It is our understanding that these documents have now been transmitted:

*“What is the concern with the “Photolysis” study submitted by BPC? We have not received the requested DER on this study.”*

*“What is the concern with the “Microbial Metabolism” study submitted by BPC? We have not received the requested DER on these studies.”*

*“What is the concern with the “Adsorption/Desorption” study submitted by BPC? We have not received the requested DER on this study.”*

### **Comments on the Ecological Risk Assessment (D320991)**

The following comments on the ecological risk assessment were not addressed as they do not identify errors in the document but refer to matters regarding interpretation of the data or the conduct of the assessment.

**The following issues raised by Baker Petrolite were not error and no change was made to the document:**

*“Delete “Water within: and insert with “Applications are made to”. Delete “is held at the treatment concentration”*

*“monitoring of ...of at least 61 miles”*

*“It has been BPC’s experience that levels measured are lower than what is often present from other sources (i.e. vehicle exhaust)”*

*“There has been absolutely no evidence on terrestrial mammals, birds and plants, with 45 years of experience and use. The warning properties and high level of dilution (max 15 ppm) have not been factored into the risk hypothesis.”*

*“Under “Plant Matter”, BPC disagrees with the Direct Contact/Root” exposure route based on the fact that the rooted plants grow back in the irrigation canals. Additionally, under Sediment/Suspended Solids”, BPC disagrees with the “Ingestion” exposure route since this is a*

*chemical reaction and the acrolein is irreversibly bound to the sediment. There is no active acrolein at this point.”*

*“The “terrestrial plants” includes the crops we irrigate. If the treated water damaged the crops we wouldn’t be in business anymore”*

*“Has the breakdown of acrolein in fields irrigated with treated water been taken into consideration when estimating these risks?”*

*“Under “Measures of Exposure” Comment – In the lettuce study conducted by BPC (MRID 43607181) leaf lettuce was exposed to radio labeled (<sup>14</sup>C) acrolein at a nominal concentration five times (i.e. 75 ppm) the maximum label treatment rate of 15 ppm with no acrolein detected in mature leaf lettuce samples after three days”.*

*“Letters are not identified. Remove letters from figure since not necessary.”*

*“Mallard Duck data for MRID 421833-01- change 28 mg a.i./kg-bw (18038) to “30.2 mg a.i./kg-bw (18-49.5)” as per the study value”*

*“Replace “maintained” with “applied”*

*“These values are not typical”*

*“Irrigation systems are all different. The users know how they can hold water within their systems. BPC’s training does provide examples.”*

*“Therefore, no longer active acrolein”*

*“BPC personnel have observed frogs during treatments of irrigation canals. They typically leave the water.”*

*“Acrolein was said to have been applied to spawning channels” as a “registered use” MAGNACIDE H’s registered use is for irrigation canals not spawning channels.*

*“This application was to an irrigation canal”*

**The following issues raised by Baker Petrolite reflect difference of interpretation of the data and are not errors and changes have not been made to the document:**

*“BPC does not see evidence of “acrolein being reformed” in the field.”*

*“Magnacide H Herbicide is not used to treat “drains”, unless it is a closed system. There are no open canal systems on West Coastal areas.”*

*“As stated previously going from one canal to another is not discharging from the system.”*

**Specific comments from Baker Petrolite which were not addressed in the risk assessment are discussed below:**

Page 4, para 2, lines 5-8

*“In reference to “ are not effective” it is very effective if the 6 days or irrigating to fields” is complied to”*

**Response:** The phrase “area as it is frequently reaching the discharge points from irrigation systems” was added to the end of the sentence.

Page 5, para 3, line 6-11:

*““Additionally...material” This sentence is “speculative, where is the data to support this comment”*

**Response:** This sentence is in the executive summary where it is presenting, in summary form, the conclusions of the main document.

Page 7, Table 1:

*“Magnacide H Herbicide is used for the control of submersed and floating weeds and algae in irrigation canals. It does not control emerged “semi-aquatic” or “terrestrial” plants.*

**Response:** The section in question addresses risks to non-target vegetation, not efficacy.

Page 8-10:

*“Table of Contents should be moved to page 3-5.”*

**Response:** The position in the document complies with the current format.

Page 11 Table 1:

*“Aquatic in front of “herbicide” It implies it is a terrestrial herbicide.”*

**Response:** It only implies that it is a herbicide. No change was made to the document.

Page 11, Table 1:

*“Change 0.354 at 25°C to 268.9 mm Hg at 25°C”*

**Response:** The units ‘atm’ was added to the document.

Page 25, par. 2, line 4:

*“exposure...submersed” Delete restrict and replace with “increase”*

**Response:** Added the phrase “due to poor mixing of the water column” to the end of the sentence.

Page 27, par. 2, line 10-14:

*“Across...respectively” Comment – none of this is MAGNACIDE H related, so why include it here.*

**Response:** Characterization of other sources of acrolein in the environmental is relevant to the understanding of acrolein occurrence in the environment. In particular, since there are other sources, detections of acrolein are not necessarily associated with the pesticidal use.

Page 33, Table 5

Page 34, Table 6

*“ Missing explanation for “†”; Column titles “Furthest Distance from Application Site (mi) and “Concentration at Furthest Distance Site (ppb)” are not accurate because the distances listed are not the “furthest distance” Dissipation half-life hours are questionable as well as ‘concentration at furthest distance’, “furthest distance from application site” and times for last detection” numbers”*

**Response:** A comment was added for “†” - Dissipation half lives were estimated by using the peak concentrations and occurrence time at each sampling site as the pulse of acrolein moved downstream. The column headers were amended to “Furthest Detection Distance from Application Site” and “Concentration at Furthest Detection Site”.

Page 35, para. 3, lines 7-8:

*“The analytical method used was EPA 70-15.”*

**Response:** The analytical method was not included in the submitted report.

Page 35, para. 3, lines 8-9:

*“California Air Resources Board (CARB) report is available.”*

**Response:** The CARB report was *not* available to us at the time of preparation of the document. We have recently obtained the document, but not in sufficient time for inclusion of the phase 3 EFED chapter.

**Multiple places:**

*“Nothing will stay around if a high concentration of acrolein odor exists. Additionally, these canals are not ‘habitats’ developed for the propagation of these species of organisms. They are designed for water delivery.”*

*“Again, organisms do not stay in areas where acrolein vapors may be present. It acts as a deterrent to these organisms.”*

*“Both the irritating characteristic and pungent odor of acrolein is being continually underrated in this risk assessment as a viable means of deterrent from organisms feeding or drinking along the treated area.”*

*“Assumptions are being made that ‘treated water’ is all that is available to these organisms on a 24/7/ basis, which is incorrect and not realistic.”*

**Response:** While EFED acknowledges the acrolein will likely illicit an avoidance response, our experience has been that, with highly acutely toxic compounds, that response may not be elicited before a toxic dose is received. Hence, we do not assume avoidance behavior for any compound unless specific data about the response is available. We are not aware of that kind of for acrolein.

Page 59, para. 3, line 11:

*“A more recent study conducted (MRID 42183301) resulted in an LD50 of 30.2 mg/kg.”*

**Response:** *EFED assessments are based on the most sensitive endpoint.”*

Page 61, para 1, line 3:

*“levels) or ..... dissipate the” Delete “chemigation” and replace with “other methods of irrigation”*

**Response:** Replaced “flood irrigation or chemigation” with “irrigation water”.

Page 70, para 3, lines 4-7:

*“PBC feels that given MAGNACIDE H Herbicide’s wide use, these statements have no basis or merit and should not be part of the risk assessment.”*

**Response:** This statement is included in all descriptions of the EIIS – no reported incidents does not mean no incidents.

Page 6, para 3, lines 1-3,

Page 70, para 4:

*“The incident being discussed was caused by “whitefly”, not be acrolein application.”*

**Response:** The incident report does not mention whiteflies.

Page 6, para 2, line3,

Page 72, para 3:

*“The incident was confirmed by two laboratories to have been caused by botulism. Information to confirm that the incident was due to botulism is available for the Agency’s review.”*

**Response:** Information on confirmation of the presence of botulism was not in the incident report available to the Agency. Additional data can be submitted to the Agency.

Page 71, para.5, line 4

*“This application would not have been a “registered use” if it was a creek. Additionally, BPC believes that acrolein is far too reactive to get into fish flesh. They probably generated acrolein due to high temperature.”*

**Response:** This information was not in the incident report.