UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460

OFFICE OF CHEMICAL SAFETY AND
POLLUTION PREVENTION

March 30, 2018

MEMORANDUM

SUBJECT: Ethics Review of Completed AEATF II Study on Dermal and Inhalation Exposure to Antimicrobial Pesticides during Brush and Roller Application of Latex Paint (AEATF II Project ID AEA09; MRID 50521701)

FROM: Michelle Arling, Human Research Ethics Review Officer
Office of Pesticide Programs (OPP)

TO: Laura Parsons, Acting Branch Chief
Risk Assessment and Science Support Branch (RASSB)
OPP/Antimicrobials Division (7510P)

REF: Testman, R., Boatwright, M., Acedo, Kimon. (2018) A Study for Measurement of Potential Dermal and Inhalation Exposure During Application of a Latex Paint Containing an Antimicrobial Product Using a Brush and Roller for Indoor Surface Painting. Study Number AEA09, 1773 p., January 31, 2018 (MRID 50521701)

I have reviewed the available information concerning the ethical conduct of the research reported by the Antimicrobial Exposure Assessment Task Force II (AEATF) in the referenced documents. The documents describe the implementation and results of a study whose objective was to develop data to determine the potential dermal and inhalation exposure for consumers (i.e., non-professional painters) using a brush and/or roller to apply latex paint containing an antimicrobial pesticide.

In its conduct, study AEA09 met applicable ethical standards for the protection of human subjects in research, and requirements for documentation of ethical conduct of the research were satisfied. Therefore, if study AEA09 is determined to be scientifically acceptable, I find no barrier in regulation to EPA's reliance on the results in actions under FIFRA or §408 of FFDCA.

In addition, under 40 CFR 26.1604, EPA is required to seek input from the Human Studies Review Board (HSRB) for intentional exposure human studies covered by EPA's human studies rule that are initiated after April 7, 2006. EPA will share study AEA09, the associated support documents, and EPA's science and ethics reviews of the study with the HSRB for their review. This

memorandum and its attachments constitute EPA's ethics review.

Summary Characteristics of the Research

Study AEA09 developed data to determine the potential dermal and inhalation exposure for individuals who apply latex paint containing an antimicrobial pesticide product (1,2-Benzisothiazolin-3-one; BIT) with brush and roller painting equipment. Individuals conducted these tasks while wearing inner dosimeters (long underwear), outer dosimeters, and air sampling pumps, which were used to collect dermal and inhalation exposure information. In addition, researchers collected face and hand wipe samples at the end of the monitoring event, and collected additional face wipe samples using dry gauze pads when subjects requested that the monitor wipe the sweat from their face or neck.

A monitoring event or ME refers to a single subject (individual) who is carrying out scripted activities using a particular pesticide active ingredient under a specific scenario, on a particular day. For each ME in this study, the subjects painted rooms (walls, trim, baseboards, ceilings) according their typical painting practices (as they would paint in their own homes). Each ME included application of 1.75 to 2.25 gallons of paint, fortified with BIT at one of three levels: ~144 ppm, ~375 ppm, or ~619 ppm. MEs typically lasted from 120 to 180 minutes. The AEA09 protocol, approved by Schulman Institutional Review Board (IRB), specified 18 to 24 MEs to be conducted in an unoccupied commercial building where typical rooms were constructed for this study. A total of 37 subjects were enrolled in the study, and of those 18 completed MEs. The MEs occurred from June 13, 2016 to July 1, 2016.

When the subject arrived at the test facility for the assigned ME, the subject was asked if he or she had any questions and was reminded that he or she could withdraw at any point before or during the ME. A nurse checked the subject for skin conditions that would disqualify him or her from participation. Females took a urine pregnancy test in a private location, and a female study staff member confirmed the results. In a private location, each subject washed his or her hands and face with soap and water, then changed from street clothes into the dosimeters provided by the study staff. The subject was fitted with two air sampling pumps and provided with safety glasses. Then the subject was taken to the area to be painted and given a closed paint can and choice of application equipment from the selection outlined in the protocol. Each subject painted until they had used 1.75 to 2.25 gallons of paint (determined by weight). The subject was reminded that breaks could be taken as needed. At the end of the ME, the subject returned to the private area where a member of the study staff assisted in the removal of dosimeters and air sampling pumps. Study staff collected wash samples from the subject's face/neck and hands. Once the subject was dressed in his or her own clothes, there was another opportunity to questions and the nurse checked the subject's hands for signs of irritation. Once this check was completed, the subject received the compensation as described in the protocol and was free to leave.

The study report provides a list of major study events in chronological order on pages 78-79.

1. Value of Research to Society

This study developed data to determine the potential dermal and inhalation exposure of

individuals who use brushes and rollers to apply latex paint containing antimicrobial pesticide products. The resulting data meet contemporary standards of quality and reliability. EPA will use the results of this study to estimate the exposure for persons painting with an antimicrobial-treated product.

2. Subject Selection

a. Recruitment

Recruitment was conducted according to the approved protocol. Advertisements were posted in the Fresno Bee and the Fresno edition of Vida en el Valle, a Spanish-language weekly periodical. The protocol noted that the advertisement was to be run in The California Advocate, an African American community weekly periodical. The arranged publication for the week of May 20, 2016, but could not confirm placement either by reviewing a copy of the periodical or by speaking with the periodical's staff. This was reported as a deviation and did not have a negative impact on the study because the other two periodicals where the advertisement was placed cover a similar geographic area.

The newspaper advertisements included a brief description of the study, as well as a phone number that interested subjects could call to receive more information about the study. Study staff followed the IRB-approved telephone script (pp. 258-9 of 1773) to provide all interested callers with more information about the study, including the necessary experience, a brief description of the ME, and the compensation, and to screen individuals interested in participating. Specific questions asked during the phone screening included whether the individual had painted with a brush and roller in the last five years, had been a professional painter within the last 10 years, and was at least 18 years old. Qualified and interested individuals were scheduled to visit Golden Pacific Laboratories for a consent meeting.

b. Demographics

Following the recruitment process described in Section 2.a. above, 37 subjects were enrolled in the study. A total of 18 subjects completed MEs – these subjects ranged in age from 20 to 64; 13 were male, and 5 were female. Six of the subjects who completed MEs were originally enrolled as alternates. These alternates replaced the test subjects for several reasons. One test subject was disqualified for having a wrist injury which could impact her ability to paint, three did not show up for their scheduled MEs, one could not be reached to schedule the ME, and one withdrew prior to the scheduled ME for personal reasons.

The study report includes additional information about all subjects enrolled in the study on pages 82-84.

c. Inclusion/Exclusion Criteria

Subjects were screened against the inclusion and exclusion criteria in the protocol (pp. 181-2 of 1773). Subjects were at least 18 years old; considered themselves in good health; had experience painting with a brush and roller within the last five years; did not have skin conditions on the hands, face, or neck; and did not have allergies or sensitivities to latex paints, the test substance, soaps, alcohol, or other chemical products. Females were required to take a pregnancy test on the day of their ME to confirm that they were not pregnant, and were asked to confirm that they were not lactating during the screening process. Anyone who served as a professional painter within the last

10 years was excluded, as was anyone with respiratory or cardiovascular health issues. Additionally, those who were employees or spouses of employees of the study sponsor, entity conducting the study, paint manufacturer, or member company of the American Chemistry Council were excluded from participating.

Subjects also completed a "Subject Qualification Worksheet" (p. 241 of 1773), which included questions about the inclusion and exclusion criteria and which was reviewed by the interviewer. In the study report, the age of one of the subjects was listed as "DNF", or "did not furnish" (p. 82 of 1773). EPA confirmed with AEATF that the subject's age was verified. Rob Testman of Golden Pacific Labs indicated to EPA that "[t]he subject's ID was always checked at the beginning of the informed consent meeting, and there is a checkbox to verify that the age was verified (on the Qualification Worksheet included as page 85 of the protocol). We reviewed the Qualification Worksheet for subject AE-9 today. The interviewer did check that they had verified the subject's age. Although the subject did not furnish age, they did include date of birth. We should have used that to calculate age for the report but missed it. The subject was 42 at the time of interview based on birthdate."

3. Risks and Benefits

The risks of participation in the study included 1) the risk a reaction to the latex paint or BIT, 2) the risk of irritation from use of rubbing alcohol, 3) risk of discomfort and heat-related illness from wearing inner and outer dosimeters while painting, 4) risk of using a ladder while painting, 5) risk of discomfort from wearing air sampling device, 6) psychological risks, 7) risk of unintentional release of confidential information/loss of privacy.

Risks to subjects were minimized by enrolling healthy subjects; not enrolling subjects with allergies or sensitivities to the test substance latex paint, or rubbing alcohol; enrolling subjects with at least 1 experience painting with brushes and rollers within the previous five years; ensuring that subjects wore safety glasses; having medical personnel on-site during monitoring events; closely observing subjects for signs of heat-related illness; reminding subjects frequently that they could take breaks at any time; providing drinks for subjects during the monitoring period; providing subjects with a copy of the product SDS and paint labeling; discussing label safety precautions with subjects prior to initiating MEs; and checking subjects' skin prior to the ME for signs of skin conditions that could be exacerbated by participation.

For ME15, the observation notes indicate that "ME15 was overloading brush causing thick drips. Observer recommended dabbing brush on ribbed tray to prevent this. Very heavy drips from overloading brush was corrected." (p. 404 of 1773) The researchers minimized the risk to this subject in compliance with SOP AEATF II-11H.1. This SOP describes the steps that will be taken in the event a subject is not following the labeling directions or engaging in another activity that may not be considered safe. This action was also taken in accordance with the protocol, which includes language about correcting a subject's activity "if the Principal Investigator determines that a subject's painting technique is outside reasonable consumer practice (e.g., gross over application, under application, or sloppiness)". (p. 174 of 1773) While there were other instances of subjects dripping paint or applying the paint thickly according to the observation notes, these fell within the expected range of consumer practices and did not trigger SOP AEATF II-11H.1 or the protocol requirement for the Principal Investigator to correct the behavior.

AEATF has a specific SOP to address heat-related illnesses (AEATF II-11B.1) This SOP was followed during the study to minimize the risks of heat-related illness. Subjects were made aware of the symptoms of heat stress and reminded to take breaks as necessary, all researchers were trained to recognize the symptoms of heat-related illness, a nurse was on-site for each monitoring event and checked subjects for signs of heat-related illness, and heat stress avoidance posters were available at multiple locations at the test facility. The heat index was monitored through a data logger placed on a mobile cart in the same location where the subjects were conducting their MEs. The temperature during the MEs ranged from 67.9 to 84.8 °F; the heat index did not exceed 95 at any point during the study. No ME was stopped due to environmental conditions or heat-related symptoms.

The research offered no direct benefits to subjects. The primary benefit of the research is new data about the dermal and inhalation exposure of individuals who apply latex paints containing antimicrobial pesticides. EPA and other regulatory agencies will use this information to support exposure assessments for a wide variety of products containing antimicrobial pesticides with similar use patterns.

In this study, risks to subjects were minimized. The low residual risk was reasonable in light of the benefits to society from the new data supporting more accurate inhalation and dermal exposure assessments for products containing antimicrobial pesticides and applied in a similar manner.

4. Independent Ethics Review

a. Protocol Review

EPA and the HSRB reviewed the protocol for study AEA09 in 2014. The AEATF submitted the AEA09 protocol to EPA with a conditional approval from Schulman IRB, based on the pending review from the California Department of Pesticide Regulation (CDPR) and incorporation of recommendations from EPA and the HSRB. AEATF also provided to EPA copies of communications with and approval of the protocol by CDPR. This review was required under California's Code of Regulations because the proposed study location was in California.

The protocol and EPA's ethics review[1], dated March 14, 2014, were discussed by the HSRB at its April 8-9, 2014 meeting. With regard to ethics, the HSRB's June 24, 2014 final meeting report concluded that, "The documents submitted to the EPA and the HSRB do not fully meet the regulatory requirements. However, the Board concluded that the protocol submitted for review will likely meet the applicable requirements of 40 CFR part 26, subparts K and L, if: 1) it is modified in accordance with EPA (Leighton, Sherman, & Cohen, 2014a) and HSRB recommendations; 2) necessary approvals are obtained; and 3) additional documents are provided to the Agency for review."[2]

[1] Leighton, Sherman, & Cohen. Science and Ethics Review of AEATF II Brush and Roller Painting Scenario Design and Protocol for Exposure Monitoring. March 14, 2014. https://www.epa.gov/sites/production/files/2014-12/documents/science-ethics-review-brush-roller_-protocol-march-2014.pdf

[2] Parkin, Rebecca T. April 8-9, 2014 Human Studies Review Board Meeting Report. June 25, 2014. https://www.epa.gov/sites/production/files/2014-11/documents/hsrb-final-report-april-2014-meeting.pdf

b. Revisions Based on EPA, HSRB Recommendations

EPA and the HSRB made specific recommendations about the protocol, recruitment materials, and consent forms for AEA09. As a condition of approving the final protocol, Schulman IRB required AEATF to submit a chart summarizing the recommendations from EPA and the HSRB, and how AEATF addressed each. (pp. 1105-1109) Attachment 1 contains EPA's summary of the ethics-related recommendations from EPA's science and ethics review of the protocol and the HSRB's final report, and how AEATF addressed them.

c. Final Protocol Approval

The HSRB recommended that AEATF delay initiation of AEA09 until completion of a related study, "Determination of Removal Efficiency of 1,2-Benzisothiazol-3(2H)-one (BIT) from Hand Surfaces Using an Isopropyl Alcohol/Water Wipe and Wash Procedure," AEATF study number AEA08. This study was completed and AEATF sent preliminary results to EPA prior to submitting the protocol for AEA09 to Schulman IRB. The protocol for AEA09 was reviewed and granted final approval by Schulman Associates IRB on March 4, 2016. Schulman IRB provided certified Spanish translations of all relevant documents related to AEA09.

d. Protocol Amendments and Deviations

After the protocol was approved, there were two amendments and two deviations. EPA raised concerns with AEATF about the protocol amendment process and the effective and IRB approval dates for both amendments.

The protocol notes that:

> Proposed changes (amendments) deemed necessary to eliminate apparent immediate hazards to the human subjects may be implemented without prior IRB approval. All other amendments relating to human subjects must be reviewed and approved by the IRB prior to implementation. Approval will be granted in accordance with SAIRB policies and procedures, and may be granted by telephone provided it is documented in writing (e.g., email) in the study raw data. SAIRB may provide expedited review of minor changes as defined by 40 CFR Part 26.1110 at its discretion. (p. 203 of 1773)

AEATF II's SOPs (SOP AEATF II-2.C2, 7.5) requires that "Amendments will be sent to the reviewing IRB for approval prior to implementation unless the amendment is deemed necessary to eliminate apparent immediate hazards to the human subjects. In this case, the amendment will be implemented prior to submission to the IRB." As required under 40 CFR 26.1108(a)(4), SAIRB also requires protocol amendments to be approved by the IRB prior to implementation, unless deemed necessary to eliminate apparent immediate hazards to the human subjects.

<u>Protocol Amendment 1</u>

This amendment corrects a typo, clarifies the analytical method summary, and adds information on how to pre-wash cotton outer dosimeters. The amendment was submitted prior to the initiation of monitoring events. The effective date for this amendment is April 26, 2016. It was signed by the study director on May 2, 2016 and by the sponsor representative on April 29, 2016. This amendment was not submitted to the IRB until May 3, 2016 and was not approved until May 4,

2016. However, AEATF confirmed that pre-washing of outer dosimeters was not initiated until May 18, 2016, after the IRB approved the amendment to the protocol.

Protocol Amendment 2

This amendment changes the transportation of samples from packing them on dry ice and transporting them to transporting the samples directly into the analytical laboratory freezer less than a block from the test site. Subject monitoring began on June 13, 2016. The effective date for this amendment is listed as June 10, 2016. It was signed by the study director and by the sponsor representative on June 10, 2016. This amendment was not submitted to the IRB until June 13, 2016 and was not approved until June 15, 2016. This amendment was implemented starting on the first test day, June 13, 2016, prior to IRB approval of the amendment, and was an unreported deviation until such time as the IRB approved the amendment on June 15, 2016. This amendment did not affect the health, safety, or rights of the subjects in the study.

EPA has raised the issue of protocol effective dates and the requirement for the IRB to approve **all** amendments to protocols prior to implementation, not only those related to human subjects. EPA raised a similar issue with the timing protocol amendments with AEATF and Schulman IRB related to study AEA07, discussed by the HSRB at the October 19, 2016 meeting. EPA's feedback was provided to AEATF after the amendments to the protocol for study AEA09 were completed, and therefore AEATF was not able to take EPA's feedback into consideration when amending the protocol for this study. EPA has reinforced its feedback about the requirement to get IRB approval of all amendments prior to implementation, unless the amendment is necessary to eliminate an imminent hazard to a human subject.

AEATF included two summaries of deviations to the protocol as part of the final study report. (pp. 311-314 of 1773). An undated deviation involved background contamination of the inner dosimeters worn by several subjects (ME01, ME02, ME04, ME06, ME07, ME10, ME12, ME12, ME16, ME17). For the inner dosimeters of these subjects, "BIT background contamination was observed at higher levels than total residues found in outer dosimeters." (p. 331 of 1773). This deviation impacted the analysis of BIT that penetrated the inner dosimeters and required development of an alternate analysis method. EPA and Canada's Pest Management Regulatory Agency collaborated to consider how to address the issue (see Section 2.1, Leighton and Cohen. Science Review of the AEATF II Brush/Roller Painting Human Exposure Monitoring Study (AEATF II Project ID AEA09; MRID 50521701. March 23, 2018). EPA's science review of AEA09 concludes that the results from MEs using the contaminated dosimeters can be treated in a way that provides scientifically valid data. The scientific validity of the results is necessary for the study to be ethically valid. Additional considerations that support the ethical validity of this study deviation are that BIT is present in many fabrics worn in everyday life and subjects were screened and excluded if they had a sensitivity to BIT. EPA does not believe that the BIT background contamination affected the health, safety, or rights of subjects.

The other ethics-related deviation was dated May 4, 2016. AEATF noted that they attempted to place an advertisement in the California Advocate at the same time recruitment advertisements were run in other publications. According to the study report, "Staff at the California Advocate indicated that the advertisement would be placed in the next available issue, May 20, 2016. However, no copies of the paper could be found and phone calls to confirm placement were not

returned." (p. 331 of 1773) The recruitment advertisement was run in two other periodicals covering a similar geographic area, and an adequate number of candidates responded and were enrolled in the study.

The remaining deviations from the protocol included in the study report were not related to the ethical conduct of the study.

5. Informed Consent

All participating subjects completed the informed consent process and signed the consent form. The most recent version of the informed consent form was approved by Schulman IRB on March 3, 2016. Schulman IRB provided certified translations from English to Spanish of the recruitment and consent materials.

Potential candidates who responded to the recruitment advertisement were interviewed by phone to determine whether they met basic criteria. If they were still interested in participating and provisionally qualified, they were invited to Golden Pacific Laboratories for a consent meeting and were instructed to bring a government-issued photo ID. Meetings were held one-on-one with a member of the study team, unless a subject chose to bring a friend or family member. As per the protocol, each person was offered the option to have the meeting conducted in English or Spanish, and all chose English. Candidates were provided with materials related to the study (consent form, qualification worksheet, product label, and product SDS), and asked to fill out the first part of the qualification worksheet. The researcher conducting the meeting reviewed the qualifications, and if the basic eligibility criteria for the study were met, proceeded to review the informed consent materials, including the "Experimental Subject's Bill of Rights". Researchers encouraged candidates to ask questions throughout the consent process and during the study itself, and reminded candidates that they were free to withdraw from the study at any time. After the consent meeting, those who met the eligibility criteria and were interested in continuing were asked to complete the second part of the qualification worksheet, and to sign and date the informed consent materials to enroll in the study.

6. Respect for Subjects

Subjects' identifying information was kept confidential – any photos or videos associated with the study were reviewed to ensure they did not show the subject's face, tattoos, or other identifying features. Subjects were assigned identification numbers, and their names were not revealed in the study report.

Each subject received compensation consistent with the protocol and informed consent document. Compensation was $20 for participating in the consent meeting and $100 for showing up to the test site, regardless of whether they were monitored as a test subject or served as an alternate.

Subjects were informed during the consent meeting and on the day of monitoring that they were free to withdraw at any time without penalty. Several subjects withdrew by not showing up on the day of their scheduling monitoring event. One subject withdrew to care for his child and because he lacked gas to get to the test site.

Completeness of Submission

The submission by AEATF and additional materials provided by Schulman IRB satisfy the requirements of §26.1303. A checklist indicating how each requirement has been satisfied is provided in Attachment 2.

Applicable Ethical Standards

The following provisions of 40 CFR 26 Subpart Q define the applicable ethical standards which read in pertinent part:

> **§26.1703**: Except as provided in §26.1706, EPA shall not rely on data from any research subject to this subpart involving intentional exposure of any human subject who is a pregnant woman (and therefore her fetus), a nursing woman, or a child.
>
> **§26.1705**: Except as provided in §26.1706, EPA must not rely on data from any research subject to this section unless EPA determines that the research was conducted in substantial compliance with all applicable provisions of subparts A through L of this part.

In addition, §12(a)(2)(P) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) applies. This passage reads:

> In general, [i]t shall be unlawful for any person . . . to use any pesticide in tests on human beings unless such human beings (i) are fully informed of the nature and purposes of the test and of any physical and mental health consequences which are reasonably foreseeable therefrom, and (ii) freely volunteer to participate in the test.

Prohibition of research involving intentional exposure of pregnant or lactating women, or of children

40 CFR §26.1703 prohibits research involving intentional exposure of pregnant or nursing women or of children under 18. Pregnancy testing of female subjects on the day of testing was conducted and no pregnant or lactating women were enrolled in the study. All subjects who participated in study AEA09 were at least 18 years old. Therefore, 40 CFR §26.1703 does not prohibit reliance on this research.

Substantial compliance with 40 CFR 26 subparts A through L

40 CFR §26.1705 requires that EPA have "adequate information to determine that the research was conducted in substantial compliance with subparts A through L of this part." Within this range, only subparts K and L are directly applicable to the conduct of third-party research such as this. The AEA09 study was conducted in substantial compliance with subparts K and L.

Compliance with 40 CFR §26 subpart M

As documented in Attachment 2 to this review, the central requirements of 40 CFR §26

subpart M, §26.1303 to document the ethical conduct of the research were addressed.

Compliance with FIFRA §12(a)(2)(P)

The requirement of FIFRA §12(a)(2)(P) that human subjects of research be "fully informed of the nature and purposes of the test and of any physical and mental health consequences reasonably foreseeable therefrom," and "freely volunteer to participate in the test," was met for this study.

Conclusion

This study reports research conducted in substantial compliance with the requirements of 40 CFR 26 subparts A through L. In its conduct, study AEA09 met applicable ethical standards for the protection of human subjects of research, and requirements for documentation of ethical conduct of the research were satisfied. From EPA's perspective, if this study is determined to be scientifically valid and relevant, there is no regulatory barrier to EPA's reliance on it in actions under FIFRA or §408 of FFDCA. This research will also undergo review by the Human Studies Review Board.

cc: Rick Keigwin
Tim Leighton
Tim Dole

Attachment 1: AEATF actions in response to EPA and HSRB comments on protocol
Attachment 2: §26.1303 Completeness checklist for AEA09 Study
Attachment 3: Select AEATF SOPs (AEATF II Chapter 11)
Attachment 4: IRB Meeting Minutes (3/3/2016) and Membership Roster

Attachment 1
Ethics Comments from April 2014 HSRB Meeting & AEATF Actions

EPA Comments on AEA09 Protocol & Consent Form	AEATF II Actions to Address Comments
Revise the first exclusion criteria as follows: "Skin conditions on the surface of the hands, **face, or neck** (e.g., psoriasis, eczema, cuts or abrasions)"	Comment was addressed in the revised protocol. (p. 182 of 1773)
Revise the fourth exclusion criteria as follows "Allergies **or sensitivities** to latex paint, soaps, isopropyl alcohol, **BIT, or other chemical-based products**"	Similar comment from HSRB was accepted. (p. 182 of 1773) See table below.
Revise the "Test Product" section of the consent form as follows: "The test product contains a ~~chemical~~ **pesticide** known as BIT which helps keep bacteria from growing."	The test substance was referred to as a pesticide in the "Risks" section of the consent document (p. 221 of 1773) In a separate communication with EPA, AEATF noted that EPA's recommended change because: *"[T]he prior section of the Informed Consent describing the purpose of the study to subjects referred multiple times to the 'chemical' which would be measured in air and on dermal matrices. AEATF felt that consistency of terminology should be maintained so that subjects would be aware that the 'chemical' to be measured was BIT. The sentence in the 'Test Product' section went on to state that BIT 'helps keep bacteria from growing' to clarify it is an antimicrobial pesticide. The risks section of the Informed Consent was updated to use the word 'pesticide.'"*
Revise the "Risks" section of the consent form as follows: "Risk of a reaction to the latex paint **or the pesticide ingredient (BIT) contained in it**."	Comment was incorporated (p. 221 of 1773)
Expand the discussion of risks in the protocol and consent form to include risks associated with using a ladder to paint ceilings.	Protocol updated (p. 170 of 1773) Consent form updated (p. 222 of 1773)
Incorporate forthcoming guidance from HSRB about how to provide personal exposure results to subjects.	The HSRB did not finalize the report from the HSRB's working group.

HSRB Comments on AEA09 Protocol & Consent Form	AEATF II Actions to Address Comments
Submit to EPA meeting minutes from SAIRB documenting final approval and attendance and documentation of IRB members' relationship with study's sponsor	AEATF working with SAIRB to provide these documents.
Revise protocol to state that "study is not actively recruiting participants from potentially vulnerable populations."	Discussion of vulnerable populations deleted from protocol.
Submit Spanish translations of informed consent documents and recruitment materials to EPA prior to study initiation, as well as documentation of SAIRB process for validating translations	Translated documents were not provided to EPA prior to study initiation. The reviewing IRB performed translation and provided certification of the accuracy of the translated documents.
Revise the exclusion criteria to replace EPA's suggested "chemical-based products" to "chemical products"	Protocol revised to address comment (p. 182 of 1773) Consent form revised to address comment (p. 218 of 1773)
Modify discussion of "good health" in the protocol and informed consent document to include definitions of the terms.	Protocol eligibility criteria includes specific health conditions (p. 181-182 of 1773) Consent form was revised as follows: "You will not be able to participate in this research… if you have heart or breathing problems; or if you have other health problems that would make participation difficult." (p. 218 of 1773)
Expand the phrase "faces or tattoos" to "faces, ears, tattoos, or other identifying features".	Consent form was revised (p. 220 of 1773)
Revise "Study Procedures" point 12 in the consent form to add the text in bold: "The researcher will remove the painter's hat, air sampling pumps, and equipment **from you**."	Consent form was revised (p. 221 of 1773)
Revise "Risks" point 1 as follows: "…if you think you may have gotten ~~some~~ **any** of the paint in your eye…"	Consent form was revised (p. 221 of 1773)
Revise "Costs and Payment" as follows: "…whether or not you are actually ~~tested~~ **take part**."	Consent form was revised (p. 223 of 1773)

HSRB Comments on AEA09 Protocol & Consent Form	AEATF II Actions to Address Comments
Revise "Confidentiality" as follows: "… any pictures of you in a report of this study will not show your face **or other identifying features (such as piercings or tattoos).**"	The consent form includes the following language under **Study Procedure**: "We may also take pictures or video to show what happened in the study, but those pictures will not show faces, tattoos, or other identifying features in the final report. If you do not want to have your picture taken, you should not participate in this study." (p. 220 of 1773)
The Board recommended that researchers complete a course in human subjects protections within three years of study initiation and completion. Depending on when the study occurs, some investigators may exceed this recommended time limit.	Comment was addressed. Researchers completed training on human subjects protection within three years of study initiation.

Attachment 2
§ 26.1303 Checklist for Completeness of AEA09 Submitted for EPA Review

Any person who submits to EPA data derived from human research covered by this subpart shall provide at the time of submission information concerning the ethical conduct of such research. To the extent available to the submitter and not previously provided to EPA, such information should include:

Requirement			Y/N	Comments/Page References
(a) Copies of all of the records relevant to the research specified by §26.1115(a) to be prepared and maintained by an IRB	§1115(a)(1): Copies of • all research proposals reviewed, • scientific evaluations, if any, that accompany the proposals, • approved sample consent documents, • progress reports submitted by investigators, and reports of injuries to subjects.		Y	
	§1115(a)(2): Minutes of IRB meetings which shall be in sufficient detail to show • attendance at the meetings; • actions taken by the IRB; • the vote on these actions including the number of members voting for, against, and abstaining; • the basis for requiring changes in or disapproving research; • a written summary of the discussion of controverted issues and their resolution.		Y	
	§1115(a)(3): Records of continuing review activities.		Y	
	§1115(a)(4): Copies of all correspondence between the IRB and the investigators.		Y	
	§1115(a)(5): • A list of IRB members identified by name; earned degrees; representative capacity; indications of experience such as board certifications, licenses, etc., sufficient to describe each member's chief anticipated contributions to IRB deliberations; • any employment or other relationship between each member and the institution		Y	
	§1115(a)(6): Written procedures for the IRB in the same detail as described in § 26.1108(a) and § 26.1108(b).		Y	EPA received this previously.
	§1115(a)(7): Statements of significant new findings provided to subjects, as required by § 26.1116(b)(5).		n/a	
(b) Copies of all of the records relevant to the information identified in §26.1125(a)-(f)	§1125(a) A discussion of:	(1) The potential risks to human subjects;	Y	
		(2) The measures proposed to minimize risks to the human subjects;	Y	
		(3): The nature and magnitude of all expected benefits of such research, and to whom they would accrue;	Y	
		(4) Alternative means of obtaining information comparable to what would be collected through the proposed research; and	Y	
		(5) The balance of risks and benefits of the proposed research.	Y	
	§1125(b): All information for subjects and written informed consent agreements as originally provided to the IRB, and as approved by the IRB.		Y	
	§1125(c): Information about how subjects will be recruited, including any advertisements proposed to be used.		Y	
	§1125(d): A description of the circumstances and methods proposed for presenting information to potential human subjects for the purpose of obtaining their informed consent.		Y	
	§1125(e): All correspondence between the IRB and the investigators or sponsors.		Y	
	§1125(f): Official notification to the sponsor or investigator, in accordance with the requirements of this subpart, that research involving human subjects has been reviewed and approved by an IRB.		Y	

Requirement	Y/N	Comments/Page References
(c) Copies of sample records used to document informed consent as specified by §26.1117, but not identifying any subjects of the research	Y	
(d) If any of the information listed in paragraphs (a) through (c) of this section is not provided, the person shall describe the efforts made to obtain the information.	n/a	