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Subject: Revised Draft Report: Indoor Air Pollution in California Dear Ms. Shimer:

Thank you for the opportunity to submit further comments on the Air Resources Board's (ARB) revised **Draft for Public Review of the Report to the California Legislature: Indoor Air Pollution**. ARB has made substantial improvements and evidently considered the comments previously received and noted on the website.

Access Business Group of the Alticor Corporation provides most of the products marketed by tens of thousands of Quixtar independent business owners in the State of California. These products include formulated household, cosmetic and toiletry products many of which are already regulated for VOC content by the ARB Stationary Source Division developed Ambient Air Quality regulations. The company also provides a room air treatment system that is performance rated by the Association of Household Appliance Manufacturers (AHAM) standard test for air cleaner performance (AC-1). These product categories are noted in the report.

We, at Access Business Group, especially appreciated the change in clearly noting the priority levels - "High Priority" and "Medium Priority" in Tables ES-3.1&2. The high-priority source seem to be appropriately documented can serve to focus ARB or other State of California agency activities in addressing indoor air quality issues.

However, we note that ARB continues to cite consumer products as a source of toxic air contaminants (the examples given include perchloroethylene and benzene) without considering the abundance of evidence obtained in the VOC reduction program for ambient air quality. Exposure of consumers to TACs is unlikely due to a variety of US product safety regulations and voluntary the efforts of manufacturers of those products. This more realistic assessment of exposure to toxic air contaminants should be recognized in the Report. Also, ARB has focused on reformulation efforts for the highest use products, balancing VOC emissions reductions with product performance. This performance is often associated with control of biological contaminants and ambient dust that might be re-entrained in the indoor air or ingested as a consequence of skin contact. These factors should be considered in addition to absolute reduction in VOC content.

#### **COMMENTS ON REVISED DRAFT REPORT**

The following are a few specific comments on the revised Draft for Public Review of the Report to the California Legislature on Indoor Air Pollution in California.

##### **Executive Summary**

Table ES-1 (page 3), "Sources and Potential Health Effects of Major Indoor Air Pollutants" continues to provide a confusing collection of data that might be misconstrued without adequate disclaimer. For example, "Endocrine Disruptors" are listed as "Major Indoor Air Pollutants" without much evidence that cited materials are

found in indoor air. DDT has been discontinued as a chemical in US commerce for many years; the phthalate cited in the report is not documented to be volatile in indoor environments; o-phenolphenol is neither demonstrated to be found in indoor air nor is it shown to be an endocrine disruptor. "Organic Chemicals" also seems misleading since most paints, cleaning agents and air fresheners do not contain the listed pollutants. ETS and Carbon Monoxide are quite accurate giving the impression that other rows would be equally accurate and complete. Therefore, the Table is still unnecessarily confusing and likely to mislead many who read the report.

In the paragraph "volatile Organic Compounds (VOCs)" (page 8) , personal care products and cosmetics are cited as sources of formaldehyde emissions. This seems to be speculative based on the use of formaldehyde as a preservative in these formulations. Such use has been largely discontinued and even when it was used the concentrations of such a water soluble compound were sufficiently low as to make emission trivial.

The paragraph "Reduction at the source" (page 15) states, "Low emission product designs or reformulations can usually be accomplished by the manufacturer, with minimal impact on the consumer, often with only minor increased costs." This is not likely to be true if further reductions in consumer product emissions above those already achieved in the ambient air VOC emissions reductions. Industry, working with CARB, has achieved considerable reductions in VOC levels within the guideline of technical and commercial feasibility. However, further reductions at each phase of regulations have been more difficult and more costly. Also, as noted above product efficacy can be an important tool in reducing biological and dust contaminants that have a higher impact on indoor air quality.

### **Full Report**

Both the citation of pesticide residues in carpeting and room freshener use (page 32) seem unnecessarily critical. It seems appropriate to encourage "those who live in substandard housing" to use appropriate consumer products to deal with pests and malodors since most consumer products are not a cause of indoor air quality problems as described by this report. In fact, they may be a significant factor in improving indoor air quality.

The Report states that consumer products, personal care products and cosmetics are a source of formaldehyde (page 59). With the possible exception of some special use coatings and adhesives, this is not accurate. There is little or no contribution to indoor formaldehyde levels from these formulated consumer products.

Section 2.3.2 (pages 63-72) "Volatile Organic Compounds" seems to be confusing as VOCs are cited when specific toxic or irritant VOCs are intended. Most VOCs have no adverse health effects at the levels found in indoor air. The more specific the report can become in correlating specific VOCs certain exposures and health effects, the more valuable its conclusions become.

"VOC Emissions from Consumer Products" (page 68) contains a fairly egregious example of misinformation. Chloroform exposure is cited as a consequence of laundry and dish washing when neither would be a likely source, absent chlorine bleaching. Instead the use of municipally treated water is the likely cause of ambient chloroform.

There are several similar errors in composition and emissions from consumer products that have been cited here, carried over from previous inaccuracies in understanding consumer product formulations. ARB has a unique opportunity to use the survey information on VOC from the consumer products ambient air program to correct these errors.

## **SUMMARY AND CONCLUSIONS**

Access Business Group continues to support the intent of the Report and understands the limitations that ARB has had in producing an encyclopedic summary of indoor air contaminants and corresponding remediation recommendations. We believe that the promised scientific peer review will identify additional areas of improvement. We hope that our comments have been constructive and we look forward to continuing to work cooperatively with ARB staff in its efforts to finalize this Report and present a path toward improved indoor air quality in California.

Respectfully submitted,

Robert W. Hamilton