

California Interagency Working Group on Indoor Air Quality

Combined Notes for
September 12 and December 12, 2007 Meetings

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FUTURE MEETINGS

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GENERAL ANNOUNCEMENTS

Emerging IAQ Brown Bag Lunch/Roundtable.

A charter meeting was held August 29, 2007 at the CDPH Richmond Campus. Notes from the meeting are available [online](http://www.cal-iaq.org/CIWG/IEQ_Roundtable_20070829.pdf) (http://www.cal-iaq.org/CIWG/IEQ_Roundtable_20070829.pdf). For information on further meetings, contact:

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CHPS Greentools for Healthy Schools

The first CHPS conference was held in San Francisco on September 27, 2007. The conference agenda, program and workshop information is available on-line: <http://chps.net/greentools.htm>.

2007 IAQ Bills in California Legislature

- **SB 7** (Oropeza) was signed into law by the Governor; it makes it an infraction for a person to smoke in any car with a child younger than the age of 18 in it, even if the car was parked or on private property (see CDPH-TCS).
- **AB 1467** (DeSaulnier) passed the legislature, but vetoed by the Governor; it would have eliminate exemptions from the statewide smoke-free workplace law for specified bars, warehouse facilities, employee break rooms, hotel lobbies, and meeting and banquet rooms.
- Three bills on Sustainable (or Green) Building practices within California, **AB 35** (Ruskin), **AB 888** (Lieu) and **AB 1058** (Laird), were passed by the Legislation in September. However, all three were vetoed by the Governor.

Search for bill information at <http://www.leginfo.ca.gov/bilinfo.html>

New Report Supports Improved Standard Setting for Workplace Cancer and Reproductive Hazards. Many California environmental regulations are based on scientific “risk assessments” performed by the Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA), and CDPH’s Occupational Health Branch (OHB) commissioned OEHHA to assess the feasibility of using the same scientific methods to develop recommendations for health-protective exposure limits in the workplace. The project focused on evaluating chemicals known to cause cancer or reproductive harm (i.e., chemicals on California’s “Proposition 65” list).

In December 2007, OEHHA released a new report, *Occupational Health Hazard Risk Assessment Project for California*. The report identifies many chemicals of concern that are either not currently regulated in the workplace or are regulated, but have Permissible Exposure Limits (PELs) that allow a significant cancer risk over a working lifetime. This information is intended to assist OHB in more effectively recommending protective occupational standards as part of its legislative mandate. The major results of the project include:

- Forty-four workplace chemicals that are listed by Proposition 65 (Title 22, California Code of Regulations, Section 12000, dated December 2006) as known to the state to cause cancer do not have a permissible exposure limit (PEL) established in California. Five workplace

chemicals listed under Proposition 65 as known to cause reproductive and/or developmental toxicity do not have a PEL established in California.

- Sixty-two workplace chemicals listed under Proposition 65 have PELs but are not regulated specifically as occupational carcinogens in California. Cancer risks of more than 100 in 1,000 were estimated for six of the 38 chemicals assuming exposure at the PEL. Fourteen workplace chemicals listed as known to cause reproductive and/or developmental toxicity have a PEL in California that does not explicitly account for those effects.
- About 60% of the workplace chemicals identified as of concern in this report are used as chemical or dye intermediates, typically used in closed systems with relatively limited potential for worker exposure. However, exposure can still occur with closed systems (*e.g.*, from fugitive emissions and during repair and maintenance), and about half of these intermediates have other industrial uses that may pose a higher exposure concern. About 20% of the workplace chemicals of concern are used as solvents, which generally pose higher concern for worker exposure. About 40% of the workplace chemicals of concern have been identified as being skin absorbable and could pose cancer, reproductive and/or developmental risks via the dermal route in addition to the inhalation route of exposure.
- About 60% of the workplace chemicals of concern are high production volume chemicals (>1 million pounds produced in and/or imported into the U.S., based on data from 2002).

Accessible on-line at:

<http://www.dhs.ca.gov/ohb/HESIS/risksummary.pdf> (executive summary)

<http://www.dhs.ca.gov/ohb/HESIS/riskreport.pdf> (full report)

<http://www.dhs.ca.gov/ohb/HESIS/standards.htm> (background)

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SPECIAL PRESENTATIONS

Semi-volatile Organic Chemicals (SVOCs) in Indoor Environments

by Dr. Myrto Petreas, Chief, Environmental Chemistry Branch
California Department of Toxic Substances Control.

Slides available [on-line](#)

(http://www.cal-iaq.org/CIWG/Petreas_2007-12-12_SVOC_6.pdf)

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AGENCY REPORTS ON CURRENT IAQ ACTIVITIES

American Lung Association of California

<http://www.californialung.org/>

-- Bonnie Holmes-Gen (bhgen@alac.org)

Check their web site (above).

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Bay Area Air Quality Management District

<http://www.baaqmd.gov/>

-- Saffet Tanrikulu, STanrikulu@baaqmd.gov

Check their web site (above).

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California Air Resources Board / Indoor Air Quality & Personal Exposure Assessment Program

<http://www.arb.ca.gov/research/indoor/indoor.htm>

– Peggy Jenkins (mjenkins@arb.ca.gov)

Indoor Air Cleaner Regulation Approved Without Sell-Through Period. At the September Board meeting in Diamond Bar, the Air Resources Board (ARB) approved a regulation to limit the ozone emissions from indoor air cleaning devices to a 0.05 ppm emission concentration. The Board considered staff's presentation, numerous public comments, and oral testimony from approximately 40 individuals. Ultimately, because of their deep concern that intentional ozone generators would continue to be sold during both the proposed certification and sell-through periods, and their concern over the appalling claims made by ozone generator manufacturers about the supposed health benefits of ozone, the Board unanimously approved the proposed regulation but eliminated the proposed 9-month sell-through period. Board approval of the regulation comes more than a year ahead of the December 31, 2008 deadline for adoption of such a regulation established by Assembly Bill 2276. Contact: Peggy mjenkins@arb.ca.gov or Chris Jakober, cjakobe@arb.ca.gov. For more information, see <http://www.arb.ca.gov/research/indoor/aircleaners/aircleaners.htm>. The ARB Staff Technical Report, *Evaluation of Ozone Emissions From Portable Indoor "Air Cleaners" That Intentionally Generate Ozone*, May 5, 2006, is available online at <http://www.arb.ca.gov/research/indoor/o3g-rpt.pdf>

New Home Ventilation and Indoor Air Study. The contractor, Indoor Environmental Engineering (IEE), is preparing a draft report of the results of the study of ventilation and indoor air quality in 108 new California homes (see previous minutes). The report will be reviewed at the March meeting of ARB's Research Screening Committee, and the final report should be available later in 2008. Preliminary analyses indicate that indoor formaldehyde levels often exceeded health based guidelines, and that ventilation was inadequate in a portion of the homes. Contact Tom Phillips, tphillips@arb.ca.gov

Review of Draft Building Standards. Staff commented on draft green building standards that are being developed by the Department of Housing and Community Development and the State Building Standards Commission, who are proposing a mixture of voluntary and mandatory standards. The standards are expected to be out for public review in January 2008. Staff also commented on the draft Title 24 Building Energy Efficiency Standards, which are being updated by the California Energy Commission. Major changes to ventilation requirements in these standards include requirements for mechanical ventilation systems for new homes and expanded demand control ventilation systems for nonresidential buildings. Contact Tom Phillips, tphillips@arb.ca.gov

Presentation at Legislative Informational Hearing on Carbon Monoxide Poisoning. On November 27, 2007, Peggy Jenkins presented information on the health effects of carbon monoxide (CO) and sources of CO poisoning at a joint informational hearing of the Senate Transportation and Housing Committee (Chair: Lowenthal) and the Assembly Housing and Community Development Committee (Chair: Saldana). The hearing was convened to provide information on the dangers and prevalence of CO poisoning in California, and to explore prevention solutions and discuss whether or not CO detectors should be required in dwellings. Each year, accidental CO poisonings account for 30-40 deaths, 175-700 emergency room visits or hospitalizations, and hundreds to thousands of illnesses. Indoor combustion appliances and vehicles account for the majority of poisonings. Poor maintenance and misuse of appliances indoors are the primary causes of poisoning. At the hearing, one family told of the success of their CO detector in saving their lives, while another told of the unfortunate death of a sister due to CO poisoning in a pool house. Representatives from Kidde CO alarm indicated that CO sensor technology has improved substantially over the years, and a representative from the California Coalition for Children's Safety and Health emphasized that children are at additional risk of poisoning and that CO alarms are relatively inexpensive, starting at \$20 per unit. Solutions such as requiring installation of CO alarms in new and existing housing, public education campaigns, requiring maintenance and/or routine inspection of combustion appliances, and installation of sensors on appliances were discussed. Legislation is likely to be proposed by the chairs of the committees. Contact: Peggy Jenkins, mjenkins@arb.ca.gov

CEC PEIR Contractors Meeting. On November 8, 2007, ARB's contractors on indoor air quality projects funded by CEC's PIER program gave presentations via Webex on the status and results of their projects.

- Bud Offermann of Indoor Environmental Engineering showed that formaldehyde levels were elevated and air exchange rates too low in many new California homes in his study of ventilation and indoor air quality in new homes. His draft final report is scheduled to be considered at the March 2008 Research Screening Committee meeting, and a final report should be available by summer 2008.
- Randy Maddelena from Lawrence Berkeley National Laboratory presented early results from an office equipment emissions study, and Ash Lashgari of Research Division presented the goals and objectives of the small and medium commercial buildings survey and field study that he is managing; those studies are just getting underway.

Contacts: Peggy Jenkins, mjenkins@arb.ca.gov,
Tom Phillips, tphillips@arb.ca.gov,

Ash Lashgari, klashgar@arb.ca.gov

Cleaning Products Outreach Program. ARB has launched an outreach program to spread the word about the possible health impacts that may result from frequent use of cleaning products that contain terpenes, in the presence of ozone. Terpenes are compounds such as pinene and limonene that give products their pine and citrus scent, respectively. When ozone is present, reactions occur that produce formaldehyde and ultrafine particles. Formaldehyde is a known human carcinogen and respiratory irritant, and ultrafine particles are believed to impact the cardiovascular and respiratory systems. Letters and copies of ARB's fact sheet entitled "Cleaning Products and Indoor Air Quality: Actions You Can Take to Reduce Exposures" (see <http://www.arb.ca.gov/research/indoor/cleaning.htm>), along with a suggested newsletter article, were sent to about 200 organizations including professional janitorial and cleaning associations, various housekeeping and janitorial companies, building management organizations, environmental and health groups, and others. Staff will follow up with calls in December and January to answer questions and encourage these organizations to share the information with their members, clients, and associates. Contact: Peggy Jenkins, mjenkins@arb.ca.gov.

Indoor Surface Chemistry: A New Frontier. ARB co-funded and staff participated in a two-day Workshop on Interfacial (Surface) Chemistry in Indoor Environments in Berkeley on July 17-18. Participants included nationally known university and government scientists with expertise in indoor chemistry, physics, health effects, and exposure assessment. The workshop focused on chemical reactions and interactions on indoor surfaces, such as at the interface between indoor air and wall surfaces. Key findings of studies to date indicate that, while surface ozone interactions can greatly reduce ozone levels indoors, concentrations of oxidation products of indoor ozone surface chemistry can be substantial. These reactions contribute to increased exposure to carcinogens such as formaldehyde and acrolein, irritants such as aldehydes, ketones, and acids, free radicals, and various other chemicals of concern. Studies also have shown that ozone reacts quickly with squalene, a component of human skin oils, to form several particularly irritating compounds. The scientists identified a number of research priorities in indoor surface chemistry. Contacts: Peggy mjenkins@arb.ca.gov, Tom Phillips, tphillips@arb.ca.gov. A brief report on the workshop is posted on the indoor research website at <http://www.arb.ca.gov/research/apr/past/indoor.htm>.

Other Conferences & Presentations.

- ***International Society of Exposure Analysis (ISEA) Annual 2007 Conference.*** At the annual meeting of the ISEA in Raleigh, NC, October 14-18, 2007, Peggy Jenkins presented results of ARB's tests of ozone emissions from indoor air cleaning devices that intentionally emit ozone (ozone generators), and Dane Westerdahl presented results of a vehicle cabin particle filtration study. ARB's ozone generator tests showed very high ozone emissions: room concentrations typically reached 1-5 times the state ambient air quality standard levels within 30-120 minutes. Peggy's presentation is available at [IAQ Roundtable 20070829.pdf](#).
- Results on the effectiveness of in-cabin particle filtration as a means to reduce ultrafine particle exposures showed that the modern, high-efficiency filters included in some new cars may reduce ultrafine PM counts by 80-90%; however, the carbon dioxide levels

originating from the exhaled breath of occupants were shown to reach very high levels – at least 5000 ppm, the Cal-OSHA 8-hour Personal Exposure Limit for workplace exposures. Contacts: Peggy mjenkins@arb.ca.gov and Dane Westerdahl, fwesterd@arb.ca.gov

- ***Graduate Course in Communications and Careers in Environmental Fields.*** Peggy participated by conference call as a guest speaker for a course in technical communications and careers in environmental fields for the University of Texas at Austin. The course is part of the NSF-funded program of Integrative Graduate Education and Research Traineeships (IGERT) at the University. She discussed the history of careers in indoor air quality, the development of ARB’s program, and career opportunities today. The ability to make a difference in the field and to positively affect indoor air and public health were highlighted.
- ***Talk to Long Beach Pulmonary Group.*** Jim Behrmann presented an overview of indoor air quality problems and their related health impacts to the August 23 meeting of “Inspirations,” a pulmonary rehabilitation support group sponsored by the Long Beach Memorial Medical Center. The talk covered how indoor air quality can affect their health, examples of indoor sources and how to reduce or prevent emissions, and finally a discussion about indoor air cleaners, and specifically about intentional ozone generators. Ownership and usage of air cleaners was higher among attendees as compared to the ARB survey conducted in 2006, but only one had an intentional ozone generator. Contact: Jim Behrmann, jbehrman@arb.ca.gov
- ***2007 Workshop for State Indoor Air Quality Program Managers.*** At a national workshop for indoor air quality program officials held in Washington, DC, October 12-13, 2007, Peggy gave a presentation on ARB’s new composite wood and indoor air cleaner regulations and led a session on emerging issues in indoor air quality (IAQ). The workshop was the seventh such workshop sponsored by U.S. EPA’s Indoor Environments Division and organized by the Environmental Law Institute since 1998.

As in the past, the 2007 workshop served as a forum for health and environmental officials from federal, state and local governments to discuss current IAQ issues and share strategies for developing effective programs in this area. Primary areas addressed by IAQ programs continue to be mold/moisture problems, IAQ in schools, and, increasingly, public inquiries relating to residential rental properties.

The years 2006 and 2007 saw the development of new state policy approaches, including ARB’s two new regulations governing formaldehyde emissions from composite wood products and ozone emissions from air cleaning devices, and New Jersey’s law requiring that child care centers and educational facilities meet IAQ standards if they are sited in certain locations.

State programs of interest included a demonstration project by Minnesota’s Asthma Program involving 64 families that included home visits and intervention materials, which showed statistically significant declines in unscheduled medical office visits, use of oral prednisone, and number of school days missed; costs averages \$468 per family, but were estimated to save \$1960 per child in medical and related costs. Similar results

were found in a study conducted by the Seattle-King County Health Department in the state of Washington among 274 low income households, even after just a single visit with limited resources allocated to the intervention. Other states reported successful “green cleaning” programs. Vermont developed a green cleaning program for its schools, and New York enacted a law requiring the state to develop – and schools to use – guidelines on the purchase and use of environmentally-sensitive cleaning and maintenance products in schools. New York also has helped sponsor the revision of the Green Seal GS-37 standard for cleaning products, which is currently out for public review.

Participants also discussed a number of emerging issues that may seriously impact the indoor environment, including:

- Global climate (energy efficiency fall-out)
- Nanotechnology (changes in products)
- Green chemistry (reaction products)
- Multi-family dwellings, rentals, condos (ETS, mold, etc.)
- FEMA trailers and formaldehyde (re-use and re-sale)
- Mercury (thermometers, light bulbs)
- Rubber pellet surfaces/tire-derived flooring (indoor emissions)
- Carbon monoxide from indoor appliances (need for policies, education) and CO alarms (need alarms for more products; labeling re: longevity of sensors)
- Green buildings (need for adequate maintenance and operation)
- Asbestos in vermiculite insulation (adequacy of best practices)
- Antimicrobials in materials and furnishings
- Indoor chlorine (and ozone) from water purification in spas, indoor pools, etc.
- Safe return criteria for residences after nearby fire or toxic chemical (methamphetamine) releases
- Semi-volatiles (phthalates, PBDEs, etc.)
- Mechanical ventilation in new homes (need for appropriate maintenance & instruction)

Contact: Peggy Jenkins, mjenkins@arb.ca.gov

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California Department of Education / School Facility and Planning Division

– Michael O’Neil (MOneill@cde.ca.gov) <http://www.cde.ca.gov/ls/fa/>

Check their web site (above).

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California Department of Public Health / Environmental Health Investigations Branch

<http://www.cdph.ca.gov/ehib/>

<http://ww.californiabreathing.org>.

– Sandra McNeel (Sandy.McNeel@cdph.ca.gov)

The Burden of Asthma in California. California Breathing (CB) has released a comprehensive data source book on asthma entitled, *The Burden of Asthma in California: A*

Surveillance Report. This report presents a comprehensive picture of the burden of asthma in the state and is the first major compilation of all available asthma surveillance data in a single source. It serves to provide a framework for asthma education, interventions, and policy in California. The report provides asthma rates by ethnicity, age, and county, and demonstrates how California compares to national goals. It also presents data on quality of life factors associated with asthma, the impact of asthma on school children, asthma in the workplace, and the presence of asthma risk factors including obesity and exposure to tobacco smoke.

Key Findings in *The Burden of Asthma in California: A Surveillance Report*:

- Blacks have the most striking disparities in asthma. They are two to three times more likely than whites to visit the emergency department for asthma, to be hospitalized for asthma, and to die from asthma.
- The rate of asthma hospitalizations is three times higher in areas where the median income is less than \$20,000 compared to where it is greater than \$50,000.
- Charges for asthma hospitalizations in 2005 alone totaled \$763 million.
- In 2004, there were about 450 deaths due to asthma.

To view the report, use this link- <http://tinyurl.com/2cpcpz> (or visit the CB website).

Strategic Plan for Asthma in California (SPAC) Implementation Grants. Several grantees have been funded to work on IAQ-related activities:

- **SF Department of the Environment:** Funded to do assessment of toxic chemicals found in drugstores near housing development; working with CBO on train-the-trainer program targeting residents in a public housing development in Bay View Hunter's Point; education will focus on toxic-free home cleaning methods.
- **EarthTeam:** Funded to implement *Something's in the Air* curriculum in 15 schools; curriculum educates students on connection between air quality and health; students also assess their school's indoor air quality and post findings on website.

For additional information on these or other California Breathing activities, please contact Sara Hicks, CB Director (sara.hicks@cdph.ca.gov).

Asthma and Housing. CB has initiated a new housing component to its program. The buildings and circumstances in which people with asthma live can present serious health challenges. This is especially true in multi-unit rental housing, with the most dramatic consequences frequently occurring in low income areas with a larger amount of substandard housing. While residents may have some control over the level of exposure to certain asthma triggers in their home (i.e: dust mites and pet dander), other issues can be more systemic, expensive to repair and outside the scope of the individual resident's responsibility (i.e.: building-wide pest infestation, moisture intrusion, mold, poor heating and ventilation). CB's first priority for housing is to implement a Strategic Implementation Grant (SIG) focused on housing and asthma. CB is requesting proposals aimed at reducing the impact of home-based asthma triggers in multi-unit rental housing. The program is especially focused on approaches that build or reinforce effective alliances among a variety of local stakeholders. These stakeholder groups include representation from the health care, housing rights, property management and code enforcement arenas. In this first round of funding California Breathing will be awarding four grants of up to \$10,000 each. CB plans to increase the

number and amount of awards for future grant cycles. Technical assistance, training, and statewide strategy sessions will also be part of the grant package for this program. Contact: Janet Tobacman, Janet.Tobacman@cdph.ca.gov

California Environmental Contaminant Biomonitoring Program. In September 2006 Governor Schwarzenegger signed SB 1379 and establishing the *CECBP*, also called the *California Biomonitoring Program*. See www.oehha.ca.gov/multimedia/biomon/index.html

When fully implemented, the Program will collect and analyze human biological specimens, such as blood and urine, from a sample of California's population every two years. Some of these specimens will be stored for future research. Results from this program will summarize the concentrations of some environmental chemicals in Californians' bodies, and the extent to which there are differences related to age, gender, race, ethnicity, geographical area, and economic status. Findings from the program will also be used to:

- Determine baseline levels of environmental chemicals in Californians' blood and other biological samples; that is, levels representative of California's general population;
- Establish trends in the levels of these chemicals in people over time; and
- Assess the effectiveness of public health efforts and regulatory programs to reduce Californians' exposures to specific chemicals.

The Program is a collaborative effort of three State government departments:

- California Department Public Health (the lead department for the program),
- Office of Environmental Health Hazard Assessment, and
- Department of Toxic Substances Control.

In addition to the website, a listserv have been established to disseminate current information about the program; sign up at www.oehha.ca.gov/multimedia/biomon/index.html, under the "More Resources" section. Contact: Sandy McNeel, sandy.mcneel@cdph.ca.gov

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California Department of Public Health / Indoor Air Quality Section

– Toni Stein (Toni.Stein@cdph.ca.gov)

<http://www.cal-iaq.org/>

Collaborative for High Performance Schools (CHPS). The update of the CHPS Volume III Best Practices Manual is underway. The release of a public comment draft of a 2009 Update is expected in February 2008. The CHPS Indoor Environmental Quality (IEQ) sub-committee formed working groups to develop updated criteria on priority topic areas. The priority topic areas were developed following a CHPS Technical Committee face-to-face meeting held in Sacramento February 6th 2007. To facilitate communications and management of documents for the working groups, CHPS set up a web-based work space to store documents and hold electronic discussions. The Priority topic areas include:

- **Updating HVAC pre-requisites and credits**
 - Reorganizing HVAC prerequisites into a single pre-requisite, and adding more detailed provisions for verification of pre-requisites including requirement to fill out a workbook showing minimum ventilation calculations;
 - Including ASHRAE 90.1 provisions for HVAC systems with recirculation-economizers to ensure no recirculation when CO₂ levels are high in classrooms. Adding in an option for schools that gain LEM credits to opt out of the “flush out” by instead providing school IAQ test data to verify that classroom air has low concentrations of toxic chemicals.
 - Modifying HVAC “filter” pre-requisites and credits to make more stringent.
 - Updating the displacement ventilation credit (DV) to clarify issues related to under floor (UF) ventilation.
 - Proposing a new IEQ credit for 100% dedicated outside air system (DOAS)
- **Updating the low emitting materials credits**
 - Harmonizing where possible with USGBC.
 - Ensuring furnishings (cabinets, and other wood containing products) comply with CARB’s new comp-wood regulations.
 - Adding provisions to address short-term toxic exposures to paints and adhesives.
 - Adding provisions for asthma, lung irritation and carcinogens, including provisions from the proposed ASTM standard submitted by Hal Levin.
- **Updating source control provisions for walk-off mats.**
 - Adding specified dimensions of mats required to achieve credit.

Green Seal Standard on Industrial Cleaners (GS-37). CDPH staff have participated in a number of key GS-37 stakeholder workgroup telephone sessions in July, August, and November to discuss various revises to the current standard, including “Inhalation Toxicity” criteria. Written comments were submitted to the committee facilitator Jack Geibig and uploaded to the GS-37 web development site on: Sept 14th. The Standard Development Team met with the Stakeholder Committee on Sept. 20th to discuss progress on criteria. On October 16th after receiving comments that the processes was not inclusive and open GS opened up the forums and added voting stakeholders. They particularly called for new participants to join the process and assist in several key areas of the standard including: Skin Absorption; Inhalation Toxicity, Asthmagens and Respiratory Irritants, Fragrances, Concentrates, Neurotoxicity, and Product Performance. October 16th Green Seal solicited opened the stakeholder groups up to add new participants to the voting roll and the workgroups. Workgroups met through November and a new proposed revised standard was compiled by the UTK that were contracted by GS to lead and facilitate the process. On November 14th Green Seal announced that it was taking over active management and communications functions of the GS-37 project from the University of Tennessee's Center for Clean Products, (Jack Geibig and Catherine Wilt). On November 19th they circulated the proposed revised standard that was compiled by UTK before the split. Stakeholder comments were due on January 16th which was subsequently extended to January 30th.

- **Updating Inhalation Toxicity Criteria.** CDPH has proposed that GS-37 be updated to add inhalation toxicity criteria to ensure that occupant indoor air concentration exposures do not exceed established health based threshold levels. Note that CDPH has encouraged

GS-37 to add criteria provisions to prohibit all chemicals listed on the AOEC asthmagen list (ie. designated with an A) that cause asthma onset from undiluted AND diluted formulations. The AOEC asthmagen list does not have any threshold concentrations associated with it regarding asthma onset. Since the AOEC has not distinguished any concentrations for which chemicals listed as astmagens are not considered astmagens; CDPH does not support any GS-37 provisions that would exclude concentrations resulting from different dilutions from its criteria since they would be subjective and not science based limits put into policy possibly manipulating the intent of the AOEC list. Aside from supporting these asthma onset related criteria CDPH has actively encouraged criteria provisions to be added to GS-37 to safeguard occupants from exposures that may have significant acute and chronic impact risks.

- ***Emission testing provisions to safeguard against acute and chronic impacts.*** CDPH has participated in committee meetings to discuss emission testing options feasible and appropriate for this industry and product sector. CDPH has worked with other standards developers to develop similar IAQ criteria for the Carpet and Rug Institute (CRI), the Resilient Flooring (RFCI), the Business and institutional Furniture Association (BIFMA) to successfully define feasible and appropriate emission testing protocols for other certification standards in place today. CDPH's CA 01350 Standard Practice already includes testing protocols for wet products and has served as the basis for CDPH's recommendations for GS-37. Specifically CDPH has recommended that GS-37 institute chamber testing and chemical analysis be consistent with CA's 01350 Standard Practice including the recommendation that GS-37 require test laboratories use the ASTM D5116 [Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products] for chamber testing and the ASTM D6196 [Standard Practice for Selection of Sorbents, Sampling, and Thermal Desorption Analysis Procedures for Volatile Organic Compounds in Air], ASTM D 5197-03 [Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Method)] for chemical analysis so that exposures to these products may be uniformly estimated. CDPH has recommended ASTM test methods to eliminate lab to lab variation and ensure uniform exposure estimates. CDPH has actively been providing technical assistance based on CA 01350 specific to cleaners including recommended guidance on sample preparations, room exposure model defaults; and recommended chamber testing durations for representative exposure modeling.
- ***Application of credible health-based thresholds.*** CDPH has actively promoted and recommended that GS-37 include provisions to ensure that a cleaning products concentration levels of chemicals of concern do not exceed health based threshold levels. CDPH has recommended that GS-37 require provisions to prohibit room concentrations from cleaning products to exceed the following health based threshold limits: California EPA's Office of Environmental Health Hazard Assessment (OEHHA) Acute Reference Exposure Levels (aRELS), Cal/EPA OEHHA non-cancer chronic Reference Exposure Levels (cRELS), the Agency for Toxic Substance Disease Registry (ATSDR) Minimum Risk Levels (MRLs), CA PROP 65 NSRL carcinogens and MADLS-repro-toxins, and EPA RfC. To address the lung irritancy endpoint (ie. asthma triggers) CDPH has recommended and been a proponent of including provisions to ensure that cleaners are tested to determine their RD 50 limits according to ASTM E981 laboratory procedures

and ensure that there is criteria to ensure that occupants will not be exposed to concentrations corrected for CA 01350 room occupant exposure scenarios.

- **Updating Skin sensitization testing requirements** CDPH has also been active in recommending that GS-37 update its skin sensitization testing requirements since the testing requirements currently called out are outdated and have been updated by both OECD and US EPA. CDPH has formally recommended that GS-37 abandon its current requirement for cleaners to be tested using the outdated *OECD Guidelines for Testing Chemicals: Section 406. Skin Sensitization (1992)*, and instead require *Guideline 429. Skin Sensitization: Local Lymph Node Assay (2002)*. Both EPA and OECD recommend the local lymph node assay (LLNA) as the preferred method for assessing skin sensitization. It provides a quantitative assessment of dose-response, and it reduces animal welfare concerns as it reduces animal distress and can reduce the number of animals required to provide good quantitative data.

State Procurement Specification for Office Furniture. *Refer to previous CIWG-IAQ reports for past chapters in this saga.*

The multi-agency Work Team, comprised of representatives from DGS RESD, CEC, CIWMB, GAT EPP and CDPH IAQ, continues to meet weekly, tasked issuing a new Request for Proposals (RFP) and defining a new bidders process.

DGS has opted to proceed with an RFP process instead of an IFB process. The RFP process was opted particularly to help address the problem encountered in the past Bid, when bid packages were found to be incomplete and had missing information to allow a bid award. The new RFP process is designed with a two-step process whereby DGS will first request bidders to submit information on their offering \$\$ offerings such that DGS can review the information for completeness and to ensure that bidders provide documentation needed to show they meet all mandatory specifications. Then after the bid information package has been found to be complete a second step of the RFP process will begin where bidders make their \$\$ offerings for DGS to evaluate and award. DGS has required each member of the RFP team to assess their particular specifications (lighting energy efficiency, waste and recyclability, and IAQ) and develop critical questions for bidders to answer that will ensure that they understand the specification and are providing documentation to verify that they meet it. DGS has asked each Team member to create bidder worksheets for bidders to fill out to ensure uniform bid evaluation.

The team has explored the format used by the State of Minnesota, which includes incentives to meet certain environmental specifications through a defined point system. The CA team has been developing “mandatory” and “non-mandatory” specifications, and DGS management has developed the point allocations for the non-mandatory specifications. In the Minnesota package, IAQ specifications that address health and safety criteria are defined as mandatory requirements. The California IAQ Workbook developed in the last bid will be used. The Bidders Conference, current scheduled for mid-February, is likely to be postponed to March.

Business and Institutional Furniture Manufacturers Association (BIFMA)

Sustainability Assessment Standard (SAS). BIFMA SAS addresses three aspects of sustainability (environmental, economic and social) and includes criteria for evaluating human & ecosystem health, energy, natural resource and corporate social responsibility impacts. CDPH has been serving as a regulatory category stakeholder member and participated in and co-led the emission sub-group of the human and ecosystem health committee for the past two years. In October a guidance document was drafted from input from each committee to provide additional helpful information and assistance regarding methods to comply with each credit in the standard. Additionally each committee worked on normalizing and allocating points across the three areas for the overall scorecard. Scorecard trials were completed by BIFMA volunteers to trial the system. NSF, the facilitator of the BIFMA SAS process has implemented a new web-based platform for distributing ballots and related material to its Standards and Policy Development Committees. On November 12th NSF released the draft standard for BIFMA member and Workgroup comments and balloting due to close on February 8th 2008. BIFMA is working with USGBC to determine eligibility for LEED innovation credits for products assessed to this sustainability standard. Additional information can be found at: <http://www.bifma.org/public/SusFurnStd.html>

Composite Wood. Work has begun on the CARB/CDPH Inter-Agency Agreement to support CARB's Composite Wood regulation. CDPH has begun work to provide CARB support for formaldehyde emission measurements. Activities have begun using the small chamber with intended goal of comparing and correlating these results to measurements made using the large chamber. Additionally CDPH is working to investigate testing using a FLEC "mini" test chamber that may be used to screen wood compliance in field enforcement activities. CDPH is also working with CARB to evaluate operating procedures, feasibility and reliability for a portable formaldehyde monitor. CARB staff have loaned CDPH their Flec tester and two of their portable Interscan formaldehyde monitors.

CDPH has written a chain of custody document defining the composite wood cutting and wood preparation protocol for CARB. These sample preparation and chain of custody documents are for use in transferring composite wood pieces by CARB for CDPH to emission testing. CDPH set-up of small and large chambers is ongoing to comply with the specific ASTM 1333 and ASTM 6007 formaldehyde testing requirements. In particular CDPH is making modifications to meet the low flow, tight temperature and relative humidity requirements. Repairs and upgrades have been underway in repairing the large chamber humidifier and temperature control system with the Facility Management Systems Group. Additionally modifications are being made to reverse damper controls, and to install supplemental in-chamber fans to ensure increased mixing for the low flow conditions. CDPH has begun developing a maintenance manual with FMS for quality assurance.

Facility Inspection Tool (FIT) Guidebook. CDPH has been participating on the CASH lead project to create and write a guidebook to provide technical clarification to the State of California Office of Public School Construction's (OPSC) Facility Inspection Tool (FIT). The work team is a continuation of the workgroup that OPSC appointed to assist them in developing the FIT. CDPH contributed and is a primary author to the HVAC section. Deborah Moore of the Green School's Initiative and Kristen Heinen of CHPS have also contributed to other sections.

Oakland Unified Schools District – Healthy & Sustainable School Pilot. The Healthy and Sustainable Schools (HSS) Workgroup has been working with Oakland Unified School District (OUSD) to demonstrate the process of making repairs within the Emergency Repair Program from the William’s Settlement. The HSS Workgroup consists of representatives from CDPH?, Green Schools Initiative (GSI), the Ethnic Health Institute (EHI), Oakland Berkeley Community Action to Fight Asthma (CAFA, Pacific Gas and Electric, (PG&E) and CHPS. Alice Sung is OUSD’s CHPS consultant and has served as the primary liaison between the Workgroup and the OUSD Facilities Dept. The Workgroup started by evaluating criteria for the different eligible school sites, based on consultant assessments and interviews with OUSD Facility Planning staff. PG&E has been particularly instrumental in including the HSS workgroup into OUSD Facility Planning office meetings to allow OUSD consideration of joint activities. The HSS brings technical and community expertise to the OUSD to join together address current facility complaints.

Oakland High School (OHS) was identified as a good candidate school, since it has received a large number of student and advocacy complaints for IAQ and other related deficiencies. On October 19th, the Workgroup conducted a walkthrough at OHS, using the OPSC Facility Inspection Tool (FIT) and the Tools for Schools assessment checklist to assess the facility. The FIT evaluation resulted in a “Fair” rating finding several “extreme deficiencies” including the HVAC system in several classrooms. CO2 readings were taken in two classrooms and found to be above 900 ppm, indicating possible inadequate ventilation. Follow-up with more comprehensive assessments in additional classrooms was planned as a next step to support a grant application for repairs to the HVAC system. CDPH is working with OUSD Maintenance and Operations Director in the HVAC evaluation and to define interim measures.

Workgroup is also working with OUSD on other repairs aside from the HVAC to define EPP products. A tour of state-of-the-art energy efficient evaporative pre-cooling HVAC systems installed Sonoma State or Mills College may be offered to OUSD and HSS team. These installations have been referred to the HSS team by the Western Cooling Efficiency Center at UC Davis and Mike Apte at LBNL.

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California Department of Public Health / Occupational Health Branch

-- Liz Katz (Ekatz@dhs.ca.gov)

<http://www.cdph.ca.gov/ohb/>

New HESIS Chief Dr. Dennis Shusterman. OHB is pleased to announce that on November 1, 2007, Dr. Dennis Shusterman became the new Chief of OHB’s Hazard Evaluation System and Information Service (HESIS). Dr. Shusterman has 22 years of experience practicing occupational and environmental medicine in both public health and academic settings. HESIS prevents worker illness and injury by evaluating new or unappreciated hazards; providing information and technical assistance to employers, workers, and others; and recommending new or revised workplace standards.

California Safe Cosmetics Program. The California Safe Cosmetics Program (CSCP) is now finalizing a list of chemicals to assist manufacturers with complying with the 2005 Safe

Cosmetics Act. It is also working with various groups to develop an online reporting protocol and system. After this is completed, CSCP will convene stakeholder workshops to share information on the program and roll out the reporting system. To prepare for these workshops, CSCP has formed a workshop planning committee which had its second meeting in early November. The program is dedicated to meeting with health advocates, manufacturers, regulators, and other interested parties to promote collaborative efforts to improve availability of information to consumers. The program website is: <http://www.dhs.ca.gov/ohb/Cosmetics/>.

Indoor Heat Regulation for Workers. Cal/OSHA has decided to discontinue developing a regulation specifically for indoor heat illness prevention. Employers will be required to address hazardous indoor heat exposure using their Injury and Illness Prevention Program. However, there is a regulation for outdoor heat illness.

New Publications on Flavorings-Related Lung Disease in Workers. OHB has posted the information web page: <http://www.dhs.ca.gov/ohb/flavoringspubs.htm>. It describes OHB's work on diacetyl, a chemical used in food flavorings, which has been linked to bronchiolitis obliterans, a serious lung disease found among California workers who manufacture food flavorings. It provides OHB's diacetyl Health Hazard Alert, new medical guidelines, as well as outreach materials for employers, workers, and community organizations.

California Healthy Nail Salon Collaborative. HESIS continues to provide technical assistance to this non-governmental organization. Senator Migden recently held an informational hearing (California Senate Labor and Industrial Relations Committee) with the assistance of the Collaborative. At the hearing, CDPH, Cal/OSHA, CARB, and the Board of Barbering and Cosmetology were questioned on their roles in protecting workers and consumers from toxic nail salon chemicals.

Energy Code / Title 24. HESIS continues to work with Cal/OSHA, CARB and others to ensure that indoor air quality is not compromised by new building energy conservation standards. One issue is a proposed requirement for carbon dioxide demand-control ventilation.

Lead body burden: lowering the adult blood lead criteria. The Occupational Lead Poisoning Prevention Program collaborated with medical experts to publish health-based recommendations for the care of lead-exposed adults. Evidence is presented for important health impacts of lead at low dose levels. The paper entitled, *Recommendations for Medical Management of Adult Lead Exposure* by Michael J. Kosnett et al. is available on-line: <http://www.ehponline.org/members/2006/9784/9784.pdf>

OHB Environmental Initiative. OHB is increasing its activities that promote safer chemicals policies, including eliminating or reducing the use of toxic chemicals that are harmful to workers, the general public, and the environment. Some current topic areas are reducing toxic pesticide use and identifying safer cleaning practices. These efforts may also include new or improved chemical regulation policies, ensuring that "green chemistry"

approaches do not adversely affect workers, and partnering with environmental agencies and organizations that share similar concerns.

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California Department of Public Health / Radon Program

-- George Faggella (George.Faggell@cdph.ca.gov) <http://www.cdph.ca.gov/radon/>

Check their web site (above).

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California Department of Public Health / Tobacco Control Section

-- Christine Richter (christie.richter@cdph.ca.gov) <http://www.dhs.ca.gov/tobacco/>

Links to local Tobacco Control Programs. Here is the link to the project directors of the local health departments' (local lead agency) tobacco control programs:

<http://tcsotis.org/public/projectDirectory/index.cfm>.

Secondhand Smoke in Cars. TCS has begun to implement an educational campaign on SB 7 (Oropeza, 2007), the *smoke-free cars with minors* law which goes into effect on January 1, 2008 (Health & Safety Code §118947). Education materials currently being developed are: a general audience fact sheet; frequently asked questions for use by TCS-funded agencies to use when addressing the public; letter to the editor & press release templates for TCS-funded agencies to adapt and distribute in their local communities; a fact card for distribution to the public; and posters.

Second Hand Smoke (SHS) Media. The TCS Media Unit was awarded the ADDIE from the Advertising Federation for their TV advertisement "Caution Tape" which visually shows who can be affected by SHS in an apartment building.

The TCS Media Unit is currently preparing for the 10-year anniversary of smoke-free bars and the implementation of the smoke-free cars with minors law with a press conference on January 3, 2008 in Hollywood. Secretary Belsché is confirmed as the main speaker and will be discussing the 10-year anniversary of smoke-free bars, how far the state has come in protecting Californians from exposure to secondhand smoke and California's commitment to further protect youth still exposed to secondhand smoke with the passage of SB 7. Dr Mark Horton, Director of CDPH, will also discuss the impact of smoking in vehicles with children. A real-time demonstration to show how toxic the air is inside a vehicle when someone is smoking will be conducted by Dr Neil Klepeis, an environmental Health Scientist with Stanford University.

Multi-Unit Housing Workgroup. The workgroup continues to meet monthly to assist in the development and implementation of strategies to increase the number of voluntary and legislative policies related to smoke-free multi-unit housing in California. Activities include planning and conducting technical assistance calls and developing media resources. A

Webinar on June 7, 2007, addressed Smoke-Free Condominiums (legal issues that condo owners face, more recent survey findings of realtors, and tips on how to work with large condominium associations). The next technical assistance call is scheduled for January 22nd, 2008 which will address data collection to enhance policy development.

Of the 26 Prop-99 funded Local Lead Agencies and 60 Prop-99 funded Competitive Grantees, 33 will be working on the adoption and/or implementation of voluntary and/or legislative policies that address smoke-free MUH including units and/or outdoor/indoor common areas over the next few years.

Secondhand Smoke Workgroup. The workgroup, which has been on hiatus for the last year, began meeting again in November of 2007. The workgroup will continue to meet every-other month to assist in the development and implementation of strategies to increase the number of voluntary and legislative policies related to smoke-free outdoor locations, including closing the gaps in LC 6404.5. The secondhand smoke and multi-unit housing workgroups have each formed sub-committees to begin planning a statewide MUH/SHS Conference to occur in December of 2008.

Secondhand Smoke Research. TCS has formally partnered with UCLA to begin researching the economic impact of smoke-free MUH and smoke-free tribal casinos.

Tribal Casinos/Workplaces. TCS established a communities of Excellence Needs Assessment requirement for the 2007-2010 Local Lead Agency plans in which local health departments with an Indian Casino in their jurisdiction assessed an indicator to determine the proportion of businesses with a voluntary policy that designated American Indian Casino/Leisure Complexes as smoke-free to a level consistent with protection provided other Calif. workers under the Calif. LC Section 6404.5, the Calif. Smoke-Free Workplace Law. Based on this assessment 3 Local Lead Agencies have chosen to begin working with the tribal governments within their jurisdiction to establish voluntary smoke-free workplace policies over the next 3 years.

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California Department of Industrial Relations (Cal/OSHA)

--Bob Nakamura (bnakamura@hq.dir.ca.gov)

<http://www.dir.ca.gov/dosh/>

Heat Illness prevention in indoor workplaces. The Division adopted General Industry Safety Order Section 3395 to address heat illness in outdoor places of employment on July 27, 2006. Currently, the Division is considering the issue of heat illness in indoor work settings. As a followup to the advisory meetings and adoption of the heat illness, the Division has held a meeting to consider the issue of heat illness in indoor work settings. The first meeting was held on October 26, 2006, and the last meeting was on March 29, 2007. Division contacts are Bob Barish at 510-286-7001 and Amalia Neidhardt at 916-574-2993.

Permissible Exposure Limit revision process. The Division has convened several advisory meetings to discuss the Division's process for reviewing existing PELs and the

factors for determining if a PEL will be revised. The most recent meeting was held on December 13, 2006 to discuss the procedures for adopting revisions. The next meeting has been scheduled for Tuesday, June 19, 2007, 10 a.m. Elihu Harris State Building 1515 Clay Street, Room 1304 Oakland. Division contacts are Bob Barish at 510-286-7001 and Steve Smith at 916-574-2996.

Aerosol transmissible diseases. The Division has convened 12 advisory meetings to develop a standard to address occupational exposures to diseases that are transmitted as aerosols, with the last meetings conducted in May 2006. The draft standard is being prepared for public notice later this year by the Occupational Safety and Health Standards Board. Division contacts are Deborah Gold at 510-286-7006 and Bob Nakamura at 510-286-7005.

Indoor Air Quality review. The Division is in reviewing proposals for the next revision (2008) of the California Building Energy Efficiency Standards (Energy Code). Refer to <http://www.energy.ca.gov/title24/2008standards/documents/index.html#022607>. Division personnel have identified several concerns about the proposals in the 2007 Workshops that have been conveyed to the California Energy Commission, and are currently under discussion with CEC. Division contacts are Jeff Ferrell at 916-574-2995, Deborah Gold at 510-286-7006 and Bob Nakamura at 510-286-7005.

Detailed information about these and other current DOSH regulatory activities can be found on the Division's website at: http://www.dir.ca.gov/dosh/DoshReg/advisory_committee.html

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California Energy Commission

-- Obed Odoemelam (Oodoemel@energy.state.ca.us)

PIER Program Research Write-up. The Public Interest Energy Research (PIER) program provides substantial funding on a wide range of energy-related topics. Among these are Indoor Air Quality and Building Engineering. Below are the projects under "Indoor Air Quality", plus the topic areas listed under "Customer Energy Use/Commercial and Residential." Research write-ups for CEC projects can be found on-line at <http://energy.ca.gov/pier/portfolio/PIERwrite-ups.htm>.

Environmental Effects of Energy Activities

Air Quality

Indoor Air Quality

[Develop R&D Plan for PIER Buildings Team for Indoor Air Quality](#)

[Development of Portable Ambient and Indoor Air Monitors](#)

[Energy-Related Indoor Environmental Quality Research: Analyses of Building Characteristics and Indoor Environmental Quality in California Classrooms](#)

[Energy-Related Indoor Environmental Quality Research: New Homes Field Study and Survey](#)

[Energy-Related Indoor Environmental Quality Research: Office Equipment](#)

[Energy-Related Indoor Environmental Quality Research: Small and Medium Commercial Buildings Field Study and Survey](#)

[Envelope and IAQ Interactions](#)

[Improved Prediction of Indoor Exposure to Outdoor Air Pollution in Apartment and Commercial Buildings](#)
[Plant Multimedia Toxics Characterization - Target 107](#)
[Simplified Models for Particulate Dispersion in Buildings](#)

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California Integrated Waste Management Board / Sustainable Building Program

<http://www.ciwmb.ca.gov/GreenBuilding>

-- Kathy Frevert (KFrevert@CIWMB.ca.gov)

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California Department of Toxics Substances Control / Hazardous Materials Laboratory

-- Myrto Petreas (Mpetreas@dtsc.ca.gov)

See [Special Presentation](#).

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Office of Environmental Health Hazard Assessment / Indoor Air Risk Assessment Group

<http://www.oehha.org/>

-- Richard Lam (RLam@oehha.ca.gov)

-- Janice Kim (jkim@oehha.ca.gov)

Reference Exposure Levels for acetaldehyde, acrolein, arsenic, formaldehyde, manganese, and mercury. OEHHA is releasing a draft document, Air Toxics Hot Spots Program Technical Support Document For the Derivation of Noncancer Reference Exposure Levels to solicit public comment. OEHHA previously developed Technical Support Documents (TSDs), which described acute and chronic Reference Exposure Levels (RELs) in 1999-2000. This revised draft TSD is designed to replace those original TSDs, and presents methodology revised to reflect scientific knowledge and techniques developed since the previous guidelines were prepared, and in particular to explicitly include consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia, chapter 731, statutes of 1999, Health and Safety Code Sections 39669.5 et seq.). In addition to the previously defined acute and chronic RELs, the new method allows for the estimation of 8-hour RELs, which may be useful in dealing with some special circumstances in Hot Spots risk assessments. The revised draft also contains proposed Reference Exposure Levels for six chemicals: acetaldehyde, acrolein, arsenic, formaldehyde, manganese, and mercury. The draft document will commence a 60-day public review period that will end on January 2, 2008.

OEHHA Acute(A), 8-Hour(8), and Chronic(C) Reference Exposure Levels (RELs)

Substance		Inhalation REL ($\mu\text{g}/\text{m}^3$)	Hazard Index Target Organs
Acetaldehyde (75-07-0)	A	750	Sensory irritation; eyes
	8	568	Respiratory system
	C	43	Respiratory system
Acrolein (107-02-8)	A	2.3	Sensory irritation; eyes
	8	1.6	Respiratory system
	C	0.1	Respiratory system
Formaldehyde (50-00-0)	A	55	Sensory irritation; eyes
	8	9	Respiratory system
	C	9	Respiratory system
Manganese & compounds	A	--	
	8	0.05	Nervous system
	C	0.03	Nervous system
Mercury (inorganic) (7439-37-6)	A	0.6	Nervous system,
	8	0.06	developmental
	C	0.03	Nervous system Nervous system

California Environmental Contaminant Biomonitoring Program. The first meeting of the Scientific Guidance Panel of the California Environmental Contaminant Biomonitoring Program will convene on December 17, 2007. The Panel was established in legislation (SB 1379, Perata, 2006) to provide scientific oversight to the Program. The program is a collaboration of three departments in California state government: The California Department of Public Health (CDPH), OEHHA, and the Cal/EPA Department of Toxic Substances Control (DTSC). The Program will measure the level of environmental contaminants in a representative sample of Californians. This information will be used to identify emerging environmental hazards and to evaluate the effectiveness of existing environmental programs. This will ultimately be used by policy makers to protect Californians from environmental contaminants through better environmental programs and laws. <http://www.oehha.ca.gov/multimedia/biomon/121707agenda.html>.

Health Criteria for School Site Risk Assessment for Chlorpyrifos. Health and Safety Code Section 901(g) requires OEHHA to evaluate and publish, as appropriate, numerical health guidance values for those chemicals that could be encountered at school sites and may adversely impact the health of school children. The latest report is on chlorpyrifos, a widely used organophosphate insecticide. In June 2000, US EPA announced a ban for most home, lawn and garden use products containing chlorpyrifos. Chlorpyrifos is still widely used in agriculture, and is a common chemical found indoors.

http://www.oehha.ca.gov/public_info/public/kids/schools113007.html

Green Chemistry at OEHHA.

- [Green Chemistry: Practical Decision-Making Tools for Identifying Safer Alternatives](#)
[08/30/07]
- [Green Chemistry: Workshop Materials and Speaker Presentations from the OEHHA-COEH Workshop Held on October 1st and 2nd, 2007](#)
[10/23/07]

Unit Risk Value For Ethylbenzene. The Air Toxics Hot Spots Information and Assessment Act of 1987 (Health and Safety Code Section 44300 et seq.), requires OEHHA to develop guidelines for conducting health risk assessments under the program. These guidelines include recommended methodology for conducting chemical- and site-specific risk assessments, and health protective values (Reference Exposure Levels for non-cancer health effects and Unit Risk values for carcinogenic effects). Ethylbenzene (CAS Registry Number: 100-41-4) is a natural constituent of crude petroleum and is found in gasoline and diesel fuels. It is also used as a chemical intermediate, primarily in the production of styrene. It is found in some consumer products which could be used indoors. Following this process, OEHHA is adopting a unit risk value for ethylbenzene of $2.5 \times 10^{-6} (\mu\text{g}/\text{m}^3)^{-1}$ and an inhalation cancer potency value of $0.0087 (\text{mg}/\text{kg}\cdot\text{d})^{-1}$. These values are based on the incidence of kidney cancer (renal tubule adenoma or carcinoma) in male rats.

http://www.oehha.ca.gov/air/hot_spots/ebenz111407.html

American Academy of Pediatrics National Conference & Exhibition. Janice Kim and Mark Miller of OEHHA co-chaired a session on "How to Provide Guidance to parents to ensure a Health Home" at the American Academy of Pediatrics National Conference & Exhibition, Oct 27-30 in San Francisco. Session topics included Using the Pediatric Environmental Health Toolkit in the Office Setting (Mark Miller, OEHHA); Health Air-Healthy Homes (Janice Kim, OEHHA) and Mold in the Home (Laura Kolb, US EPA). A special thanks from Janice Kim to ARB -IAQ staff (Peggy Jenkins, Susan Lum, and Tom Phillips), CA DPH (Toni Stein and Jed Waldman), and Barbara Sparks and US EPA IAQ staff for their input and suggestions.

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Lawrence Berkeley National Laboratory / Indoor Environments Department

-- Mike Apte (MGAPte@lbl.gov)

<http://eetd.lbl.gov/ied/>

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San Francisco Department of the Environment <http://www.sfenvironment.org>

Green Building Month. September was Green Building Month in San Francisco. For a list of events, see

<http://www.sfenvironment.org/downloads/library/greenbuildingmonthguide.pdf>

LaserJet Printer Emissions. The SF DOE issued a technical briefing on *LaserJet Printer Emissions: Do They Pose a Health Risk? Analysis of the Controversy and Interim Guidelines for Controlling LaserJet Printer Emissions in City Workplaces*, authored by Ralph Ray. It

can be downloaded at

http://www.sfgov.org/site/uploadedfiles/sfdhr/about/Reports/Laser_Jet_Emissions_Analysis.pdf

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Southern California Environmental Health Sciences and Children's Environmental Health Center (University of Southern California & UCLA)

-- Andrea Hricko (scehsc@usc.edu)

Check their web sites (below):

<http://hydra.usc.edu/scehsc/default.asp>

http://www.usc.edu/schools/medicine/departments/preventive_medicine/divisions/occupational/occ_environmental/scehsc/

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UC Environmental Health & Safety Program

-- Debbie Decker (dmdecker@ucdavis.edu) <http://ehs.ucdavis.edu/ehs/ucih/index.cfm>

Check their web site (above).

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U.S. EPA Region IX / Indoor Environment Team

<http://www.epa.gov/iaq/>

-- Barbara Spark (spark.barbara@epamail.epa.gov)

-- Shelly Rosenblum (rosenblum.shelly@epa.gov)

-- Louise Hill (hill.louise@epa.gov)

IAQ Tools for Schools Activities. The EPA Region 9 Indoor Environments Team has been working with a variety of new and continuing partners on often multi-partner activities to advance implementation of IAQ management plans in California schools. Highlights of these activities follow.

- **Schools/CAFA and/or CTA project.** Shelly Rosenblum provided "Tools for Schools" (IAQ TfS) trainings for members of the Sonoma and Solano County Asthma Coalitions, including maintenance/facilities managers from the Fairfield-Suisun, Vallejo and Vacaville school districts.
- **Oakland USD.** Barbara Spark participated in a meeting at the OUSD teachers union office to discuss how the Oakland Education Association (OEA) could work with asthma partners and EPA to improve IAQ and asthma awareness at the district, as well as further implementation of the IAQ Tools for Schools program. The meeting was arranged by Mindy Landmark of the CAFA Coalition based at the Ethnic Health Institute. Participants included OEA President Betty Olson-Jones and Executive Director Ward Rountree, Janis Nielsen, coordinator of the CTA IAQ project, and Kate Lorenzen from RAMP/CAFA.

- **Training for Tribes.** The EPA sponsored American Lung Association's Tribal Hands-On Indoor Air Training is being held at the Hopland Tribe in California (Mendocino County) on May 21-25, 2007. This course is aimed for homes built in mixed climates and is the second ALA training for Region 9 (the first was in Arizona). Funding for the training comes from a national EPA Grant to the American Lung Association Health House Project. Approximately 20 tribal environmental specialists from Northern California will be attending. Participants are taught a wide range of effective, affordable, and efficient remediation strategies to address the major IAQ related problems of moisture and mold, combustion gases, leaky buildings, inadequate ventilation, particulate control, and radon. Indoor air quality problems, especially mold and moisture are becoming bigger problems in tribal housing, mostly due to inadequate building construction. (Contact: Louise Hill)
- **San Diego USD and Montebello USD.** Barbara Spark participated in two events/meetings with key decision-makers at these Southern California school districts on February 16 and 20, 2007. At San Diego USD, she participated in a half-day workshop on "shared decision-making," attended by principals and teachers' union site representatives. Expectations are that IAQ Tools for Schools will be launched at the district in the new school year within this collaborative process. At Montebello USD she participated in a launch/planning meeting for TfS with the Maintenance and Operations Director, key staff, and the teachers' union Executive Director.
- **Presentation to state legislators.** Barbara Spark provided a detailed talk on IAQ Tools for Schools and EPA's Healthy SEAT program - and the reasons why school districts do or don't adopt these programs - at the Council of State Government (CSG) health policy forum, "Asthma and Respiratory Health: Policy Approaches to Create Asthma-Friendly Environments, May 3-5, 2007 in San Diego. The very engaged audience included seventeen state senators and representatives from fifteen states and territories. They asked a lot of questions about mold.
- **New publication on achieving improved school IAQ.** *Envisioning Excellence: Lessons from Effective School Indoor Air Quality (IAQ) Programs* can be accessed from the web page: <http://www.iaqsymposium.com/> *Envisioning Excellence* helps schools take effective action to advance health, safety, and wellness initiatives. *Envisioning Excellence* presents the Framework for Effective School IAQ Programs: Six Key Drivers--guidelines that detail the organizational approaches and practices that are fundamental to school IAQ program success--and presents five profiles in excellence to demonstrate how different school districts applied the Framework to create effective and enduring IAQ programs.
- **Other TfS training.** Among other such events, Shelly Rosenblum provided TfS workshops for the California Breathing project to help develop the Mendocino County Asthma Coalition; and well as the CAFA/S.F. Asthma Coalition TfS project at San Francisco USD.

IAQ Tools for Schools (IAQ TfS) 2006 National Symposium. Shelly Rosenblum and Barbara Spark attended the 7th Annual TfS Symposium in Washington, DC. December 7-9, 2006. Thanks to scholarships from our HQ division, a number of key decision-makers attended the 2006 Symposium from the ranks of both California school district

administration (including San Diego and Montebello USDs), and teachers unions, including the California Teachers Association (CTA) and the Oakland Education Association, resulting in significant commitments to move forward on TFS implementation. Shelly was the moderator for the plenary session on students and TFS.

National Education Association (NEA) Pre-TfS Symposium training. Barbara Spark provided EPA's welcoming talk to more than 100 members of NEA at the all-day pre-Symposium training on December 6, 2006 in Washington, DC. Barbara provided a regional perspective, focusing on the value of unions' identifying the fears about Tools for Schools implementation on the part of district administrators, and addressing these barriers head-on by entering into a frank dialogue between management and unions, along with the unions offering to assist with TFS.

IAQ Tools for Schools (IAQ TFS) 2007 National Symposium. Registration opens June 8, 2007 for this year's symposium, December 6-8, 2007, to take place in Washington, DC. The faculty will include representatives of seven Excellence Award winning school districts, including two from California: Saugus and Visalia. Attendance at this very successful annual event is capped at 500, so prompt registration is necessary to assure a place, at <http://www.iaqsymposium.com> Presentations from last year's event can also be viewed at that site.

EPA National Asthma Forum, May 31-June 1, 2007, Washington, DC. This is the follow-up to last year's very successful initial offering. Award winners and new Forum materials will be posted at <http://www.asthmacommunitynetwork.org>

CTA Healthy Air Healthy Kids IAQ project. A major new player was added in October 2006 when The California Endowment awarded a grant to the California Teachers Association "Teachers for Healthy Kids" program to fund their new "Healthy Air, Healthy Kids" project. In this statewide initiative, CTA will raise awareness of its members about school IAQ, and steps that they can take to avoid asthma triggers and encourage adoption of constructive IAQ policies and practices. IAQ Tools for Schools is included where Community Action to Fight Asthma (CAFA) coalitions are working on this objective. Along with RAMP/CAFA staff, we have been participating in the workgroup which is providing technical advice, as well as planning and helping to implement this project. Coordinators for CTA are consultants Janis Nielsen and Hellan Dowden. (Contact: Barbara Spark)

EPA HealthySEAT. HealthySEAT Version 2 Beta is now available for testing and comment until June 20, 2007. <http://www.epa.gov/schools>

EPA sponsored national asthma network. The Communities in Action for Asthma-Friendly Environments Network website, <http://www.asthmacommunitynetwork.org> has undergone substantial revision and upgrading. Seventeen California coalitions, organizations, and programs have joined the network.

Memorandum of Understanding to Reduce Health Risks from Secondhand smoke. The U.S. EPA and the U.S. Department of Health and Human Services (HHS) signed a Memorandum of Understanding (MOU) to improve the quality of life for Head Start and

Early Head Start families nationwide. The MOU establishes a framework between EPA's Indoor Environments Division (IED) and the HHS' Office of Head Start (OHS). The agencies intend to work together to conduct nationwide outreach to nearly a million families in an effort to deliver health risk reduction messages related to secondhand smoke and other environmental asthma triggers. Activities of the MOU can be read at: http://www.epa.gov/iaq/headstart/headstart_mou.html

Region 9 Grants. The 2007 Request for Proposals, Funding Opportunity *Indoor Environments: Reducing Public Exposure to Indoor Pollutants*, deadline for applications was June 8, 2007.

Region 9 IAQ Web Page. We have added an IAQ page to the Region 9 web site. A current highlight is a story about IAQ Tools for Schools at City Terrace Elementary School at LAUSD, where Principal Christopher Ortiz is an enthusiastic member of the district's IAQ Advisory Group. The site also provides a link to a six-minute IAQ Tools for Schools video, produced by Oakland Berkeley Community Action to Fight Asthma (CAFA), a project of the Ethnic Health Institute. <http://www.epa.gov/region09/air/indoor/index.html>

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U.S. Federal Interagency Committee on IAQ

<http://www.epa.gov/iaq/ciaq/>

-- Philip P. Jalbert (Jalbert.Philip@epamail.epa.gov)

Minutes for the October 17, 2007 meeting of the CIAQ featured two presentations: (a) *Photo Catalytic Oxidation (PCO)*, and (b) *Moisture Impacts of Active Subslab Depressurization (ASD) Radon Mitigation*. The next meeting of the CIAQ is Wednesday, February 13, 2008 at 1:00pm EST. More information, upcoming agendas and past presentations can be found the above website.

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FUTURE MEETINGS

Upcoming meetings of the CIWG-IAQ are scheduled as follows:

- March 12, 2008
- June 11, 2008
- September 10, 2008

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