

**TRI-TAC AIR COMMITTEE**  
**JANUARY 7, 2005**

Issue Summary

**1. WERF ODOR CONTROL TECHNOLOGIES ASSESSMENT**

Los Angeles County Sanitation Districts (LACSD) and CH2M HILL received a Water Environment Research Foundation (WERF) Odor Assessment grant for a multi-phase research program. The primary purposes of this study are to provide a working definition of odors, determine POTW odor sources, list known odor compounds of concern, provide odor assessment approaches, provide modeling techniques for odor emissions estimating and odor dispersion, and conduct field research on the most important odor issues. The first phase was primarily a literature search that was used to develop a field research agenda for the second phase studies. This phase also looked at what has been successfully used at industrial and agricultural sites to control odors and whether there is any application to POTWs. In the second phase of the study, the WERF team assessed potential origins of odors from biosolids processes following stabilization by anaerobic digestion. The research aimed at determining the means of odor generation in various dewatering, storage, and conveyance processes.

*Update:* An extensive sampling program, conducted at eleven WWTPs across the U.S. and Canada, resulted in a number of significant findings and correlations regarding how different processes affect odorous emissions from biosolids. Conclusions and correlations of the data were reported in a March 2003 preliminary Draft Phase 2 Report to the WERF Project Sub-Committee (PSC). At a workshop at WEFTEC in October 2003, Phase 2 findings were presented and discussed by experts in the industry. These comments were incorporated into the report and the final Phase 2 report was published by WERF in the Spring of 2004 and is available now.

Phase 3 of the overall program is currently underway. The overall purpose of this research is to seek ways to enhance anaerobically digested and dewatered biosolids to reduce odor intensity in the produced biosolids, and thereby reduce negatively perceived impacts on the environment or public when the biosolids are beneficially used on land. Phase 3 results will ideally present a roadmap for plant operators toward optimization of biosolids processing in an effort to reduce biosolids cake odors. This phase will be a two-year study, and will use the theories and strongest correlations formed in the Phase 2 work, incorporating laboratory (bench-scale) studies and manipulation of plant parameters at full

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scale, in order to identify the best means of reducing biosolids cake odors.

Currently, the Phase 3 work is focusing on pilot studies at the LACSD Joint Water Pollution Control Plant and laboratory studies being conducted on samples from various WWTPs around the country. At these facilities, side-by-side comparisons of dewatering facilities are currently being run, testing odor production of various means of chemical dewatering. In addition, laboratory studies are being run on the role of cations in odor production within the solids processing train. Various biosolids samples are being collected at facilities throughout North America to produce data points for this individual study.

The WERF team has mailed out a request to all WERF subscribers determining levels of interest in taking part in the Phase 3 program, either at the laboratory or full-scale level (or both), which may give specific results to participating plants that will help operators reduce their odors. Advanced digestion processes are of special interest to the Phase 3 team, as Phase 2 evidence suggests that these practices could lead to minimized odors in dewatered biosolids cake. In addition, the WERF team is currently soliciting help from dewatering equipment manufacturers and chemical vendors to participate in the full-scale studies that will be conducted at the selected WWTPs this summer.

Contact: Jay Witherspoon, CH2M HILL; Greg Adams, LACSD

**2. U.S. EPA REGION V REQUESTS INFORMATION ON VOC AND HAP EMISSIONS FROM COLLECTION SYSTEMS**

On September 17, 2004, the Air Enforcement and Compliance Assurance Branch of U.S. EPA Region V requested that the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) estimate volatile organic compounds (VOC) and hazardous air pollutants (HAP) emissions from its collection system using the WATER9 model. MWRDGC, a member agency of AMSA, requested AMSA's perspective on the use of the collection system component of WATER9.

Since 2002, AMSA has been serving as a member of the U.S. EPA Office of Air Quality Planning and Standards' (OAQPS) ad hoc WATER9 Advisory Group, specifically to address concerns that the model over-estimated WWTP emissions. As part of the model evaluation, AMSA raised significant issues related to the "new" collection system component. To date, AMSA has determined that the results generated by WATER9 are significantly different from the field-measured data, as well as from the results of two other collection system models (INTERCEPTOR and TOXCHEM+). In addition, issues of output consistency have been detected. Also, there is no way to replicate WATER9 computations by hand due to lack of documentation of the program's structure.

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As part of the WATER9 evaluation, AMSA is now comparing differences in model algorithms, to be followed by actual emissions testing. Until the WATER9 model can be refined so that it can more adequately characterize a collection system, AMSA believes it is premature to require its use to develop defensible emission estimates from POTW collection systems. AMSA has recommended that a workshop be held including EPA Region V and EPA Headquarters to develop a unified approach to dealing with collection system emissions.

**Note:** This is a new issue and will be updated in the next Issue Summary.

Contact: Greg Adams, LACSD; Jay Witherspoon, CH2M HILL

**3. CARB DIESEL AIRBORNE TOXIC CONTROL MEASURES (ATCMs)**

CARB has been working on several Airborne Toxic Control Measures (ATCMs) for diesel engines that have large impacts on POTWs, as they have the potential to force retrofits of existing diesel engines rated at 50 hp or larger. Workshops have been held to discuss draft regulations and regulatory concepts for stationary and portable diesel-fueled engines and heavy-duty diesel vehicles.

Tiered emissions standards have been set for stationary diesel emergency standby engines based on the number of hours they operate for maintenance and testing. Engines that operate fewer than 20 hrs/yr would not be required to meet specific standards. Engines operating more than 20 hrs/yr must be retrofitted to meet specified emissions standards. Emergency use of standby engines can be unlimited and does not count against these hour totals. Retrofits are phased in, and older engines (pre-1989) have to be retrofitted first, by January 1, 2006 if the owning agency has 3 or fewer engines or by January 1, 2007 if the agency has 4 or more engines. CARB is also working on changes to AB2588 risk assessment rules to make them consistent with the ATCM. These modifications to AB2588 may trigger facilities that were not in the air toxics program before into the program based on diesel risk.

Portable engines are defined as engines that are not self-propelled but that change locations at least once every twelve months. Portable diesel engines are required to comply with fleet standards starting in 2013. The emission standards will be averaged over an agency's "fleet" of portable engines. Along with the new portable diesel engine ATCM, amendments to the regulation for the Statewide Portable Equipment Registration Program have been proposed.

CARB has also proposed a diesel control measure for on-road heavy-duty diesel-fueled fleets owned and operated by public agencies, and public and private utilities. This regulation would affect all on-road vehicles with gross vehicle weight ratings of greater than 14,000 lbs owned or operated by a public agency or private utility. The ATCM would require phasing-in of Best Available Control Technology (BACT) for these vehicles between 2006 and 2011.

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**Update:** The CARB Board adopted the stationary and portable engine ATCMs, as well as revisions to the Portable Equipment Registration Program (PERP), on February 26, 2004. On November 8, 2004, the Office of Administrative Law (OAL) approved the Final Regulation Order for the stationary diesel engine ATCM. This rulemaking became operative on December 8, 2004.

Additionally, on January 4, 2005, the Final Regulation Order for the portable diesel engine ATCM was filed with OAL. The Office of Administrative Law has until February 16, 2005, to make a determination. On December 17, 2004, CARB posted the amendments to the regulation for PERP for a supplemental, second 15-day notice for public comments. As of January 7, 2005, the amendments to the PERP regulation have not been filed with OAL. The regulations, including 15-day changes and OAL final approval status, can be viewed on the CARB website:

- <http://www.arb.ca.gov/regact/statde/statde.htm> for stationary,
- <http://www.arb.ca.gov/regact/porteng/porteng.htm> for portable
- <http://www.arb.ca.gov/regact/portreg/portreg.htm> for PERP

As stated in previous Issue Summaries, the most contentious issue related to the adopted portable engine ATCM centered around the operation of engines near schools. The ATCM was adopted without language related to schools, but staff committed to submitting a staff report to the Board, with recommendations on the matter. However, no document has been available to the public as of January 7, 2005, and the final regulation submitted to OAL did not contain any language on schools.

On December 23, 2004, CARB posted a revised draft of the “Diesel Particulate Matter Control Measure for On-Road Heavy-Duty Diesel-Fueled Fleet Vehicles Owned and Operated by Public Agencies and Utilities” for review, with a deadline for comments of January 21, 2005. Low usage vehicles, defined as those vehicles operated less than 1000 miles or 50 hours per year over a five year average, are excluded from the implementation of BACT. In the previous draft, low usage vehicles were defined as those operated less than 1000 miles or 50 hours per year, but as a result of comments submitted by the BACWA, SCAP, and others, the definition now calculates hours and miles of operation over a 5-year average (to accommodate for an emergency situation that would require usage exceeding the annual mileage or hourly limitations). Draft language is available at:

<http://www.arb.ca.gov/msprog/publicfleets/publicfleets.htm>

In addition to the Diesel Fleet ATCM currently being developed, a Diesel Truck Idling rule was adopted by CARB on July 22, 2004.

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This new rule specifies that heavy-duty diesel vehicles have to be shut down after five minutes of idling. However, an exemption provides relief for most utility activities, since the rule does not apply when “providing mechanical extension to perform work functions for which the vehicle was designed and where substitute alternate means to idling are not reasonably available.” For more information on CARB’s newly adopted Diesel Truck Idling rule: <http://www.arb.ca.gov/toxics/idling/idling.htm>

Contact: Daniel McGivney, Eastern MWD; Jackie Kepke, CH2M HILL

### 4. RISK ASSESSMENT GUIDELINES

The California Office of Environmental Health Hazard Assessment (OEHHA) embarked on a process to update Health Risk Assessment Guidelines. They began this process by updating the toxicity values used in risk assessments. This took place in 1999-2001 and yielded increases in the toxicity of some compounds and toxicity decreases for others. The next phase of the update involved an overhaul of the Health Risk Assessment Guidance Manual. OEHHA's Health Risk Assessment Guidelines were officially released on October 2, 2004. This guidance manual replaces the 1993 CAPCOA Air Toxics Assessment Manual currently in use.

The assumptions contained in the new guidance manual have the potential to significantly raise project risks. Changes in breathing rate assumptions as well as exposure durations will raise residential receptor risk by about 30% and will raise worker receptor risk by about 32%.

Concurrently, CARB developed a new computer software for risk assessment, the Hot Spots Analysis and Reporting Program (HARP). This software allows for analysis and reporting of risk assessments consistent with the new OEHHA Risk Assessment Guidelines. It is available for download on their website at: <http://www.arb.ca.gov/toxics/harp/harp.htm>

CARB is also planning to put risk data, not just emissions data for AB2588 facilities on the web in the future. It will therefore be increasingly important to ensure that risk is calculated correctly and that data is right.

In October 2003, CARB issued a Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk that modifies the assumptions for residential receptors contained in the OEHHA Guidelines. This effectively keeps risk for residential receptors similar to previous levels. The assumptions built into the HARP Software reflect the Interim Policy. This Interim Policy does not modify assumptions for worker receptors, however, so project risks will likely be driven by risks to workers.

**Note:** As of January 7, 2005, there were no updates.

Contact: Jackie Kepke, CH2M HILL

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**5. WASTEWATER SECURITY**

Based on the recommendations from the September 11 Commission, wastewater and chemical security bills may be folded into legislation considered by Congress. The Wastewater Treatment Works Security Act, introduced last year in the Senate, would secure funding for enhancing the security of wastewater treatment works. The bill authorizes grants to conduct vulnerability assessments of publicly owned treatment works and to implement security enhancements to reduce problems identified in a vulnerability assessment. Though it does not require vulnerability assessments, the bill authorizes \$200 million for grants to POTWs to fund vulnerability assessments and enhance security at their facilities, with grants of \$150,000 per agency.

A vulnerability assessment requires an overall review of all aspects of a wastewater utility. The assessment will include the identification of procedures, operational countermeasures, and equipment improvements that can be implemented to reduce identified vulnerabilities to actions intended to disrupt the functioning of a plant. Preapproved basic security enhancements, such as access control equipment, intruder detection equipment, lighting, cameras, and fences, are eligible for funding once an assessment has been completed.

*Update:* In order to assist wastewater utilities in improving their security, WEF has developed a Wastewater Security Guidance Document. Development of this document was funded by U.S. EPA under the Water Infrastructure Security Enhancements (WISE) program, in conjunction with AWWA and ASCE. WEF will be providing training sessions. The document is free and available for download at:

[http://www.wef.org/watersecurity/guidance/Security\\_Guidance.jhtml](http://www.wef.org/watersecurity/guidance/Security_Guidance.jhtml)

Contact: Jackie Kepke, CH2M HILL

**6. CARB CONSUMER PRODUCTS REGULATION AMENDMENTS**

On December 9, 2003, CARB released their initial staff proposal for establishing new VOC standards for consumer products. The proposal includes a 3% VOC limit on "Toilet/Urinal Care Products." This category includes solid deodorizers such as urinal cakes. Since para (paradichlorobenzene or 1,4-dichlorobenzene) urinal deodorizers are 100% VOC, this proposal would basically ban para urinal cakes in California. It would also mean that para emissions from POTWs should drop to essentially zero once the regulation is fully implemented. This will be most important for POTWs that have to assess cancer risk caused by emission from their treatment plants (either under SCAQMD Rules 1401 and 1402 or the AB 2588 Toxic Hot Spots Program).

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**Update:** CARB adopted a ban on consumer products containing paradichlorobenzene on June 24, 2004. The regulation bans these products from being manufactured in California starting December 31, 2005. Beginning December 31, 2006, these products cannot be sold for use in California.

Other VOCs banned for certain uses in the new regulation include tetrachloroethylene (perc), methylene chloride, and trichloroethylene. These chemicals are used in adhesive removers, contact adhesives, general purpose degreasers, electronic cleaners, footwear/leather care products, and graffiti removers.

Contact: Ann Heil, LACSD

**7. CARB'S OFF-ROAD LARGE SPARK IGNITION (LSI) EQUIPMENT RULE**

CARB has begun to develop a rule for Off-Road Large Spark Ignition (LSI) Equipment. This general category is defined as equipment powered by gasoline or liquefied petroleum gas (LPG), with a power rating of greater than 25 hp. Examples of equipment included in this category are: forklifts, street sweepers, portable generators, large turf care equipment, and specialty vehicles.

Because the U.S. EPA has sole authority to control new farm and construction equipment under 175 hp, attempts are being made by CARB to minimize or eliminate overlapping regulations. Therefore, the final regulation will affect a smaller subset of all the equipment included in the off-road LSI category.

The regulation will establish more stringent emission limits for both new and in-use equipment. The level of emissions control will depend on fleet size. However, exemptions are made for small and low-use fleets. Small fleets (1-3 units) are expected to meet a 3.0 g/bhp-hr emission level by December of 2010. This level can be achieved by retrofitting, repowering, or retiring old equipment. Low-use fleets (used less than 250 hours/year) can use lower cost retrofits until 2013.

**Note:** This regulation is still under development. The last workshop was held in August 2004. The next workshop has not yet been scheduled. Information is available at <http://www.arb.ca.gov/msprog/offroad/orspark/orspark.htm>

Contact: Jackie Kepke, CH2M HILL

**8. DISTRIBUTED GENERATION REVIEW**

Over the last few months, the CARB Distributed Generation (DG) work group has been discussing DG equipment fueled by waste gases, both from landfills and digesters. The work group is developing a certification method for small DG equipment (micro-turbines and fuel cells), which will serve in lieu of obtaining a

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permit from the local air district. Larger DG equipment will still require a permit to operate from the district.

**Update:** At the last DG work group meeting, held on October 22, 2004, the work group reviewed preliminary composition lists for landfill and digester gases. The composition lists will be used to create surrogate gases that manufacturers can then use to certify their equipment. The following table lists the preliminary composition of digester gas, as compiled by CARB staff. In addition, the HHV suggested for digester gas is 300-600 Btu/scf.

CARB DG Work Group – Suggested Digester Gas Composition

Gas	Concentration
Methane	30% - 65%
C4+	<1%
CO <sub>2</sub>	30% - 40%
N <sub>2</sub>	1% - 3%
Sulfur (compound unspecified)	0.3 ppm – 20 ppm

In the meeting, concerns were voiced regarding the broad spectrum of compounds covered under the sulfur category. CARB staff recognized that sulfur composition needs to be specified in more detail, and will work towards that end by the next meeting.

The next work group meeting is tentatively scheduled for January 13, 2005. A preliminary proposal will be ready for review soon.

Contact: Dan McGivney, Eastern MWD