



AIR ISSUES & REGULATIONS COMMITTEE

A Committee of the Bay Area Clean Water Agencies

Winter 2010

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Newsletter Highlights

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- Renewable Energy Credit Opportunities
- Defining Waste-Derived Fuel
- Preparing for 2009 Mandatory GHG Reporting: One WWTP's Perspective
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Mandatory Reporting in 2010: We're Here to Help!

Written by: Jim Sandoval/CH2M HILL

(Adapted from *California Mandatory Reporting* article in CASA January 2010 Newsletter by Jacqueline Kepke/CH2M HILL)

BACWA will be hosting a workshop on AB 32 Mandatory Reporting of Greenhouse Gases (GHGs) at EBMUD's headquarters on February 17, 2010.

The half day workshop will be lead by CH2M HILL and will include an overview of the existing regulatory requirements and the proposed updates, and a hands-on training on implementing an emissions inventory.

California Air Resources Board (CARB) adopted a Mandatory Reporting Regulation for Greenhouse Gases in 2007, which kicked into effect in January 2009. Wastewater agencies are required to report if they trigger the thresholds in one of two categories – General Stationary Combustion and Cogeneration/Electric Generation. Reporting for stationary combustion is required if combustion CO2 emissions are greater than 25,000 metric tons. Cogeneration and electric generation facilities are subject to the mandatory reporting requirements if they have a total nameplate generating capacity greater than 1 MW and they

emit at least 2,500 metric tons of CO2 per year from electricity. Reporting must be done through CARB's Mandatory Reporting Tool.

Those agencies that were required to report in 2009 (for 2008 emissions) should have already done so. Approximately seven BACWA POTWs reported in 2009. Reports for 2010 (for 2009 emissions) are due April 1. While verification was optional in 2009, all 2010 reports must be verified by an accredited verification body by October 1, 2010.

The Mandatory Reporting Regulation does differentiate between biogenic emissions (those CO2 emissions stemming from combustion of biomass) and anthropogenic emissions generated from combustion of fossil fuels, however both types of emissions must be reported and do count toward the reporting threshold.

Building on lessons learned from 2009 reporting, BACWA submitted comments to CARB on ways that the Mandatory

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Save the Date!
February 17, 2010
BACWA Mandatory Reporting Workshop

AIR Committee: A Year in Review

Written by: Jim Sandoval/CH2M HILL

2009 continued to be a busy year for the AIR Committee as climate change and traditional air quality regulations continued to expand. In 2009, the AIR Committee accomplished the following.

- Continued to keep the BACWA AIR Committee and Board apprised of the most up to date on local, state and national air quality and climate change issues through quarterly meetings, emails, Board reports, and the spring newsletter.
- Attended a CA Air Resources Board workshop on implementation of the AB 32 Scoping Plan and disseminated information to the AIR Committee and developed a summary to the Board that outlined the impact to the wastewater/water sector.
- Helped spearhead and host the February 2009 Climate Change Summit where POTWs from throughout CA prioritized AB 32 climate change issues and developed a strategy for the California Wastewater Climate Change Group (CWCCG) to lead a statewide climate change advocacy initiative.
- Published AIR Committee Spring Newsletter – AB 32 Special Edition
- Members filled out surveys to assist Pramod Kulkarni of the CA Energy Commission who is working on an Assembly Bill 1613 that encourages cogeneration, especially at the POTW. The bill requires California electric utilities to provide a feed-in-tariff (a standard power purchase agreement) for any cogeneration system under 20 MW that meets an eligibility criterion. The bill also makes financing available for municipally owned waste treatment plants.
- Sponsored the BACWA workshop on the AB 32 Mandatory Reporting of Greenhouse Gases that included attendance of approximately 50 participants representing 30 POTWs from around the state. The workshop was led by CH2M HILL and included invaluable participation of Renée Lawver of the CA Air Resources Board.
- Sent Renée Lawver/CARB a letter that summarized member comments regarding the Mandatory Reporting process. Ms. Lawver responded as follows: "Thank you for these thoughtful suggestions

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Mandatory Reporting: National and State Levels

Written by: Jim Sandoval/ CH2M HILL

Federal Mandatory Reporting

Adapted from "Climate Change Opportunities & Challenges for WWTPs"
Paper accepted for the proceedings of the March 2010 WEF Odor/Air Specialty Conference

On September 22, 2009, the USEPA Administrator signed a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States, as required by the Fiscal Year 2008 Consolidation Appropriations Act. The preamble and final regulatory text will be published in the Federal Register (Volume Number 74; Document Number E9-23315) in 40 CFR Parts 86, 87, 89, 90, 94, 98, 1033, 1039, 1042, 1045, 1048, 1051, 1054, and 1065.

The rule requires reporting of annual emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and other fluorinated gases (e.g., nitrogen trifluoride and hydrofluorinated ethers (HFEs)) as defined in 40 CFR part 98, subpart A.

The rule's reporting threshold is generally 25,000 metric tons per year (tpy) of actual emissions of CO₂ equivalent (CO_{2e}). Facilities that meet or exceed this threshold are required to report all source categories for which there are methods in the rule. Generally, facilities that emit less than 25,000 tpy of CO_{2e} would not be required to report emissions.

The rule defers the entire wastewater treatment section 40 CRF part 98 subpart II for further analysis and future promulgation. Section III subpart II, of the Preamble to the

Mandatory Reporting of GHGs states, "Please note, as originally proposed for this rule, centralized domestic wastewater treatment plants continue to be excluded." However, if a wastewater treatment plant's (WWTP) total combustion GHG emissions exceed 25,000 tpy CO_{2e}, it is subject to the reporting requirements of part 98, subpart C—General Stationary Fuel Combustion Sources.

Section 98.2(b)(2) excludes CO₂ resulting from the combustion of biomass from the reporting requirement, but it includes CH₄ and N₂O emissions. Accordingly, the CO₂ generated from biogas (e.g. digester or landfill gas) combustion and sludge incineration would not count towards the 25,000 tpy of CO_{2e} threshold because biogas and sludge fall within the definition of biomass stated in section 98.6. However, CO₂ from combustion of biomass still needs to be reported, per section 98.3(c)(4), if a facility's anthropogenic emissions exceed the threshold.

CH2M HILL contacted the USEPA for clarification on the exclusion of biomass from CO_{2e} emissions. EPA responded in an email: "Biogenic CO₂ from the combustion of biomass (such as a digester gas that is a bio-gas) is not considered in the emission calculations for determining applicability of the rule. Only CH₄ and N₂O emissions from

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CARB Mandatory Reporting in 2010! (cont. from pg. 1)

Reporting Regulation and the reporting tool could be improved. CARB staff has been receptive to our comments and has already made changes to the tool based on our requests. Based on our feedback, they are also considering modifying the rule to require less frequent monitoring of digester and landfill gas heat content.

CARB is planning additional changes to the Mandatory Reporting Regulation to align with the Federal Mandatory Reporting Regulation, adopted by USEPA last year, and to support the cap and trade program. Draft amendments to the Mandatory Reporting Regulation are expected to be released in Spring 2010 and will move forward in parallel with the California Cap and Trade Regulation with adoption slated for October 2010.

Attachment 1 of the November 24, 2009, PRELIMINARY DRAFT REGULATION FOR A CALIFORNIA CAP-AND-TRADE PROGRAM lists the anticipated changes to California's regulation for the Mandatory Reporting of Greenhouse Gas Emissions to support the proposed cap and trade regulation, as follows:

- ARB staff will propose modifying the reporting threshold to be based on CO₂ equivalent emissions (CO_{2e}), rather than the current CO₂ only emissions.
- ARB staff will propose lowering the reporting threshold to 10,000 metric tons CO_{2e}, rather than the current 25,000 metric tons CO₂, only to monitor emissions below the facility cap threshold. Third-party verification would not be proposed for facilities emitting between 10,000 MT and 25,000 MT CO_{2e}.
- ARB staff will propose annual verification of emissions data reports for all facilities above the cap threshold of 25,000 MT CO_{2e}. Third-party verification would not be proposed for emissions data reports for facilities below the

cap threshold.

- ARB staff will propose requirements for additional reporting of industrial process and fugitive emissions, and for reporting of emissions by upstream suppliers of fuels and industrial gases. Quantification methods for combustion sources will be consistent by fuel type rather than dependent on industrial sector.
- Electricity sector reporting requirements will be revised, in consultation with the California Public Utilities Commission and the California Energy Commissions, to facilitate reporting by first deliverers. Requirements developed for a load-based point of regulation will be modified to be consistent with the first deliverer approach. Changes to emissions distribution requirements for cogeneration systems may be proposed.
- The deadlines for reporting and verification are subject to change based on market needs and reporting deadlines. The amount of time between reporting and verification deadlines is likely to be reduced to facilitate timely allowance settlement.
- To reduce duplicative reporting, ARB will work with U.S. EPA to facilitate a single reporting mechanism to satisfy both state and federal mandatory reporting requirements. ARB staff may propose changes to California's reporting requirements to make them consistent with the final federal rule for GHG reporting. Some options in the federal rule may be limited to assure consistency and rigor in emissions accounting for the cap-and-trade program.
- Additional changes to general provisions, definitions, quantification methods, and verification requirements will be considered to assure the reporting regulation provides the consistency and rigor needed to support the cap-and-trade program.
- Finally, ARB plans to revise the existing enforcement

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Preparing for 2009 Mandatory Greenhouse Gas Reporting: One Wastewater Treatment Plant's Perspective

Written by: Joanna De Sa/ City of Sunnyvale

In 2009, the City of Sunnyvale's Water Pollution Control Plant (SWPCP) was one of approximately 13 "Sewage Treatment Facilities" or "Water, Sewage and Other Systems" in California reporting 2008 Greenhouse Gas (GHG) emissions¹ as a result of the mandatory reporting requirements of the Global Warming Solutions Act of 2006 (AB 32). AB 32 utilizes the inventory estimates as a basis for California's GHG emissions reduction program.

The mandatory reporting threshold for AB 32 is 25,000 metric ton[nes] of carbon dioxide. According to the FAQ for the Mandatory Reporting Program, that equates to more than 471,520 MMBTu (460,000,000 scf) of natural gas, or 12,000 short tons of coal. Another threshold – and the one that put Sunnyvale on the list – is when a facility has a generating capacity of more than 1 MW of electrical AND emits at least 2,500 metric ton[nes] of CO₂ from generating activities.

In 2008, the SWPCP had a nameplate power generating capacity of 1.6 MW and a calculated emissions value of over 12,000 metric tons of CO₂e (carbon dioxide equivalent), requiring us to begin mandatory reporting, and to begin the process of hiring a verifier for 2009 data.

As one of the key components of the mandatory reporting process in AB 32, the development and maintenance of a GHG Inventory Management System (system) that is transparent, accurate and independently verifiable² is recommended. According to the California Air Resources Board (ARB), if the system is effective, it will lead the reporter and verifier through the data collection and reporting process; if transparent, it will allow verifiers and regulators to independently reconstruct and evaluate the facility's inventory process and allow the examination of calculation methods, and emission factors, and access supporting and reported data; if complete, it will document calculation methods, data collection procedures, and emission factors.

When the SWPCP began the process of gathering data necessary to report 2008 emissions, we realized that the methods we used to collect gas (landfill, digester gas, and natural gas are used in a tri-gas blend for our generators), and energy data were not going to meet the requirements outlined above. Much of our data were from hand-written logs, sometimes entered into electronic spreadsheets, sometimes not. Calibration records were stored in hand-written logs stored in a localized area of the plant. There were no written procedures for the use, maintenance and calibration of the measurement equipment except those provided in the various meter Operations and Maintenance (O&M) manuals, and those O & M manuals were kept in a non-centralized location.

In addition, determining whether the equipment met the accuracy requirements of 5% was difficult as some of the information from older models was not complete. None of the data mentioned above was checked once it was entered on the written logs – in other words, there was no "quality check" of the data.

The electrical generation information from our 3rd-party

vendor was difficult to understand, and even more difficult to store – in electronic form, the large zipped documents we received on a monthly basis were not stored on the main drive for fear of taking up too much room on our server. Instead, they are stored on a local computer – accessible to only those with a password.

As we look to generating the data for our 2009 emissions report, we are just now implementing our GHG Inventory Management System. As a NAICS code 2213 – Water, Sewage and Other Systems – our primary sector was "Other" – wastewater treatment is not a primary sector listed in the reporting tool. Our secondary sector, Electricity Generation, leads us directly to section 95111 (Subchapter (a) Electricity Generating Facilities. The operator of an electricity generating facility specified in section 95101(b) shall include the following information in the GHG emissions data report for each report year and shall meet the requirements specified in sections 95111(c)-(i) as applicable to the facility when calculating emissions for inclusion in the report.

For each facility, operators shall include:

1. ARB designated facility identification number (ID), nameplate generating capacity in megawatts (MW), and net power generated in the report year in megawatt hours (MWh);
2. Fuel consumption by fuel type, reporting in units of million standard cubic feet for gases, gallons for liquids, short tons for non-biomass solids, and bone dry short tons for biomass-derived solid fuels;
3. Average high heat value by fuel type, reporting in units of MMBtu per unit of fuel as specified in section 95111(a)(1)(B), if measured, based on values measured by the operator or the fuel supplier as specified in section 95125(c)(1)(A)-(C);

Average carbon content, as a percent, by fuel type, if measured, based on values measured by the operator or the fuel supplier as specified in section 95125(d);

CO₂, N₂O, and CH₄ emissions from stationary combustion in metric tonnes as specified in section 95111(c)-(d) by fuel type;

For facilities located inside California, wholesale sales (MWh) exported directly out-of-state, if known, that are additional to electricity transactions reported as specified in section 95111(b)(2)(E).

The operator shall report the region of destination as Pacific Northwest (PNW) or Southwest (SW).

The SWPCP uses measurement based methodologies for calculating our emissions. As a result, the same regulations note that each operator shall retain the following information for at least five years after the submission of the emissions data report:

- (1) The list of all emission sources monitored;
- (2) Collected monitoring data;
- (3) The data used to assess the accuracy of emissions from each emissions source, categorized by process;
- (4) Quality assurance and quality control information including information regarding any

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¹ **MANDATORY REPORTING DATA – EMISSIONS REPORTED FOR CALENDAR YEAR 2008**, REPORT GENERATED DECEMBER 9, 2009, CALIFORNIA AIR RESOURCES BOARD.

² **INSTRUCTIONAL GUIDANCE FOR MANDATORY GREENHOUSE GAS EMISSIONS REPORTING, CHAPTER 4: GREENHOUSE GAS INVENTORY**, PAGE 4-1, 2008, CALIFORNIA AIR RESOURCES BOARD.

CARB's Cap-and-Trade Program

Written by: Jim Sandoval /CH2M HILL

On November 24, 2009, the California Air Resources Board (CARB) circulated the OVERVIEW - PRELIMINARY DRAFT REGULATION FOR A CALIFORNIA CAP-AND-TRADE PROGRAM (PDR) for public comment. In its aim to reduce greenhouse gas (GHG) emissions to 1990 levels by 2020, the state will implement a cap and trade (C&T) program to reduce 85% of California's GHG emissions. The PDR lays out the proposed approach to implement the program and includes the draft regulation and a list of the sectors to be regulated under C&T.

C&T is one of the key measures in the AB 32 Scoping Plan to reduce California's contribution to climate change. The purpose of C&T is to reduce GHG emissions through a market-based regulatory system that minimizes the financial impact to industry, government and the public and that compliments other Scoping Plan measures and future federal climate change regulations.

How would it work?

C&T is designed to provide a regulatory approach that utilizes market mechanisms to control pollution (i.e., GHGs) by setting a cap on allowed emissions that declines over time via a stepped approach. Each period prior to a cap reduction is known as a compliance period. California is considering three year compliance periods for its program.

California has embraced C&T over command and control policy (the traditional pollution reduction approach) because in theory it enables entities to reduce their pollutants with more flexibility and less financial impact, while meeting the mandate of AB 32.

The proposed C&T approach is summarized as follows.

1. A cap (i.e., limit) is set by the State on the amount of pollutants (GHGs) that can be emitted.
2. This limit is measured by the use of allowances. Each allowance equals one metric ton of carbon dioxide equivalent. The total number of allowances created will equal the sum of emissions from all regulated entities.
3. Allowances will be distributed to entities regulated by the cap through auctions and/or they will be freely distributed by the State
4. GHG polluters that are below the cap threshold may develop GHG reduction, avoidance or sequestration projects (i.e., offsets) that reduce their total emissions and create carbon offset credits (COCs). These COCs may be sold to capped polluters to help them meet their regulated GHG limit. Offset projects will require validation by the State to assure the GHG reductions are legitimate, additional to what would have happened otherwise, and of good quality.
5. Both allowances and offsets will be known as compliance instruments. Compliance instruments may be traded (i.e., sold) among entities to enable them to meet their regulated annual GHG limit in the most economic manner.
6. At the end of each compliance period, regulated polluters will be required to provide the State with enough compliance instruments to match their emissions during this time period.
7. The PDR limits the number of COCs in a capped entity's total compliance instruments to four percent.

How will the California C&T program link with other programs?

California's C&T program will link with the regional partners of the Western Climate Initiative (WCI) to create a regional market system. The partners include seven western states, including California, and four Canadian provinces. Their core mission is to ultimately have a regional C&T program that would regulate nearly 90 percent of the GHG emissions in WCI states and provinces and economize the reduction of

GHGs through economies of scale and that would incubate investment and innovation in the clean technology sector.

"Federal climate change legislation is still being debated in Congress. In the meantime, ARB is moving forward with the development of a cap-and-trade program. Once a federal program is in place, California along with states and provinces in other regional cap-and-trade programs (e.g. WCI, the Regional Greenhouse Gas Initiative, and the Midwestern Regional Greenhouse Gas Reduction Accord) will work to link and/or transition to the national program." (PDR)

California's C&T may also allow compliance instruments from external programs to be utilized in its program to help capped entities meet their emissions cap. These external compliance instruments under consideration include:

- Allowances and COCs issued by WCI Partner Jurisdictions
- Certified Emission Reductions issued under the United Nations' Clean Development Mechanism
- Climate Reserve tons issued by the Climate Action Reserve

How will POTWs be impacted by California's C&T program?

Wastewater treatment process GHG emissions are not being regulated at this time. The only emissions generated at a wastewater treatment facility that will count towards the cap include general stationary combustion (GSC) of fossil fuels (e.g., natural gas utilized in cogeneration systems and boilers) that exceeds 25,000 metric tons CO₂e/year. According to the PDR, "most biomass fuel combustion emissions from stationary sources would not create an obligation to surrender allowances." However biomass combustion emissions will continue to be required to be reported under the state's Mandatory Reporting of GHGs program.

Timeline for CARB's C&T Program

- Spring 2010 – proposed draft C&T regulation circulated for public review & comments
- September 2010 – public release of final draft C&T regulation
- October 2010 – CARB considers C&T regulation for adoption
- Fall 2011 – initial allowances auction
- January 1, 2012 – first 3-year compliance period of C&T program begins, targeting approximately 600 of the state's largest GHG sources, along with imported electricity
- 2015 - the second compliance period begins and the following entities will be added to the C&T program:

Industrial fuel combustion at facilities with emissions below 25,000 MTCO₂e, and all commercial and residential fuel combustion of natural gas and propane transportation fuels.

For more information:

<http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>

www.bacwa.org – see Spring 2009 BACWA AIR Newsletter Article on C&T

Adaptation Cost Report Summary

Written by: Jim Sandoval Adapted from "Climate Change Opportunities & Challenges for WWTPs"
Paper accepted for the proceedings of the March 2010 WEF Odor/Air Specialty Conference

Most of the media attention and regulations around climate change have been focused on reducing GHG emissions to avoid climate change. However there are numerous reports from the global scientific community that state climate change is already occurring and we need to prepare for its impacts. Accordingly, planning ahead for climate change adaptation is an important issue that POTW managers need to take seriously and integrate into facility master planning and capital improvement and operational budgeting. A recent study commissioned by the National Association of Clean Water Agencies (NACWA) and the Association of Metropolitan Water Agencies (AMWA) estimates the cost for US wastewater and water utilities to respond to the impacts of climate change through 2050 could range from \$448 to \$944 billion (ref NACWA/AMWA).

Climate change may manifest in the form of increased extreme precipitation events, increased drought events, and/or sea level rise and storm surges. There are numerous issues that may impact wastewater collection, treatment and discharge systems and operators should be prepared. Some of these issues were introduced in the NACWA/AMWA study and a brainstorm matrix drafted by staff of the Sanitation Districts of Los Angeles County (LACSD), as follows.

- Greater necessity for stormwater storage and treatment facilities during extreme storm events
- Facility and infrastructure flooding
- Potential need to accommodate both reduced drought flows and greater stormwater flows that do not coincide seasonally
- Ocean level rise impact on total discharge head of pump stations
- Impacts to temperature-dependent treatment processes
- Activated sludge efficacy affected by warmer air and

warmer water temperatures

- Possible negative salt balance (excessive salt levels) in biosolids cakes
- Negative impacts on chlorine residuals with elevated wastewater temperatures
- Increased sulfide generation due to higher temperatures and substrate concentrations
- More sanitary sewer/combined sewer overflows caused by higher inflow from more intense storms
- Very significant impact of peaking factors on plant design and hydraulics
- New pumps and pipes will be needed
- Rehabilitated and expanded dikes will be needed
- Receiving water quality impacts
- Need for more decentralized treatment
- Increased concentration of sewage, creating odor, treatment process and other problems
- Increased treatment requirements and wear on facilities due to higher peak flows and handling of higher concentrations of solids and sulfides
- Higher energy demands
- Expanded regulations for wet weather management
- Concentration impacts caused by loss of dilution during droughts
- Greater demand for recycled water and direct reuse facilities
- Greater demand for reuse of urban runoff and Low Impact Development (LID) to maximize the infiltration and/or capture of stormwater in communities to increase local water supplies

CWCCG Updates

Written by: Jackie Kepke/ CH2M HILL (adapted from the January CASA Newsletter) and Stephanie Cheng/ EBMUD

CASA Joins CWCCG

In June 2009, CASA joined forces with the Bay Area Clean Water Agencies (BACWA), Central Valley Clean Water Association (CVCWA), and the Southern California Alliance of POTWs (SCAP) to be part of the California Wastewater Climate Change Group (CWCCG). The mission of CWCCG is to address climate change policies, initiatives, and challenges through a unified voice advocating for California wastewater community perspectives. CWCCG also serves as a resource to support and inform the wastewater community on current climate change issues.

While at the international and national levels, climate change policies are moving slowly forward, here in California, we have set some of the most aggressive targets for greenhouse gas reductions and renewable energy in the world. California is being held as a model for sub-national government action on climate change, which Governor Schwarzenegger reinforced to the Copenhagen climate conference in December. As California's policies become solidified in rulemaking over

the next several years, it will be increasingly important for the wastewater community to have a strong voice in the discussion.

As CWCCG's Program Manager, I am pleased to provide this first installment of climate change regulatory updates for CASA members. As you will read, CWCCG has already had some success in its first year of regulatory advocacy, and we look forward to an eventful year to come!

Cap & Trade Meeting

CWCCG met with CARB staff in November 2009, prior to the release of the draft Preliminary Draft Regulation (PDR) to ask for exclusion of emissions from biomass fuel combustion from the C&T system. CARB was responsive to CWCCG's comments and proposed in the PDR to exclude fugitive and biomass emissions from the surrender obligations required under a C&T system. CWCCG further submitted a comment letter focusing on: exclusion of POTWs from a cap; support for CARB's decision to exclude fugitive and biomass emissions from the cap requiring surrender obligations; and proposing to

[See Page 2 for continued article]

Climate Action Reserve Offset Protocol for Organic Waste Digestion

Written by: Stephanie Cheng/East Bay Municipal Utility District

The Climate Action Reserve (Reserve) is a national greenhouse gas (GHG) offsets program that establishes regulatory-quality standards for the development, quantification and verification of GHG emissions reduction projects in North America. The Reserve issues carbon offset credits known as Climate Reserve Tonnes (CRT) generated from these reduction projects, and tracks the transaction of credits over time in a transparent, publicly-accessible system. The Reserve is the parent company for the California Climate Action Registry (California Registry), which was created by the State of California in 2001 to address climate change through voluntary calculation and public reporting of emissions. In the future, the Reserves standards may be adopted by the California Air Resources Board for use in California's up and coming regulatory Cap-and-Trade program.

In October 2009 the Reserve adopted the Organic Waste Digestion Project Protocol (Protocol) – Avoiding Methane Emissions from Anaerobic Digestion of Food Waste and/or Agro-Industrial Wastewater. The purpose of the Protocol is to provide guidance to account for, report, and verify GHG emission reductions associated with the diversion of organic waste and/or wastewater to a biogas control system (e.g., anaerobic digester). Under this Protocol, eligible organic waste streams include liquids or solids that would otherwise have been managed anaerobically with uncontrolled release of the resulting methane to the atmosphere (e.g., lagoons, ponds, tanks or pits for liquid organic waste, and landfill for solid waste).

In order to be eligible to create CRTs under the Protocol, the project (e.g., anaerobic digester) must meet five eligibility rules related to:

- Location – Project must be located in the U.S. and its territories;
- Project Start Date – Digestion of eligible feedstock has

to have begun within six months of submission of the project to the Reserve;

- Anaerobic Baseline – Project developer must confirm that the eligible waste stream was previously handled anaerobically with uncontrolled methane release;
- Additionality – Project must satisfy a performance standard test verifying that under common practice the eligible feedstock would likely result in methane emissions. Project must also satisfy a legal requirement test meant to ensure that a project would not otherwise have occurred due to federal, state or local regulations or other legally binding mandates; and
- Regulatory Compliance – Project must meet all applicable laws relevant to the project activity.



Item to Note:

CRTs are available for eligible **digesting** facilities, not the waste source facility (i.e. landfills).

The protocol estimates avoided emissions over a ten year crediting period. Biosolids/sludge is not an eligible waste stream under this protocol. The Reserve believes that it is common practice on a national level to handle biosolids/sludge in a manner that does not typically result in the uncontrolled release of methane to the atmosphere. However, wastewater facilities that are co-digesting may have organic waste streams that are eligible for the development of CRTs.

For more information:

<http://www.climateactionreserve.org/how/protocols/adopted/organic-waste-digestion/current/>

Defining Waste-Derived Fuel

Written by: Jim Sandoval/ CH2M HILL

Adapted from "Climate Change Opportunities & Challenges for WWTPs"

Paper accepted for the proceedings of the March 2010 WEF Odor/Air Specialty Conference

Many waste-derived alternative fuels have a lower carbon intensity than traditional fossil-based transportation fuels. There are a number of waste-derived alternative fuel opportunities at WWTPs, including¹:

- Sewage digester gas (DG) to compressed natural gas (CNG), liquefied natural gas (LNG), pipeline natural gas, electricity, and hydrogen
- Biosolids to compressed natural gas (CNG), liquefied natural gas (LNG), pipeline natural gas, electricity, hydrogen and biodiesel
- FOG (collected from restaurants or sewers) to biodiesel
- Green waste to cellulosic ethanol
- Municipal waste to ethanol, Fischer-Tropsch (FT) diesel, and electricity
- Landfill gas (LFG) to liquefied natural gas (LNG), pipeline natural gas, electricity, and hydrogen

The Energy Independence and Security Act of 2007 requires that the USEPA revise and implement regulations to ensure that gasoline sold in the US contains a minimum volume of renewable fuel. The Renewable Fuel Standard (RFS) program will increase the volume of renewable fuel required to be blended into gasoline from 9 billion gallons in 2008 to 36 billion gallons by 2022. The new RFS program regulations are under development.

In California, the AB 32 Low Carbon Fuel Standard (LCFS) aims to reduce the carbon intensity of the state's transportation fuel supply by 10% by 2020. CARB will adopt and implement an LCFS program by 2010. Several proposed bills to adopt a LCFS have been introduced to the 110th Congress, but none of them were adopted.

The Los Angeles County Sanitation Districts (LACSD) and the CWCCG are working with the USEPA and CARB to educate them on the resources that POTWs can contribute to help achieve the RFS and LCFS goals. This effort may provide opportunities for POTWs to help contribute to lowering the carbon intensity of transportation fuels use in the U.S.

¹Adams, Gregory M. and Stephen R. Maguin. Letter to ARB: *Consideration for Waste-Derived Alternative Fuels in the Proposed Low Carbon Fuel Standard (LCFS)*

California's Upcoming Renewable Energy Credit Opportunities

The California REC Market

Adapted from articles written by: by Andre Schmidt and Mark McDannel/
LACSD (reprinted with permission from SCAP January 2010 Newsletter)

On December 23, 2009, the California Public Utilities Commission (PUC) issued a Proposed Decision that would create a Tradable Renewable Energy Credit (TREC) market. The nearly 100-page Proposed Decision includes the following:

- Unbundled RECs, procured and traded separately from the underlying energy, will be allowed;
- RECs generated on or after January 1, 2008 may be traded and procured separately from underlying energy;
- RECs must be traded within WREGIS accounting system;
- RECs compliance is limited to 3-year usage rule, i.e. must be used against RPS within 3 years of actual generation;
- IOUs are limited to a 40% REC usage cap for annual compliance obligations, beginning with 2010 compliance year;
- Levelized REC Cost Cap of \$50/credit. Each credit equals one MWh of generation from eligible renewable generation facility.

Comments were due on January 19, 2010, and a draft regulation is expected in March 2010.

This could be a significant and positive decision for POTW's that generate, or are considering generation, of renewable energy. It would provide an additional income source for POTWs with renewable self-generation facilities that use the power on-site. It is anticipated that the market value of these TRECs will be in the range of \$20 to \$30 per MW-hr, which would mean up to \$26,000 in annual revenue per 100 kW of renewable generation.

In order to qualify renewable generation for the TREC market, it must be certified with the Western Renewable Energy Generation Information System (WREGIS).



A 250 kW Fuel Cell at the Palmdale, CA WWTF

CA Renewable Portfolio Standards

Written by: Jackie Kepke/ CH2M HILL (Adapted from the January 2010 CASA Newsletter)

In Executive Order S-21-09, Governor Schwarzenegger directed CARB to adopt a regulation by July 31, 2010, requiring the state's energy utilities to meet a 33 percent renewable energy target by 2020. CARB released a Concept Outline of their proposed approach to the Renewable Electricity Standard (RES) in October 2009.

In the RES, CARB plans to maintain the same eligible resources or fuels currently allowed under the existing Renewable Portfolio Standard (RPS). This is a good thing for the wastewater community, as eligible resources currently include biodiesel, biomass, digester gas, and landfill gas.

CWCCG's primary interest in the RES is the issue of renewable energy credits (RECs). At present, there is a lot of red tape surrounding who owns the RECs as a new project is developed. Under the CARB proposal, RECs traded separately from energy generation would be eligible for the RES, thus un-bundling the RECs from the electricity itself and allowing wastewater agencies to sell RECs generated by their renewable energy projects. Un-bundling of RECs is a very controversial topic, as it influences how out-of-state renewable energy can be used to satisfy California requirements. CWCCG will continue to advocate for a tradable REC market as a way to incentivize development of renewable energy at water and wastewater agencies. The next draft of the RES Regulation is expected in March and will include a resolution of CARB's evaluation of how TRECS fit into the RES.

For more information: www.wregis.org or Contact Mark McDannel of LACSD at MMcDannel@lacs.org

AB 1613 - New Legislation for Combined Heat and Power Units

Written by: Randy Schmidt/ Central Contra Costa Sanitary District

The California Energy Commission (CEC) conducted three public workshops on AB 1613: Waste Heat and Carbon Emissions Reduction Act (signed in October 2007). The last workshop conducted in mid-October 2009, provided details on the draft AB 1613 guidelines, which sets the minimum requirements for a combined heat and power (CHP) facility to be a CEC certified CHP facility. The implied thinking here is that power from a CEC certified CHP facility is high efficiency generation and would be worth a premium on the open energy market. While power from a CEC certified CHP facility is not "renewable," it is much more efficient than ordinary gas turbine electric generation, so it is kind of grey power (in-between renewable and low efficiency fossil fuel).

The major requirements for a CEC certified CHP are as follows:

1. System that produces electricity and thermal energy from a single fuel that:
 - a. Is grid interconnected
 - b. Meets on site thermal demand
 - c. Complies with GHG Emissions Performance Standard in Section 2843 (f)
2. As an Eligible customer generator:
 - a. Generating Capacity of not more than 20 MW
 - b. Two way time-of-use meter
3. AB 1613 Requirements on CHP System Performance
 - a. No de facto wholesale generation with guaranteed purchases (once CEC verified as high efficiency, utilities will want to purchase excess electricity to decrease their carbon footprint)
 - b. Meet NOx emissions standard of 0.07 lb/MW-h
 - c. 60% efficiency for combination of Topping and Bottoming Cycles
 - d. Greenhouse Environmental Performance Standard (EPS) is 1,100 lb CO₂eq/MW-hr (CHP essentially gets GHG credits by utilizing the thermal output of the CHP)
 - e. 15% minimum thermal output requirement
 - f. Application for Certification and Annual Reporting Requirements specified

AB 1613 Implementation Schedule:

- CEC by January 1, 2010
- Develop and adopt CHP Technical Guidelines that will establish the eligibility of CHP systems for incentive programs to be developed by the California Public Utilities Commission (CPUC) and municipal utilities
- CPUC by January 1, 2010
- Establish policies and procedures for purchase of excess electricity from an eligible CHP system
- Adopt rates, charges and tariffs for excess electricity purchased from an eligible CHP system
- Adopt procedures to establish a pay as you save pilot program with IOUs for eligible CHP systems
- California Air Resources Board by December 3, 2012
- Report on reduction in emissions of greenhouse gases resulting from the increase in CHP/recommend policies to further these goals

From the Frying Pan to Fuel: SFPUC's Renewable Energy Program

Written by: Nohemy Revilla/San Francisco Public Utilities Commission

The San Francisco Public Utilities Commission (SFPUC) has several renewable energy programs. One of them is the collection and conversion of Fats, Oil and Grease (FOG) into biofuels. "SFGreasecycle" is the name of the recycling program with the objective of collecting waste vegetable oil (WVO) from many San Francisco's restaurants for free. This project started in late 2008 and currently collects WVO from more than about 600 restaurants. WVO is transported into a receiving station at the Southeast Wastewater Treatment Plant (SEP), where the oil is decanted and later sold to a biodiesel plant. Part of the program also consists of having year-round, permanent drop-off locations where San Francisco residents can dispose of their used cooking oil.

Part of the effort of the City's and SFPUC's of creating a FOG recovery program includes the objective of evaluating the commercial viability of converting waste trap grease (brown grease) to fuel through the FOG-to-Biodiesel demonstration project. This project consists of transforming approximately 1,200 gpd grease trap waste from City's restaurants into a separated brown grease (free of water, food solids, grit, etc), and then converting it to Biodiesel with a patented technology (BlackGold Biofuels, INC., FOG-to-fuels™). Some of the separated brown grease, water and the food solids removed from the original waste product will be used to feed Wastewater Treatment Plant Digesters to increase methane production, which is ultimately used as a cleaner burning technology in the treatment plant cogeneration engines.

Other important pieces of the renewable energy programs are the implementation of a San Francisco FOG Control Ordinance and the Automatic Grease Recovery Device (AGRD) Technology Demonstration Project. One of the objectives of the FOG Control Ordinance is precisely making the installation and upgrade of AGRDs mandatory to San Francisco's restaurant's owners. With this measure, restaurant owners will have to service and inspect AGRDs every 90 days. The Ordinance will also establish FOG handling best management practices and all FOG will have to be beneficially used.

The AGRD Technology Demonstration Project started in late 2008 with the installation of AGRDs in about a dozen of restaurants in the City. Testing is still on-going, data is still being gathered and results have not been conclusive. However, part of the findings show that proper maintenance is very important for the device's proper performance. The installation of AGRD provides the benefit of a reduction in annual operating costs by reducing the amount of water in the collected FOG. This way, water does not have to be transported to the FOG collection facility and later separated from the recovered product.

Some of the benefits provided by the FOG recovery programs are the following:

- Conversion of FOG into fuel for San Francisco City fleet. Currently, all SFGreaseCycle collection trucks run on biofuel produced from waste grease collected from City's restaurants.
- Reduction of greenhouse gas emissions
- Reduction of San Francisco dependency on fossil fuels
- Increase of wastewater collection system capacity by reducing FOG that can clog pipes and increase system maintenance.
- Boost of existing power generation at SEP and OSP.

For more information: <http://www.sfgreasecycle.org/>



National Emission Standards for Hazardous Air Pollutants for RICE

Written by Sarah Merrill/ CH2M HILL

On March 5, 2009, the EPA proposed amendments to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines (RICE). CO emissions were chosen to serve as a surrogate for HAP emissions, the pollutant of concern for the EPA. In the proposed rule, "landfill and digester gas" stationary engines are explicitly included in this emissions standard.

If the amendments are approved, the following criteria will have to be met by digester gas-fueled engines:

- Landfill/Digester Gas $50 \geq \text{HP} \leq 500$ at Major Sources: 177 ppmvd CO
- Landfill/Digester HP > 500 at Area Sources: 177 ppmvd CO
- Inspection and maintenance requirements for smaller engine sizes at Area Sources
- Engines are exempt from this regulation if the digester gas-fueled engine provides the equivalent of at least 10% of the annual total gas input for the permitted facility.

In their correspondence with the EPA, BACWA submitted two comment letters in the fall of 2009. The comments presented echoed comments made by NACWA and member's concerns about this standard.

The main concern was that the proposed standards were not appropriate for existing digester gas- fueled engines. Retrofitting these engines would likely cost utilities millions.

BACWA emphasized that not only is this discouraging the use of a viable alternative energy source, but may encourage POTWs to purchase power instead from the electricity companies. Furthermore, the proposed EPA standard of 177 ppmvd of CO is significantly lower than those proposed by CARB for even the newest engine models.

BACWA also suggested there be flexibility in designating the type of gas regulated for HAP emissions reduction. NMHCs (non-methane hydrocarbons) are an alternative surrogate parameter to CO and can be more directly linked to HAPs emissions. Being given this option does not compromise the integrity of emission reduction quantification, but provides the engine operator with possibly more cost-effective options as is similarly done in the 503 sewage sludge incinerator regulations.

Lastly, BACWA suggested staggering compliance deadlines based on facility categories and an extended timeline specifically for engines combusting renewable biogas. This would allow for evaluating and implementing cost-effective compliance technologies and lessens the financial impact of these types of regulations on local entities. It also allows for public agencies to form a long-term plan of emission mitigation and to plan ahead and budget for the needed funding to implement these measures.

For more information:

<http://www.epa.gov/ttn/atw/rice/ricepg.html>

USEPA Tailoring Rule

Written by Jackie Kepke/ CH2M HILL (Adapted from the January 2010 CASA Newsletter)

USEPA has found that greenhouse gases (GHGs) are - or will be upon promulgation of the light duty vehicle rule, anticipated in the Spring of 2010 - "regulated pollutants", and as such would be subject to Prevention of Significant Deterioration (PSD) and Title V permit requirements under the Clean Air Act. When GHGs become regulated pollutants, the PSD and Title V programs will automatically apply to major sources because these regulations apply to "any regulated pollutant" emitted above specified thresholds. The thresholds in the Clean Air Act are 100 and 250 tons per year, and are normally applied to criteria pollutants. Greenhouse gases are emitted in much larger quantities than criteria pollutants, and therefore if these thresholds were used for GHGs, even restaurants might trigger into PSD and Title V.

To avoid a regulatory meltdown associated with permitting everyone who breathes, EPA has proposed the Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. The goal of this proposed rule is to "tailor" the regulatory program by using different thresholds for GHGs, namely 25,000 metric tons of CO2 equivalents (CO2e).

As proposed, agencies that currently have Title V permits will likely have GHG requirements incorporated into their next permit renewal, and this could include requirements to implement BACT for GHGs. Those agencies that do not currently operate under Title V but emit greater than 25,000 metric tons of CO2e would be required to obtain Title V permits, and those that emit more than 10,000 tons may trigger PSD permit requirements if proposing modifications. The current draft of the rule does not distinguish between anthropogenic and biogenic (or biomass) emissions.

CWCCG has significant concerns with this proposal - namely that the PSD and Title V programs are inappropriate for the regulation of GHGs, we think the proposed threshold is too low, and guidance needs to be provided upfront for permit streamlining. . We submitted comments on December 28, 2009 and will continue to participate in the regulatory process, alongside NACWA and other organizations.

NACWA Weighs In With EPA Air Office on Data Request for Incineration

Adapted from NACWA's November 20, 2009, "Clean Water Current" Publication

NACWA raised serious concerns in November 2009 over an information collection request (ICR) issued by EPA's Office of Air Quality Programs and Standards (OAQPS) to nine clean water agencies across the country seeking data on emissions from sewage sludge incinerators (SSIs). In a letter to the director of OAQPS, NACWA expressed concern over the cost to conduct the comprehensive emissions testing and the short timeframe in which EPA has given the utilities to complete the testing. The data is being collected to assist EPA in its development of maximum achievable control technology (MACT) standards for SSIs under Section 129 of the Clean Air Act (CAA). With costs exceeding \$50,000 per incinerator for the testing, some of the selected utilities will have costs approaching \$300,000. NACWA's letter noted these costs were not budgeted for and, in many cases, the expenditure of this money would require approvals and bidding processes that could make it impossible to meet the Agency's Feb. 17, 2010, deadline.

Also of major concern is the limited amount of data EPA is collecting. By limiting its search to nine utilities, EPA

is able to avoid the time-consuming process of seeking approval from the White House's Office of Management and Budget (OMB), but the Agency will only have data on 20 incinerators to use when developing standards for the over 230 SSIs in operation. NACWA believes that collecting data from only 20 incinerators will not produce results that are scientifically valid and equitable. NACWA participated in a December 1, 2009 conference call with EPA and the nine agencies to discuss possible time extensions and NACWA's other concerns regarding the quantity of data being collected.

In November 2009, NACWA also met with Office of Water officials in its continuing effort to persuade the Agency not to regulate SSIs under Section 129 of the CAA. EPA continues work to develop a definition of non-hazardous solid waste to help it determine which combustion units should be regulated under Section 129 versus Section 112 of the CAA. NACWA has argued that sewage sludge is not a solid waste and SSIs should be regulated under Section 112, not Section 129.

Area PM Designations Released

Written by: Sarah Merrill/CH2M HILL

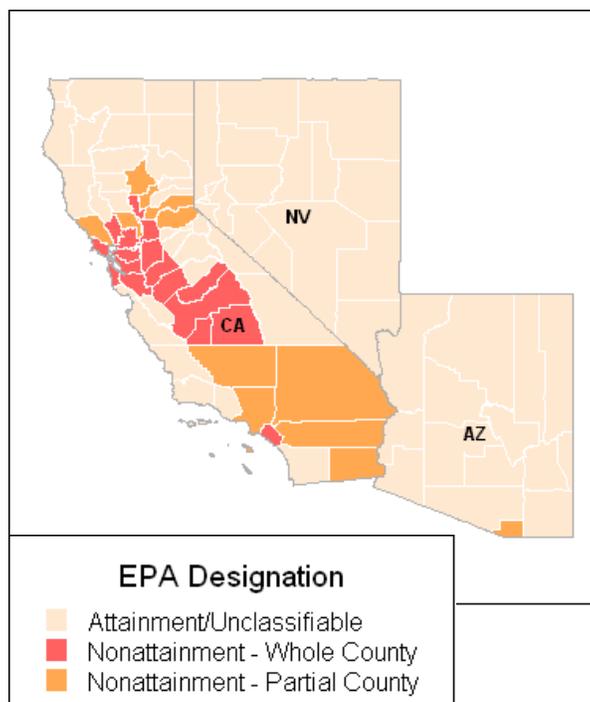
On October 8, 2009, the EPA released its final area designations for the 24-hour national air quality standards for fine particulate matter, also called PM_{2.5}.

The designations are based on air quality monitoring data from 2006 to 2008 as well as other factors, analytical tools, and technical information obtained by the EPA. Areas throughout the U.S. have been classified as "nonattainment", "unclassifiable/attainment", or "unclassifiable" based on the 35 µ/m³ limit. The Clean Air Act requires state, local and tribal governments to take steps to control fine particle pollution in those designated as "nonattainment". State implementation plans (SIPs) are due to the EPA in 2012 and attainment levels must be met by 2014, if no extensions are filed.

Local counties designated as "nonattainment" include: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano (partial county) and Sonoma (partial county). In the next few years, counties with this designation should brace for related engine and transportation regulation development as local air districts attempt to achieve compliant PM_{2.5} levels.

For more information:

<http://www.epa.gov/pmdesignations/2006standards/regs.htm#4>



Source: www.epa.gov

Forklift Fleets: Regulation

Written by: Sarah Merrill/CH2M HILL

On October 20, 2009, more stringent test procedures were passed for new LSI equipment. Only manufacturers of LSI equipment will be directly affected by the approved amendments to the regulation. The ARB's large spark ignition (LSI) engine standards and test procedures apply to off-road LSI engines of 25 horsepower or greater for non-preempt emissions of hydrocarbons (HC) and NOx. LSI engines are commonly found in forklifts. Other LSI equipment includes: scrubbers, sweepers, refrigeration units, etc.

The following table shows the progression of the fleet average HC+NOx emission limits:

Fleet Type	Number of units	Fleet Average Emission Level		
		1/1/2009	1/1/2011	1/1/2013
Large forklift fleet	26+	3.2 (2.4)	2.3 (1.7)	1.5 (1.1)
Mid-size forklift fleet	4-25	3.5 (2.6)	2.7 (2.0)	1.9 (1.4)
Non-forklift fleet	4+	4.0 (3.0)	3.6 (2.7)	3.4 (2.5)

*Note: Table units are in g/kW-hr (g/hp-hr)

Early compliance (≤ 3 years before regulations become effective) credits, grants, and other benefits may be available to your agency.

For more information: <http://www.arb.ca.gov/msprog/offroad/orspark/orspark.htm>

Retrofitting Your In-Use, Off-road Diesel Vehicle Fleets: Problems and Solutions

Written by: Sarah Merrill/ CH2M HILL

With many lowered emission standards being implemented, an option for lowering your fleet emissions is retrofitting engines with verified diesel emissions control strategies (VDECS). VDECS are exhaust retrofits and the common units are diesel particulate filters (DPF). ARB has released a list of approved VDECS and installation contacts.

VDECS installation, effectiveness and safety concerns have been an issue for many users. ARB just released the Retrofit Visibility Guide and Exemption application. This allows for applying for exemptions from the 2010 retrofit requirements if you are not able to retrofit equipment without compromising the visibility of vehicle drivers. This policy has been instated in the interim while a more permanent solution is being sought.

Generally, the current requirements in effect are related to not buying any new equipment, Tier 0 vehicles, labeling and reporting requirements, and operating regulations. New emission and retrofitting regulations are coming effective for all sizes of fleets in the next five years. Early compliance is being encouraged with the opportunity of credits and funding from ARB.

The ARB has developed a "Knowledge Center" website to address all the elements of this regulation and assist your agency in determining what is applicable to your fleet. Requirements that are in effect now include: labeling vehicles, an idling limit, selling requirements, and reporting vehicles. Definitions of terms, fact sheets and fleet calculating tools are also available.

**March 1, 2010
Large Fleets Only:
Over 5000 HP**

NOx and PM requirements become effective in 2010. After 2009, large fleets must report each year from 2010 to 2020, detailing how requirements have been met.

**March 1, 2013
Medium Fleets:
2,501 to 5,000 HP**

NOx and PM requirements become effective in 2013. After initial reporting in 2009, medium fleets must report each year from 2012 to 2021, detailing how requirements have been met.

**March 1, 2015
Small Fleets:
2,500 HP and Under**

Only PM requirements become effective in 2015 for small fleets. After initial reporting in 2009, fleets must report each year from 2014 to 2026, detailing how requirements have been met.

For more information:

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

BAAQMD CEQA Guidelines

Written by: Jim Sandoval/CH2M HILL

In the early Fall of 2009, The Bay Area Air Quality Management District (BAAQMD) published proposed new California Environmental Quality Act (CEQA) air quality thresholds of significance for greenhouse gas, criteria pollutants and precursors, risks and hazards, and odor. The CWCCG and BACWA AIR Committee researched the new thresholds and the CWCCG submitted a comment letter and Jackie Kepke of CH2M HILL testified at the public hearing on behalf of BACWA and the CWCCG requesting that biogenic emissions not be counted toward the threshold in determining whether a project's greenhouse gas emissions are significant under CEQA. The BAAQMD has posted their revised guidelines, and as a result of the letter and Jackie's comments, they have added the following language:

Biogenic emissions should not be included in the quantification of greenhouse gas emissions for a project. Biogenic emissions are defined as carbon dioxide emissions resulting from materials that are derived from living cells, excluding fossil fuels, limestone and other materials that have been transformed by geological processes. Biogenic carbon dioxide originates from carbon (released in the form of emissions) that is present in materials that include, but are not limited to, wood, paper, vegetable oils, animal fat, and food, animal and yard waste.

The indirect emissions from wastewater treatment include the GHG emissions associated with the electricity use in wastewater treatment (and not the biogenic CO2 process emissions).

This language in the BAAQMD guidelines may set precedent for other air districts still evaluating how they will address greenhouse gases under CEQA.

A number of the other air contaminant thresholds in the proposed guidelines are carry-overs from the existing CEQA guidelines (e.g., odors, Criteria Air Pollutants and Precursors (local CO)). The PM-2.5 receptor concentrations (i.e., > 0.3 µg/m³ annual average) in the Risks and Hazards category for new projects appeared relatively stringent. This is because BAAQMD is building assurances to maintain Bay Area Non Attainment Zone thresholds. However, it was difficult to ascertain the impact to new POTW projects because it is difficult to gauge the impact to receptors within 1,000 feet of a project without a defined project and modeling.

The revised guidelines were considered for adoption by the BAAQMD Board on January 6, 2010, but adoption was tabled until the April 2010 meeting to allow for more time for public input.

For more information: <http://www.baaqmd.gov/Divisions/Planning-and-Research/Planning-Programs-and-Initiatives/CEQA-GUIDELINES.aspx>

BAAQMD – Amended Regulation Affects Boilers, Steam Generators & Process Heaters in 2010

Written by: Jim Sandoval/ CH2M HILL & Randy Schmidt/CCCS

In July of 2008, BAAQMD Regulation 9, Rule 7 was amended to limit nitrogen oxides (NO_x) and carbon monoxide (CO) emissions from industrial, institutional and commercial boilers, steam generators and process heaters. The compliance schedule that began on January 1, 2009 is as follows:

1. January 1, 2009 - Conduct inspection and tune-up at least once every calendar year
2. January 1, 2010 - Limit exposed surface temperature to 120°F, including exposed pipes and ducts, but not the stack
3. January 1, 2011 - Limit maximum stack temperature = steam temperature + 100 degrees F
4. January 1, 2012 - Decrease NO_x limit from 30 to 15 ppm NO_x on natural gas fired load following boilers rated > 20 MMBTU/hr, but < 75 MMBtu/hr (Note: NO_x limit will remain at 30 ppm for landfill gas fired boilers)
5. January 1, 2012 - Add annual source testing for NO_x and CO

In order to comply with this rule, Central Contra Costa Sanitary District will spend approximately \$500,000 per boiler on capital improvements. These capital improvements include surface insulation, updated burner controls, and installation of low NO_x burners.

There are a number of exceptions to the rule, including:

- Boilers, steam generators, and process heaters with a rated heat input of 2 million BTU/hour or less, if fired exclusively with natural gas, liquefied petroleum gas, or any combination thereof
- Boilers, steam generators and process heaters with a rated heat input less than 1 million BTU/hour fired with any fuel
- Boilers used by public electric utilities or qualifying small power production facilities, as defined in Section 228.5 of the Public Utilities Code, to generate electricity
- Waste heat recovery boilers that are used to recover sensible heat from the exhaust of combustion turbines or reciprocating internal combustion engines
- Kilns, ovens, and furnaces used for drying, baking, heat treating, cooking, calcining, or vitrifying

For more information: <http://www.baaqmd.gov/dst/regulations/rg0907.pdf>

Hybrid Truck & Bus Voucher Incentive Program

<http://californiahvip.org/>



On February 3, 2010, Air Resources Board launched a \$20 million funding assistance program for the purchase of hybrid trucks and buses.

Funding incentives range from \$10,000 to \$45,000 and each vehicle purchaser, regardless of the size of their fleet, is limited to a maximum of 100 vouchers and is expected to put up to 800 vehicles on the road on a first-come, first-served basis. **Funds are available now!**

ARB created the financial incentive program from AB 118 funding to help Californians purchase cleaner, but more costly hybrid vehicles.

ARB has partnered with CALSTART to administer the program. Eligibility is based on the purchase of selected hybrid vehicles and fleet owners must agree to register and operate the vehicle in California for three years.

Contact: Mary Fricke at (916) 322-2990

DWR Local Groundwater Assistance

<http://www.water.ca.gov/lgagrant/>

http://www.water.ca.gov/lgagrant/docs/Draft_GuidelinesPSP_LGA-112309.pdf

What's New?: The Local Groundwater Assistance (LGA) draft Guidelines and Proposal Solicitation Package (PSP) is available.. The comment period ended January 12, 2010. See the website for PowerPoint presentations of information presented at workshops in January. Final Guidelines are scheduled to be released this month.

Applicant: Local public agencies with authority to manage groundwater resources

Projects: Groundwater data collection, modeling, monitoring and management studies; monitoring programs and installation of equipment; basin management; development of information systems; and other groundwater related work.

Funding: Up to \$250,000 per eligible applicant.

Tentative Schedule:

Date	Event
12/03/09	Released Draft LGA Guidelines and PSP for Public Review
01/05/10 & 01/07/10	Public Meetings to obtain comments on Draft LGA Guidelines and PSP
01/12/10	Public Comment Period Ended
February 2010	Release Final LGA Guidelines and PSP
April 2010	Proposal Applications Due
July 2010	Public Release of Draft Award Recommendations

Fund Source: Proposition 84

Contacts: William Hoffmann at (916) 651-9229, email at whoffman@water.ca.gov, or Jerry Snow at (916) 651-9264. email at alsnow@water.ca.gov

2010/2011 Clean Water State Revolving Fund

http://www.swrcb.ca.gov/water_issues/programs/grants_loans/srf/srf_forms.shtml

http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/fy0910/fy0910cwsrf_ppl.pdf

The Division of Financial Assistance (Division) will be updating the Clean Water State Revolving Fund (CWSRF) Program Project Priority List (PPL) for State Fiscal Year (SFY) 2010/2011. The list is updated every year with new projects, while some listed projects rollover into the next year given their reapplication is submitted. Even if your project is already listed on the 2009/2010 CWSRF PPL, it is imperative that you log into FFAST to update your information to be included on the 2010/2011 CWSRF PPL.

The Division updates and publishes the CWSRF Program PPL each SFY in accordance with the Clean Water Act and Federal regulations. **Your project must appear on the State Water Resources Control Board (State Water Board) adopted PPL to be eligible to receive financial assistance.** CWSRF funds can be used for construction of wastewater treatment and water reclamation facilities, correction of non-point source and storm drainage pollution problems, and implementation of estuary enhancement activities.

The initial update period for the 2010/2011 CWSRF Program PPL began on January 11, 2010. The Final PPL will be considered for adoption by the State Water Board in June 2010. For the complete 2009/2010 CWSRF PPL adoption schedule please see the Tentative Adoption Schedule.

Check out BACWA AIR's new website for up-to-date grant information!



Grant Opportunities Page

<http://bacwa.org/Committees/AirIssuesRegulations/GrantOpportunities/tabid/153/Default.aspx>

- Here you will find grant opportunities and other potential funding option details. This page will be updated once a month with more long-term, ongoing grant status tracking.
- For real-time grant information, reference the **<Email Archive>** page:
 - In the "Email Categories" box, click on the **<Grants>** category to view all the recent grant-related news.

Please send any feedback to Sarah Merrill (sarah.merrill@ch2m.com)

CARB Mandatory Reporting in 2010! (cont. from pg. 2)

language in Section 95107 to provide more comprehensive rules about how the number of violations will be calculated, with the goal of ensuring adequate data collection and accurate and timely reporting and verification. Preliminary draft language containing some of the amendments under consideration for this section is presented below.

Evaluating Your Facility

It is recommended that BACWA members calculate their combustion CO₂ emissions to know whether they would be impacted by this threshold change. The following table contains emission factors that can be used for preliminary calculations:

Fuel Amounts Resulting in 25,000, 10,000, or 2,500 MT CO₂ by Fuel Type

Fuel Type	Fuel Units	Kg CO ₂ /Unit	Amount of fuel to produce 25,000 MT CO ₂	Amount of fuel to produce 10,000 MT CO ₂	Amount of fuel to produce 2,500 MT CO ₂
Natural Gas (unspecified) ¹	scf	0.0544	459,000,000	184,000,000	45,900,000
	MMBtu	53.02	471,500	188,600	47,150
*Digester Gas ^{2,3}	scf	0.0438	571,000,000	228,000,000	57,100,000
	MMBtu	52.07	480,000	192,000	48,000
*Landfill Gas ^{1,3}	scf	0.025	916,000,000	366,500,000	91,600,000
	MMBtu	52.03	480,500	192,000	48,050
Diesel/Distillate Fuel (#1, 2, & 4) ¹	Gallons	10.14	2,465,000	986,000	246,500
Motor Gasoline ³	Gallons	8.80	2,841,000	1,136,000	284,100
*Sludge (dry) ^{1,4}	MMBtu	116	215,500	86,200	21,550

¹ (California Code of Regulations)

² (USEPA, 2009)

³ Does not include pass-through CO₂ emissions.

⁴ Dewatered digested Biosolids = 5,300 Btu/lb._{dry solids}; Chemical Precipitated Biosolids = 7,500 Btu/lb._{dry solids}; Dewatered Raw Biosolids = 10,300 Btu/lb._{dry solids};

http://www.biosolids.org/ems_main.asp?sectionid=48&pageid=189&pagename=Manual%20of%20Good%25 Chapter 15, Table 15.2 (National Biosolids Partnership, et al, January 2005)

* considered biomass, which does not count toward the threshold, but is reportable if a facility otherwise exceeds other parameters' thresholds

AIR Committee: A Year in Review (cont. from pg. 1)

for improving greenhouse gas reporting from the perspective of BACWA members. This is very helpful. Responses to some of these suggestions can be a fairly quick turnaround while others will need further consideration and action. Again, thank you for taking the time to compile these suggestions and the supporting rationale."

- Sent the EPA a letter and follow-up letter regarding the proposed National Emissions Standards for Hazardous Air Pollutants (NESHAP) for reciprocating internal combustion engines (RICE), specifically as it applies to digester gas fueled engines. The letters were based on the helpful feedback of committee members. EPA staff appreciated the feedback and we have an open dialogue with them now. Please see the "NESHAP for RICE" article on page 10 for further details.
- AIR Chair Stephanie Cheng and other committee members were instrumental in reforming the CWCCG to provide technical support services and wastewater industry advocacy on climate change issues on behalf of BACWA, SCAP, CVCWA, and CASA. \$150,000 was raised by these groups to support a contract with the CH2M HILL, the CWCCG program manager. See the "CWCCG Updates" article on page 6 for further details.
- AB 32 Mandatory Reporting Fact Sheet was developed for the Board and AIR Committee.
- Stephanie Cheng participated in the Board retreat and presented on "GHG Reporting" and "Clean Air Program Issues – What's Next"
- AIR Committee has developed a new webpage on the BACWA website that includes grant tracking information for members. Members may visit the site at <http://bacwa.org/Committees/AirIssuesRegulations/tabid/67/Default.aspx> with their password.
- In the early fall of 2009, the Bay Area Air Quality Management District (BAAQMD) published proposed new CEQA air quality thresholds of significance for greenhouse gas, criteria pollutants and precursors, risks and hazards, and odor. The AIR Committee and CWCCG researched the new thresholds and the CWCCG submitted a comment letter. Jackie Kepke of CH2M HILL testified at the public hearing on behalf of BACWA and the CWCCG requesting that biogenic emissions not be counted toward the threshold in determining whether a project's greenhouse gas emissions are significant under CEQA. The BAAQMD has incorporated this request in the revised guidelines that they plan to approve this spring. See the "BAAQMD CEQA Guidelines" article for further details.
- A technical memorandum was developed on the applicability of the EPA Mandatory Reporting of GHGs to WWTPs based on discussions with the EPA.

Federal Mandatory Reporting (cont. from pg. 2)

the combustion of biomass would be considered for applicability. If however, the facility is subject to the rule, all emissions from the combustion of biomass fuels are required to be reported.”

The response does not specifically mention sludge as biomass. However, logically, if digester gas from sewage sludge is biomass, then the sludge itself must also be biomass. To be thorough, CH2M HILL has made another inquiry to the EPA to get a confirmation in writing that the EPA considers municipal wastewater sludge to be biomass.

The final MRR and the Preamble to the MRR can be found at <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>.

CWCCG Updates (cont. from pg. 6)

expand the use of offsets within the program. CWCCG awaits the next draft regulation, expected in April 2010.

Find CWCCG Info on the Web

Looking for dates of upcoming climate change workshops, links to regulatory information, copies of CWCCG comment letters? CWCCG and CASA members can go to CASA's website at www.casaweb.org, click on Programs, and you will find the California Wastewater Climate Change Group page. This site is a work in progress, so if you have any suggestions, please contact Jackie Kepke.

Also contact Jackie if you are interested in signing up for CWCCG's Listserve. Through the listserv, you can receive regular updates and information about climate change regulations as they develop.

Preparing for 2009 Mandatory Greenhouse Gas Reporting: One Wastewater Treatment Plant's Perspective (cont. from pg. 3)

Written by: Joanna De Sa/ City of Sunnyvale

- (5) measurement gaps;
- (6) The data used for the corroborating calculations.

We currently have a verification firm looking at our 2008 data – our goal is to look for any improvements, additions and/or corrections that will allow us to create an Inventory System that will guarantee us, no matter who is collecting, or reporting the data in the future, a clear, effective, verifiable data-set for 2009 and beyond. The outcome will be used as a template for other regulatory agency data management systems and can only help the plant in improving our data collection, and management systems, processes and quality control methodologies for GHG emissions reporting and beyond.

For more information: http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg_rep_faqs.pdf

Important Dates

- BACWA Workshop: Mandatory Reporting of GHGs for POTWs – February 17th, 2010
- Next BACWA AIR Committee Meeting – March 17, 2010

See BACWA AIR's website for meeting and workshop details:

<http://bacwa.org/Committees/AirIssuesRegulations/tabid/67/Default.aspx>

- ARB Mandatory Reporting of GHG
 - Reports due to CARB through ARB Webtool: April 1, 2010
 - Third-Party Verification of Reports Due: October 1, 2010

About Our Organization

BAY AREA CLEAN WATER AGENCIES (BACWA)

BACWA agencies are the day to day urban water resource managers and the stewards of the San Francisco Bay estuary. As such, it is the goal of BACWA to ensure that local and regional decisions makers understand and use scientifically sound data to make management decisions that will result in improvements and enhancement of the Bay estuary.

It is the goal of BACWA that all resource managers and decision makers understand the watershed dynamics and embrace a regional approach to water quality issues recognizing that regional problems call for regional solutions.

AIR ISSUES & REGULATIONS COMMITTEE (AIR)

The Air Issues and Regulations Committee (AIR) develops, analyzes and distributes scientific information regarding air pollution and climate change issues related to operation and maintenance of publicly owned treatment works.

A BIG THANKS to our Contributing Authors

JOANNA DE SA (City of Sunnyvale)

Joanna authored an article about her facility's challenges with the new CARB Mandatory GHG Reporting process and verification. Thank you Joanna!

NOHEMY REVILLA (SFPUC)

Nohemy authored an article about the interesting alternative energy programs that the SFPUC has recently rolled out. Thank you Nohemy!

RANDY SCHMIDT (CCCS)

Randy authored an article about Combined Heat and Power System certification requirements that may help facilities better plan for future, profitable additions to their WWTFs. He also helped edit other articles throughout the newsletter. Thank you Randy!

STEPHANIE CHENG (EBMUD)

Stephanie authored an article about the Climate Action Reserves' Protocol for Organic Waste Digestion and about possible credits from implementing co-digestion processes. She also co-edited entire the newsletter. Thank you Stephanie!

JACKIE KEPKE (CH2M HILL)

Jackie lent us articles she had written about CWCCG's recent news and other items that CWCCG has addressed. Thank you Jackie!

BACWA AIR also would like to thank SCAP, Andre Schmidt/LACSD, Mark McDannel/LACSD, and NACWA for allowing us to include their articles in this publication.

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