



CEHA

POINT SOURCE

Colorado Environmental Health Association

Winter, 2010

www.CEHAweb.com

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SUBMISSIONS

Contact Amanda Hensley at the Public Health Alliance to submit your story or update for the next Point Source Newsletter.

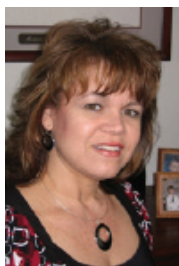
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Please note that the views expressed in the Point Source Newsletter are those of the authors and do not necessarily reflect the official policy or position of the Colorado Environmental Health Association.

Letter from the President

Carmen Vandenburg
 CEHA President & Nominating Committee Chair
 Consumer Protection Coordinator, Northeast Colorado Health Department



Hello CEHA Members,

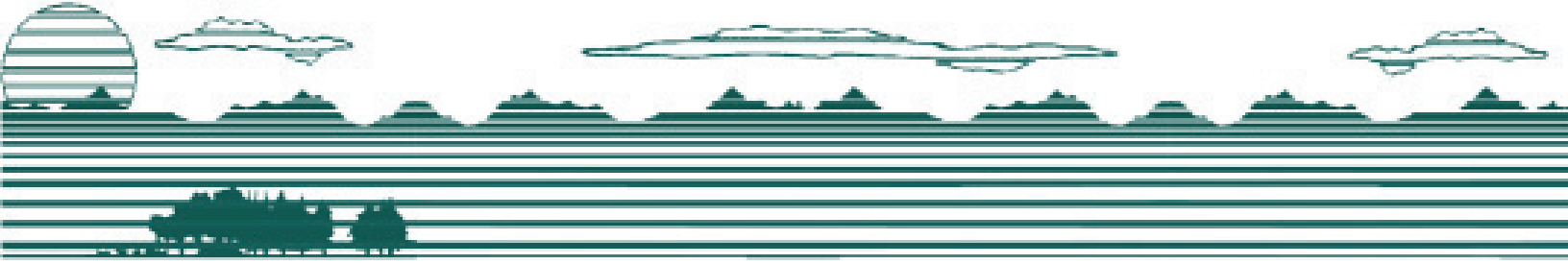
Welcome to 2010! I hope you all had a great holiday season and are recharged for a new CEHA year! The Annual

Education Conference in Copper Mountain proved to be a great success. We really need to congratulate all the planning committee members and everyone else that worked countless hours to produce a well attended and exceptional education conference. There were 242 attendees, 11 exhibitors and 48 presenters. The silent auction brought in \$2427.00, which along with the \$1000.00 from the Fat Cat auction, will be going to the scholarship fund. Thank you to Eric Berquist with Infiltrator Systems for the reusable water bottles, Doug Jatcko with Front Range Precast for donating half of the total proceeds of the Fat Cat Auction, Roger Shafer with SCG Enterprises for the breakfast burrito brunch, Derrick Eggleston with Valley Precast for sponsoring Thursday’s breakfast break and to

Dr. Jim Dale for auctioning off another can of his highly coveted beer. The board would like to express their appreciation to all the exhibitors that provided a great atmosphere for members to network. Our sustaining membership is a valuable part of our organization and we are very grateful for all the input and support you provided in the past and would like to work harder to build this part of our membership this year.

At the last board meeting, many topics for one day trainings were suggested and those trainings should be finalized in February. If any member has an idea for training or would like to serve on the committee, please contact Committee Chair, Richard Stenson, at rstenson@gunnisoncounty.org or any other board member. We also are very excited to announce that our 2010 AEC will be in Colorado Springs, September 27-29 and will be in collaboration with the FDA Southwest Regional Conference. This is lining up to be an exceptional education experience and I encourage you to attend. The planning committee has just started

continued on page 4



Once Again, A Fabulous AEC!

Mindi Ramig

CEHA Board Member

Environmental Health Specialist IV, Jefferson County Public Health

A little fall, a little winter; all made for a spectacular 2009 CEHA Annual Education Conference (AEC) and Exhibition in Copper Mountain. We had a very successful joint endeavor with the Public Health in the Rockies Conference, calling the week “Uniting Public Health”. The two conferences were connected via “Bridge Day” on Wednesday, an historic event for public health. The Office of Planning and Partnerships, CDPHE, led the attendees in guided discussions surrounding the draft Public Health Improvement Plan which includes priority areas that will detail recommendations for Colorado’s Public Health system over the next five years. It was vital to have environmental health at the table to provide our input. Attendees described this effort as worthwhile and valuable, and that it was great having a mix of people in on the discussion. They felt that the organization of the sessions was excellent, allowing for smaller groups to brainstorm.

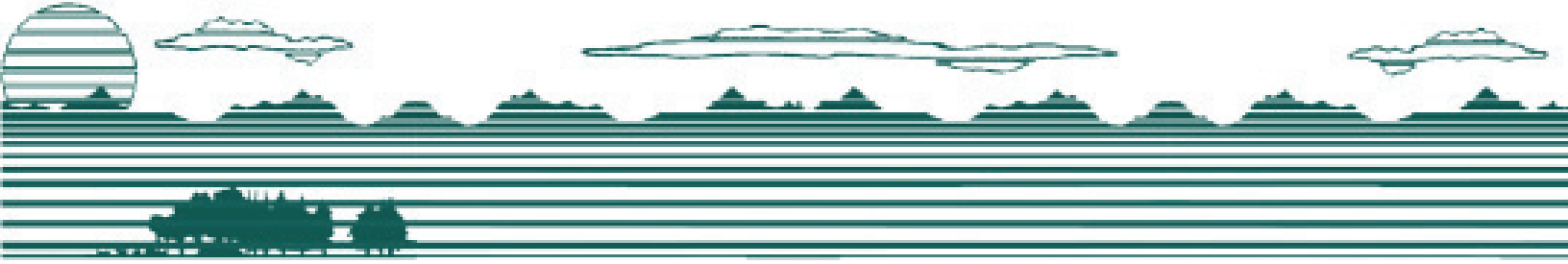
As always, your participation in the conference is valued and contributes to the sustainability of CEHA. This year we had an impressive 242 attend all or part of the conference, with 142 who attended the full conference. Thursday and Friday were packed with a variety of information in our environmental health educational tracks; Food Safety, Sustainability

& the Built Environment, Water & Wastewater, Tools for the Profession, Zoonosis, Air & Waste, and General Environmental Health. The educational opportunities provided at the AEC continue to be one of the most valuable aspects of CEHA membership, as attested to through the follow-up survey. Attendees enjoyed traditional environmental health topics as well as a great panel discussion, titled *Opportunities to Advance Academically & Professionally* in Tools for the Profession and a change of pace with *Community Based Social Marketing*, which was a favorite to some.

Additionally, there were abundant networking opportunities with the exhibitor reception, environmental health knowledge bowl, annual volleyball tournament, awards banquet, and silent auction. The winner of the environmental health knowledge bowl was Janine Bennett with Tri-County Health Department – Congratulations! There was quite an upset in the volleyball tournament this year. The long time running champs, ‘Mountain Power’, lost in the finals to ‘Wally World’, a team from SCG Enterprises, Inc.; Mike Scrivner, Erik Hamilton and Roy Kroger. Congratulations to the new champions!

The AEC silent auction was fortunate again this year to have an abundance of great items donated by our members, sponsors, and supporting businesses. Thank you to all who donated items or worked to obtain donated items, and to all who bid on items! In addition, Dr. Jim Dale conducted his now infamous live auction for a single can of the extremely rare and much coveted “Fat Cat” beer. Through these efforts over \$3,500 was raised for the scholarship fund. This is very significant, especially in the current economic climate.

A huge thank you to our members for making all of the 2009 conference such a rousing success! Planning efforts are already underway for the 2010 AEC. We need volunteers to serve on the AEC Planning Committee so that the 2010 conference will be just as great, or even better. This is an excellent way to get involved and help to shape the future of our conferences. What we do know about the 2010 conference is that it will be a collaborative effort again, with the FDA Southwest Regional in Colorado Springs on September 27-29. Also, we are now accepting abstracts for the 2010 conference. Please start thinking about what topics you could share with other environmental health professionals and submit these ideas via the website, www.CEHAweb.com.



Is Your Business Considering Becoming a Sustaining Member?

As a Sustaining Member of CEHA, you align yourself with an organization that is dedicated to the education and training of Environmental Health Professionals across Colorado. It gives a company the opportunity to interface with industry professionals and provides a voice to support the organization and offer suggestions and for improvement. As a sustaining member, you are the lifeblood of our organization-without the continued support of our Sustaining Members CEHA could not readily provide the opportunities we present each year. There are many benefits to membership, including:

- A link to your website, email, or contact information from our website, www.cephaweb.com
- A discount on Exhibition at the Annual Educational Conference
- Priority selection for booth space at the AEC
- A 25% Discount for advertising in the CEHA Quarterly Newsletter

If you have any questions, or would like to become a Sustaining Member of CEHA, contact Chad Perlmutter, Industry Chair, at 800-783-3207 or Chad@flxx.com.

Or join online at www.cephaweb.com!

Thank You!

The Board would like to recognize the following members for their contributions to the scholarship fund at the time they renewed their memberships in 2009:

JERRY BLEHM
TODD BURKE
TOM BUTTS
JIM DEVORE
MARK MCMILLAN

Their contributions and the money raised at the silent auction and Fat Cat Auction (high bidder, Doug Jatcko with the assistance of many others) will be available in 2010 to fund the scholarships listed on the web site and supplemental scholarships. This year, both the supplemental scholarship/board sponsorship funds are available to assist CEHA members with registration fees for continuing education/professional development at CEHA, NEHA or similar conferences or training programs. For further information, please contact the CEHA Treasurer at Thomas.Butts@cephaweb.com.

SUSTAINING MEMBERSHIP.....\$270

Any business, company, corporation or association of such firms with a general interest in CEHA and its objectives, and which has a desire to contribute to its success shall be eligible for sustaining membership.



Letter from the President, cont'd from page 1

meeting and is looking for additional members. Please contact AEC Committee Chair, Paul Rees, at prees@larimer.org for more details.

One of the goals I had for this year was to make it easier for CEHA members to attend one day trainings and our AEC in this difficult economic climate. I believe we have found a way in our budget to create several mini scholarships available to CEHA members. We will be finalizing this at our next board meeting in February. Look for more information posted on www.CEHAweb.com soon.

Another goal that is not new by any means, but still as important as ever is to increase membership participation. An organization is only as strong as its membership and their involvement. We would like to involve more of our membership in the decisions the board makes throughout the year. Starting with our next meeting in February, the agendas and meeting minutes will now be posted to the website at least 2 weeks prior to each and every board meeting. Please let any board member know your input about agenda items and the general direction you would like for CEHA to go in for 2010 and beyond.

I also would like to ask everyone to start thinking now about the CEHA awards, & which CEHA professional is worthy of a nomination for one of these awards. Currently the awards we present every year are the Environmental Achievement, Environmental Achievement for Industry and the Milton M. Miller. Additionally we are looking at developing an award that will be awarded to a CEHA member working exclusively in the field. Stay tuned as we work on the details. As a prior

recipient of the E.H Achievement award, I cannot put into words how honored, surprised, and appreciative the award made me feel. Let's show our fellow colleagues how appreciative we are of their efforts and really honor their achievements in the field of Environmental Health. We should be celebrating our successes! It is easier than ever to nominate someone with the new online submission process. Last year, the entire CEHA website was remodeled and I encourage you to visit it and see the many new features and improvements, including nominating someone for an award!

When I started in the field of Environmental Health 18 years ago, I really did not see the bigger picture of public health and what a difference Environmental Health could make. It is a big responsibility that generally gets little or no recognition. Most of our contributions are taken for granted, such as safe food, clean air and clean water because when we do our jobs, nothing happens. It is hard to measure prevention. I really did not start out to become a "health inspector." In fact I went to school to be a large animal veterinarian. I had almost completed all the course work for an undergraduate Biochemistry major, when I decided; I really didn't like school very much and certainly did not want to go for another 4-5 years. Without a solid career path mapped out, I did the most logical thing I could think of and that was to switch to a major that would still allow me to graduate on time!

I switched majors and was able to finish up the summer after my senior year with an internship in the QA Department at Excel Beef Plant and soon afterwards began working

for the Northeast Colorado Health Department as a new, inexperienced, EH generalist, which can easily be abbreviated GRUNT! Being on the bottom rung of a tall ladder, I was assigned some interesting work that was not at all covered in the text books and I really had no idea what I was doing.

After a while it started to become clear to me that I could make a difference and began to get more involved in workgroups and organizations such as CEHA. Somewhere along the way I became passionate about the work I was doing. You see, we all contribute differently to our profession, but we all make a difference. Some know this is the field and direction they want to go into right away; others, like me, find our way later.

It is never too late to become passionate about what you do and the difference you make. If you haven't found that passion or maybe need to renew it, make this the year that you find renewed zest and achieve great things! Challenge yourself and become involved in YOUR organization!! There are many committees in CEHA that any member can participate on. Check out the board page on the website to find an area of interest for you. The board is made up of a really talented group of individuals and as a team we are up to the many challenges that will make CEHA a stronger organization.

I am really excited to be your President for the next year and look forward to a great CEHA year! As always, I invite you to share your thoughts and ideas by emailing me at carmenv@nchd.org.



Carmen Vandebark
CEHA President

Greenhouse Gas Reporting Rule for Municipal Solid Waste Landfills

Ben Noller
CEHA Board Member
Senior Project Manager
Weaver Boos Consultants



Introduction

On September 22, 2009 the final Greenhouse Gas Reporting Rule (40 CFR Part 98) was signed by the USEPA Administrator. Subpart HH of this rule addresses the reporting requirements for municipal solid waste landfills. Complete information on the final rule can be found at <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>.

Affected Landfills

The reporting rule applies to municipal solid waste landfills that meet both of the following criteria:

- The landfill accepted waste on or after January 1, 1980; and
- The landfill generates methane in amounts equivalent to 25,000 metric tons of carbon dioxide (25,000 metric tons CO₂e) per year.

Note that the rule lists the relative global warming potential of methane to be 21 times that of carbon dioxide, so 1,190 metric tons of methane equals 25,000 metric tons CO₂e. Weaver Boos' preliminary analysis suggests that nearly all active and recently closed landfills will be required to report under the rule.

The following sources are covered under Subpart HH of the rule:

- Municipal solid waste landfills;
- Landfill gas collection systems; and
- Landfill gas destruction devices (including flares).

Exclusions

The following source categories are not included under Subpart HH:

- Hazardous waste landfills;
- Construction and demolition landfills; and
- Industrial landfills.

These facilities are not required to report unless they utilize stationary fuel combustion sources with a rated

heat input of 30 MMBtu/year or more, and emit more than 25,000 metric tons of CO₂e per year from these combustion sources.

Information to be Reported

The following emissions must be included in the annual report:

- Methane generation and methane emissions from the landfill;
- Methane destruction resulting from landfill gas collection and combustion systems; and
- Carbon dioxide, methane, and nitrous oxide emissions from stationary combustion sources (boilers, process heaters, etc.), regardless of size.

Reporting Schedule

Data collection will begin on January 1, 2010. The first greenhouse gas emission report is due on March 31, 2011 and should cover emissions from calendar year 2010. Subsequent emission reports are due on March 31 of following years.

Parameters to be Monitored

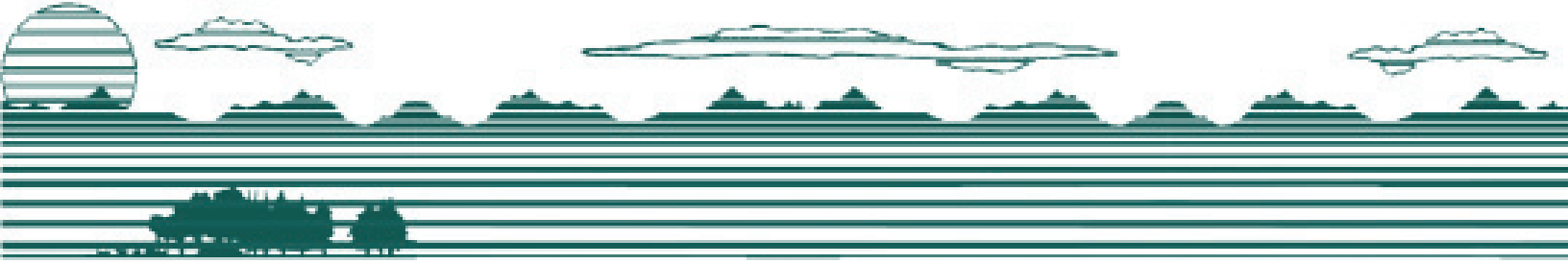
Beginning January 1, 2010 the following parameters must be monitored at all municipal solid waste landfills that are covered under Subpart HH:

- Fuel consumed by stationary combustion sources;
- Annual quantity of waste landfilled; and
- Quantities or waste fractions for the following materials, if available: food waste, garden waste, paper, wood/straw, textiles, diapers, and sewage sludge.

In addition, each affected municipal solid waste landfill that utilizes a gas collection system must also monitor the following parameters:

- Flow rate of landfill gas before any treatment equipment (daily);

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Setting Priorities in Environmental Public Health

Jim Dale, DVM, MPH, MBA, DACVPM

Director of Environmental Health Services, Jefferson County Public Health

Each year, each month and everyday we set priorities and work to accomplish them. Some of the questions I often ask myself are, “Which things on my list are really important? How do I decide which is important? How are they going to affect people? What are my core Public Health values? Why am I here? “

I believe we make decisions based on the totality of our whole life experience. I have a friend who had a boss that noted, “Where you are, is where you sit.” For instance, I have these three friends whose names might be Jeff, Trevor and Jeff. I believe they make decisions these days based on “where they sit” which are different from “where they sat”. Speaking in Covey terms, I believe both their zones of Concern and Influence have changed and expanded. They might have some thoughts about this...but I do believe that, where you are is where you sit.

Another frame of reference for me is that decisions typically have multiple aspects including rational, emotional and political. I believe that Environmental Health and all types of Public Health folks love to be rational – think things should be science based, that there should be a preponderance of evidence, and that the evidence should be appropriate for our location (My malaria control program is fantastic). Secondly, we in Environmental Health can be very passionate, probably emotional, about our work, our special project, and protecting the public we serve. Lastly, I believe we in public service live in a political environment. There are Public Health Department politics, Board of Health politics and elected official politics to name but three. How do we juggle these aspects?

And then there is your boss - he or she probably is working to address a whole constellation of issues and has a lot of things on their mind. And then there is me/you and the attitude I/we bring to the office (think Fish Principles). So what is one to do and how do we decide? The “Great Gretzky” said he skated to where the puck was going to be. I’d recommend we do that – be strategic, focused but work for balance. We are in the people business; we should laugh often and remember the joy of work. Priority setting... It’s an art not science and tomorrow is a new day.

Greenhouse Gas, continued from page 5

- Methane concentration, temperature, pressure, and moisture content of landfill gas (daily, if available, or weekly);
- Total annual methane recovered prior to destruction;
- Operating hours for all destruction devices;
- Gas collection system operating hours per year; and
- Areas and depths of waste for active areas, areas with gas collection, areas with intermediate cover, & closed areas.

Weaver Boos Qualifications

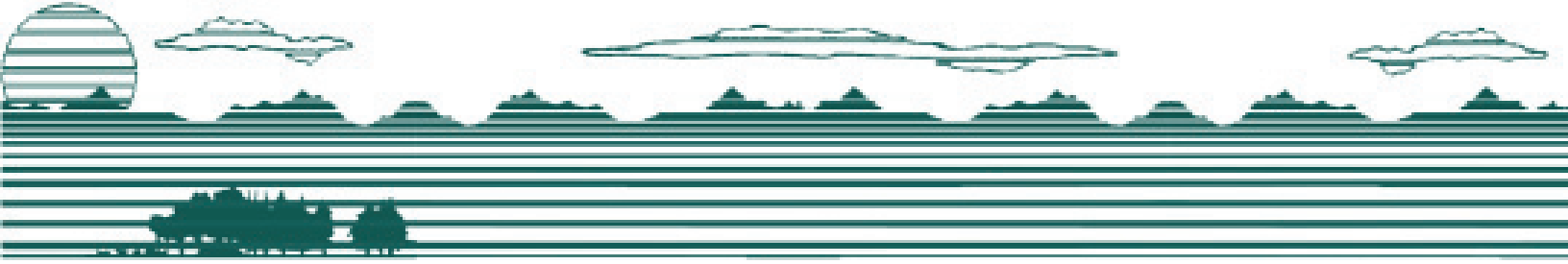
Weaver Boos can provide the following services to assist landfill owners/operators in complying with the new greenhouse gas reporting requirements:

- Identification of affected landfills and emission sources.
- Development of a monitoring program to meet the requirements of the rule.
- Monitoring of landfill gas collection and control systems.
- Calculation of emissions.
- Preparation of the annual report.

For additional information regarding the above, please contact John Briest or Neil Nowak of Weaver Boos Consultants at (720) 529-0132, or via email jbriest@weaverboos.com or nnowak@weaverboos.com.

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Garfield County’s Regional Geographic Initiative (RGI) Grant is Complete

Paul Reaser

Senior Environmental Health Specialist, Garfield County Public Health Department

In September 2007, \$107,000 was awarded to Garfield County Public Health by the US EPA (Region 8) through a cooperative agreement that was designed to accomplish a variety of important objectives:

1. To further develop the basis for decisions on how Garfield County can best manage impacts of air pollution caused by energy development
2. Creation of a comprehensive community based air quality management plan and implementation strategy that has broad support
3. Offer recommendations about how the State & Garfield County can best characterize air quality
4. Begin determining health risk from energy development under a variety of conditions (temporal, spatial, meteorological)

We worked with a very diverse group of stakeholders, including our cooperative partners from the EPA and CDPHE as well as stakeholders from 4 local energy operators, a 3rd party consultant, and others to help us complete this project back in October 2009. This grant was originally designed to fit within an overall air quality program framework that has been a dynamic process implemented over the last several years. The implementation took a variety of efforts which have

included continued air monitoring, updates on local emissions inventories, the development of health risk assessments, and the creation of an assortment of education and outreach efforts by our department. The RGI project was taken on with the hope of filling in gaps where data was missing, mainly to build a solid site specific database, and to inform and lead our citizens toward a strong air quality management approach.

The grant consisted of 4 parts:

1. Implement short-term targeted air monitoring near oil and gas fields
2. Update our local (county-wide) emissions inventory
3. Create an “Air Quality Issues/ Opportunities Assessment Report” (including priorities and recommendations)
4. Create a “Citizen’s Guide on Air Quality Management Issues in Garfield County”

For more information about the work products from this project, contact Paul Reaser at 970-625-5200 x-8123 or preaser@garfield-county.com.

Don’t forget about our updated air quality Web site:

www.garfieldcountyaq.net for all the latest air quality information in

It’s Time to Renew your CEHA Membership!

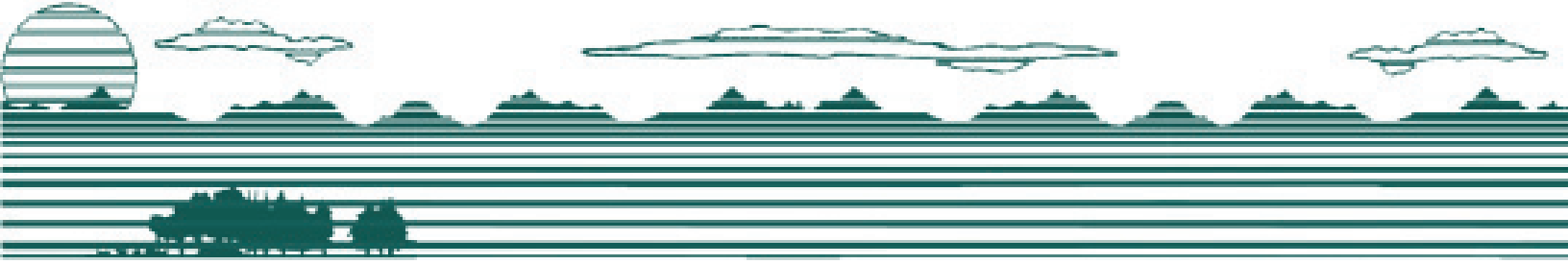
If you haven’t already done it, now is the time! Being a member of CEHA comes with great benefits, including:

- **Discounted AEC Registration**
- **Discounted Registration at One-Day Trainings**
- **Subscription to the PointSource Newsletter**
- **Email updates on current environmental health events & issues**
- **Legislative updates via email & conference call**

Renewing your membership is easy!

Just visit www.CEHAweb.com today

Don’t forget to encourage your colleagues to support the environmental health profession in Colorado by joining CEHA as well!



Let's Not Forget About Radon: The Silent Killer

Mindi Ramig, with help from James Dale and John Moody

CEHA Board Member

Environmental Health Specialist IV, Jefferson County Public Health

January was Radon Awareness Month, which reminds us that there is a cancer-causing, radioactive gas that is colorless, odorless, and tasteless that must be reckoned with. Radon is a known human carcinogen. When a person breathes radon, they increase their chances of getting lung cancer. In fact, long-term radon exposure is the leading cause of lung cancer in nonsmokers and the second leading cause of lung cancer in smokers in the United States. Lung Cancer due to radon exposure claims about 21,000 U.S. lives annually, which includes as many as 500 in Colorado, based on EPA estimates.

Radon is found throughout the United States, and Colorado is one of the states where radon is particularly prevalent. The majority of the state is ranked as an EPA Zone 1 area, the highest radon risk zone where the average house will likely exceed the EPA's action level for indoor radon. This level was set at 4 pCi/L for indoor radon as a result of the Indoor Radon Abatement Act in 1988; the national goal at that time was for the reduction of radon in buildings to the ambient level of outdoor air. EPA recommends that all homes be tested for radon and those found with levels above the action level should be mitigated. There is still some risk at levels below

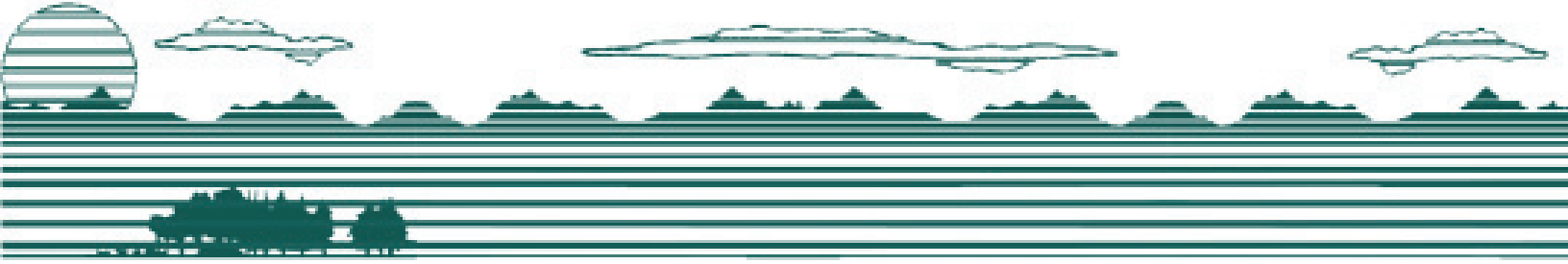
4 pCi/L, therefore it's suggested that people consider mitigating their homes to bring radon levels down as close to ambient outside air as possible (approximately 0.4 pCi/L). Testing for radon is easy and inexpensive. Having a radon mitigation system installed by a National Environmental Health Association (NEHA) or National Radon Safety Board (NRSB) listed contractor usually costs between \$900 and \$1,200.

This naturally occurring inert, radioactive gas is found in almost all rock, and all soil and ground water due to the ubiquitous nature of uranium in the environment. Since radon can easily travel through voids and porous materials, without being chemically bound or attached to other elements, all buildings contain some radon. Elevated levels of radon in structures depend upon: the strength of the radon source, how easily radon is delivered into the structure, and, to a lesser degree, the structure's ventilation rates. The radon is pulled into the building by air pressure differentials. These differentials are created by natural and mechanical ventilation. Natural ventilation occurs because of stack effect (hot air rising in the home), wind, and temperature differences between inside and

outside air. Rain and low barometric pressure can also increase radon entry. Exhaust fans in the home, as well as negative pressure relative to the outdoors caused by heating systems also increase radon entry. Because of these factors, radon varies constantly, both daily and seasonally. The highest levels are expected in the winter, while in the summer, with windows and doors open, lower concentrations would be expected.

Radon is produced from a radioactive decay process that begins with uranium. Uranium decays through several intermediate elements to produce radium and radon. Radon has a half-life of 3.8 days, therefore half of the element will decay into radon decay products (RDP's) or progeny in that time. These progeny are different from radon in that they are short-lived (less than 30 minutes), they have a static charge, they are chemically reactive, and are solid particles, which act as aerosols in the air. These properties enable RDP's to attach easily to solid objects. If they attach to dust and smoke in the air, they can be easily inhaled and attach to the lung lining. Here they decay emitting high-energy alpha particles, the main culprits in the decay process being Polonium-218 and Polonium-214.

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Radon Gas, continued from page 8

Damage from the alpha particles to the cell's DNA can lead to lung cancer. This is why exposure to radon and its progeny doesn't mean you will contract cancer; it means that you have an increased risk of getting cancer. Even though the biological effect of radon is caused by its progeny, radon gas is usually measured since there are fewer variables in radon measurements, gas concentration is not affected by circulation or plate out, it's easier to make time-weighted measurements of radon gas, and radon gas measurements are a good indicator of RDP's.

Jefferson County Public Health is making a renewed effort to tackle this significant environmental health issue. Dr. James Dale is working to educate building officials throughout the County about Radon and recommending that each Building Department adopt codes requiring Radon Resistant New Construction (RRNC). This involves adopting Appendix F of the International Residential Code (IRC): Radon Control Methods. RRNC typically costs a builder between \$250 and \$750. This work could cost less than \$250 if the builder already uses some of the same techniques for moisture control.

Several Colorado Cities and Counties have adopted the RRNC codes, according to the EPA. These include the cities of Aspen, Fort Collins, and Sterling; and the counties of Boulder,

Logan, Archuleta, Huerfano, and Las Animas. Through the efforts of Dr. Dale, the City of Golden is now on board. More than 1.5 million homes have been built since 1990 using radon-resistant techniques, based on an annual survey of builders conducted by the National Association of Home Builders (NAHB) Research Center. Jefferson County Public Health recognizes the importance of continuing and expanding this trend. It would be great if other jurisdictions added to this effort. If there are any agencies who are interested in working with their local building officials and would like more information on the Jefferson County efforts, please contact our Department at (303)271-5700 or <http://jeffco.us/health>.

Radon Websites

EPA: www.epa.gov/radon
NEHA: www.radongas.org
CDPHE: www.cdphe.state.co.us/hm/rad/radon
The American Association of Radon Scientists and Technologists: <http://www.aarst.org>

Other Resources

Colorado Radon Hot Line: 1-800-846-3986
Western Regional Radon Training Center: 1-800-513-8332

SAVE THE DATE!
September 27 - 30, 2010

2010 Annual Education Conference & Exhibition

in partnership with the

FDA Southwest Region Food Safety Seminar

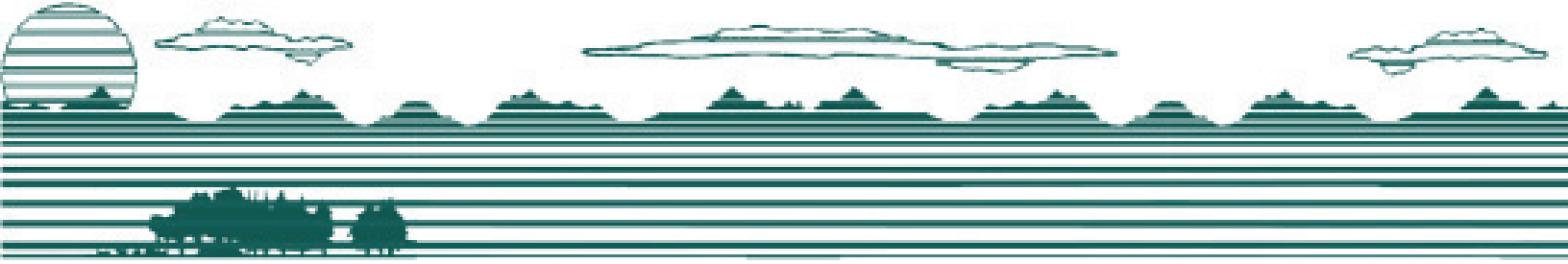
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Doubletree - World Arena
1775 E. Cheyenne Mountain Blvd.
Colorado Springs, CO 80906

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CEHA's Annual Education Conference & Exhibition is the premier gathering of environmental health professionals from around Colorado. Please mark your calendars and plan to attend!

Visit www.CEHAweb.com for more details.



What is a Performance Based OWS Code?

And Why do we need Training and Certification?

Robert Wright, PE

Principal, Church Onsite Wastewater Consultants

The Colorado Department of Public Health & Environment (CDPHE) has initiated a stakeholder process to address the 2002 Recommendations of the Individual Sewage Disposal Steering Committee regarding the state ISDS regulations. The Steering Committee was convened by the Executive Director of CDPHE and was jointly chaired by Colorado Water Quality Control Commission and Colorado Board of Health representatives.

The Steering Committee created 13 recommendations regarding how the ISDS regulations in effect in 2002, and the industry itself, should be changed to bring it up to the standards of the research and recommended practices of the time.

Two recommendations that appear to generate a good deal of controversy are the adoption of Performance Based regulations, and a requirement that practitioners in the industry be trained and certified. The Colorado Professionals in Onsite Wastewater (CPOW), an organization that represents members from all disciplines of the onsite wastewater system (OWS) industry supports Performance Based Codes and training and certification for all practitioners, regulators, designers, installers and O&M providers.

From a review of the comments submitted to CDPHE by stakeholders addressing the 13-recommendations, it appears that the concept of a Performance Based Code is not well understood. This article will attempt to address a description of what a Performance Based Code is, and how it is different from a prescriptive based code, and how it may affect the OWS industry in Colorado.

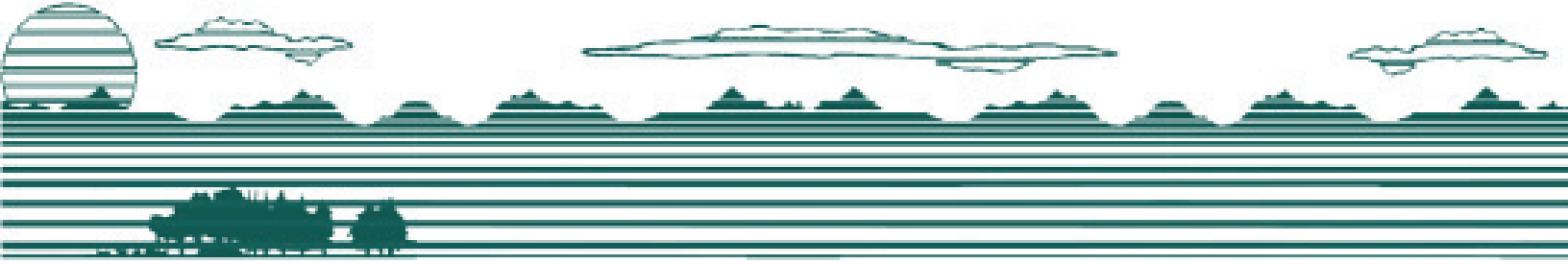
A prescriptive code prescribes; it calls out minimum standards for elements of a system; design, installation and maintenance. An example is that the current codes used in Colorado counties indicate minimum septic tank sizes based on the number of bedrooms or the estimated volume of wastewater generated from a building. Setbacks are a good example of prescriptive regulations that have not maintained pace with current OWS technology. The state standard for the setback between an OWS drainfield and a well is 100-feet. This standard does not consider whether the well is up slope or down, shallow or deep, grout sealed or pit, whether the wellhead is properly mounded for drainage or the type of treatment the OWS provides. The 100-foot minimum applies regardless of

whether the system discharges extremely high strength waste or potable water into the ground.

Performance Based Codes define conditions that must be met at points along the treatment train, such as wastewater strength, volume of flow, pathogen content or contaminants, such as nitrate, and determine setbacks by how well these conditions are met. It may be that a treatment system can discharge effluent into the drainfield that has a wastewater nitrate content of 1 mg/L consistently. This system may be allowed to be closer to a well than a system discharging nitrates at 50 mg/L.

There appears to me a misconception that a Performance Based Code will eliminate basic OWS systems used throughout Colorado; this is not what a Performance Based Code accomplishes. When combined with a Risk Based site assessment process, the Performance Based Code allows the designer to select a type of system that matches the site conditions, restrictions and risks to the level of wastewater treatment most appropriate to that site. For example, a 35-acre parcel on the eastern plains that has acceptable soils and an acceptable separation

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distance from the onsite well, based on the characteristics of the effluent discharged to the soil, can most likely support a typical septic tank to gravity discharge, rock and pipe drainfield. The determination is based on the capabilities of the selected treatment type and the risk the proposed system poses to wells and groundwater in the vicinity.

A Performance Based Code does not recommend secondary treatment or expensive proprietary equipment when the risk does not warrant them. A Performance Based Code provides minimum levels of quality that must be met to ensure that the risks assessed for a site are specifically addressed in the type of OWS designed and installed.

The second element of the Steering Committee recommendations that need to be addressed here is training and certification of professionals in the OWS industry. While all of us would like to believe that most practitioners in our industry are adequately educated in their specialty; that assumption is not always the case.

If we take an objective step back from our desire to believe we are well qualified to perform the jobs we do, it can be seen that the mechanisms in place to hire regulators, allow engineers to design OWS, license installers and train O&M Providers, it should become clear that there is little in the way of actual training,

and almost no certification specific to the OWS industry.

In general, most counties do not hire personnel with experience specific to OWS. For some smaller, rural counties, just getting someone qualified in the health arena is difficult. When inadequate budgets and low wages are included in the mix, hiring qualified and experienced personnel becomes even more difficult. Most counties do not have a written program, managed by a person certified in OWS, to train new hires. For most of us in the industry, our education in OWS consists of on-the-job-training by someone who may or may not know what they are talking about.

The reliance by regulatory agencies on designs by professional engineers is essentially a false confidence that a professional engineer's stamp (PE) means that the engineer understands onsite wastewater systems. A PE is similar to a Registered Environmental Health Specialist certification in that neither guarantees that the holder has any education and/or experience specific to OWS.

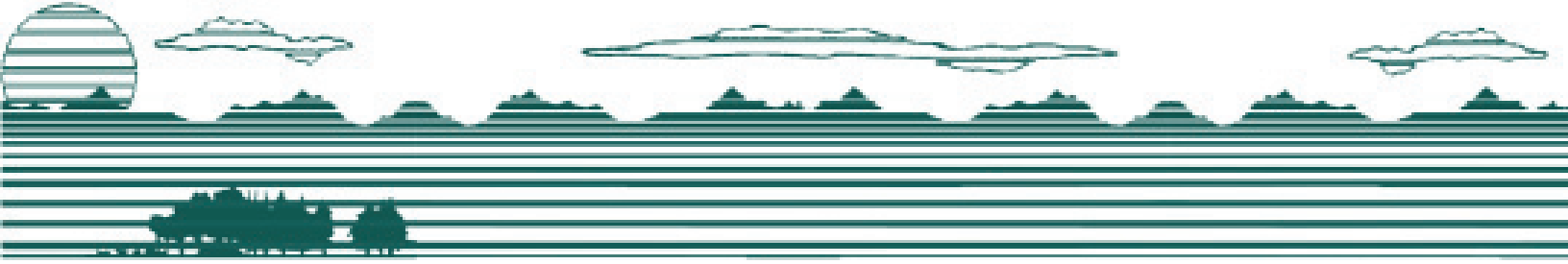
Think about how an OWS installer learns the trade. Until very recently, there was no school or program a budding installer could attend to learn the basics of how to install an OWS. If we consider the number of different types of OWS; standard septic tank & gravity systems, pressure

distributed systems, mounded field systems, low pressure pipe systems and secondary treatment systems, as examples, we can see that some of these OWS have very different requirements for excavation, materials, controls and equipment. Unless an installer has constructed one of the more complex systems in the past, or even received education at a workshop, seminar or by a manufacturer, they are essentially learning at the expense of the client; we all do to some extent, and that's not the way we should be doing business.

The recommendation by CPOW that all OWS practitioners be required to be trained and certified, and to maintain that certification through continuing education is not a radical concept. It is what should be the standard in the industry, and what we, as professionals, expect of other professionals.

How many of us are willing to take our kids to someone who is learning to be a dentist on his first 40-patients? How many of us are willing to hire a person who has never plugged in a lamp to rewire our house? We don't want other professionals learning their trade on us, so why do we believe it is acceptable for practitioners in the OWS industry to learn their trade on the public? For those who will claim that installers and O&M Providers have to be licensed through the county, let's be honest. The tests administered by counties in no way assure the

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public that the installer or O&M Provider are qualified to do their jobs. These tests simply represent a document that counties can present to indicate that they do something, regardless of how inadequate, to try to ensure that installers know what they are doing. These tests do not distinguish between simple and complicated systems which we can all understand have very different requirements from those installing them.

The requirement to meet minimum experience standards, to be tested and licensed as a designer, was instituted in Washington State in the early part of this decade. The change from requiring more than a designer simply having a pulse and a pencil was accompanied by a great deal of anguish on the part of many regulators, designers and some members of the public. Dire predictions that the pool of designers would shrink and costs for OWS designs would skyrocket were made. As of June 2003, when all designers in Washington State were required to be licensed, the pool of designers shrank from about 650 down to about 250. However, predictions that there would be a shortage of designers and that prices for designs would be raised substantially proved to be unfounded, and the OWS design industry in Washington went on, pretty much as before, with the exception that the public was assured that the person

designing their system was experienced, licensed and under the management of a regulatory agency. The same can be true in Colorado.

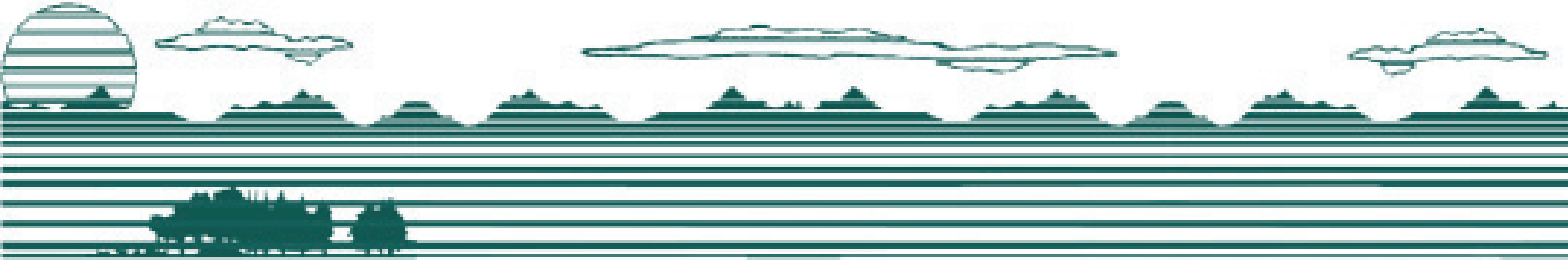
One argument against training and certification of all practitioners is that it will cost money; this is true and there isn't any way around it. If we want to be professionals in the OWS industry, then we must step up to the plate and do what is necessary to become certified in our specialty. The claim that this will make it economically prohibitive for property owners to get a new system designed and installed or a repair design is completely baseless. The cost of NAWT Inspector Training is less than \$350 initially and less than \$250 on a biennial basis for renewal and recertification. The advanced NEHA CIOWTS installer training is only \$110 for NEHA members. When we consider the cost of a single gravel and pipe OWS at an estimated cost of \$7,500, the initial cost of a CIOWTS certificate is less than a 2% change in that system. If the cost is amortized over a number of systems, then the additional cost is quickly reduced to much less than 1% of the system cost, which is far less than the potential for additional costs of installation due to unforeseen circumstances. Consider the effect of having a trained and certified technician inspect a more complex system that costs \$20,000 to design and install. The initial cost for a NAWT certification compared to a single

complex system is less than 2%, assuming that the entire training fee is recouped on a single system, which it will not be.

Health jurisdictions can remove much of their responsibility and cost for inspecting OWS by transferring that requirement on to the designers of the systems. There are health jurisdictions in the U.S. that do this now, using their resources to spot check systems in sensitive areas, or systems from designers they lack confidence in and systems constructed by installers who are new or marginally qualified. The onus to sign off on the system and ensure that it is installed properly with the materials and equipment specified is then placed on the designer. Costs for designs will increase to cover the additional installation observations and reports, but no more than adequate coverage of the installation should cost, and the local health districts will be ensured that the installation is correct, because the certification of the person observing the installation is on the line. The county has no liability or responsibility for the actual system, except to manage the designer who verifies that it is installed properly.

This type of program reduces the cost of OWS to the county health department, and at the same time, institutes a higher standard of oversight, because the designer is trained and certified. There are a number of other benefits to this type of system, not the least of

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which is that the installer wants and needs the designer to sign off on the system to obtain county approval, and is therefore more attentive to the proper installation of the system.

There is nothing that can be done to prevent unethical practitioners, whether they work for private practice or regulatory agencies. When unethical activities are discovered, a thorough investigation and suspension of certification can remove the practitioner from the pool, but human nature dictates that there will always be unethical people in all industries, as there are now.

Both Performance Based Codes and training/certification can raise the standards of the OWS industry across the state. There are creative methods of bringing these improvements to our state without raising the costs of onsite systems unduly. All practitioners in the OWS industry must pull together and set their sights on a better industry if we truly desire to provide lasting protection of our water resources from OWS pollution.

In case you missed it...



Networking



Education

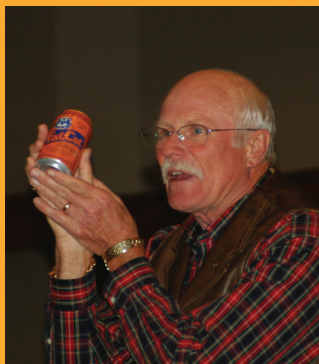


Silent Auction



The passing of the gavel

More photos from the 2009 AEC are posted on www.CEHAweb.com. Photos courtesy of Kurt Dahl.



Fat Cat Auction



The Winner!



Time to Celebrate...



Tasty!