



# WESTERN CHAPTER NEWS

## INTERNATIONAL EROSION CONTROL ASSOCIATION

*Serving Erosion Control Professionals in Arizona, California, Nevada and Hawaii*

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**SUMMER 2013**

### In this Issue...

President's Message .....	2
Upcoming Events .....	2
Election 2013 - Did YOU Vote? .....	3
Silt Fencing and Graduated Silt Fencing .....	4
Training Courses, Exam Reviews and Exam Dates .....	6
Professional Listings .....	6

The extraction of minerals and energy from the earth invariably necessitates a disturbance of pristine environment. That is in direct conflict with an often-overlooked best management practice (BMP) for controlling erosion: don't disturb the soil in the first place.

Fortunately, the emphasis of the extractive industries has changed significantly over the past two decades since I first entered the reclamation business. Traditionally mining companies had focused on managing a mineral resource. The game has changed to the point they now acknowledge they also have a broader natural resource to manage. Increasingly mining companies are tackling the formidable task of measuring and reporting both their positive and negative long-term impact on the environment and society.

Why? A company cannot find and extract minerals if it cannot access land. Part of the price for gaining *future* access to land is to meet stakeholder expectations about how companies should *currently* be managing their land. The strong message our environmentally enlightened society is sending to companies who must disturb the land is that approvals for future projects will only be won if the company can demonstrate that they are appropriately managing current projects. Regulatory pressure supplying teeth to this societal pressure is increasing almost everywhere.

Accordingly, in the pursuit of demonstrating good stewardship of the environment it becomes critically important to utilize state-of-the-art technology to minimize disturbance, and to implement successful reclamation in a timely manner. The development of horizontal drilling now enables one drilling pad to anchor multiple wells and improved planning efforts minimize the potential for erosion occurring from that single drilling pad. Similarly, progressive successful re-establishment of the native environment is critical to demonstrating a mine's operational capability, and to creating confidence among stakeholders about current and future mine projects.



Successive years of roadside revegetation success at high altitudes earned the Beartooth Highway (FHWA) Team the 2007 NPHQ National Achievement Award. Photo Credit: Peter McRae.



Sustainable native plant growth at Hyundai's Proving Track in the Mojave Desert proves the "Do it Once, Do it Right" adage. Photo Credit: Peter McRae.

Empirical data now exists highlighting the economic benefits of completing reclamation successfully the first time around.

See **Doing It Right**, page 3



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# President's Message

I hope everyone is enjoying the summer. I want to take a minute to thank our men and women in uniform for their service, because without their service we could not enjoy the freedoms we do! I hope everyone had a happy and safe 4th of July!

During the past year I have enjoyed serving as the President of the Western Chapter. I do find it difficult sometimes in our industry that competition supersedes good solutions and collaboration. I really want to emphasize the importance of sharing your knowledge and experience with other members. I would like to take this opportunity to remind everyone of Article 1 of the Western Chapter's Bylaws:

**Article 1:** *The general purpose for which this Chapter is organized is to **unite interested parties into a group for the discovery, collection, preservation and dissemination of knowledge toward the attainment of effective and economical methods of preventing erosion and sedimentation of the earth.** The geographic boundaries of the Western Chapter include the states of Arizona, California, Nevada, and Hawaii*

I would like to plan more events in the future where we can collaboratively meet and share information in all of our Chapter States. I'm sure many of our member's would be interested in what is going on in neighboring states and perhaps we can build on what was utilized elsewhere.

I think the Tahoe Event was a great venue to disseminate some of the knowledge we have to others in our organization. The Two-Day Field Roadshow on August 8-9, 2013 demonstrated innovations in Storm Water Management and Successful Construction. I hope many of you were able to take advantage of this event. I'd like to thank all those who worked on it. Remember, non-members can also attend these events so when you can pass the information on to co-workers or others interested in these topics.

See **President**, page 3



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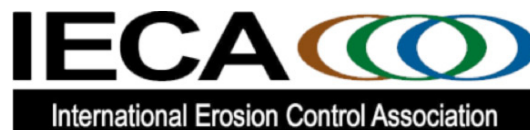
## Upcoming Events

**September 9 - 11** (Squaw Valley, CA)  
CASQA Conference *Taking Stormwater Quality Management to New Heights.*  
See [stormwaterconference.com](http://stormwaterconference.com)

### Various Dates (Regions in CA)

Sacramento River Watershed Program presents a series of Watershed Management Workshops. See [www.cce.csus.edu/conferences/srwp/srwp.cfm?pid=10](http://www.cce.csus.edu/conferences/srwp/srwp.cfm?pid=10)

California Rapid Assessment Method Training (CRAM) [www.cramwetlands.org/training.html](http://www.cramwetlands.org/training.html)



The IECA, our parent chapter, as part of its mission to "connect, educate and develop the worldwide erosion and sediment control community" has implemented a new program to provide assistance to local IECA Chapters.



Laura Felux

Our Chapter is fortunate that Laura Felux, the IECA Marketing Manager will be providing assistance to our Board during this year. 🐾

## Western Chapter Polo Shirts Available!

**Stand out—be proud to be a member of the Western Chapter and help the Scholarship Fund!**

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*Taking the time to re-vitalize a functioning soil community on drilling pad disturbed soils in Pinedale, WY earned Shell Oil BLM's prestigious "Best Management Practices" Award for Sage Grouse habitat restoration in 2006. Photo Credit: Dick Carr.*

## Doing It Right, continued from page 1

Reclamation failures can result in a 50% cost increase over the cost of planning for and implementing proper, and successful, reclamation techniques from the outset of the project.<sup>1</sup> Or to put it another way, the "low bid" option (as opposed to "best value" option) is notoriously the most expensive way to discharge one's reclamation obligations.

The study addresses the economic impacts associated with both the *direct* costs and *indirect* costs of unsuccessful reclamation. The significant economic impacts associated with the direct costs reflect the additional earthwork for sediment clean-up and re-grading, the costs of importing topsoil or applying soil amendments when poor soil conditions generate initial re-vegetation failures, the obvious repeat costs of re-seeding and re-installation of erosion control products, and the costs of weed control.

The hidden indirect costs include environmental manager and consultant time to coordinate reclamation work that needs to be redone, potential agency fines for stormwater management violations, and potential lost opportunity cost due to poor agency and landowner relationships that delay mineral extraction.

The study highlighted the importance of the need for environmental managers to set up a system for cost data collection to establish credible reclamation budgets. Providing reasonable estimates for reclamation activities that can be applied to capitalizing reclamation costs up front on future projects would ensure resource protection. ☁

<sup>1</sup> The Economic Benefits of Completing Reclamation Successfully the First Time for Oil & Gas Sites. D. Chenoweth, D. Holland, G. Jacob, L. Kruckenberg, B. Whiteley.

## President, continued from Page 2

Additionally, something I have been involved in is the SWRCB recently adopted Phase II Small Municipal Separate Storm Sewer Systems (MS4) Permit. For those who are not familiar with this Permit it requires small cities as well as non-traditional facilities to obtain coverage under it. In a nutshell, it directs the permittee to monitor the discharges into their storm drain systems from the various entities within their jurisdiction. In San Diego, where I reside, all of our cities were covered under the Phase I MS4 permit. However, there were several other facilities which were not included with the Phase I permit. Those facilities included hospitals, schools including colleges, special districts, military and prisons to name a few. If you checkout the SWRCB website and look at the permit (Order No. 2013-0001-DWQ) you will see under Attachment B page 7 and 8 there are several facilities in San Diego which need to obtain coverage. These facilities have until July 1, 2013 to file their Notice of Intent to obtain coverage. This may be of interest to those of you who are seeking new opportunities to expand your businesses. Additionally, these facilities might benefit from your knowledge in erosion and sediment control, etc.

Also, in California we are still holding our breath for the adoption of the new Industrial Storm Water Permit. It looks like it will not be adopted until December 2013 or January 2014. The original permit was issued in 1997. Typically this type of permit expires every 5-years. Keep your eyes open for this permit. There will be new training requirements and thus opportunities for those interested in the Industrial Storm Water Program.

Lastly, I'd like to mention the next IECA Environmental Connection Conference will be in Nashville, Tennessee February 25-28, 2014. Please check out the IECA website for information on this event and deadlines for submittals.

Please contact me directly or any of our board members if you have an idea for holding an educational training/workshop event in your area. ☁

## Election 2013 – Did YOU Vote?



Voting for the Board of WCIECA Directors began July 12 and concluded August 16. Thank you for your votes!

We will announce the new Board and positions after the Board meets in September.

If you forgot to vote please remember how valuable your participation is for future elections.

### Election Statistics

Year	# of Ballots	% of Membership Voting	Total Members
2012	28	6.9	405
2011	35	8.2	417
2010	35	7.3	479
2009	31	5.3	580
2008	51	7.8	652

As you can see, we have a low percentage of members voting. We need your vote, be proactive! ☁

# Silt Fencing and Graduated Silt Fencing

## Proper Product Selection, Installation and More!

During the past few years while conducting inspections of both active and in-active construction sites, I have noticed a common theme concerning Silt Fencing (SF), Graduated Silt Fencing (GSF) and even Belted Silt Retention Fence (BSRF) devices. Well, really it's the lack of a common theme in the proper selection, installation and maintenance of these devices and that is where the problem exists in my opinion.

Many project applicants find themselves with a dilemma after plans are approved. That dilemma is simply figuring out exactly which product is appropriate for the site to ensure that local water quality protection objectives are consistently and cost effectively met to the Maximum Extent Practical (MEP). Specifically, which device will contain and capture sediment that has become dislodged and even suspended in water from leaving the site.

Perimeter control devices, such as traditional SF, GSF and BSRF are just three of the plethora of devices that are available in the market that can be chosen to prevent sediment from leaving a site. Perimeter control devices, like many sediment control devices, are not a "one size fits all" measure to control and contain sediment from both active and inactive construction sites. As I am out and about during work and my everyday life I notice how many unique and, albeit interesting ways perimeter control devices have been installed, maintained, cleaned and repaired. Not to mention how many interesting or new ways that site operators have used SF, GSF and BSRF devices. These devices are not the same and if not properly used and / or installed can actually increase water quality risk which, in turn, increases exposure to both site operators and owners to violations and fines.

Traditional SF, GSF and BSRF are vertical sediment barriers which contain sediment by impounding sediment-laden runoff on the up gradient side of the device. They are designed based upon the concept of "permeability" which is basically the flow rate of water through the cross sectional pattern of the fabric. The fabric is designed with tighter spacing (warp & weft) at the bottom portion of the fabric and larger spacing at the top portion which controls flow rate to allow sediment to settle behind the device. They are intended to be installed following American Society of Testing and Materials (ASTM) and California Stormwater Quality Association (CASQA) standards. To ensure that all of your time and money is effectively spent to achieve the MEP concept to protect local water quality, here are some thoughts to consider during product selection, installation and maintenance.

## SF / GSF / BSRF Applications

Some of the more common applications of SF, GSF and BSRF include: (1) perimeter control, (2) overland flow control, (3) secondary inlet protection on bare soil, (4) containing sediment runoff from temporary stockpiles on pervious surfaces, (5) intercepting runoff, (6) general flow control, (7) removing sediment and/or pollutants, (8) controlling volume or pollutant loads, and (9) complying with regulations—Federal, State (California Construction General Permit, 2010 California Green Building Standards Code or CALGreen, Caltrans' Construction General Permit, etc.), and local.

## Product Selection

Again, silt fencing devices are not designed as universal devices that fit all applications and /or sites. Silt fencing selected to capture sediment from a site containing a silt loam is different than the device needed to capture larger particles from a site comprised of sandy soil. In addition, the anticipated volume of flow will affect the necessary spacing between stakes. Thus, for proper selection please consult a qualified professional or supplier representative.

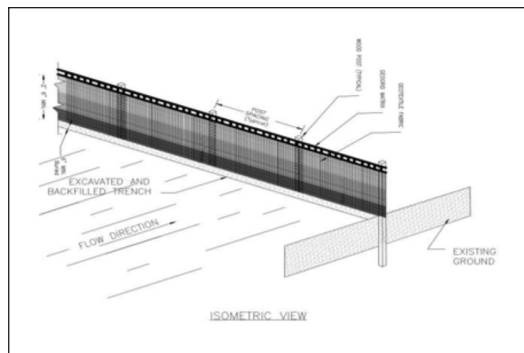


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MRSWMP Stormwater  
Program Manager



*Perimeter control devices, such as traditional SF, GSF and BSRF are just three of the plethora of devices that are available in the market that can be chosen to prevent sediment from leaving a site.*



*No matter how well engineered the product is, if it is not installed per design standards, it will not meet its intended purpose.*



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## Call for Articles

Do you have a technical article, regulatory update or event announcement you'd like to share with your fellow members? Possibly a profile write-up on a fellow Chapter member who is quietly implementing imaginative erosion control practices out of the mainstream eye? Would you like to earn some continuing education units or professional development hours to maintain your professional certifications? If you are interested, please forward articles to Doug Dowden, WCIECA Editor-in-Chief at [stormwaterca@att.net](mailto:stormwaterca@att.net) for the WCIECA fall newsletter by September 15th, 2013 and we'll publish them in the next issue of *Western Chapter News*! Thank you!

## SF, GSF and BSRF Product Performance Factors

Factors to consider for product performance include: (1) install properly—no matter how well engineered the product is, if it is not installed per design standards, it will not meet its intended purpose; (2) perform routine inspections, which are paramount to ensuring product performance throughout the designed life-span of the product—inspect weekly, before a predicted storm event, during the storm event when safe, and immediately following the storm event; (3) maintain and clean perimeter control devices weekly, before a predicted storm event, if needed and when safe during the storm event, and immediately following the storm event; (4) repair and / or replace the devices as necessary; (5) select the right device for the job at hand (again, these devices are not a “one size fits all” scenarios); and (6) maintain and update your storm water BMP log daily—documentation is key to compliance. Your best defense when a notice of violation and / or fine has been levied is your records and paperwork.

## Product Installation

Factors to consider prior to product installation include: (1) slope length, gradient and total disturbed soil area; (2) upstream hydrology and total disturbed soil area (DSA) behind the SF, GSF and BSRF; (3) soil type (percent clay, silt, and sand), amount of rock, and depth; (4) local climatic conditions (rainfall, season); (5) purpose—will the device be short-term or long-term, is it intended to control volume, total pollutant load and / or velocity; (6) status of adjoining land uses (i.e. developed, exposed soil, and / or vacant); (7) the site's proximity to a waterway (Clean Water Act Section 303[d] status), a riparian zone, etc.; (8) overall project risk level (1, 2 or 3); (9) device distance and spacing considerations; and (10) cost considerations.

## Recommended Industry Installation Standards & Tips

SF, GSF and BSRF should be installed perpendicular to water flow. Always install from the lowest level to higher level contours. Install so that the SF, GSF and BSRF is uniformly perpendicular to grade to avoid concentrating overland flow patterns. At a minimum, entrench the device 6 – 12” into the soil. The best method to achieve proper installation is “static slicing” which is the insertion of a narrow custom-shaped blade at least 10” into the ground simultaneously pulling silt fence fabric into the opening created, as the blade is pulled through the ground. Ensure there is a smooth, even soil surface to ensure no gaps between the SF, GSF and BSRF and the underlying soil. Following installation, compact soil on both sides of the SF, GSF and BSRF to prevent storm water undercutting. Staking depth should be at least 12 – 16” deep, but also based upon soil type, slope length, gradient, and total exposed surface area behind the SF, GSF and BSRF. The distance between stakes should not exceed 10', but closer staking may be required, based upon soil type, slope length, gradient and total exposed surface area behind the SF, GSF and BSRF. Install SF, GSF and / or BSRF so that the stakes are on the outflow / discharge side.

The end of a given segment of SF, GSF and BSRF with the stake should be rolled into the end of the next segment to ensure a sealed juncture between two sections. The ends of each section should overlap approximately 3'. Total SF, GSF and BSRF runs should be “J-looped” at the ends, meaning turned at least 3' upslope to reduce the chance of runoff flowing around the ends. SF, GSF and / or BSRF devices installed at a base of a slope are typically positioned at least 3' from the base of the slope to allow for adequate room for capturing runoff and to enable cleaning the device. Additionally, the ends of SF, GSF and / or BSRF installed in long continuous runs should be turned upwards every 100' to prevent concentrating overland flow at the base of the device over an extended distance.

Now, the information contained herein is just recommendations and does not include all contributing variables to product selection, installation and maintenance. Remember, each site is different and even if you select a product that isn't optimal and a slight failure occurs you may be able to mitigate a violation notice and / or fine if you have properly documented all required inspections, maintenance, cleanings and repairs in a log that is kept on site at all times. ☁



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## Trainings – Offered by CISEC

For one and one-half day construction site inspector training modules on sediment and erosion control. Visit [www.cisecinc.org](http://www.cisecinc.org) for various dates and locations coming up in California.

## IECA Webinars

IECA eLearning Online Webinars usually are one hour in length and credit attendees 1 Professional Development Hour. See [ieca.crhosts.com](http://ieca.crhosts.com)

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