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Western Chapter News

I • E • C • A

Serving Erosion Control Professionals
In
Arizona, California, Nevada and Hawaii

Inside this issue:

WCIECA Members Pair Erosion Control with Fine Wines

On July 20 WCIECA members converged on Napa Valley to kick off a memorable day learning about vineyard erosion control issues.

Dave Steiner of the Napa County Resource Conservation District (RCD) set the stage for the day with an overview of vineyard development and erosion issues in Napa and Sonoma.

Two changes that occurred had significant impacts on the erosion potential in vineyards; the build-out of the valley floors moved vineyards up on to the slopes, and changes in agricultural techniques that allowed plantings to become more intensive. These changes introduced erosion control challenges. Initially, slopes were planted in the same manner as the valley floor, leading to massive erosion. Now in Napa, all vineyards with slopes or 5% or more must develop erosion control plans. The RCD is involved in reviewing these erosion control plans.

WCIECA members examine vineyard erosion control techniques

Vineyards use various methods to prevent erosion. Terraces, back sloping roads and terraces, cross slope diversions, and inter-row cover crops are some of the more common erosion control methods. Each vineyard has a different philosophy on the best approach and most of them implement a variety of practices.

Mike Morris escorted the group into the Domaine Chandon fields to explain the erosion control techniques employed. Drip irrigation and cover cropping is used in all the fields. Cover crops are mowed and the trimmings are cast under the vines to serve as mulch. Compost research is currently underway and Domaine Chandon's parent company in France uses 20-40 tons of compost per acre on the vineyards.

The Universal Soil Loss Equation was employed to determine the placement of diversion swales. Domaine Chandon uses large swales, which involve a larger initial investment, but are easier to maintain. Other vineyards use smaller swales that can be bridged by tractors and are cheaper to install.

Domaine Chandon doesn't use terraces, their preference is to leave such steep slopes unplanted rather than risk failure and loss of vines. If a slope drain fails the terrace is lost along with the vines. There are also logistical problems associated with turning equipment on the terraces. Humps are created in fields with slopes. These humps break up the slope length, can be planted, and the tractors can drive over them.

The next stop was at the Spring Mountain Vineyard in St. Helena. After a picnic lunch featuring a Spring Mountain red outside the estate house, Rex Gaitner toured us around the steeply sloped vineyard to explain Spring Mountain's erosion control program.

Spring Mountain employs terraces on the steep slopes. Soil depth allows them to plant two vine rows per terrace, so there is only a minimal loss of vines density, 2040 vines/acre in terraced blocks compared to 2700 vines/acre in the flat blocks.

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President's Message

Dear Western Chapter Members,

Congratulations to our new Board members: Dave Gilpin, Hossain Kazemi, and Mel Mathews. If you don't remember them from their biographies on the ballot, David is President of Pacific Coast Seed, Kazemi is a storm water regulator for San Francisco Water Board President, and Mel Mathews is a Principal Engineer with DMJM+HARRIS. New officers include Carol Forrest continuing as Technical V.P., Mike Chase as Administrative V.P., Sandy Mathews continuing as Secretary, Claudia Chambers continuing as Treasurer, and myself continuing as President. The well-rounded Board now includes 3 consultants, 2 contractors, 2 regulators, one supplier, and one supplier/consultant. Turnout, unfortunately, was very low, 38 to be precise, and we are very disappointed by the membership's lack of participation. If anyone has comments or suggestions regarding how we may get better participation in future elections, please contact us.

Our appreciation is extended to out-going members Kym Kelley, John Haynes, and Jon Shilling for their outstanding contributions to the Chapter over the years. Certificates of appreciation were presented in Napa. Extra thanks to Jon, who organized the very successful 'A Taste of Napa' field tour.

Regarding new educational opportunities, IECA headquarters has approached the Chapters about increasing local availability of the Program Development Courses. Up until now, these very popular courses have been typically offered in population centers and in conjunction with the annual conference. Consequently, some members have not had the resources to travel to the courses and are at a disadvantage for obtaining continuing education.

The proposal calls for two different levels of Chapter involvement: 1. Public Courses, which are open to the general public. The Chapter supplies some support and is rewarded $25 per participant, and 2. In House Courses, where a group or company approaches the IECA to provide one or several classes. IECA charges a set fee regardless of the number of participants, and can provide local expertise to adjust the curricula as needed. The Chapters can charge what is appropriate, and can require a minimum or maximum number of participants. We are currently working with Tahoe agencies to offer one or more courses via the In House program. The courses can be viewed on the IECA web site, www.ieca.org. If you are interested in having the WCIECA/IECA bring one or more of these courses to your area please let us know.

Other educational updates: We are currently planning another field tour, this time in the Phoenix area with Chapter member Lou Snow as our guide. We are looking at dates in late November, 2001. We will keep you posted as the program develops. The regional conference will be held in mid- to late-April of 2002 in Ventura. We envision a venue similar to the San Diego conference held in 1998, with a day of professional presentations followed by a day in the field examining and evaluating local erosion control and water quality problems. A CPESC tutorial and exam will also be included in the program. The theme for the conference is Monitoring. This broad topic will cover numerous types of projects, including monitoring for implementation of NPDES, and monitoring of cut and fill erosion control projects. The final program will be determined this coming winter. If you are interested in participating, please contact us.

Julie Etra, CPESC
Western Chapter President

Are You A Member?

To become a member of the IECA, or to become a Western Chapter member (if you are already an IECA member) contact IECA Headquarters:

(800) 455-4322
http://www.ieca.org

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Terraces are back-sloped and underground diversion drains convey water down the slope. To protect the soil structure of the terrace, soil is only ripped right along the vine row. Rex said that replanting the terrace blocks, which includes the underground piping, costs about $60,000 per acre, of which about 1/3 is for erosion control measures.

Care is taken in placing the terraces to preserve trees. The vines are kept outside the drip lines of the trees, which both protects the trees and enhances the productivity of the vine.

Spring Mountain has a grant from the Regional Water Quality Control Board to study the off-site sediment transport rates of till versus no-till vineyard blocks.

The final stop for the day was at Frog's Leap Vineyard. Stream bank erosion control was featured at Frog's Leap, although the organic dry farming methods employed here presented a different vineyard management perspective. Before the tour started Anne Hopkins and vineyard owner John Williams treated the group to a wine tasting while providing background on the vineyard.

The vineyard is located right along the Napa River. Several years ago Evan Engber was called in to address several areas of serious bank erosion. Evan evaluated the site and employed bioengineering techniques to repair and stabilize the lost bank sections. According to John Williams, bioengineering fit well with the overall organic philosophy of Frog's Leap.

The repairs address two critical areas, removal and ongoing management of vegetation on gravel bars and re-establishing and stabilizing the banks. Vegetation was removed from several gravel bars in the river. Vegetation had colonized the bars over many years of low water flow. Once the woody vegetation was established flow was forced into the weaker banks, which washed out. Evan noted that it is essential to manage mid stream vegetation to keep the high flows moving and allow the natural processes to push the gravel bars downstream. Management of bank vegetation is not an important factor in high flows, however the presence of bank vegetation will help sediment to deposit out on the bank where it is needed.

Fill brought in to recreate the slope was stabilized with live willow brush mattresses. Within one year, full riparian cover was re-established. Now the vineyard managers watch for slope problems and perform repairs with willow mattresses while the problems are still small.

Rex Gaitner of Spring Mountain Vineyard describes the erosion control measures of a newly terraced vineyard block to WCIECA members.

Frog's Leap organically dry farms grapes. Dry farming involves regular cultivation of the rows during the growing season. The cultivation pulls natural soil moisture up into the root zone eliminating the need for irrigation. Hardy drought tolerant rootstock is used and the vines develop extensive and deep root systems before the wine grape is even grafted onto the rootstock. The flat vineyard and

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Contractor's Corner

Soil Stabilization using Erosion Control Blankets

by Mel Mathews, CPESC

Erosion Control Professionals are often faced with the challenge of stabilizing that stubborn slope. A possible solution might include the use of Erosion Control Blankets. Erosion Control Blankets can be effective in minimizing the erosive effect of rainfall when used to cover bare or newly planted soil. Their use stabilizes the soil to protect new plantings and reduces the potential for introducing sediment into storm water runoff, a win-win situation! Erosion Control Blankets can be specified by designers for protection of newly graded slopes, open areas, or drainage swales to allow germination of seed mixes and plantings. Contractors may also choose to use Erosion Control Blankets for temporary erosion control on highly erodible areas.

Several types of erosion control blankets are in the process of being installed on a slope to evaluate their effectiveness.

What are Erosion Control Blankets?

Erosion Control Blankets are biodegradable materials that can be used to protect disturbed slope and channel areas from wind and water erosion. The blanket materials are natural materials such as straw, wood excelsior, coconut, or are geotextile synthetic woven materials such as polypropylene.

Tell Me More

Erosion Control Blankets are effective for soil stabilization on steep to moderate slopes, new landscaped areas, and drainage swales and ditches that are to be planted or seeded. Additional desirable attributes include:

- They increase water infiltration into the soil.
- When used with a seed mix, they protect the mix from being eroded during heavy rainfall or wind.
- They increase the retention of soil moisture to promote seed germination.
- Most importantly, they reduce soil erosion.

There are many types of products available for erosion control. Product selection is based on many factors, such as:

- Duration required (short or long term temporary usage).
- Effectiveness compared to other soil stabilizers.
- Relative cost of purchase, installation and maintenance.
- Visual impact to the public.
- Environmental acceptability. Synthetics may biodegrade more slowly than natural materials.

Getting the Most from Erosion Control Blankets

Erosion Control Blankets provide excellent short and long term temporary erosion control - when properly installed and maintained. Proper soil surface preparation is critical to the effectiveness of the installation:

- All rocks, clods, debris, and vegetation should be removed to ensure full contact between the blanket and the soil surface.
- Follow the manufacturer's recommendations for seed application requirements when used with blanket installation.
- The blanket should be anchored to the soil using metal wire staples as recommended by the manufacturer.
- The staples should be driven through the blanket and into the soil, flush with the soil surface.
- Erosion Control Blankets should not be used where final vegetation will be mowed, because material and staples may be caught in the mowers.

Inspections and Maintenance

As with any erosion control method, the result depends on the product selected, the installation quality, and the commitment to maintenance. The inspection and maintenance of Erosion Control Blankets should be conducted as follows:

- Inspect the site during installation.
- Inspect the installation before, during and after significant rain events.
- Repair or replace all damaged materials.
- Recompact all soil washout areas.

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Calendar of Events

Summer and Fall 2001
Construction Site Planning and Management for Water Quality Protection workshops. A cooperative project of the San Francisco Estuary Project and the San Francisco Bay Regional Board and Friends of the SF Estuary.

September 26 - Contra Costa County (open to all)
October 30 - San Mateo County

Registration and info at http://www.abag.ca.gov/bayarea/sfep/programs/construction/index or call Carol Thornton at 510-622-2419.

October 9-11
5th Biennial State of the Estuary Conference, San Francisco Estuary Achievements, Trends, and the Future, Palace of the Fine Arts, San Francisco, CA. Get Registration and info at www.abag.ca.gov/events/estuary_state or call 510-622-2465.

November 26-30
Erosion Control 2001 Pacific Northwest Conference on Soil Erosion Control, Tacoma WA. Sponsored by the Pacific Northwest Chapter. Pre-conference CPESC training and exam. Registration and info at www.pcwieca.org or call Carol Davis at 253-815-0477

November 29-30
WCIECA and CPESC will be conducting a two day seminar on Phase II regulations and CPESC training in Phoenix, AZ. For those individuals who have gone through the approval process to take the CPESC exam, there will be an opportunity to take the exam. The keynote speaker for this seminar will be John Kosco who was the primary author of the Phase II regulations. The flyer will be e-mailed next week with all the details.

Fall and Winter 2001
Phase II: How to Select, Install and Inspect Construction Site Erosion and Sediment Control Best Management Practices for NPDES Storm Water Permit Compliance. Co-sponsored by the IECA and USEPA.

September 24, Honolulu, HI
October 8, Denver, CO
October 9, Denver. CO
October 10, Salt Lake City, UT
October 23 East Windsor, CT
October 24, Modesto, CA
December 11, Juneau, AK
December 12, Anchorage, AK
December 13, Fairbanks, AK

Registration and info at www.ieca.org/

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fact that it is not irrigated, limits the erosion potential in the summer and cover crops are planted for the rainy season.

The day ended with a massive BBQ back at the Domaine Chandon vineyard operations facility where the party went into the evening as chapter members shared insights from the day

WCIECA members sample organic vintages at Frog's Leap vineyard.

and awards were presented to the out going Board members, John Haynes, Kym Kelley and Jon Shilling.

The Western Chapter very much appreciates the efforts of the vineyards who hosted the tour; the sponsors who provided refreshments, and transportation; and most of all the efforts of Jon Shilling for organizing the event.

The Effect of Soil Roughness on Rainfall-Induced Erosion

By Michael V. Harding, CPESC; Carol L. Forrest, Vice President, URS Corporation; Howard H. Chang, PhD, SDSU

The San Diego State University Soil Erosion Research Laboratory (SDSU/SERL), which was constructed under a Caltrans contract, integrates beneficial features from each of the primary, soil erosion research facilities in the United States. The rainfall simulation device selected for the SDSU/SERL was the Norton Ladder Rainfall Simulator, which was developed at the USDA-ARS National Soil Erosion Research Laboratory. For testing in the indoor laboratory, multiple simulators were in-

stalled in parallel above the soil test bed to uniformly apply precipitation over the entire test plot area.

The drop former used for the Norton simulator is the Spraying Systems Veejet nozzle, and the nozzles are spaced 1.1 meters apart. For uniform intensity across the plot, the center of spray patterns from two laterally adjacent nozzles meet at the plot surface. This gives a 2.25 mm median drop size, a nozzle exit velocity of 6.8 m/s, and a spherical drop.

The impact velocities of almost all drops from the Veejet nozzle are nearly equal to the impact velocities of those from natural rainstorms when the nozzle is at least 2.4 meters above the soil surface. For this reason, the rainfall simulators used in the SDSU Soil Erosion Research Laboratory are installed such that the nozzles are a minimum of 2.5 meters above the soil surface. Rainfall intensity can be changed instantaneously with the simulator in operation, and the maximum intensity produced is 135 mm/hr.

The soil test bed is a 3-meter wide by 10-meter long (323 square feet) metal frame that is supported by two hydraulic cylinders that extend to tilt the test bed from its horizontal position to a maximum gradient of 1V:2H. The test bed was designed to support a 60-cm (2-feet) depth of soil, which is sufficient to allow placement and compaction of soil and the implementation of the various surface roughness practices to evaluate their effect on erosion rates. The total usable surface area of the soil bed is 3 meters wide by 10 meters long. However, only a portion of the treated bed, 2 meters wide by 8 meters long, is delineated for evaluation by the use of metal edging. Runoff and sediment are directed to a flume at the toe of the slope and from there to collection receptacles on the floor. In order to obtain accurate results from the rainfall simulation/erosion rate evaluations, the municipal water supply is treated by reverse osmosis and softened to remove minerals.

Soil Roughness Testing

Soil roughening is an important first step in the establishment of permanent erosion control vegetation on a newly constructed bare slope. Soil roughening is the creation of a soil surface roughness by mechanical means. Typically, the roughening is performed parallel to the slope contours and perpendicular to the direction of runoff. The benefits provided by soil roughening are to slow runoff, enhance infiltration, moderate soil temperature, trap moisture, and enhance seed germination and root penetration. To evaluate the effectiveness of different roughness techniques in reducing erosion rates for different storm events, roughness tests were conducted at the SDSU/SERL using simulated storm events corresponding to the 5-year (yr), 10-yr, and 50-yr storm for the Los Angeles area. All tests were run using a clayey sand soil, on a 1V:2H slope, with three (3) replications of each test condition.

Roughness types that were tested included:

- Smooth-rolled soil: The characteristics of a smooth-rolled, compacted surface were simulated by placing soil in the test bed, tilling it to uniform consistency compacting it with hand tools, and lightly raking the surface.

- Trackwalking: The characteristics of a trackwalked surface were simulated by first preparing the soil to a smooth-rolled condition, then placing a metal template on the surface to produce the required roughness. Three tracks from a Caterpillar D-9 bulldozer were welded together to form a template for the trackwalking procedure. A small gasoline-powered compactor was used to compress the tracks into the soil surface.

- Sheepsfoot-Rolling: The roughness characteristic of a sheepsfoot-rolled slope was accomplished by designing and utilizing hand tools to create the appropriate impression in the soil surface. As with other roughness techniques, the soil surface was first tilled and compacted by hand before application of the sheepsfoot tool.

- Ripping: To simulate the effect of ripping the surface with bulldozer tines, the soil was first tilled and compacted by hand. Following hand compaction, the soil surface was ripped to a depth of 10 cm (4 in.) using a hand pick. The ripping was done perpendicular to the flow of water down the slope, with each incision 30-35cm (12-14 in.) apart.

- Imprinting: The triangular characteristic of an imprinter/roller was accomplished by utilizing a hand tool designed and constructed to the dimensions of an actual imprinting machine. The orientation, depth, and spacing were monitored and adjusted for consistency of surface preparation.

These techniques provide erosion control by slowing down runoff velocity, increasing the soil surface area to enhance infiltra-

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Regulatory Update: California Adopts Sampling and Analysis Requirements for Construction Site Runoff

In April 2001 the California State Water Resources Control Board (State Board) adopted Resolution 2001-046, which requires sampling and analysis of construction site runoff. The resolution modifies the existing permit required for storm water discharges from construction sites that are 5 acres or greater. The required sampling and analysis strategies had to be amended into project Storm Water Pollution Prevention Plans by August 1, 2001.

As reported in the Spring newsletter sampling and analysis plans need to address two types of pollutants. First, construction sites that directly discharge runoff into waters listed as impaired for turbidity or sedimentation/siltation must monitor for these pollutants. Second, sites where construction materials are stored exposed to rainfall and runoff must sample and analyze for pollutants that cannot be visually detected in runoff.

The listing of impaired waters, known as the 303d list, is available from the State or Regional Water Quality Control Boards. Only construction sites that discharge directly into waters listed as impaired for sedimentation/siltation or turbidity must conduct this sampling and analysis.

Non-visible pollutants can include a wide range of materials used on a construction site. These sampling requirements apply to all construction sites regardless of the water body into which runoff is discharged.

Effective and maintained erosion and sediment control practices and preventing contact of construction materials with runoff are the keys to staying in compliance with the storm water runoff requirements.

Sampling and analysis requirements for non-visible pollutants can be minimized or possibly eliminated by storing materials in water tight containers, inside buildings, or under cover and out of the elements. However, for some materials, like soil amendments, it might not be possible to prevent contact with storm water. In those instances must know what chemicals might leach out of the amended soil and test runoff for that chemical or its indicator parameter, e.g. pH for lime.

The California Stormwater Quality Task Force produced a guidance document to help discharges develop sampling and analysis strategies. A draft of the guidance is currently available at http://www.stormwatertaskforce.org and http://www.swrcb.ca.gov/. The final guidance is due out is September.

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tion, and reducing runoff volume through storage in surface depressions. Roughness techniques are important for permanent stabilization in three ways:

1. Most techniques can be accomplished with existing on-site equipment so that finished slopes have a margin of temporary protection until permanent vegetation is established.
2. Roughness techniques complement most erosion control methodologies (i.e., hydraulic soil stabilization), making them perform better.
3. Roughness techniques, through increased infiltration and decreased runoff of water, improve vegetation establishment.

Results

Dry sediment weight was subjected to an analysis of covariance with roughness treatment and storm type as treatment factors and total runoff volume as the covariate. Storm type and roughness treatment were highly significant, as was the interaction between the two. Thus, both storm type and roughness treatment influenced sediment weight, with the effects of different roughness treatments depending significantly on storm type. The covariate effect was not statistically significant, but was strongly related to storm type. This may reflect the fact that storm type is affected by factors other than just runoff (e.g., rainfall intensity) that were not specifically addressed in this study.

The weight of discharged sediment was normalized based on the unit surface area of the test bed and rainfall volume.

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Overall, sediment discharge increased more with increased storm intensity than increased storm volume (each Type (2) storm had a lower intensity and higher volume than the Type (1) storm for the same return period). Ripping produced slightly lower sediment yields than the smooth-rolled (baseline). Sheepsfoot-rolling and trackwalking produced even lower sediment yields, and were not significantly different from one another. Imprinting produced significantly lower sediment yields than any other treatment considered in this experiment. The superiority of the imprinting treatment was roughly consistent across all the tested storm types.

Conclusions

When making a decision as to which soil stabilization practice to implement on a site, it is important to compare the performance of a particular technique (to the untreated condition) over a broad range of storms that might be encountered during the construction period (e.g., 5-yr, 10-yr, 50-yr). Therefore, a practical interpretation of the roughness data is expressed in the last column of Table 1. This column shows the average, relative increase or decrease in erosion or runoff for a particular roughness practice, as compared to smooth rolled, over a wide range of storm events.

The results of the soil roughness tests (normalized erosion rate and runoff) are summarized in Table 1. From Table 1, some general statements can be made:

- The imprinting technique appears to be the most effective practice in reducing erosion (76 percent decrease in soil loss);
- Sheepsfoot-rolling and trackwalking provide a good level of erosion control (55 percent and 52 percent decreases in soil loss, respectively);

Table 1
RESULTS OF RAINFALL SIMULATION TESTING FOR ROUGHNESS

Treatment	Measurement	Statistic	Storm						Average Increase (+) Decrease (-)
			5-yr (1)	5-yr (2)	10-yr (1)	10-yr (2)	50-yr (1)	50-yr (2)	
Smooth	Normalized Erosion Rate (kg/m²/mm)	Mean	0.06	0.07	0.16	0.09	0.12	0.09	
		St. Dev.	0.03	0.07	0.04	0.01	0.02	0.02	
		% of Smooth	100%	100%	100%	100%	100%	100%	0%
	Runoff (L)	Mean	255.7	364.4	419.2	470.3	422.3	611.0	
		St. Dev.	11.9	35.1	19.6	9.7	10.6	20.3	
		% of Smooth	100%	100%	100%	100%	100%	100%	0%
Imprinted	Normalized Erosion Rate (kg/m²/mm)	Mean	0.03	0.02	0.03	0.02	0.03	0.02	
		St. Dev.	0.03	0.19	0.11	0.12	0.04	0.05	
		% of Smooth	49%	26%	18%	25%	22%	19%	76% (-)
	Runoff (L)	Mean	222.3	415.6	380.8	446.6	464.4	501.8	
		St. Dev.	13.3	96.1	49.4	84.0	21.1	37.8	
		% of Smooth	87%	114%	91%	95%	110%	82%	4% (-)
Ripped	Normalized Erosion Rate (kg/m²/mm)	Mean	0.04	0.07	0.12	0.08	0.15	0.06	
		St. Dev.	0.18	0.03	0.07	0.04	0.01	0.09	
		% of Smooth	66%	99%	75%	88%	121%	71%	12% (-)
	Runoff (L)	Mean	154.2	276.3	387.3	416.3	373.5	443.4	
		St. Dev.	75.6	17.0	29.8	24.7	7.0	79.2	
		% of Smooth	60%	76%	92%	89%	88%	73%	19% (-)
Sheepsfoot	Normalized Erosion Rate (kg/m²/mm)	Mean	0.03	0.03	0.02	0.05	0.06	0.04	
		St. Dev.	0.03	0.14	0.06	0.03	0.04	0.03	
		% of Smooth	58%	46%	14%	56%	51%	46%	55% (-)
	Runoff (L)	Mean	361.3	374.8	525.1	511.8	503.3	584.4	
		St. Dev.	11.9	71.3	26.7	22.5	26.0	24.3	
		% of Smooth	141%	103%	125%	109%	119%	96%	12% (+)
Trackwalked	Normalized Erosion Rate (kg/m²/mm)	Mean	0.04	0.04	0.05	0.04	0.04	0.07	
		St. Dev.	0.11	0.05	0.08	0.06	0.09	0.04	
		% of Smooth	80%	60%	30%	40%	30%	80%	52% (-)
	Runoff (L)	Mean	218.7	448.3	460.7	468.5	410.6	579.9	
		St. Dev.	48.0	26.8	35.5	38.4	49.7	36.0	
		% of Smooth	86%	123%	110%	100%	97%	95%	2% (+)

Advertising Information

Advertising in the Western Chapter IECA Newsletter is a great deal! Benefits include:

- ✓ Inclusion in both the on-line version and the standard paper version.
- ✓ Direct links to your website on the on-line version.
- ✓ Distribution to the people who need your products/services the most – erosion control professionals.
- ✓ Distribution at trade shows, seminars, conferences, short courses and field tours.
- ✓ And you will be helping to make the Western Chapter IECA Newsletter the best in the industry.

The Western Chapter IECA Newsletter is distributed quarterly to members of the Western Chapter IECA. Additionally, each year the January issue will be a Special Color Edition that will be distributed at the Annual IECA Conference.

If you have any questions or would like more information, please contact Vance Howard at:
Phone: (530) 757-1156 Fax: (530) 247-1601
E-mail: vance@dcn.davis.ca.us

Classified Ads

Civil Engineers wanted

Calif. PE desired, site erosion control design and compliance, SWPPP development and implementation, full time, full charge, positions in North LA and San Diego Counties. Contact: Eric Woodhouse, Landscape Development, Inc. at (661) 295-1970 or email @: ewoodhouse@landscapedevelopment.com

For Sale

1982 International cabover with 2500 gal. hydroseeder and large cargo hoist
$15,000.00/offer
Metamorphosis Erosion Control, Inc. 800-994-7333

Wanted Accurate Email addresses for WCIECA members

Not receiving newsletters and other announcements from the WCIECA, maybe we have an old email address. Please let Sandy Mathews mathews6@llnl.gov know or check your membership listing at www.ieca.org, you can update your information anytime in the Members Only section.

This is a new section for Western Chapter News and it is FREE to Western Chapter Members. Classified ads are limited to 4-5 lines (approximately 25 words). Content of the ad must be industry related. Examples include: employment opportunities, used equipment to sell, etc. Submit your classified ad to Sandy Mathews.

Western Chapter News
c/o SWAG
491 South St. Suite B
Redding, CA 96001

A t t e n t i o n !

Many exciting things are happening in the Western Chapter. First, the Western Chapter IECA now has a website (www.wcieca.org). This is where you can go to read the newsletter, view announcements, and stay in touch with what is happening in the Western Chapter. For advertisers this means exposure to EC professionals around the world and a direct link to your company's website.

It is time for you to get involved. This newsletter is for you and your fellow professionals. Share your knowledge of the industry with others—submit an article, a column, or just an announcement. There is a lot happening in the erosion control industry these days (new regulations, new technologies, etc.). Let's communicate and stay ahead of the game.

At the IECA Conference in Las Vegas many Western Chapter members informed me that they were not receiving the newsletter. Over 80% of the members receive the newsletter via email. Unlike physical addresses, email addresses change often, so keep me updated to insure you always receive the newsletter and announcements.

Vance Howard, *Editor*

Western Chapter News is produced by the non-profit Sacramento Watersheds Action Group.

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