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Volume V – Winter 2009



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## MISSION STATEMENT

“Protecting and preserving the water and wastewater resources of Rural Illinois through education, representation and on-site technical assistance”.

## ABOUT THE COVER

The Illinois Rural Water Association Staff at the 4th Annual Northern Conference – Rockford, Illinois

Pictured front row, left to right: Heather McLeod, Pat Gammill, Frank Dunmire, Denise Burke, Gale Moore  
Back row, left to right: Gary Chase, John Bell, Wayne Nelson, Bill Dowell, Mark Mitchell, Chuck Woodworth

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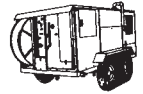
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## **SOURCE WATER PROTECTION: Many Tools at Your Disposal**

*by Mark E. Mitchell,  
Source Water Protection Specialist*

One of the most important aspects in today's world is security and emergency preparedness (contingency planning). Contingency planning deals with emergency preparedness, mitigation & response for public water supplies and prepares those in responsible charge to evaluate their preparedness for and response to threats to health and safety within their own supply. It requires supplies to consider their specific vulnerabilities and take steps to mitigate them.

When preparing your emergency preparedness plan, many things need to be evaluated including, but not limited to: determining who is in charge, chain of command, possible needed and available resources, distribution system repair supplies and long and short-term alternative water supplies.

The Illinois Rural Water Association has available a template for use in developing a **CONTINGENCY PLAN FOR EMERGENCY PREPAREDNESS** for source water protection. This template is available by either calling our office to request one, or it is also available as a free download under the security tab on our website ([www.ilrwa.org](http://www.ilrwa.org)).

Another source water protection tool that has been around for many years, but we are seeing a renewed interest in, due to various issues in Illinois, are Maximum Setback Zones for wells. As you already know, CWS wells in Illinois are given either a 200 or 400 feet setback from potential Primary sources of contamination as defined in the Illinois

Environmental Protection Act. These setbacks are determined based on the geologic sensitivity of the aquifer the well draws water from. The most geologically sensitive wells are of course given the larger setback. What most people may not understand however is that existing potential primary sources of contamination are also given a setback of either 200 or 400 feet, and no new CWS wells may be drilled within the setback of that potential primary source. I do not have space to completely explain Maximum Setback Zones here in this article, if you think this measure of protection might be in order for your CWS wells, contact me to discuss this further and we can take a look at your individual situation of your wells.

It is our responsibility as stewards of public water supplies to protect the sources we have and enjoy today so that future generations have that same privilege. I cannot stress enough the importance of the idea that in Source Water



Protection an ounce of prevention is worth a pound of cure. I have seen numerous real life instances here in Illinois where supplies have had no other

*continued on page 7*

An advertisement for Ressler & Associates, Inc. The background is a black and white photograph of a chain link partially submerged in water, with ripples. The text is centered and reads:

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# *Illinois Rural Water Association Logs Another Successful Year!*

*by Frank Dunmire, Executive Director*

After a year that witnessed the loss of funding for two programs, the Illinois Rural Water Association (IRWA) is cautiously celebrating a turnaround that is culminating in another successful year. After beginning the year operating under the first deficit budget in its 30-year history, other funding avenues opened up that resulted in changing the red ink to black. In this month's article I will try to highlight some of the other accomplishments of 2008.

**State Lobbying Efforts** – The Board of Directors for the IRWA ambitiously voted to employ the services of a part-time contract lobbyist in Springfield. Mr. Steve Longhta of SRL Consulting began lobbying on behalf of the association at the beginning of this legislative year. Although we were successful in quashing some unfavorable legislation, passing favorable bills out of both houses proved to be difficult, at best. As you have most likely guessed, all of the partisan politics and distrust that dominated the media resulted in most bills dying in committee. Such was the case with ours. With the impeachment process that is underway at the time of this writing, the residents of Illinois might finally begin get the representation they deserve. Whatever the outcome, interests of rural water and wastewater will be represented in the State's Capitol once again in the upcoming year.

**Annual Conference** – Keeping pace with the past few years, new records were set for the IRWA annual conference held in Effingham during February. A record number of vendors were on hand to showcase their products and/or services

designed to make work in the water and wastewater fields safer, easier or more productive. On hand to visit the vendors' booths was a record number of water and wastewater professionals who were treated to two and a half days of quality educational opportunities, networking with their peers and entertainment during the evening. This year's conference also witnessed the first repeat winner of the water taste test contest. Congratulations to Lake Egypt!

**Golf Outing** – This year's golf outing was held in Peoria and the number of golfers was down slightly from years past. This annual event is designed to get operators out of their offices, equipment or trenches and on to the links for a fun filled relaxing day. Always held on the Friday preceding Labor Day, this outing moves to different courses throughout the state in an effort to afford operators a better chance to attend. When choosing a location, the IRWA staff looks for ease of access. Ideally, the course chosen will be close to the intersection of two major highways and be reasonably priced. Currently we are considering the Effingham area for this year's event.

**Northern Conference** – In spite of the fact that attendance was down slightly, this year's Northern Conference met with rave reviews from both attendees and exhibitors alike. This 4th annual event, held in Rockford, was fast approaching the point of outgrowing its current location and the decision was made to relocate next year's conference to the Cliff Breakers. Mark your calen-



dars for October 20 - 21 to attend the IRWA's 5th annual Northern Conference in Rockford.

**National Awards** – During the National Rural Water Association's Annual Technical Conference held in Reno Nevada, IRWA was the proud recipient of several awards. Merit awards were presented for the categories of Website, Newsletter, Member Services, and State Legislative efforts. In



*IRWA President  
Greg Bates*

addition to the merit awards, IRWA was also the winner in the Public Relations category. While the Board and staff were ecstatic to be honored with this recognition, it paled in comparison to the sense of pride felt when it was announced that the recipient of the Association of the Year was the Illinois Rural Water Association and IRWA President, Greg Bates was called to the stage to accept this year's award.

**What They are Saying** – Throughout the past year, IRWA staff have been busy

## Illinois Rural Water Association Logs Another Successful Year!

continued from page 6

traveling the state assisting systems with a myriad of problems, offering training sessions, and developing source water protection plans. All of this assistance is free-of-charge and all that we ask is a letter of appreciation be sent to the IRWA office so that it might be used in the association's annual report to Congress. It is in this report that we demonstrate to our elected officials that funds they provided for training, technical assistance, and source water protection was well

spent. Following are excerpts of what systems are saying about the services received from IRWA staff.

*"The services and information provided by ILRWA are invaluable to small municipalities like Savanna."*

*"A public "Thank You" to Illinois Rural Water Association and Frank Dunnire for sending Gale Moore to ... assist us."*

These excerpts are from just a couple of the letters received during the past year and we are always on the lookout for more letters. So, when asked, please send a short letter to our office so that we can use them to ensure that we can continue to provide excellent training and technical assistance. 💧

## SOURCE WATER PROTECTION: Many Tools at Your Disposal

continued from page 5

option but to look for an alternative source of water because another source within their jurisdiction was simply not available or cost prohibitive.

If you need assistance with protecting your source of water please contact us and let us assist you in starting or furthering your protection measures by doc-

umenting your **CONTINGENCY PLAN FOR EMERGENCY PREPAREDNESS** and see where that leads you in your protection efforts. 💧



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## Steve Fletcher Elected to Executive Board

by Greg Bates, IRWA Board President

The Illinois Rural Water Association was very proud this year of our National Director, Mr. Steve Fletcher. Mr. Fletcher has been IRWA's Director to the National Rural Water Association for the past seven years and decided to run for an open seat on the NRWA's Executive Board.

Steve was nominated and elected the very first time. The executive Board is a nine person Board that is elected from the 48 person Board of Directors of the NRWA and being elected the very first time that he was nominated tells us that he is well respected and valuable member to the NRWA. Steve has been on several committees throughout his tenure of National Director for the state of Illinois.

The awards committee is the one he has been heavily involved in and is well respected for his professional input into that committee – so much so – that this past year Steve was asked to return due to a vacancy on the committee.

Steve has been on the Board of Directors for the Illinois Rural Water Association for approximately 24 years and serving as National Director for the past 7 years. Steve also served as President of the IRWA for many years and has played a key role in the success of the Illinois Rural Water Association. Steve and Frank Dunmire, our current Executive Director, have developed many key legislative relationships over the past



20 years which have proven to be very valuable. The friendships and knowledge they have acquired over the years have proven to be irreplaceable.

Steve Fletcher, in his spare time, manages the Washington County Water

*continued on page 9*



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## Steve Fletcher Elected to Executive Board

*continued from page 8*

Company out of their office in Nashville, Illinois. Steve also patrols the streets of Nashville as a part-time police officer when filling in for officers on vacation or sick leave. He also serves on the Board of the local park district and has recently accepted the post of Deputy Coroner for Washington County.

Steve has been with the Washington County Water Company for 27 years and oversees one of the largest rural water systems in the state. Steve and his wife Jane spend many personal hours furthering the cause of rural water and I would like to take this time to personally thank them both for their many sacrifices and to congratulate Steve on his appointment of Executive Board of NRW. This is a well deserved honor and I am confident that he will serve Illinois and the industry well. Good luck Steve! 💧



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# Algae Control with Grass Carp

by Gary Chase, Wastewater Technician



The Village of Andalusia, Illinois, is a testimony of utilizing grass carp to control filamentous and duckweed algae.

The Village of Andalusia is located along the Mississippi River in Northcentral Rock Island County with a population of 1,054 residents.

Max Stark is the Public Works Director for the Village of Andalusia and the person who took advice from an Andalusia resident, Leo Hirschuehler, to use grass carp to control algae.

Leo Hirschuehler is the past and current president of the Crescent Lake Association in Alpha, Illinois.



Picture of the two rock filters side-by-side, the one on the left has NO Grass Carp; the picture on the right is stocked with Grass Carp.

In 1994 Max was explaining to the Village Board why extra time and labor were needed, due to the duckweed problem.

Max and the Village employees used dip-nets to remove the duckweed, from the surface of the lagoons and distribute the duckweed to the Village residents for fertilizer value in landscaping.



Many stabilization lagoons can only rely on wind action to keep the duckweed blown off the surface to the lagoon banks by the prevailing winds. Without the wind action, the duckweed will prevail.

In the Fall of 1994, Max contacted the Henry County Water and Soil Conservation District, in Cambridge, Illinois, about purchasing Grass Carp for the Andalusia Lagoon System.

The Henry County Water and Soil Conservation District suggested that Max stock the lagoons and



West Rock filter with Grass Carp

It was at this same Village Board meeting, in 1994, that Leo and Max discussed the experience that Crescent Lake had with the Grass Carp and the absence of filamentous and duckweed algae.

Max was very interested in the idea of stocking the two main lagoons and the rock filters with the Grass Carp which would eliminate the labor and time spent manually removing algae.

Duckweed is almost impossible to control, due to the algae multiplying logarithmically.



East Rock filter without Grass Carp

rock filters proportionally.

Going by the suggestion of the HCWSCD, Max stocked the primary lagoon cell with 10 Grass Carp, the secondary lagoon cell with 8 Grass Carp and the rock filters with 6 Grass Carp.

The Summer of 1995 was the first test for the Grass Carp. The duckweed was less and did not cover the units completely. The duckweed did not have to be removed, since there was less duckweed on the surface. There was no signs of dead Grass Carp and could see the Grass Carp at certain times of the day.

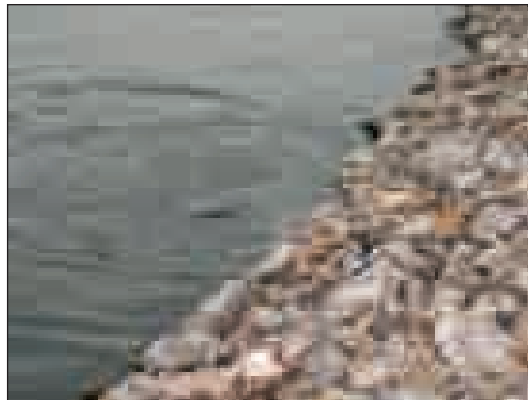
Since Max has stocked the lagoons and rock filters, he has always met the B.O.D and Suspended Solids weekly and monthly parameters. There is no Ammonia-Nitrogen standard, since it is a lagoon system.

There are two important parameters that must be met for algae control to operate properly:

- You need a source of mixing and dissolved oxygen, such as a blower or a mechanical aerator. Without mixing the duckweed would inhibit

photosynthesis and the Grass Carp would not have enough oxygen to live.

- The water depth is very important. For stabilization lagoons, that are



*Grass Carp can be seen walking along the road at the perimeter of the lagoons*

6' or less, the Grass Carp would not survive, due to water temperature, ice and snow cover, which in turn inhibit photosynthesis and create low dissolved oxygen levels.

The primary lagoon is 9.5' deep, the secondary lagoon is 9.0' deep and the rock filters are 8.5' deep.

Max will check the dissolved oxygen levels at different times of the day. The levels in the aerated lagoons are usually above 9.5 mg/l or above. The West rock filter will range from 5mg/l to 10 mg/l

and the East rock filter will range from 3mg/l to 5mg/l.

At the present time the East rock filter has no Grass Carp, due to cleaning the filter last year and haven't had the time to transfer the fish back from the West filter to the East filter.

When I decided to do an article on the Andalusia lagoon system, I toured the system and took pictures as I walked along the lagoon roadway. The fish were visible at the water level by the lagoon banks. The Grass Carp were so shallow the dorsal fins were out of the water.

Max believes there may be some Grass Carp over 5' in length in the lagoons.

After the water leaves the East rock filter the water passes through a contact tank. Since the new dissolved oxygen parameter of 6.0 mg/l went into effect, there are times the Effluent needs a boost to meet the 6.0 mg/l requirement.

Max installed an air diffuser in the contact tank which raises the dissolved oxygen to the standard limits.

If you would like to tour the facility, or contact Max in regard to questions you may have, contact Max at:

Max Stark, Public Works Director  
208 8th Street East  
Andalusia, IL 61232-0789  
Phone number: (309) 798-5593

If you are interested in stocking your facility with Grass Carp, contact:

Henry County Water and Soil Conservation District  
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If Henry County is too far from your facility, the Henry County Water and Soil Conservation District will be able to direct you to the nearest Water and Soil Conservation District in your area. 💧

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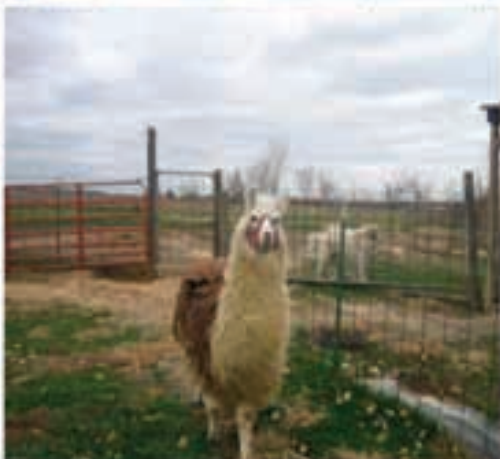
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## Gateway Regional Water Company – *Another Historical Event* by Cheryl Moody, Heneghan & Assoc., P.C.

Sometimes it is difficult to remember historical events from the past. As with other decades, many historical events occurred during the 1990's. In 1991, Operation Desert Storm was launched to free Kuwait. In 1993, parts of Illinois experienced the 500-year flood with thousands and thousands of acres of land being flooded by the Mississippi River and its tributaries. In 1997 a Scottish researcher created a clone lamb from the DNA of an adult sheep. In February 1999, President Bill Clinton was acquitted from his impeachment trial which started in January 1999.

While world-wide history was being made, some local history was created in the 1990's when a group of concerned citizens banded together to explore the possibility of developing a regional water treatment plant to serve parts of central and southern Illinois. From conception to completion, it took the time, energy and teamwork of several hundred people to accomplish the end result. The end result was a \$20 million water treatment plant with the capacity of treating up to 3 million gallons of water daily.

Heneghan and Associates, P.C. was involved with Gateway from its conception in the 1990's to its completion in the early spring of 2008, and beyond. In

September, Dean Heneghan, owner of Heneghan and Associates, was presented with the 2008 American Society of Engineering Outstanding Civil Engineering Achievement Award for engineering the Gateway Water Treatment Plant.

*"I'm very proud to say that we played a significant role in the design and completion of Gateway," Dean Heneghan said. "This kind of project could not take place without the cooperation and teamwork of everyone involved. I look forward to the next opportunity of designing a similar water treatment plant some day which will improve the quality of life for others."*

Heneghan engineered the plant with longevity in mind. For example, Gateway operates on centrifugal force instead of mechanical force, resulting in cost savings on repairs and maintenance and essentially a trouble-free plant with an extended life-span. The plant's centrifugal force ClariCones help to purify the water as chemicals are added to cause the fine solids to coagulate and settle to the bottom, while sending the usable water through sand and anthracite coal filters where bacteria and microscopic organisms are removed.

For additional cost savings, the plant was designed with on-site chlorine generation. Equipment was installed which uses electricity to turn salt into a chlorine solution. On-site chlorine generation is economical, efficient, and safe.

Keeping in mind the "go green" movement throughout the Country, Gateway was engineered for energy efficiency as geo-thermal units were installed for heating and cooling the 6,000 square foot administrative office building. According to Heneghan and Associates project manager, Craig Olsen, water gives up heat in the winter and soaks up heat in the summer. Considering this fact, water is pumped 150 feet down into the ground through pipes from 12 wells sitting side by side. With the ground temperature being an average of 56 degrees, the water extracts the heat from the ground and goes through a geothermal furnace where the heat is stripped from the water to heat the offices. To cool the office area, the geothermal process takes the heat out of the rooms and directs it back into the ground.

Presently there are 12 members of Gateway including the communities of Alma, Flora, Iuka, Patoka, Vernon, and Xenia, and Clay County Water Company,

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## Gateway Regional Water Company – Another Historical Event

*continued from page 18*

Northeast Marion County Water Company, Fayette Marion County Water company, Fayette Water Company, Western Wayne Water Company and Raccoon Water Company. While Gateway possesses the capacity of pumping 3 million gallons of water daily, it currently pumps around 1 million gallons of water daily to its 12 members.

The Gateway members agreed to pursue the idea of pumping water from Carlyle Lake to the new water treatment plant. This would mark another historical event as in the past, permission was never granted to those seeking to take water from Shelbyville or Carlyle Lakes. Permission had only been granted for taking water from the existing river channel. Sponsored legislation was approved giving the state the authority to enter into an official agreement for the purpose of pumping water out of Carlyle Lake to Gateway.

With Carlyle Lake serving as the water source, there were environmental challenges to overcome. The Army Corps of Engineers and EPA said the banks of Carlyle Lake could not be disturbed as work occurred to put a system

in place which would pump water from the lake 9 miles east to the site of the Gateway plant. To protect the lake's shoreline, the raw water intake line was directional bored under the lake. An unusual sight on Carlyle Lake was a track hoe on a barge as the water intake screen to transport water from the lake to the raw water intake pumps was placed on the bottom of the lake.

As the lake water arrives at Gateway, it is pumped through the plant where it is treated and then pumped to a clearwell before finally ending up at the plant's ground storage tank. From the ground storage tank the water flows to elevated water storage tanks which distributes water to the Gateway members so they can then distribute the water to its customers. There are currently about 20,000 consumers of Gateway's water.

While it was certainly a tremendous undertaking to transport the water from Carlyle to Gateway to Flora which is located 43 miles east of Carlyle Lake, it was also a tremendous undertaking to solicit cooperation from the 12 different members, EPA, the Army Corps of Engineers, the contractor, the local government officials and state representatives, and funding agencies.

Speaking of funding agencies, Gateway was the recipient of almost \$20 million in grant monies and low interest loans primarily obtained from Rural Development (RD). The Department of Commerce and Economic



Opportunity and RD played significant roles in helping to secure this funding to improve the quality of life for those who would be the users of the water distributed from Gateway.

Gateway Regional Water Company is governed by a board of directors comprised of a representative from each of its 12 members. Each member has an equal voice in the decision making process as related to the Gateway plant. Equal representation is a critical element for successful regionalization. The Gateway board is planning for future expansion and looks forward to serving additional towns and rural water companies. 💧



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TOTAL ENCLOSED: \$ _____		

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## REGISTRATION

Registration is required for all conference attendees. Badges are required for all attendees. Please register each attendee using the registration form included in this packet. Include the attendee's full name on the registration form as it should appear on his or her badge.

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## ON-SITE REGISTRATION

All conference attendees must obtain a name badge and conference material at the registration desk. If you do not pre-register, please make sure that you register as soon as possible after you arrive at the Keller Convention Center.

\*\*Please note that on-site registration is \$25.00 higher than pre-registration.\*\*

## Registration Hours:

Tuesday, February 17th	8:00 a.m.—4:00 p.m.
Wednesday, February 18th	8:00 a.m.—4:00 p.m.
Thursday, February 19th	8:00 a.m.—9:00 a.m.

## Cancellation & Refunds:

Refunds only in the event of emergencies. We must have a written notice of cancellation to issue a refund.

## EXHIBIT HALL

Over 80 companies will be bringing their products and services to you at this year's conference. Professionals from all areas of the water and wastewater industry will be on hand to help solve your problems and provide you with the information you need to make those crucial decisions. The exhibit hall is open during the following hours:

Tuesday February 17th	10:30 a.m.—4:00 p.m.
Wednesday, February 18th	8:00 a.m.—3:15 p.m.

## EXHIBITOR'S HOSPITALITY NIGHT

Tuesday, February 17th	6:00 p.m.—10:00 p.m.
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Our conference exhibitors have provided food, soda and beer in rooms 3 & 4 for the evening.

## CASINO NIGHT

Wednesday February 18th	6:30 p.m.—9:30 p.m.
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## SPORTSMAN RAFFLE

The exhibitors will be donating sports related prizes for the raffle. Attendees have the opportunity to purchase raffle tickets for these prizes with the winners announced at the conclusion of Casino night. Last year we purchased new equipment for the staff to better assist our members and sent a portion of the proceeds to rural water lobbying efforts in Washington D.C.



## NEW PRODUCTS/SERVICES ROOM

New to the conference this year! Stop by the Jefferson Room to see the presentations for the new and improved products or services our exhibitors have to offer. A new presentation will begin every 45 minutes. The schedule of sessions will be included in your packet at the conference.

# CONFERENCE AT A GLANCE

<b>Tuesday, February 17th</b>		<b>Registration Open: 8:00 a.m.—4:00 p.m.</b>	
9:00 a.m.—10:30 a.m.	Opening/RD Update/Confined Space Entry		
10:30 a.m.—11:15 a.m.	Break/Exhibit Hall Opens		
	<b>WATER</b>	<b>WASTEWATER</b>	<b>BREAKOUT</b>
11:15 a.m.—12:00 p.m.	Poly Pigging of Distribution System	IEPA Update	CUPSS
12:00 p.m.—1:00 p.m.	Lunch Buffet—Ticket Required		
1:00 p.m.—2:30 p.m.	Illinois Hydrogeology—What It Means to You	Rock & Sand Filter Cleaning	SEMS
2:30 p.m.—3:00 p.m.	Break/Exhibitor Drawings		
3:00 p.m.—4:30 p.m.	IEPA Update	Screening & Dewatering Equipment	NIMS Overview
4:30 p.m.	<i>Water Taste Test/ Awards Ceremony</i>		<i>At-Large Caucus/ Annual Meeting</i>
6:00 p.m.—10:00 p.m.	Hospitality Night		
<b>Wednesday, February 18th</b>		<b>Registration Open: 8:00 a.m.—4:00 p.m.</b>	
8:00 a.m.	Exhibit Hall Opens		
9:00 a.m.—10:30 a.m.	Basic Gaseous Chlorine Use in PWS	Manhole Rehabilitation	Strategies to Contain Healthcare Costs
10:30 a.m.—11:00 a.m.	Break/Exhibitor Drawings		
11:00 a.m.—12:00 p.m.	Case Study: Radium Removal	WW Math	Funding Options
12:00 p.m.—1:00 p.m.	Lunch Buffet/Ticket Required		
1:00 p.m.—2:30 p.m.	Hydrant Maintenance and Repair	Sewer Video Equipment	Bidding Procedures
			Red Flag Rule
2:30 p.m.—3:00 p.m.	Break/Exhibitor Drawings		
3:00 p.m.—4:30 p.m.	Line Stopping	Proper Lab Procedures	Meeting Rules
			Employer Rights
6:30 p.m.—9:30 p.m.	Casino Night /Announcement of Sportsman Raffle Winners		
<b>Thursday, February 19th</b>		<b>Registration Open: 8:00 a.m.—9:00 a.m.</b>	
7:30 a.m.—8:30 a.m.	Breakfast Buffet/Ticket Required		
8:30 a.m.—10:00 a.m.	Antennas & Water Towers	Lagoon Cleaning	Strategies to Contain Healthcare Costs (Repeat)
10:00 a.m.—10:15 a.m.	Break		
10:15 a.m.—11:45 a.m.	Cross-Connections—Maintaining an Active Program	Electrical Panels	What are GIS/GPS & How Can They be Used at My Utility?
11:45 a.m.—12:00 p.m.	Closing Ceremony/Grand Prize Drawing		

## *The Coming Age Of HDTV - What Does It Mean To Me?*

*by Lloyd Howard*

HDTV - high-definition television: it is something that has been discussed for some time now, however not everyone has a strong sense of what it is and why he or she would want to have it.

Because all television stations will be required to broadcast a digital signal after February 17, 2009, many viewers are beginning to ask a lot more questions about how the new digital age of television will affect their personal viewing experience. They want to know whether or not their television set will be compatible, whether or not they will have to replace it, and what steps they will have to take in order to keep watching their favorite shows.

### **How To Identify If Your Television Is An Analog TV**

Analog television has been with us since the inception of television broadcasting. Analog is the old way of processing a television signal.

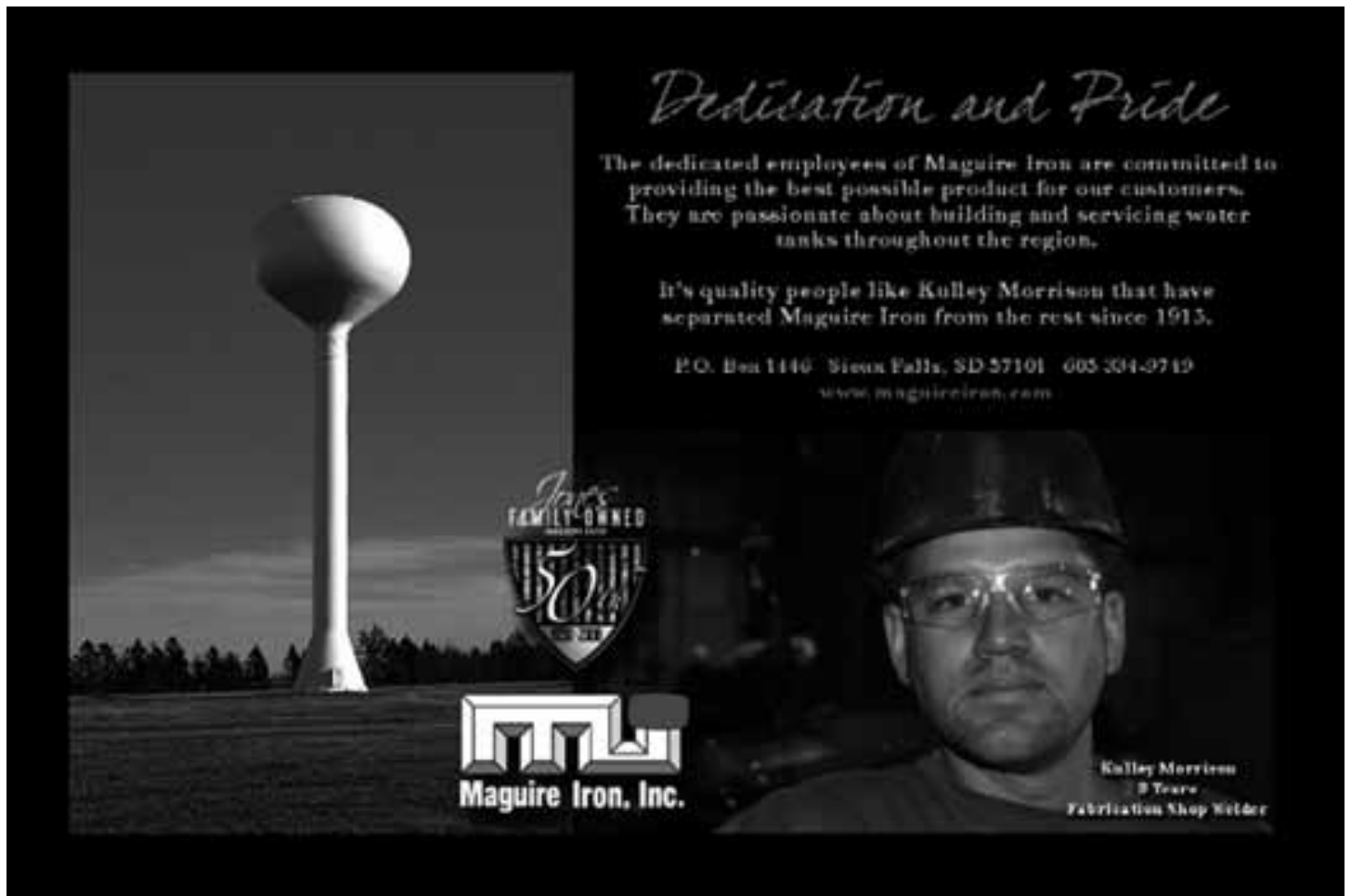
Television technology took a big leap in the 1960's with the transition from television tubes to circuit boards, but that conversion failed to bring with it any major strides in the quality of the television picture.

If your current television does not have a logo on its front that indicates DTV (Digital TV), EDTV (Enhanced Definition TV), or HDTV, then your television set is an analog TV.

### **Understanding The Transition From An Analog Signal To The New Digital Signal**

Digital image processing is a technology that began in earnest during the 1970's, when Japanese technology companies began to explore the concepts of HDTV. The Japanese TV manufacturers were exploring ways to improve the picture quality of the television image, as a way to find more customers for their television products.

While Americans were busy playing with building the computer industry, the Japanese were hard at work trying to build a better television set. The first HDTV systems developed by the Japanese still relied on the old analog system of sending a broadcast signal to



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# *The Coming Age Of HDTV - What Does It Mean To Me?*

*continued from page 23*

their televisions, but they were still able to produce a better television viewing experience.

When initially introduced to the U.S. Government, the new HDTV system produced a myriad of concerns, which included the issue of an analog HDTV-system needing more bandwidth than what was currently allotted to the television broadcasters.

In 1993, a consortium of American researchers and manufacturers (known as The Grand Alliance) joined forces to find a way to bring HDTV-quality to the American public, while keeping the bandwidth requirements of broadcasters within the existing limits.

Researchers soon understood that they would need to push at least part of the television signal in a digital format to make sure that HDTV could be transmitted within the limits currently allotted to the television broadcasters. By the time they had finished their work, the Grand Alliance had created a system that was 100% Digital.

In 1995, after considerable opposition from the television broadcast industry, the U.S. Federal Communications Commission officially set the standard for completely digital HDTV broadcasting system. This put into motion the events that are just now coming to fruition, with the rollout of the new Digital Television broadcasting system.

Although most television stations have been broadcasting a Digital Television Signal now for a few years, analog television owners have been none the wiser. But that will all change on February 17, 2009.

## **Will My Analog Television Stop Working In 2009?**

The simple answer is "yes", but that does not mean that you will have to buy

a new television in order to get the new digital broadcasts. While you may not need to replace your television set, you may have to make changes in how you get your television signal.

There are in fact three ways that the average consumer can continue to get a television signal using their old television set:

1. Subscribe to a cable television service (and use their digital television converter);
2. Subscribe to a satellite television service (and use their digital television converter); or
3. Buy a DTV converter (Digital TV Converter) to receive signals from your analog antenna and to convert that signal back to analog, so that you can continue to use your analog television. (If you receive your television signal over-the-air, the Federal Government has implemented a Coupon Program to help consumers offset the cost of the DTV converter boxes:  
<http://www.ntia.doc.gov/dtv-coupon/index.html> )

## **Understanding The Three Facets Of The New Digital Technology**

### **1. Lines Of Resolution**

The newer digital technology is all about Lines Of Resolution. With more lines of resolution, the viewer will receive more image information, therefore bringing the viewer much more picture clarity and detail.

When the Japanese rolled out HDTV on the Japanese mainland, the lines of resolution numbered 1080. To put this into perspective, the standard analog TV signal exhibits 330 lines of resolution.

This makes it more than clear that the original analog HDTV format really was a real issue for television broadcasters in the United States. To produce a resolution of 1080 lines on a system designed for 330 lines would have literally required three times the bandwidth of the current analog system.

Here are the standard television resolutions:

- Analog Television - 330 Lines of Resolution
- VCR's - 240 Lines of Resolution
- DVD's - 480 Lines of Resolution
- EDTV - 720 Lines of Resolution
- HDTV - 1080 Lines of Resolution

There is a caveat to this chart though. The minimum requirement of the FCC is that broadcasters must produce a minimum of 720 Lines of Resolution. As a result, some broadcasters like ABC chose the 720-resolution, and yet they can still legally call their programming standard, HDTV.

Other broadcasters like PBS opted for the higher 1080 format. Good for them.

In 1998, when the first HDTV's became available to the buying public, the Headline News newscasters were joking that with the rollout of HDTV, we the audience would be able to see every blackhead and blemish on their faces. Of course, they were probably correct in that assumption. The detail of the HDTV-signal is absolutely amazing.

### **2. Aspect Ratio**

Another factor connected to the new HDTV-format is the Aspect Ratio.



## The Coming Age Of HDTV - What Does It Mean To Me?

continued from page 24

In a standard analog television, the Aspect Ratio is a 4-by-3, which nearly looks square. The 4-by-3 ratio means that it can be measured 4-parts wide to 3-parts high.

With the new HDTV format, the Aspect Ratio has been changed to the same format seen in the movie theatre - a 16-by-9 Aspect Ratio, or 16-parts wide to 9-parts high.

### 3. Sound Quality

The third factor connected to the new HDTV-format is Sound Quality. In fact, most HDTV programming will carry with it Dolby Digital 5.1 surround sound, as frequently heard on DVD's. So long as you have a surround sound unit

attached to your television set, the surround sound will enable to the television viewer to be immersed in the sound, so much so as it often feels as if you are in the middle of the action happening on your television set.

### In Conclusion...

While it is true that you do not need to upgrade your television from the analog format to the new digital format, you might seriously consider doing so anyway.

Now that we are quickly approaching the end of the analog-television era, the cost of HDTV television sets has fallen considerably. Whereas five years ago, the average HDTV cost in the range of

\$3-4,000, the cost of most HDTV's has fallen to under \$1200 today. After February 17, 2009, the cost of HDTV should drop again, making it much more affordable to the general public.

Although it will be possible to convert the digital television signal to analog, you will lose the extra picture detail on the conversion. So, if you stick with your analog television, you will be restricting yourself to the quality of picture you are currently receiving, even after the change in television broadcasting formats is complete.

Although color-technology was first introduced to audiences with the release of The Wizard Of Oz in 1939, color television did not become mainstream until the late-1960's. And although the tech-

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## The Coming Age Of HDTV - What Does It Mean To Me?

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nology of color was mainstream, black-and-white televisions were still being manufactured and sold well into the 1980's.

Fortunately, this transition will be a bit quicker than the conversion from black-and-white to color. Under the FCC rules for the transition to digital television, television manufacturers were required to include a digital tuner in all television sets manufactured after March 1, 2006.

This conversion is much like the transition from AM to FM as the standard listening medium in the radio industry. Radio listeners could not listen to FM stations until which time they had upgraded their radio from AM to the

AM/FM format. The same thing will happen here as well. If you want to receive the beautiful, high-quality HDTV images, you will need to upgrade to a television set capable of displaying the HDTV images.

If you have any lingering doubts about the better HDTV standard, all you need to do is to visit your local television store and see for yourself just how awesome of a picture HDTV actually produces. Just as Dolby Digital Surround Sound enables the listener to feel as if they are in the middle of the action on the television, HDTV permits the viewer to feel as if they are standing in the same room as the actors, on the sidelines at the football game, or on the same beach as the models - it really is that good of a picture.

### About The Author

Lloyd Howard writes about technology and business. Satellite TV providers continue to outpace the performance of cable companies in the conversion to digital television programming. For example, DirectTV will have more than 100 channels and 231 NFL Football Games available in HDTV this year. To compare Satellite Television services, visit <http://www.placeingit.com/satellite>. The growth of the Internet has spurred some of the greatest opportunities for small business entrepreneurs to grow their businesses. Visit the following website to learn more: [http://www.gibline.com/lloyd559/revenue\\_sharing.html](http://www.gibline.com/lloyd559/revenue_sharing.html) 💧

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