

***Not Enforcement, Reinforcement
Caution! You're about to enter a
No-Swim Zone! ☺***



New Wastewater Operators Newsletter

Volume 2, Issue 4, June 2011

Dear Ladies and Gentlemen:

June's issue is late because of a computer problem. That's what I get for going on vacation; a surge came through and took out my hard drive while it was off (but still plugged into my UPS). ☹

Anyway, I lost my entire email victims list and have had to rebuild it from scratch. We're at 202 "subscribers", down from 209 in May. We'll make it up somehow.

I should have followed my own advice and backed everything up, but I didn't, so spank me very much. ☺

The main purpose of this voluntary exercise is to showcase cool ideas I see or hear about in the wastewater treatment industry, mostly in Eastern Washington, but not always. If you have an idea or interesting project you'd like to share, please let me know.

If anybody has archived all the newsletters for some strange reason, please email me so I can get them back. Everything was wiped out in the surge, probably a lightning strike.

Equipment for sale or to give away:

In May, a small town's Public Works Director in central Washington needed a fecal coliform incubator for the membrane filter technique. Well, another municipal treatment plant has loaned them a spare incubator for as long as they want it. The network works! ☺ Thank you, and a big dam Saaalute! to the donors.

Cool Idea of the Month:

We now travel to the Grand Coulee-Electric City WWTF (Grand Coulee plant, for short, my old *alma mater*) to see what's going on with their new dual influent screening devices.

This was the brainchild of Thomas E. Coleman, P.E. (Thomas E. Coleman, P.E. Consulting Services, of Yakima, WA). Tom and I had talked about replacing the old-school comminutors with a helical or auger-type screening device.

Comminutors basically chew debris up and allow it to pass into the rest of the treatment train. The screening devices actually wash, transport, compact and deposit the rags, rubber and plastics, etc., into a receptacle for removal. Photos below: Typical comminutor and existing rag racks (next page).



Cool Idea of the Month, cont.:



We already had 2 influent channels, so he reckoned we could get away with not paying for extra engineering, excavation, contingencies like blasting, and other usual expenses, and get two devices for the price of one!

Also, since the project entails equipment replacement, not process changes, and everything was to be installed on the plant site, no SEPA/NEPA reports and the associated delays were necessary. We did run the plans by our permit manager at Ecology (Pat McGuire), and got the go-ahead without delay.

Well, it finally came to pass after I left Grand Coulee. Fortunately, the cities (Grand Coulee and Electric City) had been saving into individual Sewer Reserve Funds for a number of years, so financing was not an issue. They went through the planning and competitive bid specification process with Tom's help, and obtained two Lakeside Raptors.

Cool Idea of the Month, cont.:

These are built to order, so it takes a while (60-120 days) to get delivery. They were delivered in the fall of 2010 and had to over-winter under cover (photo below).



Never mind that car in the background. It's just an impound (drug related) that the local police chief said would be removed in a few months (about 3 years ago!). Don't you hate it when they use your plant site for everything from surplus junk storage to animal control kennels? I sure did.

At one point, after a drug raid, we had 8 cars and trucks impounded at the plant. Some were leaking vital fluids all over our nice clean asphalt, and others had flat tires. The police were amused at our consternation, but we were not amused at all. Those vehicles belonged to trained felons, after all, (#\$*&! expletive deleted).

Cool Idea of the Month, cont.:

So winter came and went, and Chief Operator, Gareth Abbott and his Assistant Operator, Don Abel finally had some good weather to install a water line (for spray water) and drilled some holes in the channel walls for mounting the Raptors over the influent channels. Now all that remains is to install and wire in the control panels, ultrasonic transducers (to control start/stop based on water level), and power for heat traces, etc.

Three guys and a front end loader were needed to maneuver the main units onto the supports. Note that these things will be able to pivot up out of their respective channels for maintenance. I've seen some installations which don't have that feature, making it a nightmare to replace brushes, etc.



Cool Idea of the Month, cont.:

Here's another view:



The unit on the right is propped up over the active influent channel. The left side one is sitting on the bottom of the inactive channel, preparatory to adding channel seals. Grit removal is not included in this project, so the operators will still have to hand-shovel grit out of the grit traps downstream. But the grit should come out cleaner than in the past.

What necessitated the purchase and installation of the screening devices: When the local sanitary landfill closed and a transfer station was built, we suddenly had no place to haul our nasty rags and other debris. We had to start drying it on grates and then hand-bagging it in contractors' bags before we could dispose of it in the transfer station. Changes to the Biosolids Rule (link here: <http://www.ecy.wa.gov/pubs/wac173308.pdf>), specifically "WAC 173-308-205 Significantly remove manufactured inerts", pretty much demands it too, by July 1, 2012.

Cool Idea of the Month, cont.:

Here are a couple of shots of the bottom ends:



Cool Idea of the Month, cont.:

Here's the happy Gareth (Gary) Abbott posing near his new toys on July 1, 2011.



I remarked “Just think, you’ll be able to say you installed your own screeners.”

He replied “Yeah, but I wouldn’t do it again.” The red tape of advertising for contract electricians and other stuff (not the physical labor) is a real pain.

But look at the advantages of this project:

- 1. They can alternate channels periodically for mechanical longevity of the equipment without bypassing screening and having to hand-rake debris off of bar screens;**
- 2. With two units, they can “dry dock” one for an extended period if necessary for maintenance purposes;**

Cool Idea of the Month, cont.:

3. They'll get rid of those gawd-awful comminutors;
4. Total cost of the project is about \$150,000, approximately what a facility would pay for one screening device (including engineering, planning, etc.);
5. Compliance with the Biosolids Rule;
6. They won't have to deal with multiple 5-gallon buckets of filthy rags which pass through the comminutors and re-tie themselves into great rafts of offal in the treatment train, all the way from the oxidation ditch to the aerobic digesters,



like this. Actually this is some of the cleaner stuff.

A big dam Saaaalute! to the following:

Tom Coleman, an engineer who listens to his clients' concerns, including the operators;

Cool Idea of the Month, cont.:

The cities of Grand Coulee and Electric City (who share the treatment facility and parts of the collection system, along with O&M costs);

Operators Gareth Abbott and Don Abel, fine friends of mine;

And Evergreen Rural Water Association Wastewater Technician, Chad Short, who showed up to help them set the units onto the main supports.

Excellent job, Guys!

I'll follow up on this report as they get the electrical components installed, along with the final mechanical installation.

One note about freeze protection: In the words of the famous Yosemite Sam, "Ah'm a-warnin' ya, Stranger!" I've seen a number of helical/auger type screening device installations in my rounds. These vary by manufacturer and models within the brands. Although freeze protection should be a standard feature for outdoor installations, there are a number of screeners in Eastern Washington which weren't protected enough. So make sure the specifications for screeners mention the temperature operating range of proposed units. Get it in writing, people, or it didn't happen—the attorneys will be the only happy campers.

Operators have found out the hard way in the dead of winter, how difficult it is to remove rock-solid frozen rags from the compaction zones of their inadequately protected machines. They've had to follow up with additional fiber glass insulation wrapped with black plastic, more heat traces and excessive cursing. One contractor failed to energize the heating circuits—more cursing.

Can you say "poopcicles"? 😊 Not in polite company, I suspect.

Cool Happenings:

The word is out! A record number of municipal wastewater treatment plants in Washington State have received Ecology's Outstanding Wastewater Treatment Plant Awards for 2010. Quoting from Sandy Howard's article here: <http://www.ecy.wa.gov/news/2011/186.html>

Of particular note are the nine plants that achieved the honor for the first time. They are:

- Community of Dryden Wastewater Treatment Plant in Chelan County.
- City of Castle Rock Wastewater Treatment Plant in Cowlitz County.
- Moses Lake Sand Dunes Wastewater Treatment Plant in Grant County.
- City of McCleary Wastewater Treatment Plant in Grays Harbor County.
- Community of Dallesport Wastewater Treatment Plant in Klickitat County.
- City of Pateros Wastewater Treatment Plant in Okanogan County.
- Medical Lake Wastewater Treatment Plant and Reuse Facility in Spokane County.
- Chewelah Wastewater Treatment Plant in Stevens County.
- Boston Harbor Wastewater Treatment Plant in Thurston County.

Hey, Congratulations to all the winners, and to all who missed it by a nose. A big dam Saaaalute! to you all.

I didn't want to brag, but MaryAnn St. Martin and Jeff Jennings said I should. I got a little award for my work too. This is cooler than a slug on an ice cube. Now I have to work harder than ever (I think it's a conspiracy). 😊

Article here: <http://ftemagazine.com/featured-articles/ecy-water-quality-program-staff-honored-by-sandy-howard-ecology/>

I'm humbled by the honor my colleagues have bestowed on me. They have much harder jobs than I do, and they're short-handed to boot.

Cool Happenings, cont.:

Carl Jones and I were talking yesterday about the Outstanding Plant Awards. A TV reporter asked Sandy Howard in communications which plant was the largest in the state, and which was the oldest?

Largest: West Point at 212 MGD

Oldest: Walla Walla (municipal), 1929

So Carl and I turned it into a trivia contest.

Active Operator who's been certified for the longest time: Richard Finger (1971)

Oldest still-operating small trickling filter plants in Eastern Washington (to my knowledge): St. John, 1955 and Lind, 1956

The smallest public activated sludge plant: Could be the Selkirk School District near Metaline; they have a cute little plant smaller than a 2-car garage, complete with an aeration "tub", a clarifier "tub" (my words), and chlorine disinfection, operated by John Kinney. He also teaches the science and art of wastewater treatment to the students there, including laboratory tests.

Most unique feeding of activated sludge bacteria during low flow periods: Could be the Stevens Pass Sewer District plant (I don't know who's operating it now)—powdered milk! The little package plant inside the 3rd Power House at Grand Coulee Dam used to feed their bugs dry dog food.

The only lagoon system I know of to sink a utility truck up to its roof warning lights: Unnamed, to protect the innocent. Truck was later retrieved by a wrecker.

The only two lagoon systems using solar-powered circulation pumps (that I know of): Davenport and Kettle Falls.

Anybody else have cool wastewater trivia about Washington State for us? Drop me a line about it. Thanks!

So you don't have to ask:

I recovered from my hard drive disaster by getting on my wife's computer and ordering 2 new hard drives from TigerDirect™ (<http://www.tigerdirect.com/>). I've ordered computer goodies from them before. Their prices are satisfactory and the service is great. I got a 2TB (terabyte) internal drive and a 1TB external drive for backups. All for less than \$170 including shipping.

For power protection, I also bought a CyberPower 1000AVR UPS (battery-backed Uninterruptible Power Supply) at \$120 including shipping. I also got a couple of power cable splitters for about \$7 each, so now I have plenty of protected circuits to plug my rigs into.

Now I just have to remember to back up my data often. You'd be wise to do the same.

Hey! Keep up the good work! See you next time.

All the best to you and yours,

Darrel Fleischman

P.S. If you want off this list for any reason, just let me know. I'm still missing some of the "old" members, so if you know of anyone who'd like to get back on this wagon, tell 'em to email me.

P.P.S. All previous newsletter issues (hopefully) will be available by email, if somebody out there has archived them and will send them to me. Thanks!

P.P.P.S. Feedback is welcome, both positive 😊 and negative 😞, so let me have it! You and your opinions are appreciated.

P.P.P.P.S Three parting shots from my recent vacation on the next pages.

From "Snake River Country" by Bill Gulick

...Time was running short and the Pacific Ocean still lay a long way to the west. Below the flat, hill-surrounded plain where Lewis's River and the Koos-koos-kee melded their waters, the Nez Perces called the big river the Ki-moo-e-nim (The Snake). Chief Twisted Hair and Chief Tetoharsky, who had agreed to look after the party's horses, accompanied and guided the whites as the canoes floated on the swift current toward the Columbia. At this season, the water level was low and few of the rapids dangerous, though Clark admitted that some were run which would not have been attempted had the party not been so short of time.

There were a few upsets and dunkings, with valuable trade goods lost. But the amiable Nez Perces, a number of whom kept pace on horseback along the shore, always were there to help right and reload the dugouts. Their presence, that of the two chiefs, and the fact that the Shoshone woman, Sacajawea, always rode in the lead dugout, smoothed the way when new tribes of Indians were met. Sacajawea was particularly useful, for the inclusion of a woman was assurance of the party's peaceful intentions.

On October 16, 1805, the Lewis and Clark party reached the Columbia. Heartily sick of their fish diet, they shot some ducks, bought some dogs to eat, briefly explored the flat sagebrush desert in which the Ki-moo-e-nim placidly ended its existence (near present day Pasco, WA), and then moved on down the Columbia toward the sea. The party had been in the Snake River Country two months and three days.

After all their trials and tribulations, then, 206 years ago, how strange it is to see this now: My nephew-in-law knocking golf balls across the mighty Snake River near Bliss, ID.



A dawn shot of the oasis at the Bruneau Sand Dunes State Park near Hammett, ID on 6-23-2011 (digital). Enjoy!

