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August 2013

A newsletter from the
Black Mountain Irrigation District
No. 45

BMID WATER NEWS

BMID 2013 Board

The Board for the Black Mountain Irrigation District remains stable and unchanged for 2013-14. Al Horning and Gerry Zimmermann were re-elected by acclamation in April for a 3-year term. The BMID Board of Trustees for 2013-14 are: Gord Ivans (Chair), Al Horning, Alfred Kempf, Allen Kirschner & Gerry Zimmermann.

Spring Runoff

Although the spring was wetter than normal, Mother Nature was kind to the watersheds in comparison with the damage experienced in 2012. The snowpack was above average, but runoff was not as relentless as in 2012. There was one brief event on June 20th, when the snowmelt was ending, where an intense rainstorm combined with saturated ground conditions, resulted in the highest ever recorded flow on Mission Creek of 120 m³/second.

Available Water

The wet spring resulted in BMID being able to withdraw water from the creek without having to release water from our storage reservoirs until later in the year. The upper watershed reservoirs are all at above seasonal averages. Although watering restrictions will not apply in 2013, BMID regulations still have maximum watering rates and allotments to be followed. Those drawing more than their share of water could reduce pressures and flows available to other BMID customers.

Summer Sprinkling Regulations

For all residential customers, BMID follows the Kelowna Joint Water Committee city-wide water sprinkling regulations. Rate payers with odd-numbered addresses may irrigate their yards on the odd-numbered days of the calendar. Even numbered addresses may irrigate on the even numbered days. Automatic lawn sprinkling is permitted between the hours of 12:00 a.m. and 6:00 a.m. on the permitted day. Peak water usage in July was high and BMID water bailiffs tagged and shut off several abusers.

"If you must speak ill of a person, do not speak it, write it in the sand near the water's edge" Napoleon Hill

DAM SAFETY REVIEWS

On June 13, 2010, a small dam on Testalinden Creek above the town of Oliver failed, releasing 100 Megalitres of water to the steep creek bed below. The release resulted in the movement of approximately 10 times the water volume in the form of a liquefied river of silt that slid into the creek and engulfed the farmland below. Several homes were completely destroyed as were crops and the riparian zone of the creek. Highway 97 was closed and the concern for the failure of other dams was raised. The Province subsequently increased their monitoring and reporting requirements on the 2,200 dams that they regulate within BC. Although historically the failure at Testalinden Creek was small no lives were lost,



and it served a useful purpose in that it raised the bar for dam maintenance in BC.

BMID owns and operates 12 dams in the Mission Creek and Scotty Creek watersheds. BMID also monitors two breached dams that are no longer active. Seven of the 12 BMID dams are rated as High or Very High Consequence, meaning that should the dam fail, there are high consequences either in terms of human safety and/or economic impact. All dams in BC fall under the Dam Safety Regulation of the Provincial government who assigns responsibility of dams with the dam owner.

The province has on-going requirements for Operations, Maintenance and Surveillance for all dams. Every 10 years, a thorough Dam Safety Review must be carried out by qualified Professional Engineers that are skilled in the fields of dam safety.

A Dam Safety Review considers all aspects of dam design, dam construction, and Operations, Maintenance, and Surveillance procedures of the dam. The dam components reviewed include outlet gates, flood spillways, slopes, dam materials stability and their capacities and factors of safety.

Two critical conditions that dams are tested under are the Probable Maximum Flood (PMF) and the Maximum Probable Earthquake (MPE). The PMF tests the ability of the dam to withstand extreme flooding conditions. The PME tests the geotechnical ability of how the dam retains water under a severe earthquake. (photo Fish hawk Dam)



The 2013 BMID Dam Safety Review is being completed by Golder Associates and Agua Consulting Inc. The report will be completed in August, 2013.



BMID Eligible for Provincial-Federal Funding

An Implementation Strategy was developed for the 2012 Kelowna Integrated Water Supply Plan (KIWSP) and was submitted to the Province in February of 2013. One month prior to the May, 2013 election, the Minister of Community Development, the Honourable Bill Bennett, accepted the Implementation Strategy and KIWSP as a whole and stated that it met his conditions. The Province would allow funding to the Kelowna Improvement Districts, provided that work be in conformance with the project order and principles set out in the KIWSP. This is good news for BMID customers as it means that major BMID Capital Projects such as Black Mountain Reservoir and UV Disinfection Building can apply for grants and be evaluated by the Province when infrastructure funding programs come available. The next Federal program is set to come out in the fall of 2014. The KIWSP process took 4 years to complete with a significant effort by staff and engineers from all 5 Kelowna water utilities.

BMID Operations and Maintenance

BMID works staff have been working on a number of projects this year:

- ◇ Additional covered storage was constructed on the east and north sides of the BMID shop at Belgo Road;
- ◇ District mapping has been updated;
- ◇ Servicing of gate valves, air valves and stations is on-going;
- ◇ Spring hydrant servicing was completed. More than 400 of our 650 hydrants have been painted;
- ◇ All service shut-offs are being located as over the years some become buried and hard to find in an emergency;
- ◇ Flushing was completed in June;
- ◇ A new water Booster Station was commissioned at Melcor's Black Mountain development project;
- ◇ Emergency wash-down shower was constructed at the main chlorinator building to meet WCB requirements;
- ◇ Additional sludge drying area is being constructed at the Water Treatment Plant site to dry greater sludge volumes due to longer plant run times.

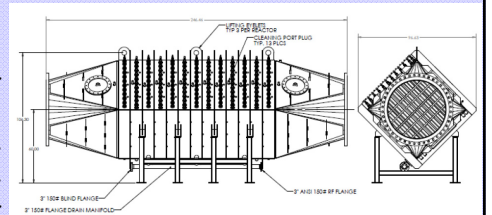
OBSERVE, RECORD & REPORT
questionable watershed activities to
BMID at 765-5169

BMID is progressing steadily on the Ultraviolet Disinfection building and Black Mountain Reservoir projects. So far this year, BMID hired Bennett Contracting Ltd. to install the remainder of large diameter 42 inch steel transmission main from Joe Rich Road to the UV Building site (photo below). Trojan Contracting was retained to carry out pre-grading work at the UV Building site prior to the pipe installation work. The UV building is situated immediately below the future south dam of the Black Mountain Reservoir and will be constructed and commissioned prior to the reservoir being constructed.

BMID obtains the majority of its drinking water from Mission Creek. The water is usually of very good natural water quality with little man-made contamination in the creek. In the spring, the higher flows during spring run-off result in high turbidity levels and colour in the raw water. Safe domestic water is provided through selective access of the raw water, operation of the BMID water treatment plant, extended settling times of silt and sediment in Stevens and Hadden Reservoirs, and extended chlorine disinfection before the first customer. Still, there are risks, particularly of Cryptosporidium, which is a naturally occurring protozoa cyst (oocyst) that infects a persons digestive tract and can make them ill for up to a week. Although UV disinfection does not kill the Cryptosporidium oocysts, it does mess up their DNA and renders them ineffective to infect people. A cross section of a UV reactor is shown in the inset figure.



BMID is in the City of Kelowna rezoning process for both the UV disinfection site, and the larger Black Mountain Reservoir site. The UV site will be simpler and must be in place prior to building construction beginning. The reservoir rezoning is more complicated and has a higher impact as it is a much larger site that will be flooded. An equipment tender is being issued in the next month to three large UV disinfection equipment suppliers. The equipment with the best long term purchase and operating cost value to BMID will be selected through the tender process. Once equipment is selected the detailed design of the UV building components will begin. A benefit of the slow but steady progress is that there is time for BMID to fund the projects through surplus revenue and without borrowing money. In the last 5 years, BMID has spent over \$7,000,000 in securing the pipeline, getting transmission main installed and obtaining approvals for the UV building and reservoir. The Board has worked hard to keep rate increases manageable during this time. The water rates that were set in 2013 are sufficient to cover the costs that would be required to finance the \$6,000,000 UV and transmission mains project that is proposed for 2014. Staff have expended great effort to develop the City-wide KIWSP of which the Black Mountain Reservoir and UV Building form key supply components. BMID will be eligible to apply for government funding for the UV Disinfection and the Black Mountain Reservoir projects, however the UV Disinfection is required under permit and must proceed in 2014 with or without government assistant.



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"Once during prohibition, I was forced to live on nothing by food and water"
 W.C. Fields