

ALBERTA



UTILITY OPERATOR

NEWSLETTER

SPRING / SUMMER 1999 - NUMBER TWO

FEATURE FACILITY:

Town of Barrhead Water Treatment Plant



treated water was stored on site and a 227 cubic metre elevated storage tank was used in the system.

In 1978 an additional raw water storage cell was built with a capacity of 160,000 cubic metres. The water plant was upgraded by increasing the 8" pipe to a 10" pipe from the flocculation chamber to the up flow clarifier, and the clarifier to the recarbonation chamber. Tube

The Town of Barrhead is located approximately 110 km Northwest of Edmonton on Highway 33. Barrhead is a major service centre to the surrounding agricultural and resource industry as well as a tourist destination. The 4,300 residents of Barrhead rely on the Paddle River for the source of their water supply, filling their raw water reservoirs periodically.

Barrhead's original water treatment plant was built in 1963. It employed 2 raw water storage cells with a capacity of 230,000 cubic metres, in plant aeration, coagulation, flocculation, up flow clarification, recarbonation, and filtration. 318 cubic metres of



RIVER PUMPHOUSE

settlers were added to allow for higher flow. A new raw water pumphouse was built, employing a stationary pup. This replaced the Flygt pump that had to be hoisted into the river manually as needed. New filter media pumps and a 4,500 m³ treated water reservoir were added.

At the new facility an 8" Gorman Rupp pump draws water from the river pumphouse clearwell and discharges to the first raw water reservoir. To keep a maximum volume of water in the raw water reservoir, pumping from the river is done on a continuous basis, as river flows allow. The raw water reservoirs hold approximately 390,000 cubic metres of water. With the decommissioning of the original water plant, the in plant aeration tower was taken out of service, so Freshwater Systems installed an aeration system in the storage cells.

The new BCA packaged water treatment plant consists of two "trains", each rated at 1700 L/minute. Each train employs flash mixing, coagulation, flocculation and tube settler assisted clarification, followed by high rate filtration.



RAW WATER RESERVOIR



FLOCCULATION SECTION



SETTLING CLARIFIER

The advantage of two treatment trains is that one train can use alum as a coagulant, and the other train can use alternative coagulant, thus allowing a comparison of the treatment choices. Another advantage is that one train can be cleaned while the other keeps running, without disruption of treatment.

Water enters the plant through a rate of flow and solenoid control valve. Alum coagulant is injected into the incoming water upstream of the mixer blades. Provision is made for addition of potassium permanganate and activated carbon if needed. The flash mixer is equipped with a 2-hp mixer and provides a minimum of 120-second retention time. Polyelectrolyte floc conditioner is injected downstream of the mixer blades to avoid shearing effects.

The coagulation and flocculation section consists of 3 compartments, each equipped with a mechanical flocculator. A variable speed motor controller located in

the plant control panel controls rotation of each paddle. Paddle speed is progressively reduced in each of the three compartments. Total design detention time in the flocculation zone is 30 minutes. The heavier particles and silt settle in the flocculation chambers and the water continues on to the clarifier.

The settling clarifier is an upflow, solids contact separation basin sized for 180 minutes contact time. Flow is vertical from the bottom distributor up through the sludge blanket that normally is maintained below the 60° inclined tube settlers. Controlled intermittent removal of sludge from the clarifier bottom ensures that the sludge blanket level is maintained. Even distribution of the flow is ensured through the plastic tubes. Retained



FILTER

sediment slides down the tubes, counter – currently to the water flow to the bottom of the clarifier.

From the clarifier section, water flows into the top of the filters and is drawn through the filter media. The media consists of anthracite on silica sand, supported by a layer of gravel on top of the underdrain system. The underdrains are slotted laterals connected to an external manifold. The filters can be operated to backwash at a set head loss (300 mm), on a time interval or on manual command. The backwash cycle includes air scour, backwash and filter to waste cycles.

In addition to the alum, potassium permanganate, activated carbon, polyelectrolyte and caustic soda there is provision for addition of alternative coagulant or chemicals. Disinfection is accomplished with the use of gas chlorine at the treatment plant and residual boosting using sodium hypochlorite at the treated water reservoir. Treated water is also fluoridated using hydrofluosilic acid. All liquid chemical addition is accomplished with ProMinent diaphragm type metering pumps.

Filtered water flows into the three water treatment plant clearwells (2,015 m³ total) and is then pumped to the

distribution system and 4,500-m³ reservoir. Two pressure reducing stations ensure that pressure is consistent throughout the distribution system.



PETER REICHER & ROSS PENTNEY

Thanks to plant operators Ross Pentney and Peter Reicher and to Everett Nabe of

Siemens

Engineering for their assistance in making this feature possible.

OBITUARY



TIMOTHY A. MATHISON

Born on March 18, 1945 in Dodsland, Saskatchewan, passed away on February 28, 1999. Mr. Mathison began working for the Town of Valleyview in 1977. By 1990 he was managing the Valleyview water and wastewater facilities. He remained in that position until his illness.

Tim was an Executive Member of the Alberta Water and Wastewater Operators Association and served on a number of committees.

He leaves behind his wife Karen, two children and one grandchild. Our sympathy to Tim's family and friends.

The Alberta Water and Wastewater Operators Association.

PERSONAL PROFILE

TOM DLUGOSZ

Town of Peace River



Tom Dlugosz was born in McLennan and grew up in High Prairie, Alberta. In the spring and fall Tom still helps out on the family farm in Guy, 26 miles west of High Prairie. With 11 quarters to work this is no small task.

In 1983 Tom began his career in the municipal utilities field as a meter reader/water plant operator for the Town of High Prairie. In 1986 Tom became a licenced agricultural and roadside chemical applicator for ID 17C. While employed by ID 17 C he trained local operators of a Metis Settlement water system. He also worked as the municipal service operator for the Hamlet of Grouard. In 1991 Tom took on the challenge of head operator at the Town of Peace River and in 1992 he moved on to become the manager of the Town of Peace River water and wastewater facilities.

The Town of Peace River serves a population of approximately 6,700 and operates two Class III water treatment facilities, 60 kilometers of distribution mains, three storage reservoirs and seven pressure reducing valve stations. The wastewater facilities consist of six wastewater lift stations and a Class II extended aeration activated sludge treatment plant.



Tom is currently certified at Level III Water Treatment, Level II Water Distribution and Wastewater Collection and Level I Wastewater Treatment. He is currently working on having his Wastewater Treatment Level II Certificate reinstated. Tom is a 12-year member of the Alberta Water and Wastewater Operators Association (AWWOA) and in March of 1999 he ran and was elected to the Association Executive. He is representing operators in communities of 3,000 to 10,000 population and is on the Operators Seminar Guest Program Committee and the AWWOA Safety Committee.



Tom is a busy person "off the job" as well. He is single, enjoys fishing, golf, pool and camping, when he isn't busy on the family farm. He is a guy who "enjoys the challenges".

FROM THE AWWOA CHAIR MIKE PELLETIER

Well, now that we are all geared up and ready to go for summer, thought it might be nice to recap some of the AWWOA Seminar highlights. First I'd like to thank Terry Chapman for the good job he did as Chairman the past year, and of course a huge thanks to Kathy, Del and Gerald for all the work they do for the organization of our Annual Seminar.

Again this year we saw a terrific turn out. A total of 549 people registered (320 delegates, 36 spouses, and 193 displayers). Along with this fourth straight record breaking year came some other successes. The fundraiser for Water People Canada Western Canada Section was a big success, raising \$3916.35. This will go a long way in providing resources for those in need.

Receiving the Ron Bayne Service award was John Barrett from the City of Calgary. John is one individual who is truly dedicated to the betterment of water and wastewater operators throughout the Province. Outstanding contributions John!

Operator of the Year has always been a tough choice. Provincially we have many operators that day in day out work with true dedication at what they do and will take that extra effort to ensure it is done right. This year the award was given to Barry Brookes of Red Deer who has filled those shoes.

The NAIT Award went to Nicole Dmytruk who obtained the highest marks in the full time Water and Wastewater program. She completed the program with an overall average of 96.7%.



OPERATORS SEMINAR PRESENTATION

This year featured, for the first time, an AWWA Teleconference "Operations and Maintenance: Tools and Technologies to Protect Water Quality in Distribution Systems". The session was well received by those in attendance.

Again Thanks, and Congrats to all, enjoy your summer!!!



OPERATIONS AND MAINTENANCE TELECONFERENCE

AWWOA OPERATOR OF THE YEAR NOMINATIONS

The Alberta Water and Wastewater Operators Association is soliciting nominations for "Operator of the Year". Municipal officials, plant managers, or any member of the AWWOA may submit nominations.

Nomination Guidelines

- 1 The nominee must be a "member of good standing" of the Alberta Water and Wastewater Operators Association.
- 2 Written nominations must be received by January 31, 2000, for the March 2000 presentation.
- 3 The nominee must have provided exemplary service to the water and wastewater field over an extended period of time.

Written nominations and brief biography can be sent to:

Joe Vandenerboom
c/o The Alberta Water and Wastewater Operators Association
P.O. Box 34010, 196 A Kingsway Mall P.O.
EDMONTON, AB, T5G 3G4

Or Fax to:

Joe Vandenerboom
(403) 227-5831

AWWA WESTERN CANADA SECTION WATER FOR PEOPLE



AWWOA-WFPC SILENT AUCTION

Water For People Canada (WFP-C) is a program designed to help poor people in developing countries help themselves. WFP-C focuses on drinking water projects and related water resource, sanitation and hygiene education initiatives.

Update Spring 1999

We have "Great News" to report from the 1999 Alberta Water and Wastewater Operators Association (AWWOA) Conference held in Banff, Alberta from March 9th through March 12th. A total of \$3,916.35 was raised for Water For People. The funds were raised through a Silent Auction, selling of Water For People lapel stickers, an Easter egg guessing contest, cash donations from suppliers, and contributions from conference registrants. The surprise windfall allows an entire school water development project to be funded.

Water for People extends a heart felt thanks to the AWWOA conference organizers, the AWWOA Executive, conference delegates, and trade show participants. A special honourable mention is extended to Doug Thorson, Terry Chapman, Kathy Abramowski, and Del Morrison who devoted extra time to ensure a successful fund raising effort.

The WFP Canada, Western Canada Section Committee will be applying to the Wild Rose Foundation for a matching grant to double the funds raised by the AWWOA. Thank you AWWOA for jump starting our 1999 fundraising efforts and helping support those in need with safe water and improved sanitation conditions.

If you are interested in volunteering for future WFP-C activities please contact Glenda Donovan-Malik at (780) 790-5534 or if you are interested in learning more about Water for People or purchasing any WFP products (such as T-Shirts, coffee mugs or pins), please feel free to contact Kathy Abramowski at (780) 427-7713.

AWWOA "RON BAYNE AWARD" - SERVICE AWARD

We need your assistance to recognize an outstanding individual.

The AWWOA would like to recognize an individual, nominated by you, who has contributed in a significant way to the goals of our Alberta Water and Wastewater Operators Association. This award is in recognition of long dedicated service to the Association while on the Executive or in an advisory capacity. The individual should be someone who has furthered the goals of training, education and certification of operators in the Province of Alberta.

If you know of someone that you feel is deserving of this award would you please contact Doug Thorson at (403) 309-8501 or Fax (403) 342-6022. Please follow up your call with a short note of recommendation outlining the reasons for your nomination.

Thank you

Doug Thorson
AWWOA Vice Chairman

AWWOA/ALBERTA ENVIRONMENT COURSES OFFERED 1999 - 2000

The following classroom, correspondence and homestudy courses will be offered in 1999 and 2000. The training brochures will be mailed out to all certified operators, members of the Alberta Water and Wastewater Operators Association, as well as all municipalities in late August. If you do not receive your copy by September 1, 1999, please contact Del Morrison at (780) 427-8130

COURSE	LOCATION / DATES
Level I Certification Preparation Course	Edmonton
Part "A"	October 13 & 14, 1999
Part "B"	Edmonton
	November 16 & 17, 1999
Hydrant & Valve Seminar	NAIT
	December 15 & 16, 1999
Iron & Manganese Control Course	Red Deer
	January 25 & 26, 2000
Management & Supervision for Operators	Edmonton
	February 15 - 18, 2000
Level II Certification Preparation Course	Edmonton
	March 1 & 2, 2000
Alberta Operators Seminar	Banff
	March 7 - 10, 2000
Chlorination Workshop	Calgary
	April 11 - 14, 2000
Level I Certification Preparation Course	Edmonton
Part "A"	April 4 & 5, 2000
Part "B"	Edmonton
	May 16 & 17, 2000
Small Water Systems Course	Edmonton
	April 26, 2000
Small Wastewater Systems Course	Edmonton
	April 27, 2000

Correspondence/Homestudy Course

Water Treatment Plant Operations Correspondence WCWWA
 Practical Mathematics for Operators Correspondence WCWWA
 Level I Certification Preparation Correspondence
 Level II Certification Preparation Correspondence
 Small Water System Homestudy Course
 Small Wastewater Systems Homestudy Course
 Wastewater Treatment Operations "A" Homestudy Course
 Wastewater Treatment Operations "B" Homestudy Course
 Rotating Biological Contactor (R.B.C.) Homestudy Course
 Pumps; Theory, Operation & Maintenance Homestudy Course

1999-2000 WATER & WASTEWATER OPERATOR CERTIFICATION EXAM SCHEDULE

Anyone who is interested in writing certification exams may request application forms from:

Alberta Environment
 Municipal Program Development Branch
 9820 - 106 Street
 EDMONTON, AB, T5K 2J6
 Fax: (780) 427-5204

DATE	LOCATION	APPLICATION DEADLINE
November 18, 1999	Edmonton	September 20, 1999
November 18, 1999	Calgary	September 20, 1999
March 7, 2000	Banff	January 20, 2000
May 23, 2000	Edmonton	April 10, 2000
May 23, 2000	St. Paul	April 10, 2000
May 24, 2000	Red Deer	April 10, 2000
May 24, 2000	Peace River	April 10, 2000
May 25, 2000	Medicine Hat	April 10, 2000
May 25, 2000	Grande Prairie	April 10, 2000
May 25, 2000	Lethbridge	April 10, 2000
May 26, 2000	Calgary	April 10, 2000
May 26, 2000	Lac La Biche	April 10, 2000

Editors note: Yes the deadline dates listed are the DEADLINE dates ... no exceptions!

LOOKING FOR NOMINATIONS

The AWWOA Nominations Committee is looking for people who would be interested in serving on the AWWOA Executive. If you are a full member in good standing and want to be involved in the direction of our organization, contact:

Jim Hepler at (Phone) 780-987-3415 (Fax) 780-987-3227,
 or
 Scott Chant at (Phone) 403-646-2902 (Fax) 403-646-2653

LEVEL III AND IV STUDY GUIDES COMING SOON TO A COMPUTER NEAR YOU

ellow operators, some of you will recall, a couple of years ago the Association of Boards of Certification (ABC) ran a survey involving numerous Alberta operators, to develop a NEED TO KNOW document that would be useful in the updating of operator certification exams.

We, the AWWOA, in a joint venture with WCWWA have taken this information and have commenced the development of a series of Level III and IV study guides through Access Technologies at SAIT.

At the present time we have completed the Water Treatment and Wastewater Treatment Level III and IV guides and hope to have the Water Distribution and Wastewater Collection study guides completed by the end of the year. We will keep you posted.

The study guides will be available through our Website at: <http://www.awwoa.ab.ca> in the very near future so keep your eyes peeled and have a good summer.

Andy Bebbington

AWWOA BURSARY AWARD

The 1999 Bursary of \$2000.00 has been awarded to Ken Grant, of Millet, Alberta. Ken is enrolled in the Water and Wastewater Technician Program at NAIT. He is presently performing the work practicum of four months before completing his studies in the fall.

Ken has been working since 1988 as an Operator III for the Town of Millet in the water and wastewater field, as well as in general public works. He holds Level II certification in Water Distribution and Wastewater Collection, and Level I Water and Wastewater Treatment. He finds this to be a "very interesting field to be working in, with many varied tasks and challenges."

The Executive congratulates Ken on his ongoing success, and hopes that he will be an active member of the AWWOA throughout his career.

The Alberta Utility Operator is published three times a year by the Municipal Program Development Branch of the Environmental Sciences Division, Alberta Environment, as a means to exchange information for those involved in the operation of water and wastewater facilities. The contents do not necessarily reflect official opinion or policy and, unless otherwise stated, should not be construed as policy or regulations. **The Alberta Utility Operator** and Alberta Environment allow the Alberta Water and Wastewater Operators Association to publish noteworthy information in this newsletter, however, we cannot be held responsible for the accuracy of information submitted. Contributions, comments and criticisms are welcome.

ISBN: 0381-3908

ALBERTA UTILITY OPERATOR
MUNICIPAL PROGRAM DEVELOPMENT BRANCH
ENVIRONMENTAL SCIENCES DIVISION
ALBERTA ENVIRONMENTAL PROTECTION
5th Floor, 9820-106 Street
Edmonton, Alberta T5K 2J6