econotalk

THE LATEST NEWS FROM ECONOTECH AND FRIENDS | FALL 2002 | VOLUME NO. 15

Funny, we don't look a day over 29.

Thirty years ago Pierre Trudeau was Prime Minister, Team Canada had finally beaten the Soviet Union in the Summit Hockey Series and Don McLean's American Pie was topping the radio charts. 1972 also marks another notable event: the beginning of Econotech.

As any of the four remaining original staff members will tell you (Ed & Norma Becker, Ralph Abley and Don McDermid), Econotech's progress has been typified by a steady series of small breakthroughs from all our departments. Here are just some of the accomplishments that have contributed to our success.

Our Pulping department has developed methods to simulate new cooking processes including: Kamyr MCC, EMCC and low solids, Beloit RDH, Bauer M&D, and solvent pulping. We have pulped hundreds of wood species from all over the world, as well as many non-wood materials. The Bleaching department has done work with most new bleaching agents and bleaching sequences.

Our Analytical department has developed many methods for testing mill process liquors and pulp & paper products. We can carry out almost all of the standard analytical tests plus some we have developed ourselves. We have provided AOX and TOX testing to the industry for over 16 years.

The Microscopy department has determined species and fiber characteristics on thousands of wood and pulp samples from all over the world. They also identify contaminants with a number of tests, accompanied by digital photomicrographs. When asbestos testing was requested, we quickly developed this capability for all industries.

Over 30 years there's little doubt that technology and trends have changed considerably at Econotech, but one thing that hasn't, is our unwavering commitment to provide our customers with the very best service possible. To all our customers, new and long term, thank you for being part of our legacy. <<

DR. ED BECKER – PRESIDENT, esb@econotech.com

left to right: Don McDermid, Ralph Abley, Dr. Ed Becker and Mrs. Norma Becker. These are the four original people still here who were also here when it all started.

The samples, they are a changin'

Over the years, we have performed fiber analysis on a large variety of sample types; single pieces of wood, chip blends, pulp, paper, contaminants and miscellaneous debris. Through the progression of the industry, we have observed some interesting changes relating to sample type and analysis requests. In particular, one request has become more popular – determination of recycle content! >>

continued inside

The samples, they are a changin' continued

>> Using microscopic fiber analysis techniques, the degree of certainty for recycle content evaluation on unknown paper products varies. The most reliable way to determine recycle content is to reference the audit trail that follows the production process from fiber acquisition to end product. When an audit trail is not available, microscopy is the last and best resource.

There are definitely issues regarding microscopic evaluation of furnishes for quantitative recycle content. Difficulties arise because of the possibility of an unknown amount of a particular fiber/pulp type in the recycle portion that is similar to the virgin component. We cannot make the distinction of which portion, the recycle or virgin, a similar fiber originated in if there's excessive crossover. We sometimes encounter this problem with mixed office paper recycled/FBK blends.

If we can confidently differentiate the blend of both the recycle and non-recycle components, we should be able to quantify the recycle content – reference samples of each component, when available, are of great assistance. Ideally, we can make a rough estimate of amounts, usually reporting in ranges of 10%. Short of quantification, we can report the presence or absence of any recycle material in the sample. Strong indicators of recycle content include traces of mechanical pulp, synthetics, non-wood fibers and a high variety of wood species from different geographical locations.

You may be wondering if that card or envelope really is "at least 60% recycled content". Reduce your curiosity about whether that fiber has been reused, by checking your recycle content with us. <<

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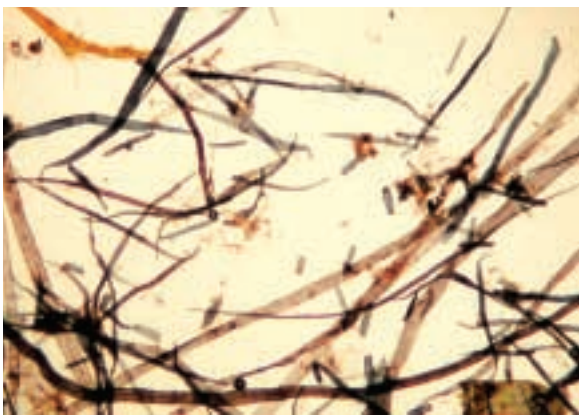

My 28 years at Econotech.

Over the last 28 years I have witnessed many changes at Econotech. And I am very proud of Econotech's achievements and recognition for its service to the pulp and paper industry around the world over its 30 year history.

Our Analytical Department has grown from two employees – one supervisor and one technician to a twelve member team. In 1972, we started by using our internal Columbia Research procedures after the closure of its R&D Center with the formation of Econotech. We have now developed over three hundred procedures and are using TAPPI, ASTM, SCAN and PAPTAC methods in conjunction with our own procedures. Many of our procedures were developed to provide accurate analyses of the chemical matrices specific to pulp and paper process streams.

Back then we had only one instrument that was capable of running just one element at a time (an Atomic Absorption Spectrometer). Now we have an ICP instrument that can run 32 elements at once, plus a multitude of other instruments that can test for many organic and inorganic compounds. Certainly, with the advances in improved instrumentation, the sensitivity and accuracy of our analyses has vastly improved, but speaking for everyone here, our commitment to our customers remains constant.

Today mills rely on our services more than ever. I am particularly proud of the quality services we've provided and the resulting relationships that have developed with customers from North America to Asia. Nothing is more satisfying than hearing positive comments from customers after solving their problems.

In the beginning, many people doubted our viability. Some gave us five years. But thanks to talent, perseverance and a genuine commitment to our customers, Econotech has succeeded. And if the current state of operations is any indication, we'll be around for many more years to come. <<

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left to right: Tom Wong, Elmer Portillo, > Yolanda Cahoon, Don McDermid, Ravi Mehai, Sandra Fodor and Mohammad Sabzvari.

Fracture toughness revisited.

In a recent article by Derrick M.S. Wanigaratne, Warren J. Batchelor and Ian H. Parker featured in the September 2002 issue of APPITA, the authors tested to see if there was a correlation between fracture toughness and tensile properties. Their conclusion is "the relationships were not strong enough to justify using measurements of tensile properties to predict the fracture toughness."

The authors substantiate the fact that web runnability is significantly affected by the presence of defects in the paper. Fracture toughness measures the paper's resistance to fracture from pre-existing flaws and is closely related to runnability.

Econotech had the first commercially available Fracture toughness tester in North America. <<

Allow me to introduce…

To celebrate Econotech's 30th anniversary, I would like to take this opportunity to introduce our Paper Testing department. Many of you have worked with Don McDermid or myself over the years, but also working with us is a talented group of technicians.

In 1995, Econotech purchased the Optest Fiber Quality Analyzer. Yolanda Cahoon, Paper Testing Group Leader, was trained extensively on the operation of the FQA, including sample preparation development. Yolanda has worked at Econotech for the past 6 years and along with her FQA responsibilities, she is also responsible for lab QA/QC including testing equipment and water quality. If you are interested in more information, please do not hesitate to email her at yolanda@econotech.com.

Thomas Wong, Senior Technologist, has worked at Econotech for 20 years. Thomas has worked in all aspects of the Paper Testing department including PFI evaluations, mechanical pulp evaluations, handsheet preparation, handsheet testing and dirt evaluations. Today, his schedule involves reviewing all projects completed in the department to ensure reported results are precise and accurate.

Over the years, we have met many of our customer's demands by expanding our pulp and paper testing capabilities. The most recent evaluation added to the Paper Testing department is wet web tensile. Using a specially designed template, we have been evaluating the wet web tensile at 30% solids for both softwood and hardwood PFI evaluations. Elmer Portillo, Senior Technologist, is responsible for the wet web tensile evaluations and has worked in the Paper Testing department for the last 5 years.

Using a specially designed humidity chamber, the Water Vapor Transmission Rate test can meet TAPPI T464 recommendations of 38°C and 90% R.H. as well as the standard conditions of 23°C and 50% R.H. in our CT& H room for TAPPI T448. Ravi Mehai, Senior Technologist, is responsible for the WVTR evaluation and has been working with the Paper Testing department for 13 years.

Our beater lab operates two shifts to provide our customers with rapid turnaround times. Mohammad Sabzvari, Technologist, has been running PFI and Valley Beater evaluations during our afternoon shift for 9 years and is our master PFI/VB technician.

I hope this article will give you a chance to meet our paper testing team. We have enjoyed working with many of you over the years and thank you for your continued support. <<

SANDRA FODOR – SUPERVISOR, PULP & PAPER TESTING
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The power of one.

Have you ever heard of the phrase "The Power of One". Well, Marsha, my wife, and I firmly believe that with help we can make a difference. We have often wrestled with the idea as to why we were born into such a beautiful part of the world where we don't have to struggle to exist. We know where our next meal is going to come from, we know that we will have a bed to sleep in at night and even very simple things such as being able to turn a water tap on and drink the water without getting sick. In terms of our world this is a rarity and is truly a blessing to be thankful for. But the question remains why?

Marsha and I believe that that it is our responsibility to help other people in need and have dedicated our spare time to Compassion Canada, which seeks sponsors for children in other countries. We have several children in Bolivia as well as Guatemala. We have visited our Bolivian children on two occasions and this past July we visited our Guatemalan children. What a special time it was.

In most third world countries the children are put out to work, to help provide for the family. Many are put into the sex trade. In Guatemala many children are being abducted by nationals and put up for adoption into the US. So you can see that it is rare for one of these children to be able to be educated as the parents simply can't afford it. If this is allowed to continue what hope is there for not only the children but also for their country. This is where Compassion comes in.

To be a sponsor requires a donation of $31 per month (in Canada) and perhaps a small donation towards a birthday or Christmas present . This is totally up to the sponsor. The biggest and most important commitment for the sponsor is to build a relationship with the child through letter writing. This is very important. But think for a moment, these children are young and the letter, which should be written approximately every three months, need only fill a post card. Post cards are perfect because they show something about where you live. Three or four sentences asking things such as how many brothers or sisters do they have, what are their favorite subjects in school – get the picture. Keep it simple. The child then knows that you are thinking of them. >>

Marsha and I saw and spent some time with our three Guatemalan children. The parents couldn't thank us enough for our help. They showed the child's clothes that our birthday gifts helped buy. The money goes towards school uniforms, which most foreign schools require, it goes to purchase text books and school supplies. But you know what? It is us who received the biggest joy for we couldn't possibly purchase the pleasure we received in visiting with these kids.

In closing let me say that cost is minimal. We know of a school girl in Alberta who sponsors a child. She collects pop cans and collects more than enough money each month to pay the $31. She came with us a few years ago to Bolivia to visit with her sponsored child. You can imagine the bonding as the two were much closer in years than my children are with me. I'm more of a grandpa to them.

If the wheels in your head are beginning to turn, which I hope they are, then I've done my job. If you would like more information please email me. Remember, you can make a difference – The Power of One! <<

DON D. MCDERMID
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< Don and Marsha McDermid with their three Guatemalan children and their parents in Guatemala.

30 years of cooking at Econotech.

It is hard to believe that Econotech has been serving the pulp and paper industry for 30 years. The kraft pulping process remains basically the same as when it was invented in 1879 but over the past 30 years, the size and complexity of kraft digesters have increased. We have helped many equipment suppliers improve their digesters. Past customers include: Kamyr, Beloit, ESCO, Ahlstrom and others. Our work has covered areas including chip impregnation, liquor profiling and countercurrent cooking. These studies were performed in our laboratory batch digesters using simulations of their digesters. We have the capability of performing "Low Energy Batch Cooking" such as in the Beloit RDH or Sund's systems for batch digesters or can simulate the latest EMCC digester.

In the 1970's, chip thickness screening was developed to reduce the amount of pulp rejects from a digester. Later developments in the use of hydraulic impregnation and countercurrent current cooking have also led to a reduction in pulp rejects. In a conventional batch digester all liquor is added at the start of the cook and alkali concentration rapidly drops as the cook progresses. In a countercurrent digester alkali is added at several points throughout the cook and flows countercurrently in the cook zone. The presence of a higher alkali concentration at the end of a cooking helps to cook out "dirt" from bark and reduce pulp rejects. Here is some lab data (Dr. Ed Becker – TAPPI 1992 Boston MA preprint) to illustrate the impact of digester evolution of pulp rejects. The same chip sample was cooked to a 30 kappa target using the following lab simulations:

SIMULATION	CONVENTIONAL	CONTINUOUS	CONTINUOUS	EMCC
Presteaming	No	No	Yes	Yes
Hydraulic impregnation	No	Yes	Yes	Yes
Countercurrent cooking	No	No	No	Yes
Max cook temperature	172°C	172°C	172°C	160°C
Time at temperature	85 min	82 min	82 min	220 min
Pulp rejects	2.2%	0.8%	0.15%	<0.05%
Screened pulp kappa	30.8	30.0	31.2	27.9
Kappa spread	24.1-40.0	26.2-34.8	26.2-37.5	26.8-29.1

The kappa spread shown above is the difference between the 2-3mm thick chips and the >10 mm overthick chips. Countercurrent cooking gave a narrower pulp kappa spread should be more bleachable.

We can simulate your cooking process by cooking different layers based on chip thickness, different wood species or other characteristics. This will show the effects of your process variables on pulp rejects, kappa number and pulp quality. <<

For more information or if you require a pulping evaluation, please contact:

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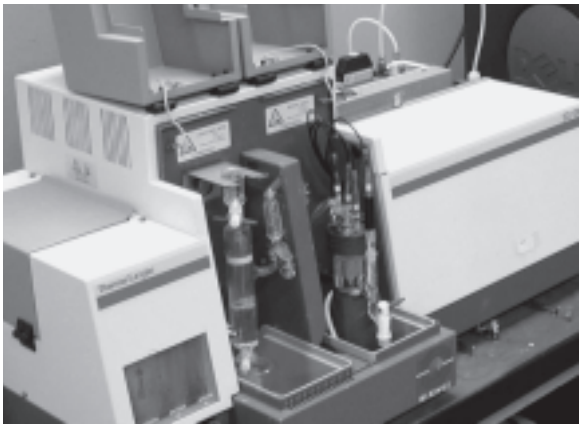

New developments in AOX.

In May 2002, the AOX Department upgraded its equipment with the purchase of a Thermo Euroglas ECS 1200 chlorine analyzer with autosampler. This purchase allowed us to retire our Dohrmann and Mitsubishi AOX analyzers, which had produced good results for the past 14 years but lately had required increasing amounts of maintenance.

The staff was given extensive training by Charlie Fink from Infinity Instruments on the operation of this instrument and on the Windows based software operating the instrument. The new software gives results graphically and numerically for a more thorough interpretation of the data.

The staff has been pleased with the response of the instrument. We have found that the instrument is electronically more stable, has a higher capacity cell and is more sensitive than our previous instruments. The addition of the autosampler allows the collection of more quality control data.

We can do the following analyses for you:
> AOX on effluent
> US EPA 1650 AOX in effluent
> AOX on pulp (leachate)
> Extractable OX on pulp (solvent)
> TOX (PAPTAC H.8P or ISO 1148-1977E) on pulp <<

For more information, please contact:

STEVE RICHE – SENIOR TECHNOLOGIST
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9 Principles for corporate longevity.

E – Experience: A 30 year track record serving the international pulp and paper industry.
C – Confidentiality: Your results are more than just numbers, they are industry secrets.
O – Optimization: We strive to make your operations more efficient and successful.
N – New technologies: We embrace new technologies and change, to better serve you.
O – Organizational strength: We have a strong managerial structure.
T – Turnaround Time: Your results, when you want them.
E – Extra mile: Not just results, we provide you with interpretations and suggestions.
C – Competencies: Multi-disciplined, with 8 specialty departments to assist you.
H – High moral standards: We will not compromise your results or our reputation.

Yes, we have been around a long time. We thought you should know why. Next time you need testing done, remember these nine principles. <<

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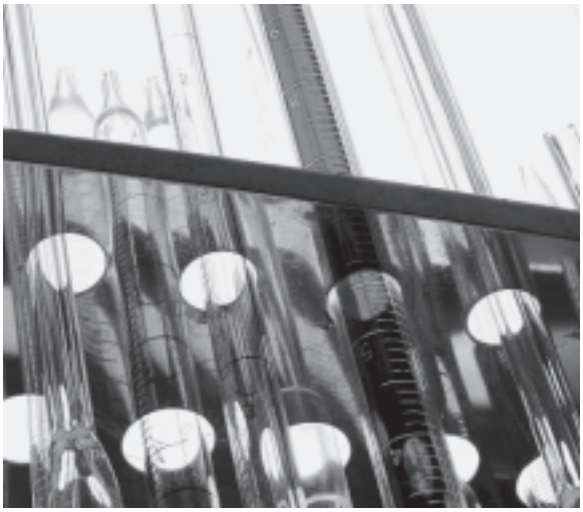

What do you think?

Whether it's about our new look or a topic you would like to see covered in a future issue, we'd like to hear from you. Please contact Jacquie Stanley with your comments or suggestions. <<

JACQUIE STANLEY – ADMINISTRATIVE ASSISTANT
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In Memoriam.

Wilbert Dorash, passed away June 13, 2002, after a lengthy illness. He is missed and remembered by everyone at Econotech. Wilbert was a founding member of Econotech and a faithful employee for 30 years. Wilbert will always be remembered for this dedication, loyalty and his quiet and caring disposition. The world has lost a great man. <<

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