

Australian Water and Wastewater Operator's Association inc.

Victoria Australia A12314

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August 2001 Edition

Gippsland Water New Treated Water Storage Basin at Sale

Project Officer: Piyal Gunaratne

A new 10 ML treated water storage basin has been commissioned at Sale recently. The new basin is located adjacent to the existing clear water storage at the Water Treatment Plant (WTP). This is an earthen basin with a liner and cover similar to the existing storage basin.



Earthworks for the new basin in progress

The dimensions of the basin are 100 metres by 60 metres at the crest and the depth is 4.3 metres. The liner material is 1.5 mm HDPE (High Density Polyethylene) and the cover is 1.0 mm Polypropylene.



Installation of AGI drains on the base of the basin to protect the liner from ground water pressure.

The reason for this project was that the existing 10 ML clear water storage did not provide sufficient balancing and

reserve storage volume for community water supply at Sale.



HDPE Liner

The new basin will double the security of water supply to Sale, as the total treated water storage capacity is now 20 ML.



Floating Cover

The Sale WTP including two basins lies fully within the flood plain of Thomson River and is subject to riverine flooding. The embankment crest level of the both basins is 6.5 m AHD that is 430 mm higher than the 100-year flood level.

The existing and new basins can be used independently.

The Contractor for construction of the earthen basin was G. Goldsmith Construction from Leongatha and the Contractor for Liner and Cover was Beltreco from Queensland.

The total cost of the project was \$900,000.



Editorial

A revamp of the format of 'Operator' is underway. It was hoped that the new format would have taken place for this edition but time has not permitted this to happen i.e. for the printing side. Some new sections have been included, some of the old format remains and 'Around the Traps' has been expanded.

In regard to 'Around the Traps' the State has been divided into groups of Water Authorities and Private Industry with a particular person responsible for each group. Some of you may have already been contacted and may have even forwarded articles. From the articles received the system has been working well, a throw off from the old STD (remember those) area coordinator.

Below is a list of who's who with contact details and which Water Authorities they will be seeking input from:

North East - North East Water, Goulburn Valley Water and Coliban Water

Peter Tolsher - fax/ph 02 6059 1596, mobile 0419 337 151, email: wodwest@nerwa.vic.gov.au

South East - East Gippsland Water, Gippsland Water, South Gippsland Water and Westernport Water Russell Mack - Ph 5177 4659, fax 5177 4690, mobile 0427 331 586, email: mackr@gippswater.com.au

South West - Glenelg Water, South West Water and Portland Coast Water

John Harris - Ph 5562 9275, fax 5562 9262, mobile 0417 338 688, email: jhar@swwa.com.au

North West - Central Highlands Water, Grampians Water and Lower Murray Water

Tony Heagney - ph 5333 2780, fax 5333 2560, email: theagney@chw.net.au

Central - Barwon Water, Western Water and Metropolitan Water Companies

Graham Thomson - ph 5226 9109, fax 5226 9140, mobile 0408 993 756, email:

graham.thomson@barwonwater.vic.gov.au

Private Industry

Chris Andrew - ph 5851 9200, fax 5859 0096



Publication Deadline Dates

(These are the cutoff dates coordinators forward material to The Editor, so you will need to get material to your area coordinator prior to this date or forward direct to The Editor)

October 11, for the November publication January 18, for the February publication April 27, for the May publication July 20, for the August publication At this stage the committee is planning on four editions per year

When contributing material please keep formatting simple.

NO fancy page setups, no columns, simply type out your text and save as a 'Text only' file (*.txt).

If you are not familiar with this, save as a *.doc file. The editor will carry out all formatting.

If you have photographs **DO** NOT scan into the article send hard copies and label as Fig 1 etc in your text for where your require them to appear (don't forget to also label the back of the print accordingly).

You may also send digital files (*.jpg) but these should be of a high quality and the same applies DO NOT include them in your article, forward as a separate file with a reference to the file name in your text where you require them to appear.

Sorry to be so longwinded about this but it will make the process easier for all concerned. If you are unsure about what to do ask either you area coordinator or give me a call.

Articles can be forwarded directly to The Editor Ph 2526 9236, fax 5226 9262, mobile 0418 569 183, email: richard.greenhough@barwonwater.vic.gov.au

THE EDITOR



Water Industry Training A New Beginning

Water Industry Training Centre Pty Ltd has been established to provide training to comply with the requirements of the National Water Industry Training Package. The new organisation specialises in water and wastewater treatment.

This new enterprise has been set up to continue the excellent service provided to the Water Industry over the past 20 years by the Water Training Centre, State Body. This body has been wound-up as a Business Enterprise of the Victorian Government.

This change in management structure will streamline the Centre's ability to offer training both Nationally and Internationally.

Registered Training Organisation

The new organisation is in the process of seeking status as a Registered Training Organisation and also the authority to deliver the Certificate 11 in Water Industry Operations, Certificate 111 in Water Industry Operations and Certificate 1V in Water Industry Operations.

Once approved, the organisation will also have authority to deliver the Certificate 1V in Assessment and Workplace Training.

Expertise

The Centre boasts some 60 years of training experience specialising in water and wastewater treatment (Municipal and Industrial), water quality monitoring and occupational health and safety. It is operated by three professionally qualified trainers (Ken Herbert, Stephen Wilson and John Park) who are well known in the Australian Water Industry.

Business as Usual

The new Water Industry Training Centre continues to offer high quality operations training modules. A Training Schedule covering the next 6 months has just been circulated and is available on request.

The Centre will continue to maintain a record of trainee progress towards the qualifications and has accepted the responsibility of maintaining all student training records of the antecedent body.

Booking procedures remain unchanged and unless indicated otherwise, off-job training modules will continue to be offered at the Centre at Deakin University, Geelong, Victoria.

Secretary's Scrawl

2001 Conference



Arrangements are well under way for the 64th Annual Victorian Water Industry Engineers and Operators Conference. Remember the dates -September 5th and 6th in Bendigo hope to see you there.

Registration forms have been mailed out already and the program of speakers and topics is excellent.

The 'old' staff at the NEW Water Industry Training Centre has agreed to continue with the sponsorship of the Operator Poster Papers and a flyer has also been distributed to AWWOA Members and all Water Authorities. As usual, the response has been very slow so please give some thought to entering this category and let me know of your topic ASAP.

Magazine

In conjunction with Peter Mosse from Gippsland Water, we've been working on producing a new magazine written by operators. The AWA have offered to increase the pages in their "Water" magazine to allow the inclusion of a

section dedicated to operators and our issues. We plan to take up this offer initially in the November and June editions of Water, and we hope you will enjoy reading it. As with our Newsletter contributions from Members is vital, so if you have the opportunity to contribute something please get involved.

Arrangements for this day are under way and it will be staged on Sunday 21st October at Trafalgar Golf Club. More info will be forwarded in the near future. Please try to support this day, even if you don't play golf seriously. There are categories for all standards of players and the day was great fun last year. We raised a considerable sum for charity and had a great time into the bargain.

3rd Annual Charity Golf Day



Website



We've been really busy over the past couple of months and have completely revamped the AWWOA Website. It now contains much more information in what should be a more user friendly format. Now included are copies of old conference papers and we've started a new section called "Operator Resources". In this section, we'll be placing what we hope will be useful information that you can access and copy to your computer and use.

The first item added is a simple excel spreadsheet "water balance model" that can be used for either wastewater lagoons or small water storages. All you need to do is copy it and modify the fields to suit your plant. Check out the site at:

www.awwoa.org.au.

New Members



Welcome to the following people who have recently joined our Association.

Brendan Holt Sandy McGregor Joe Cassar Peter Roberts

James Young Ross Guastalegname Wayne Shaw Jason Whittaker

And the following new Corporate Member: Portland Coast Water,

George Wall - AWWOA Secretary

News from the USA - Plant operator convicted

DETROIT - Michael J. Kuhn of Bay City, MI, was convicted 14 May of violating the Clean Water Act by ordering employees at a waste treatment plant to pump sewage sludge into an emergency outfall ditch that flowed into the Saginaw River and for falsifying records.

At the time of the violation, Kuhn was superintendent of the Bay City Wastewater Treatment Plant. In June 1997, Kuhn knowingly ordered an employee to falsify a data record related to the plant's influent, according to the US Environmental Protection Agency (EPA), which investigated the case.

Kuhn thereafter certified the accuracy of the false data in a monthly report submitted to the Michigan Department of Environmental Quality, according to the EPA.

Pumping sewage sludge into surface waters can present an infection risk to people who come into contact with the water, make the water unsuitable for drinking and recreational purposes and can harm fish and wildlife.

When sentenced, Kuhn faces a maximum sentence of up to 12 years in prison and/or fines of up to \$1 million.



Around the Traps North East

North East Water, Goulburn Valley Water & Coliban Water

Mt Buffalo Weekend Seminar Feedback

The Mt Buffalo Weekend Seminar was a great success not only the setting but the presentation by ITT Flygt Ltd. Flygt gave us a look at the new technology of the N Pump. I thought at the time that North East Water had a site that would put the N pump to a test, this being the inlet works at West Wodonga Waste Water Plant.



The inlet pump station has three pumps each giving fifty litres per second. The pumps have been in service since the commissioning of the plant in 1987. One of the pumps after a routine service had mega'd down to earth and after further investigation was found to be no longer serviceable. We had a spare RAS pump that we put into the well as an

option as the plant is in the final stage of being let for tender and the existing pumps will have to be upgraded for the new system. We found that the pump kept blocking up after about thirty minutes. The RAS pump had the standard pump fixed to it.

After discussions with management it was decided to try out the N pump. We retrofitted the spare RAS pump with the new N pump and it has been a great success as the pump has been in operation for about 4 weeks and as yet it has not blocked once. The running amps of the motor decreased from 18 amps to 8 amps which means that it is more efficient to run and is giving us more output, about 65 litres per second. ITT Flygt carried out the total retrofit at their workshop in Melbourne with a turn around time of approximately one week. Costing about \$1,700 money well spent. Overall the N pump decreased operating costs, decreased down time and increased pump efficiency by 30%.

Peter Tolsher - Operator - North East Water

Shepparton WTP SCADA System /24 Hr Monitoring vs the Old Days

Recently the Shepparton WTP experienced a major power failure. Despite the advent of automatic power generators to cater for power outages, there can always be the inevitable appearance of Murphy.

On this occasion Murphy was well and truly in the picture. The Shepparton Plant had a major failure one evening; the site alarm detected a phase failure. The automatic generator tried to compensate, but each time it started it would still throw out the entire power system on phase failure. Being night, we couldn't see and we didn't know what was causing it. Powercor were called, but their diagnostics said all was well from their end, so it must be an internal problem. Finally with the help of three electricians, the probable cause of the problem was found.

One of the six raw water pumps, which draw water from the Goulburn River, was shorting phases within the motor terminal area.

The fault appeared to be the result of a loose motor winding and motor supply cable terminations. The heat stress at the point of termination in the motor caused the current to seek earth at its nearest point, that being the termination plate. The motor windings of two phases shorted to earth and welded in that position.

As the motor was not burnt out, it did not trip the motor thermal overload protection, therefore tripping the circuit protection device much further upstream, which shut off power to the entire plant. The only way we discovered the problem, in the dark, was the burning smell coming from the low-lift pump station. Even then we had to test each pump one by one until we found the culprit.

This all now leads me to the real point of this tale. In the time it took to discover the problem, and then in turn to deal with it, I can only thank modern work practices and innovation for playing a major part in Emergency Management.

For those of you who don't know Shepparton, it is a major

food production centre. Along with the residential needs on the day in question, our throughput of the plant was 75 ML. When the plant is down for any length of time during the high production period, we have to manage our storages very carefully. Especially in relation to our trade agreements and guarantees of supply to industry. During the WTP plant failure (4 hours) two of us were able to deal with incoming calls, liaise with the major industries during staged shut down of their production lines and to operate the SCADA system to best manage the water supply we did have. All of that was carried out from the one place.

Remember how we would have had to deal with it in the old days, people in vehicles at selected sites with two way radios, instructions given as to when a pump should be operated or closed. Waiting for information to be delivered to you whilst a customer query is pending.

I know some water authorities are still working under those conditions, well take it from me, after that experience I wouldn't want to go back. Having all of the information you require at your fingertips allows for proactive action. Especially when you are dealing with major industry, they don't like to lose water supply at any time, but when they can stage a shut down logically it is far preferable to losing supply without notice. Besides, they like us to pay rather stiff penalties when we interrupt supply without notice.

Neil Healey - Area Manager Western/Central Water Goulburn Valley Water



Conferences and Seminars

Fourth International Riversymposium

The 4th International Riversymposium will be held in Brisbane 29th and 31st of August 2001.

Registration: \$580 (Student/Non-profit Organisation \$316)

Riversymposium + Australian Stream Management Conference (Monday 27th to Friday 31st August, 2001)

Registration: \$880 (Student/Non-profit Organisation \$545)

The online registration form is located at http://www.riverfestival.com.au/2001/content/register_nocc .html

For the latest Riverfestival and Riversymposium updates visit their website: www.riverfestival.com.au

2002 and 2003 Weekend Seminars

Recently two possible Weekend Seminar venues were investigated one in Lower Murray Water's region at Swan Hill and the second in Gippsland Water's region at Rawson. With both locations suiting our needs it has been decided to go to Swan Hill in 2002 and to Rawson in 2003.

The 2002 Weekend Seminar will be held on Saturday and Sunday, April 27 and 28, 2002 at the Sundowner Swan Hill Resort.

Details regarding trade presenter will be finalised after the Annual Engineers and Operator Conference next month so watch this space in the November edition for more details.

Trivia: for those of you who are not aware, Rawson was the town built by the MMBW for the building of the Thomson Dam so will be well suited history wise for our seminar.



Around the Traps Central

Barwon Water, Western Water & Metropolitan Water Companies

Barwon Water's Water Restrictions removed

Stage 1 water restrictions in Barwon Water's Barwon region were removed on July 1, 2001. The decision followed good seasonal rainfall and reduced consumption, which has seen storages increase to 65 per cent capacity.

Barwon Water Chairman Stephen Vaughan said combined with the likelihood of further winter and spring rain, the Board considered it was appropriate to remove the bans. Restrictions were first imposed in January 1998, and have varied between Stages 1 and 2 during the driest four-year period on record. "The current storage level ensures the region is in a more secure position than previous years," Mr. Vaughan said. "Analysing all the relevant information, the Board believes removing restrictions is a responsible decision, particularly due to consumption falling markedly during winter.

Water restrictions in Apollo Bay, Marengo and Skenes Creek were also lifted on July 1, 2001. The decision followed early seasonal rainfall, the success of a contingency plan which supplemented supplies by pumping from the Barham River and reduced consumption, which has seen the Marengo Basin rise to 94 per cent.

Barwon Water Chairman Stephen Vaughan said the basin had recovered significantly in the past two months. "Barwon Water believes it is now appropriate to lift the Stage 2 bans, but based on the limited storage facility and unprecedented consumption last summer it may be necessary to re-introduce restrictions next year. "I therefore appeal to the community to be conscious of water conservation."

Mr. Vaughan said the Board had made a conscious decision to empower the community with the responsibility of wise water use rather than enforcing restrictions. "The community has shown during the restriction period a growing appreciation of water as a valuable resource. We believe on-going co-operation will conserve supplies."

The authority will continue to closely monitor storages and advise customers of any developments. In line with lifting restrictions, the authority will expand its current water conservation campaign which is based on the theme **Water: think smart!** Print and radio advertising and the authority's schools' program will be used, to re-inforce the importance of conserving water, not just during drought.

The authority is taking a lead in water conservation through the marketing of mulch and rainwater tanks and initiating a discount scheme on water efficient appliances at approved retail outlets.

From Barwon Water's Web site



'Ponderosa' Filming at Barwon Water's Bostock Reservoir Ballan

'Ponderosa" an American TV series at present is being produced in Victoria and will be using 'The Man from Snowy River' location at Kataminga outside Trentham. Part of the series was also filmed at Barwon Water's Bostock Reservoir at Ballan during the month of July.



Film Crew and Horses onsite

'Ponderosa' is a prequel to the TV western 'Bonanza'. For those of you who were or still are 'Bonanza' buffs (I believe it still screens on PAY-TV) one of the scenes filmed at Bostock is where Adam and Hoss Cartwright gave their little brother Joe his nickname 'Little Joe'.

'Little Joe' is being played by 11 year old Melbourne actor Jared Daperis.



Crew Members with 'Little Joe' at rear

So when the series is released and the scene is Lake Tahoe, Nevada with the Rockies in the background you will be viewing the pine plantations at Bostock Reservoir.

> Richard Greenhough – Coordinator Headworks Barwon Water

\$6.4m Colac sewer plant revamp

Barwon Water will spend \$6.4 million on a major upgrade of Colac Sewage Treatment Plant. It will be the most significant since the plant was established 70 years ago.

Chief Executive Dennis Brockenshire said while the previous system had served Colac residents well, the authority had given the upgrade priority in its capital works program.

The project will see a new treatment plant, incorporating inlet works, biological reactor, control building and systems. The existing outfall pipeline will be retained. Consultants Gutteridge Haskins & Davey investigated project options and identified the Bio-P IDEA (Biological Phosphorous removal, Intermittently decanted Extended Aeration) process as the most effective treatment.

It involves a biological process where bubbling air passes through the effluent. The sludge sinks, leaving clear water suitable for re-use. Dennis said the process would utilise the best available technology to ensure a safe, reliable and efficient treatment method.

"The process follows strict environmental safeguards and will meet Environment Protection Authority licensing requirements" Dennis said.

Construction is due to start mid-2001 and is expected to take up to 18 months.

Source Barwon Water's 'News Keeping you up to date' Vol. 5 2001



Barwon Water/Rex Hunt Futurefish Foundation Environment and Fishing Education Centre launch

Barwon Water and the Rex Hunt Futurefish Foundation have established a centre promoting environmental studies and sustainable fishing practices at their Stony Creek No. 1 Reservoir, Durdidwarrah.

The initiative features an outdoor classroom, fishing and water testing platforms and picnic facilities on the banks of the reservoir and was launched by the Minister for Environment and Conservation, the Hon. Sherryl Garbutt, MLA on July 20th.

The Barwon Water/Rex Hunt Futurefish Foundation Environment and Fishing Education Centre will focus on school children, disabled people and disadvantaged youth.

Under the direction of an experienced environmental teacher, fishing instructors and Waterwatch personnel, participants will engage in a range of hands-on activities, including fishing clinics and water quality testing.

The centre, which will be stocked with nearly 50,000 fish by December, also will be open to angling clubs conducting activities involving children, and periodically for adults to promote sustainable fishing practices to children in their care.

Press release Barwon Water



National Water Training Package

Finally, this project has been completed and on June 28th a teleconference was held between all State Training Authorities and ANTA where approval was given to our project on the National Training package.

It will take about one month to go through the ANTA process and then the Registered Training Organisations (RTO's) will be able to map where all operators are up to with current training and competencies.

A new project currently being undertaken is a Resources Project to establish a Certificate II User's Guide and Marketing Kit which will help promote the package through the workplace and Industry. This will be followed up by another called the Certificate III User's Guide and Marketing Kit.

During the Water Training Package development phase, time and knowledge constraints meant that we had to concentrate our resources on completing the Certificate II to IV modules. Consequently, some important projects including the Advanced Diploma and Hydrography were left out. We will now be working on developing materials in these two fields.

As AWWOA Members would recall, we commissioned the Water Training Centre to review the student records of all AWWOA Members who had completed the old Certificate in Water Operations to determine where they sat within the new Australian Qualification Framework (AQF). At that stage it was determined that most of the members fell somewhere between Certificate II to III level.

There have been many changes to the AQF package since the WTC completed their initial review and it is appropriate to now reassess where our Members currently sit.

It is likely that a number of people may in fact be closer to Certificate IV so at our August AWWOA Committee meeting I will table a recommendation that the new Water Industry Training Centre P/L reassess all AWWOA members that responded to our initial survey in light of the changes to the package.

We will keep Members informed of outcomes.

John Harris - National Vice Chair of WIETAA



Around the Traps South East

East Gippsland Water, Gippsland Water, South Gippsland Water & Western Port Water

East Gippsland Water

Control structures environmentally beneficial for Macleod Morass and Bairnsdale WWTP, construction of two rock spillways for stormwater and flood control within Macleod Morass near Bairnsdale have been completed ahead of schedule by East Gippsland Region Water Authority contractor, Albert and Coleman.

Following signing of a Memorandum of Understanding for co-operation between East Gippsland Water (EGW) and Parks Victoria, with support for the project agreed to by the Department of Natural Resources and Environment and the Environment Protection Authority, the works form part of a collaborative project aimed at ensuring a future supply of high quality reclaimed water for Macleod Morass.

The Morass and The Gippsland Lakes are listed on the Ramsar convention as a "wetland of international significance', especially as migratory bird habitat.

EGW's Manager of Technical Services, John Hutchison, reports that because of a long dry spell and low water in the Morass, spillway construction and associated drain diversion work came in well ahead of schedule.



Looking south floodway adjacent Brownlow's Point

It was originally believed construction of the spillways would probably extend over two autumn seasons. Both low-level rock beached spillways form part of control structures designed to manage the water regime in the Morass.



Carp Trap at Southern floodway

Greater control of the water regime is expected to enhance favourable habitat and to protect the wetland from threatening elements such as European Carp and salinity.

Importantly, a wetland to be created by EGW within the Morass adjacent to the EGW Wastewater Treatment Plant will provide a reliable source of water to the Morass to the standard specified by the EPA.

Flow from the constructed wetland will be directed to various wetland segments in accordance with management requirements.

Contracts have been let and work is expected to begin in the coming summer season. For the first time, management of the Morass will include an ability to dry out segments, a

process expected to benefit management of organic sediments and wetland plants as well as controlling European Carp by controlled drying of selected segments.



Diversion channel cut through into the Morass Northern Section completed with rock beaching for protection in the event of flood flow.

A Macleod Morass Management Plan is currently under development by Parks Victoria. The project has evolved from a seven-year consultation program among the key partners and promises to ensure an environmentally secure future for this important wetland.



Looking west across the area which in stage 2 will incorporate a constructed wetland as part of the Bairnsdale Wastewater Treatment Plant operational regime.

Robin Burgess

Gippsland Water

Covering of Gippsland Water (GW) clear water storages is progressing well, with a number of basins being lined and covered by floating covers, to reduce the possibility of recontamination of the treated water and to reduce the chlorine demand.

Moe Water Treatment Plant operator Wayne Shaw has just clocked up 10 years of service.

Dutson Downs Waste facility has had a weighbridge and office facility installed to improve the control of what and how much is to be disposed of at the site.

The new DAFF plant at Warragul has been handed over to operations and is performing well thanks to the efforts of Len Ablett. Len will be presenting a paper on the optimisation of the plant at this years Annual Victorian Engineers and Operators Conference in Bendigo.

South Gippsland Water

After another dry summer South Gippsland Water (SGW) came out of restrictions earlier than in 2000. Over the past three years every winter has been slightly wetter than the last so SGW are hoping to fill all their reservoirs this year.

SGW have had manganese problems at most of their water sources and as a result of works done, a paper will be presented at this years Annual Victorian Water Industry Engineers and Operators Conference in Bendigo. SGW reports that potassium permanganate is proving useful. Correct pH and adequate time before addition of alum are also important for its success.

SGW are in the midst of an operational review to ensure staffing levels are adequate to meet the proposed legislation on Risk Based Quality Management.

In addition to operating their own plants SGW currently operates a WTP plant owned by Parks Victoria at Tidal River under contract to the builder Aquagenics. With a new nutrient removal WWTP proposed at Tidal River by Parks Victoria SGW are now in discussions with tenderers of the project to provide operational services to that plant.

Brian Ashworth

Westernport Water

• When will the Reservoir Spill?

At the time of writing (mid July) Candowie Reservoir was close to spilling. Sitting at 96.2% of capacity with good rain predicted in the coming week Philip Keady, Superintendent of the Ian Bartlett Water Purification Plant, is not happy to take bets on when it will go over. Philip has been in this position before and the last time he made a definitive statement the reservoir levels started going backwards.

Westernport Water (WPW) has one reservoir working on an annual cycle. On average, WPW expect to receive most of the inflow into Candowie during the winter and spring months and the reservoir to spill every spring. The stored water is required to get WPW through the summer peak demand and autumn before the cycle starts again.

Funding Success

WPW is proud to be responsible for one of nine Victorian projects to share in more than \$1.3 million of Natural Heritage Trust funding. Senator Robert Hill, Federal Environment Minister, announced in March that WPW was to receive \$250,000 towards the construction of a treated effluent filtration plant at Cowes Wastewater Treatment Plant. The project is funded under the Trust's Coast and Clean Seas 2000-2001 initiative.

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