

RURAL WATER NEWS

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Positive changes in new programme

The Minister for the Housing, Planning and Local Government, Eoghan Murphy, TD, has approved a framework document detailing proposals for the next 3-year capital investment programme for rural water.

With an increased budget allocation of €25 million per annum, the new programme introduces several positive

changes to funding measures, including a focus on source protection, amalgamation and rationalisation.

A ‘Community Connections’ measure is being introduced, to fund extensions to the public water and wastewater networks in unserved areas. Irish Water will be centrally involved in the design, procurement and construction of such projects.

Key measures relating to water quality and water conservation remain in place, as do measures supporting the construction of new schemes and the taking-in-charge of schemes by Irish Water.

Expert Panel

The role of the ‘Expert Panel’ in project evaluation is being expanded to include projects other than those dealing with water quality. This means

that all GWS applications will have to demonstrate a ‘need’ for the upgrade to be carried out.

A circular will shortly issue to local authorities (LAs) requesting submissions under the new programme, while a workshop is to be held to explain the main changes and clarify any queries in relation to the bidding process.

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NFGWS Chairperson, Brendan O'Mahony enters a chamber that collects water from several springs for distribution by the community-owned drinking supply of Gramastetten in Upper Austria. See report on pages 15-18.

Learning from others

A visit to an Austrian rural water supply

Any notion that the rest of the world has little or nothing to teach us about rural water supply is quickly dispelled when you travel abroad and actually see what others are doing.

Some overseas communities have been providing drinking water supplies an awful lot longer – and arguably more successfully – than we have here in Ireland.

Take, for example, the community of Gramastetten, a rural area west of the city of Linz in Upper Austria: its first communal drinking water supply was constructed in 1603 when wooden pipes carried water from springs to local homes and farms.

Today, this water co-operative supplies more than 550 households, as well as businesses and community facilities in an upland valley that is principally (in terms of land

While on a visit to Austria in September to discuss the implications of the proposed recast EU Drinking Water Directive with representatives of community-owned rural water supplies from other European countries, the delegates from Ireland and Galicia availed of an opportunity to visit a co-operative water scheme in the community of Gramastetten in Upper Austria.

In this article, Brian MacDonald recounts what they saw and some of the lessons learnt during that visit.

activity) a dairying and beef producing area. Not that you would have known it, for we saw only a handful of farm animals outdoors, the rest presumably being fed indoors.

As for its human population, around the small town of Gramastetten there is some local industry. Many residents commute daily for work in Linz, about 20 kilometres away, while for those finishing their working lives and entering retirement, it is considered an attractive place to live ... and for good reason.

Hosts

The invitation to visit the scheme came from its Chairperson, retired engineer Dr Franz Zeilinger and he was joined in showing us around by scheme vice-Chairperson, Kurt Pfeiger.

Arriving early in the afternoon, we were welcomed by Franz's wife, Anna Lise, whose delicious home-made apple strudle set us up nicely for the study trip.

Franz explained that the scheme has no employees, but he and Kurt and a couple of others effectively manage

the supply on behalf of the co-operative. As we were to find out, the fact that these volunteers are highly skilled is reflected in every aspect of the scheme's management.

Springs

The 4 raw water supply areas supplying Gramastetten are fed by no fewer than 21 springs and our first stop was at one of seven springs feeding into the Wimmerquellen collection shaft.

This was on the edge of a forested area and the area immediately surrounding the well was protected by a ditch that diverted storm water away from the intake.

Entering the spring intake chamber was a revelation. It was spotlessly clean, tiled and equipped with stainless steel troughs that collected water that was then piped to the Wimmerquellen shaft, about 500 metres distant.

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Left: Irish and Galician delegates with their Austrian hosts on a tour of Gramastetten co-operative drinking water supply.

Above: One of 21 springs supplying the scheme, tiled and with a stainless steel water collection trough.

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Far from being an exception, the tiling and cleanliness of the spring intake was repeated at every point we visited on the distribution network.

At the Wimmerquellen shaft, the attention to detail was evident from the choice of the shaft lid, to the safety ladder providing access, an internal camera that allows monitoring of flow from the spring intakes, the use of solar power and, of course, tiling throughout and stainless steel troughs.

Recorded flows to each of the 4 collection chambers show major variations. In the case of the Wimmerquellen shaft, for example, raw water output from the 7 supply springs in 2017 ranged from 170m³ per day in May to just 110m³ per day in October.

Back-up

To guard against raw water shortages, this shaft also includes a back-up water supply, taken from a municipal raw water pipeline that passes through the area on its journey from the Alps.

During 2017, this back-up source provided an average of about 350m³ per month (excluding July and August when infrastructural works were being carried out that required an increased back-up supply).

Top: Signage is placed in each spring catchment area to alert people that they within a drinking water source area.

Middle left: Franz opening the Wimmerquellen shaft and (inset) the back-up municipal water supply pipe.

Middle right: Road kerbing placed at an upward angle to divert storm water towards a storm drain that by-passes the Stitswald spring collection shaft.

Bottom: A view from the storm drain over the field purchase that includes the spring collection shaft. This field was purchased by the water supply co-operative in 1946. Under the purchase agreement, the farmer retains the right to mow the grass, but can not spread fertilisers or pesticides.



A short drive away and we arrive at the Stitswaldquellen spring collection shaft. This is located in a large roadside meadow and is the collection chamber for a further 6 springs.

The meadow was purchased as a source protection area from the local farmer as far back as 1946, but while no fertilisers or pesticides can be applied, the farmer retained the right to the grass from the meadow, an agreement that continues to the present day.

As an increase in turbidity levels was periodically detected in this collection shaft during and following storm events, the co-operative has taken steps to address this issue.

Run-off from two roads immediately above the meadow is now diverted by angled kerbstones towards a storm drain that carries the water to a point below the collection chamber.

Dividend

This focus on protecting the supply sources through the use of simple, low tech mitigation measures has paid a handsome dividend, as only minimal treatment is required before distribution of the water supply to the community.

As with the other infrastructure we had seen, the building incorporating the treatment facility, reservoirs, office and storage facility had to be seen to be believed.

The pitched tiled roof fitted snugly into the landscape, with the office and storage facility contained within the roof space and the treatment processes and reservoirs in a deep basement that had been cut into the hill and was largely hidden from view.

Each phase of infrastructural development is housed within its own chamber and the entrance carries the date of the development, so that walking through the structure is akin to walking through the



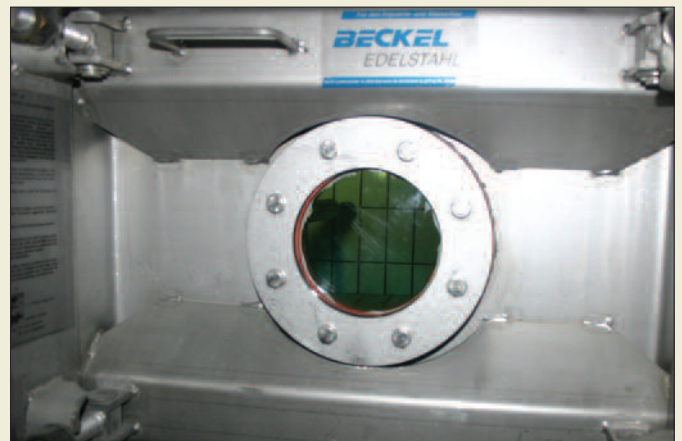
From the top: The structure housing Gramastetten co-operative's treatment facility, reservoir, office and storage area : The validated UV disinfection system is the scheme's only defence against pathogens : A view inside the deacidification tank, where the raw water filters through limestone chips to raise pH levels (note the tiling of this and all water holding tanks. In addition, such tanks and reservoirs include a window to allow for visual inspection) : Each phase of infrastructural upgrade carries the year of its installation : Operation of the plant, including pumping systems to high elevation areas of the scheme, is controlled using similar technology to that being used by many Irish group water schemes. modern history of the supply.

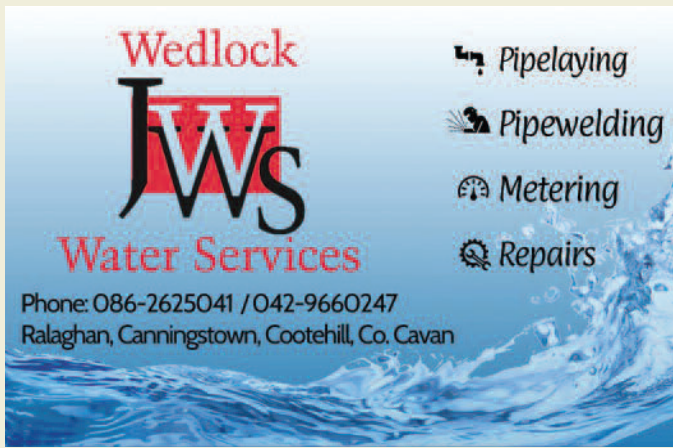
This is not limestone country, so the underlying water tends to be acidic rather than alkaline. To ensure that the water isn't too aggressive, the raw water is fed through a tank that contains 8 tons of limestone gravel.

From there it passes through a validated UV disinfection unit. The operation and maintenance of this unit are closely managed, with the UVI sensor being replaced annually, as are the bulbs.

Surprisingly, chlorination is not part of the treatment process, so there is no disinfectant residual. This holds true for many European supplies. Addressing risk at source is much preferred to the use of sodium hypochlorite.

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Annual report

Gramastetten manages just over 49 kilometres of pipework, including the 12 kilometres of piping used to gravity-feed raw water from the wells to the treatment facility.

The detailed annual report to members of the co-operative itemises this and all of the assets belonging to the scheme, including 221 stop valves, 30 scour valves, 15 air valves, 9 pressure-reducing valves and 19 fire hydrants.

Also included in the report is a detailed analysis of rainfall during the year and the supply from each of the well shafts.

Inflow from the wells, the volume of water purchased from the municipal utility, the consumption of treated water, network losses (UFW) and energy consumption are detailed over a five year period for comparative purposes.

Repair or improvement works completed on the scheme during the previous year are also reported to members.

Professionalism

Despite the fact that the scheme has no actual employees, there is a major emphasis on professionalism in all of its operations, including oversight of the sophisticated on-line systems that allow real-time monitoring from source to tap.

The co-operative receives little State funding, so it relies on payments from its mem-

bers. Water is charged at €0.90 per cubic metre.

Are all of Austria’s community-owned drinking water supplies run to this standard? No, Gramastetten is regarded as a model for others and in terms of its attention to source protection, in particular, it serves as an excellent model for Irish schemes also.

Top: All operations of the schemes from spring flow to water in the distribution network is centrally controlled.

Middle: Pipes and fittings are stored in the roof-space, which is fully shelved.

Bottom: One wall of the treatment facility displays a map (completed by Kurt Pfeifer) of the scheme’s area and assets, including distribution pipework, which is colour-coded.

