# Where does the water in Yerres come from?

**By Claude Valiton**

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## SOURCES: CATCHMENT AREAS, RIVERS, AND STREAMS

Water treatment, once a relatively simple process, has become increasingly complex and scientific, and Lyonnaise des Eaux – Suez established its laboratory in Le Pecq (78) as early as 1934. Rapid filters were invented by Degrémont, which later became a subsidiary. In the southern Paris region, the company negotiated lease agreements or concessions with numerous municipalities.

It buried a large number of drinking water pipes, thereby creating an interconnected network that benefited from easement agreements listed in prefectural decrees of public utility. Groundwater catchments (wells or underground springs) also benefited from protection zones detailed in specific prefectural decrees.

To name those near us on the so-called Champigny-Nord aquifer: those in Bréant (Brunoy), Saint-Thibault (Mandres-les-Roses and Brunoy), Périgny (Périgny-sur-Yerres, Varennes-Jarcy, and Boussy-Saint-Antoine), and Le Breuil in Combs-la-Ville; and on the so-called Champigny-Sud aquifer in Seine-Port, Boissise-la-Bertrand, and Vert-Saint-Denis, towns near Melun. This is relatively hard, calcareous water that undergoes no treatment but is continuously monitored.

The surface water intake and treatment plants, which have also been designated as public utilities by prefectural decrees, are located in Morsang-sur-Seine with a nominal capacity of 225,000 m³/day, in Viry-Châtillon, Vigneux-sur-Seine, as well as in Corbeil-Essonnes on the Seine and in Ormoy on the Essonne.

This collected and treated water supplies, to name the most significant: the Belle-Étoile reservoir in Yerres (46,500 m³), those in Épinay-sous-Sénart, Sucy-en-Brie, Créteil, Ormesson, Étiolles, Brie-Comte-Robert, Savigny-sur-Orge, and further afield, Saulx-les-Chartreux (20,000 m³), Linas (30,000 m³), Montlhéry, Les Ulis, Orsay, and Gif-sur-Yvette, for a total volume of 130,000 m³ stored in the interconnected southern Paris network.

The advantage of an interconnected or meshed network, unlike an isolated or branch network, is that it ensures a continuous supply of drinking water virtually everywhere, thanks to the network's interconnectivity and numerous storage facilities. In the event of a pipe break, only a minimal number of customers are left without drinking water while repairs are underway. On the other hand, it is difficult to know exactly at any given moment where the water flowing from our tap comes from, due to the numerous sources and the movements generated within the network by pumping stations, boosters, pressure-boosting units, and reservoir refills. The answer is generally provided as a percentage.

# SURFACE WATER TREATMENT

Various processes are used::

- physical processes: screening, sieving, settling;
- physicochemical processes: coagulation, flocculation;
- chemical processes: oxidation, ionization, neutralization, acidification;
- followed by filtration using sand or activated carbon and/or membranes (microfiltration, ultrafiltration, or nanofiltration);
- neutralization of viruses and bacteria using ozone, ultraviolet light, and then chlorine.

For very long distribution networks, re-chlorination stations are distributed throughout the network to prevent bacterial growth. Chlorination has been intensified by government order since the activation of the Vigipirate plan. Water is the food product subject to the greatest number of inspections. It should be noted that shallow wells have been abandoned and subsequently filled in under the direction and supervision of the ARS (Regional Health Agency).

The main pipelines of Lyonnaise des Eaux - Suez run from the Morsang-sur-Seine plant to the Créteil (DN9001) and Brie-Comte-Robert reservoirs to the east, and from Morsang-sur-Seine to the Suez catchments at Le Pecq - Croissy-sur-Seine and Flins-Aubergenville (78), passing through the reservoirs at Linas (DN1200 and 1000) and then Saulx-les-Chartreux (DN 800) to the west. The group's two largest production plants are thus interconnected.

It should be noted that the plants in Le Pecq and Flins have been artificially replenishing the groundwater for over thirty years, allowing the subsoil to contribute to its filtering capacity. Another example of the filtering power of sand: downstream from Melun, water from a gravel pit is pumped and discharged into the Seine, and the water newly arriving in the gravel pit is found, upon analysis, to be "very clean," as reported in a local newspaper.

Finally, these last two plants have developed, in agreement with their municipal clients, a decarbonation unit that supplies softened water for the well-being of consumers.

The water is monitored and analyzed across all networks by the Regional Health Agency through sampling points.

# HISTORICAL BACKGROUND

The first contracts for the Val d'Yerres were signed in 1928 with the Société des Eaux de Seine, based in Vigneux-sur-Seine, which drew water from the river at a site formerly known as "Pompe à feu" or the Villeneuve-Saint-Georges pumping station; The water distributed was drawn directly from the river with almost no treatment, undergoing only screening and filtering. It supplied the underground reservoirs in the surrounding area for firefighting, street cleaning, and a few fire hydrants marked "Non-potable water."

The site still exists in the same location upstream from the confluence of the Seine and the Yerres, although the municipality to which it belongs may have changed somewhat. Subsequently, the intake and treatment processes benefited from all DegrémontDegrémont technologies.

The names of the companies changed over time: Société des Eaux de Seine, then Compagnie des Eaux de Source et de Seine for the Canton of Boissy-Saint-Léger, and later Compagnie départementale des Eaux de Source de Brie-Comte-Robert. These companies were acquired by the Société Lyonnaise des Eaux et de l'Éclairage (SLEE), founded in 1880, which later became Lyonnaise des Eaux and then Suez Eau France.

Why “Lyonnaise”? Because it was founded by Crédit Lyonnais, and “de l’Éclairage” because, in addition to water collection, treatment, transmission, and distribution, as well as wastewater management, the company is also involved in public and private lighting and heating. At the time, public lighting was often powered by pipes carrying gas to streetlamps or “gas lamps,” lit each evening by municipal workers, and the “public bathhouses” in many towns received water supplied and heated by SLEE.

Much later, in 1945, and after repairing the damage sustained during the two wars, SLEE supplied water to 150,000 customers, gas to 360,000, and electricity to over 200,000, providing 77 million cubic meters of water, 120 million cubic meters of gas, and 130 million kilowatt-hours. However, General de Gaulle decided to nationalize the electricity and gas sectors on March 2, 1945, and SLEE was required to transfer all of its electricity and gas facilities to EDF and GDF on June 1, 1946.

It is noted that water distribution was not nationalized because, at the time, it was not a matter of concern. Over time, however, the issue became a political one, with some municipalities preferring private concessionaires and others municipal utilities.

Thus, more recently, newly formed urban communities have sought to end Suez’s involvement—from wellhead extraction to distribution, including all stages of treatment—for reasons that are not, however, related to the quality of the distributed water.

A mayor in Essonne, who is also president of an urban community, had a treatment plant built on an aqueduct in the *Île-de-France* region.

This facility had to be shut down because its treatment costs proved too high. Changing operators is always difficult to implement due to the transfer of ownership and the use of various facilities and networks that are, by definition, fixed. In Essonne, a new entity called Eau du Sud Francilien was established in 2023 with the objective of “returning the facilities for the production and transport of drinking water across the entire interconnected southern Île-de-France network to public ownership,” with final distribution remaining the responsibility of the municipalities.

It will likely be the courts that will have to adjudicate these transfers and the compensation they entail.

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Sources: *Le Val d’Yerres Magazine*, *France Mutuelle Magazine*, the Internet, and the book *"La Lyonnaise des Eaux Turns 100"*.

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## Note :

1. DN: The abbreviation stands for “*Diamètre Nominal"* [nominal diameter], followed by a number representing the internal measurement of that diameter in millimeters.