

# A History of the Water Supplies of Bathford

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## 1. HYDROGEOLOGY

Bathford, in common with many other places in the Avon Valley in this vicinity has many springs. These occur when water percolating through the fissured oolitic limestone famous for building stone in this area reaches the junction of the limestone with a band of impervious clay. The water runs on top of the clay until the dip of the strata brings it to the escarpment. The main water bearing bands are the Great Oolite which was extensively quarried at Monkton Farleigh, and the more reliable Inferior Oolite. The Inferior Oolite is at too low a level to be useful in Bathford, and the Great Oolite mainly dips away towards the Wessex Water Authority's boreholes at Holt.

Below the Great Oolite, there are lesser limestone bands within the Fuller's Earth, and on the escarpment landslips have split these up. It is from these lesser bands that the wells and springs of Bathford came. The volume of storage supplying these springs was therefore not great, and led to difficulties in times of drought. Also, because of the landslip, the depth of wells necessary to reach supplies was not consistent.

## 2. BATHFORD WELLS TO 1901

The story of Bathford's supply is similar to Bath's, and indeed ends as being part of Bath's story. The scale of the problems is obviously smaller, and because of this, improvements followed much later than in Bath.

Bathford even had its own 'Spaw'.

'An Essay towards a Description of Bath' by J. Wood, 1742 tells of the discovery of a Spring of Mineral Water issuing out of the South-Eastern Bank of the By Brook half a mile from its confluence with the Avon.

About 1740, I quote:

'One Arnold Townsend, a Miller of Bathford, began to clear a certain Piece of Ground, part of a Small Estate purchased by him in that Parish, of an Ash Bed which grew upon it : And one Mr. Hull of Berfield, near Bradford, having been at that Time at Bathford, as he was amusing himself with seeing the Wood cut down, he observed a Spring of Water in the midst of it, which discoloured every thing it ran over, and made him conclude that it was strongly impregnated with some sort of Minerals.

In this Opinion he was more and more confirmed on trying a few Experiments with the Water; and this encouraged him to persuade the Miller to send some of it to Oxford, and other Places, to have it examined by Persons of greater Skill, which was accordingly done: And the Water appearing what Mr. Hull conjectured it to be, the People in the whole Neighbourhood of Bathford began to try it in all manner of Cases; and its first medicinal Virtue was, by such Trials, DISCOVERED in the Cure of several Wounds and running Sores.

Then the Spring was dignified with the Title of a 'Spaw'; and the Miller selling his Estate to one of the Bath Physicians, the Spaw received some small Improvements by building, but rather for the Doctor's own Amusement and private Use, than for the Convenience of the Public '

'A plan and elevation of a square pavilion for Bathford Spaw begun to be executed AD 1746' was included, but no sign of this or the spring can be found in the rough ground that constitutes the site today.

A further mineral spring called St. ANTHONY'S WELL was described as issuing from the

north bank of the brook a mile further upstream at Shockerwick. 26 open wells existing prior to 1896 have been located from the Ordnance Survey maps of 1886 and 1904, and from local knowledge, as well as a further 30 pumps which would be connected to enclosed wells where access to the well was inconvenient, or the well was too deep. The village pump in Pump Lane, for example, was connected to a well in the middle of the road junction.

The enclosure map of 1865 also shows some protected watercourses which flowed from springs falling into tanks. One started near the Dry Arch on the Bradford Road and supplied Warleigh Manor, whilst two more rose on the south west edge of The Hollow, feeding Bathford Manor and Hillside.

In 1869, the Parish Order Book was much concerned with the poor state of the drainage in the Parish, and in their report of November that year included examples of wells being polluted:

'4thly The Committee found the property opposite the house occupied by Mr. Kent in a very bad state there being an open cesspit with no drainage close to an open well.

6thly The drainage of the whole of the New Inn property in as bad and defective a state as can be conceived, & in reference to the well complained of on Miss Yeeles property, the Committee, having thoroughly examined the property, are of opinion that the impurity of the water may be attributable to the said defective drainage. Water in the well in Stable Yard of Eagle House very impure caused (it is believed by the Committee) by the drainage of the Farm Yard in the occupation of Mr. T. Lewis, there being a deep manure pit in the said Farm Yard - To this also may be attributed the fouling of the well in the Vicarage Grounds.

Miss Yeeles complained off and on for ten years about the situation, and finally called in the Secretary of State to force the Parish to carry out the required works as presented in a report of 21st February 1870, by a Surveyor, one Alfred Mitchell. Mr. Mitchell had ended his report:

'In conclusion permit me to remark that I consider it is much to be regretted that the matter could not be in connection with the general subject of Water supply and Drainage which should at all times go hand in hand and were the sanitary state of Bathford improved and the facilities that exist for economically carrying out such works taken advantage of, I can but think that the property would much improve and entirely change & become a favourite resort, the ready access and pleasant walks offering no ordinary inducement for selecting such a picturesque place of residence.'

Nothing was done about the supply however, and when the Parish Council first met under the Local Government Act 1894, one of the first considerations was the water supply. In July 1895, a sub-committee was formed to schedule the wells, and arrange for them to be tested. The committee sampled 50 wells. 33 of these were then qualitatively analysed, and even some of those passed by the Committee were condemned by the analysis. The Committee asked the District Council to call on the owners of the contaminated wells to clean and repair them, i.e. seal them from percolation or sink new wells.

Two months later half of the 40 condemned wells had been put right, the cause of contamination being identified:

'Amongst these is the Parish Well, which has been cleaned out and old stone drains near it found to be partly filled with sewage, have been taken up and concreted in various places'

Before further action was taken on the remaining wells, it was agreed that certain wells would be tested after a 3 month period.

These tests passed the Parish Pump Well, and those at Lower House Farm, Laurel Cottage and Watford Cottage, but failed the Post Office Well.

The Committee were 'fairly satisfied', but on the 20th March 1896, decided to search for more water. They made their first of many approaches to Bath, who merely deferred the question (Waterworks General Purposes Committee 14th May 1896), and on 17th April, decided in principle to adopt a scheme whereby water could be brought to within a reasonable distance of almost every house in the central village by means of standpipes, some of which survived until at least 1948. Enter Mr. Chesterman of Bath with his divining rods. Five possible sites were found by divining, and the rate payers were circulated with details of the proposed scheme.

The first well was sunk in November 1896, by Mr. Chesterman, in the North West corner of the allotments, the allotment holder being given notice to give up possession of the land, as he was in default of his rent. After driving through rock strata, pure water was found at 34 feet. C. Hawkins was then given the contract for a well house protecting the pump over the new well, and this building stands today.

The second well was sunk by private expense at the School House. Mr. Chesterman sunk a third in Brewery Lane in February 1897, and was given the contract for a fourth in Dovers Lane. Sir Gabriel Goldney gave the land for this fourth well free of charge, and £10 towards its cost. But the Dovers Lane well ran into trouble. The water pressure from the spring was low, 49 feet from ground level, and so a suitable pump was installed. By November 1897, the water from this pump was declared unsatisfactory. The pump was removed, and an accumulation of mud cleared to a depth of 82 feet! 25 feet of mud soon returned however. This time, they tried setting a charge after clearing the mud, but it made matters worse, and so on December 20th it was decided to abandon the well. Mr. Chesterman got the special pump brought in as part payment of his bill.

So, the originally planned scheme of pipes from new local wells was abandoned, and in February 1898, Bath was again asked to supply the village. Bath's asking price of 9 pence per 1000 gallons from Monkswood reservoir, plus the cost of mains from Batheaston was considered too much however and on March 1898, it was decided to consider a new scheme of collecting springs on the edge of Ashley Wood.

The Misses Briscoe kindly offered the land and water free of charge to the village

### **3. THE FIRST VILLAGE SCHEME 1901 to 1956**

In 1901, the new village scheme was constructed. A 25' x 12' x 5' 3" concrete tank collected the springs, and formed a sump for a treble ram pump driven by a paraffin engine with a petrol engine standby. For certain periods during the day this pump would force water through 663 yards of 4" pipe to fill up a 68' x 36' x 8.65' concrete reservoir covered by concrete domes. In addition, 1730 yards of 3" mains laid from the reservoir gave a gravity supply to standpipes in High Street, Church Street, Prospect Place and the beginning of Brewery Lane, and on line mains to the houses of those few who could afford such a luxury.

In March 1902, a waterman, Mr. Pocock was appointed. His duties included keeping the engines in good order, ensuring the reservoir was topped up, and maintaining the standpipes. He was also to collect the 2d per week levied to all householders for amongst other things his upkeep. Where a rent charged for accommodation was less than £10.00 per week, the landlord had to pay the levy. Houses with water laid on were charged 5% of their rateable value. By May 1904, 24 houses were listed as private consumers.

By January 1905, complaints were being made about the operation of the scheme. The upper part of the village was not receiving any water until late in the morning. It was agreed that the pump would be started earlier in the morning to fill the reservoir and the system for the whole

village.

Some of the old pumps and wells now fell into disuse. In 1906, Captain Gilling-Gilling used up his stored supply of water to fight a hay rick fire, and so mended the village pump to supply his stock. He asked the Parish to recompense him the cost of the repair, but the village pump was not of interest to them any more.

By October 1908, it was suggested that so many houses were connected direct to the water supply; some standpipes were just wasting water. The standpipe outside the Crown Inn and the School were thus removed, not without objections from the school with regard to the boys being deprived of their supply, and from the Crown with regards to their horses. A Mr. Munnings asked for the standpipe outside his house to be removed. He had a house supply, and considered the daily collection of people outside his house to be a nuisance.

In December 1913, the Council considered the village's fire hazard. To the 8 hydrants existing in the village four more were added. The fee being asked by the Bath City fire service to attend fires in the village was too much, and so the pump house in the allotment was put to a new use, housing the village's own appliances.

On the outbreak of the Great War the Rural District Council felt threatened enough to ask the Parish Council if they should consider guarding the water supply!

At the end of the War, the main in the High Street was extended to the Box Road, to the new cottages erected by the Paper Mill. At the same time, a drinking trough was erected on the green near the Crown. This was paid for by a Mr. Sainsbury, in memory of his wife. By 1945 this trough had suffered so much damage from traffic, it was disconnected from its supply, and re-erected inside the gates of the playing fields where it remains today.

By 1921, the top of the village was suffering from lack of water again, and doubts were being expressed about the ability of the springs to survive a drought. In January 1922, protests had swelled to a village petition, and a new efficient electric engine for the pump was promised to extend pumping times. This engine did not however arrive until 1937, and in 1929, the feared drought happened.

The main spring dried up, and mains valves were operated to supply different areas of the village in a rota. The prospective developer of houses in Morris Lane was told that the village couldn't give him supply, he would have to approach Bath to provide it over the border from Batheaston.

Another drought from August 1933 to January 1934 forced Bathavon Rural District Council to turn to Bath. In a letter dated 4th November 1933, they asked for a metered supply, stating that Bathford was rationed to 3 hours water per day. The Bath and Wilts Chronicle of November 28th stated that 'the Bath Waterworks Committee's recommendation was that the Committee was not prepared to consider a partial supply only, but are willing to consider the taking over of the whole supply.'

Correspondence and newspaper reports on Waterworks Committee discussions show that this consideration went on for some time, until 1958 to be exact, with repeated appeals from Bathavon Rural District Council, and deferments of decisions by Bath.

Meanwhile, the Rural District Council was boring to find new springs, and in February 1934, the Chronicle reported that a significant new spring uphill from the Ashley Wood springs had been found just four feet below the ground. The paper also printed a letter from a Mr. Aldridge, who had long campaigned for Bath to take over the supply, stating that the spring being so close to the ground meant a grave risk of contamination. Nevertheless, the new water was gravitated into the supply. It still wasn't enough for summer 1934, however. A metered supply not being forthcoming from the West, the Rural District Council turned to the East. A small pipe was laid along the ground from Kingsdown, and this brought water from Calne and Chippenham Rural District Council's mains to the service reservoir until 1938, when one supposes that it was needed more urgently for

the vast War Office Department complex that took over the old quarries.

The Parish Council kept pressing the Rural District Council to approach Bath, especially in view of the ever increasing population in the village. In March 1942, the Rural District Council arranged for water to be brought from the War Department at 1/6d per 1000 gallons, however, this seemed to be more a convenience for the, I quote 'Several large establishments in the village since the War started' as the long suffering villagers still found themselves without water until 8.00 in the morning. The Rural District Council promised to provide the 'large establishments' with storage tanks topped up with river water, and to supply the villagers earlier.

In the event, the springs were never sufficient, and complaints of low pressure, and shortages continued, until the Bath Waterworks records show that Bath, in advance of taking over the supply, laid a 6" main in 1956 from Batheaston and connected into the Bathford system outside the Crown. This supplied treated water from Monkswood reservoir to all areas that could be reached by gravity, whilst the higher parts of the village had the springs to itself.

The 1948 report of the Sanitary Inspector for Bathavon Council gave the following details of the villages' supply. Population, 980. No. of houses, 318. % of houses with water laid on, 92%, leaving 8% of the houses still relying on standpipes.

Although it had been out of order as long as Mr. Canning can remember, the village pump was only removed from its site in 1952, when an abortive attempt to remove its lead was discovered.

#### **4. THE SECOND VILLAGE SCHEME 1958 to present**

Bath Corporation assumed responsibility for water supply in the Parish of Bathford on 1st October 1958, with plans already under way for a scheme to abandon the local springs.

Originally it was proposed to lay 6" mains from the Crown to a conventional above ground pumping station at Chapel Row.

In the end however, it was decided to install two silent submersible electric pumps in a chamber under Dovers Lane, just outside the Inn. 4" pipes carried the water pumped from there up the length of Dovers Lane to the service reservoir. The pumps operated on an automatic float valve installed in the reservoir. This kept the reservoir topped up, and supplying all the village by gravity. Supply for Box Road and Church Street was taken off before the booster pump.

The scheme was completed in April 1962, and at the same time, mains were extended along Ashley Road and up New Road, and also into Rowlands Close.

The next major mains extension was in 1964, when a 3" main was laid to Warleigh Manor, which until that time had survived on spring water stored in tanks just below Warleigh Lane, immediately above the Manor. A 2" main took the water from there to Manor Farm and the cottages beyond, but not to Sheephouse Farm until 1973 .

Towards the end of 1964, works began on altering the mains to accommodate the new Dovers Park Estate. In 1968, Church Close received a main, and in 1971, the Ashley Road main was extended to supply Bannerdown View Farm.

This still left Shockerwick, where springs rising above Upper Shockerwick Farm were collected in a covered reservoir from where it gravitated via various pipes to tanks situated in 18 properties including another covered reservoir above Shockerwick House. On route, supplies were taken off for cattle.

Morris Lane, and in 1965 Meadow Park were both supplied from Monkswood with the aid of a pump booster on the corner of Eden Park Drive and Bannerdown Road. The first proposal was to increase the capacity of this pumping station, and supply Shockerwick across fields to Upper Shockerwick Farm. The scheme carried out in 1973, however consisted of a 4" main off the main to Bathford village which went along Box Road and via both lodges to the Shockerwick House area only, leaving Upper Shockerwick Farm with its Springs.

The latest change in the village's supply came with the 1982 connection of the village reservoir and the Bannerdown booster pump with the new main laid in 1975 from Fiveways Reservoir at Hawthorn to Monkwood Reservoir. This gives the village the facility to call on the new groundwater supply from Malmesbury.

#### SOURCES

Bathford Parish Order Book 1869, 1870

Bathford Parish Council Minutes 1894 to 1956

Bath City Waterworks Committee Minutes 1896, 1900 to 1964

Bath City Waterworks Files 1933 to 1973

Bath and Wilts Chronicle and Herald 1932 to 1938

## APPENDIX

### **BATH - A Brief History of Water Supply**

Legend tells that Bath was founded because of its hot mineral springs. However, these did not make ideal drinking waters.

Early residents must have drawn water from springs that issued from the surrounding hillsides. The river too would have been used for supply and when this became muddied by the increasing population, wells adjoining the river could draw clear water filtered by its passage through the river gravels. These wells also would soon become polluted by poor sanitation, and so at an early date, open paved channels and later elm or lead pipes brought springs from Beacon Hill and Beechen Cliff into the City, supplying strategically placed 'fontems' or dripping tanks.

The Beechen Cliff spring was shared with the Abbey, after supplying a fontem near the South Gate. The water crossed the river in an arch over the Bridge. The wooden pipes were pierced by a hollow quill sometimes indiscriminately, to draw off a supply where required.

The pattern of supply remained until the City's expansion in the 18th Century. In 1769, the Corporation increased its supply by acquiring three springs near Sham Castle from the Bathwick Estate in return for the granting of permission for the construction of Pulteney Bridge to link the Estate with the City. Two small reservoirs now disused were built one located behind Camden Crescent, and the other at the Holloway end of Calton Road. These were to help balance the variations in demand on the two original springs at Beechen Cliff and Beacon Hill.

Other small reservoirs came into being when private developers formed their own 'water companies'. The Circus Waterworks for example served the Royal Crescent, Brock Street, The Circus, Gay Street and Queen Square from springs below Lansdown Crescent. These were collected in a reservoir now in the grounds of the High School, and local storage and reduced pressure was afforded by the now disused secondary reservoir under the grassy hump in the middle of the Circus.

In 1839, acquisition of more springs at Sham Castle did not satisfy the pressure for improvement of sanitary conditions that followed the Municipal Reform Act of 1835. Bath Corporation therefore looked further afield, and by 1851, the two reservoirs collecting springs between Little Solsbury and Charmy Down were constructed.

By the mid 1860's, the private water companies were in trouble. Pressures in supply could not reach the top of tall houses, and some were without water during summers. The densely populated poorer areas had insufficient water to flush streets and sewers. On the Lansdown slopes, sewage was dispersed by leakage into the ground. Epidemics were rife, and to top it all, 1864 was a drought year. A report in October of that year laid down guidelines for improved sewerage, and recommended a further reservoir site at the Upper end of the St. Catherine's Valley. Thus in the early 1870's the first Monkswood reservoir of capacity 1 million gallons was constructed. In 1900, it was greatly extended to its current 52 million gallons capacity.

The earlier springs were soon abandoned. The Sham Castle Springs now feed the canal, and the Beacon Hill and Lansdown Springs run into the ponds at the Botanical Gardens - The Beechen Cliff springs were lost when the Somerset and Dorset Railway tunnel was driven beneath Bloomfield Road and Wellsway in 1872.

By 1877, Bath Corporation controlled virtually all the private companies.

A drought in 1929 sparked off a controversy over a new reservoir proposed by the Waterworks Engineer. The Waterworks committee opposed the proposal, and therefore came in for fierce attack during an even worse drought in 1934. However, no new reservoirs were forthcoming, an empty Monkswood Reservoir was partly filled by water imported from West Gloucester Water Co., in a hastily laid pipeline, and water from new springs in the Midford Valley was pumped over Combe Down.

The question 'What if a bomb fell on the main from Monkswood' prompted the construction of new service reservoirs in Bath, but open reservoirs were scorned because of the ease of 'Dropping typhoid into them.'

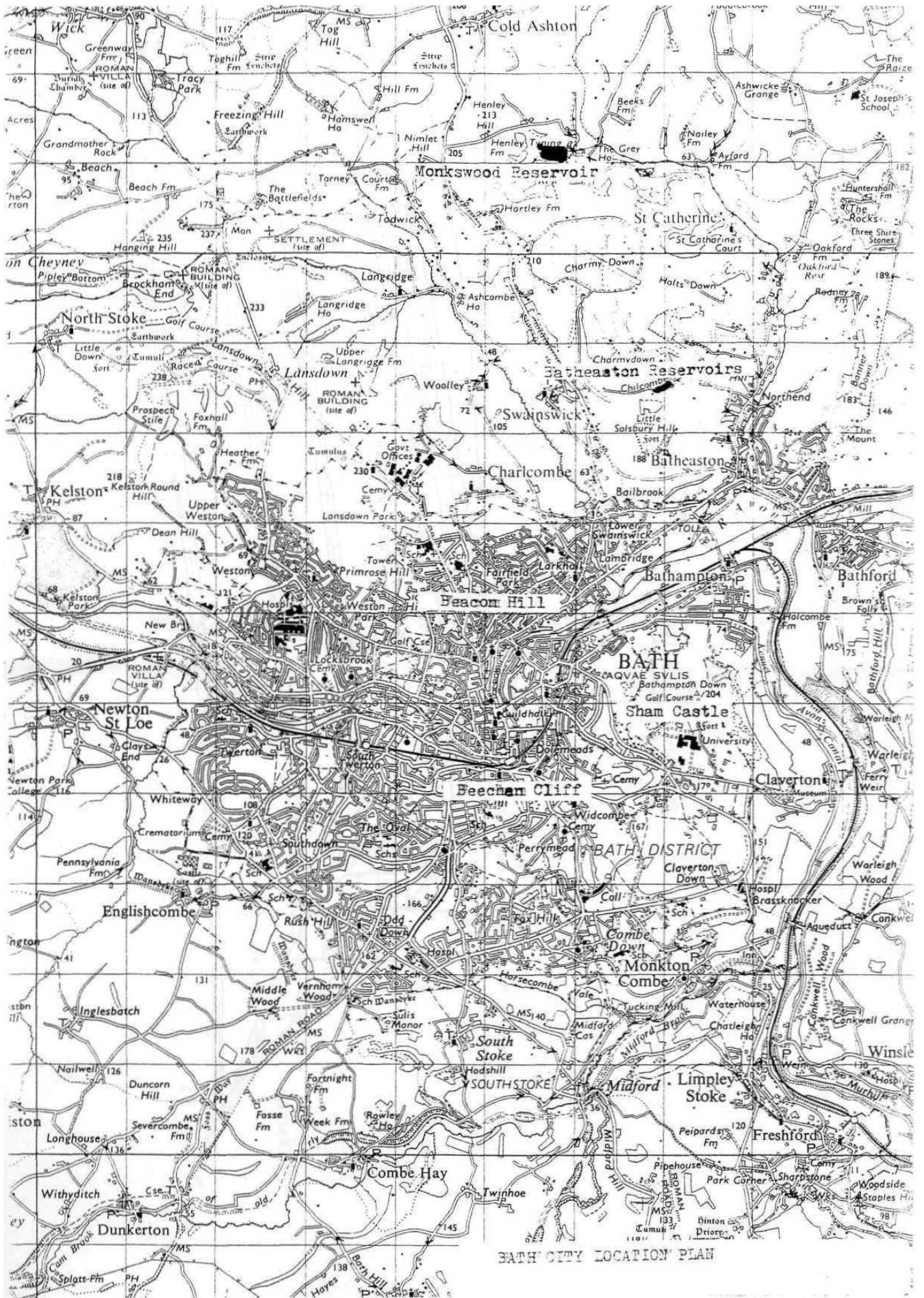
The next major change in Bath's water supply was brought about by the amalgamation of Water Companies and other Authorities under the new Wessex Water Authority in 1974. This enabled supply to be considered on an even wider basis, and led to a large area of groundwater in the Malmesbury area being tapped at Charlton, Millbourne, Cowbridge and Rodbourne, reaching Bath via Chippenham.

## SOURCES

The Water Supply of Bath - H. V. Chivers - January 1980

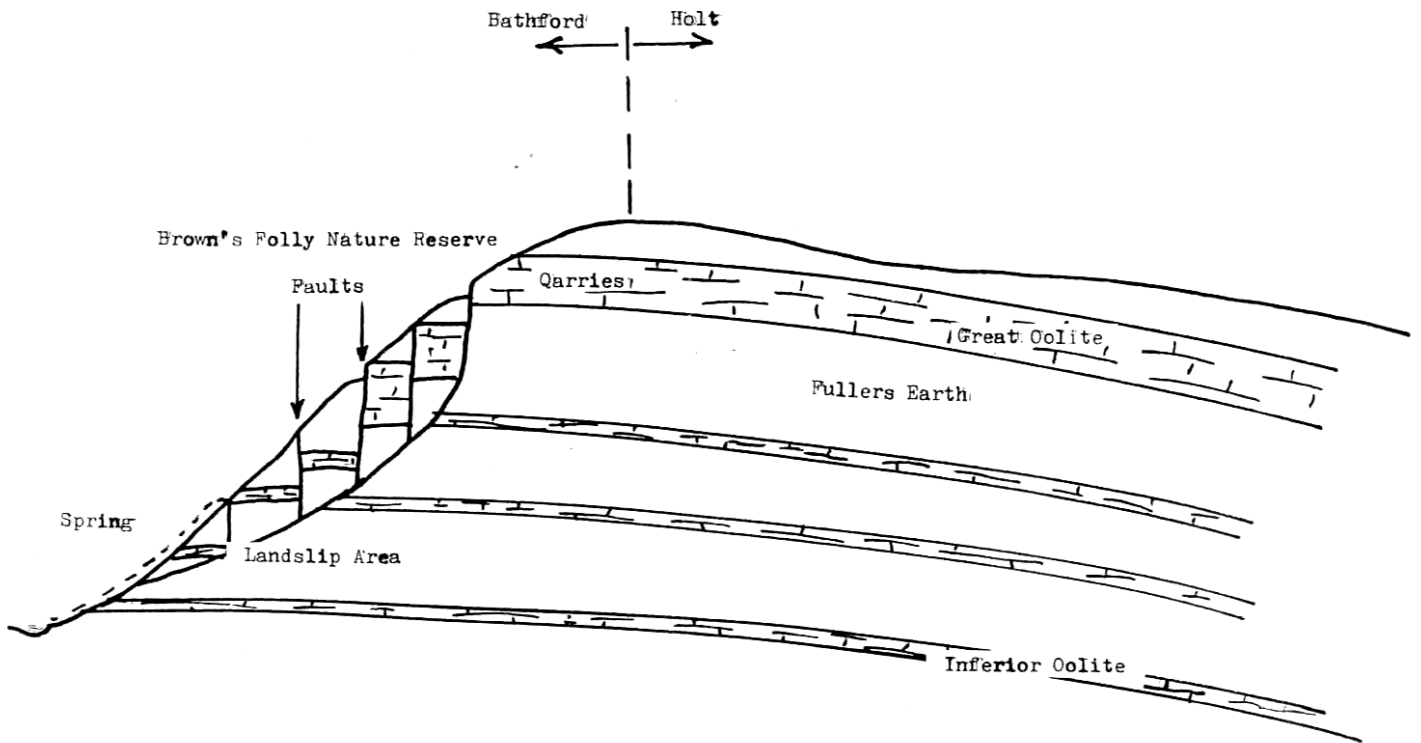
Bath and Wilts Chronicle and Herald - 1934

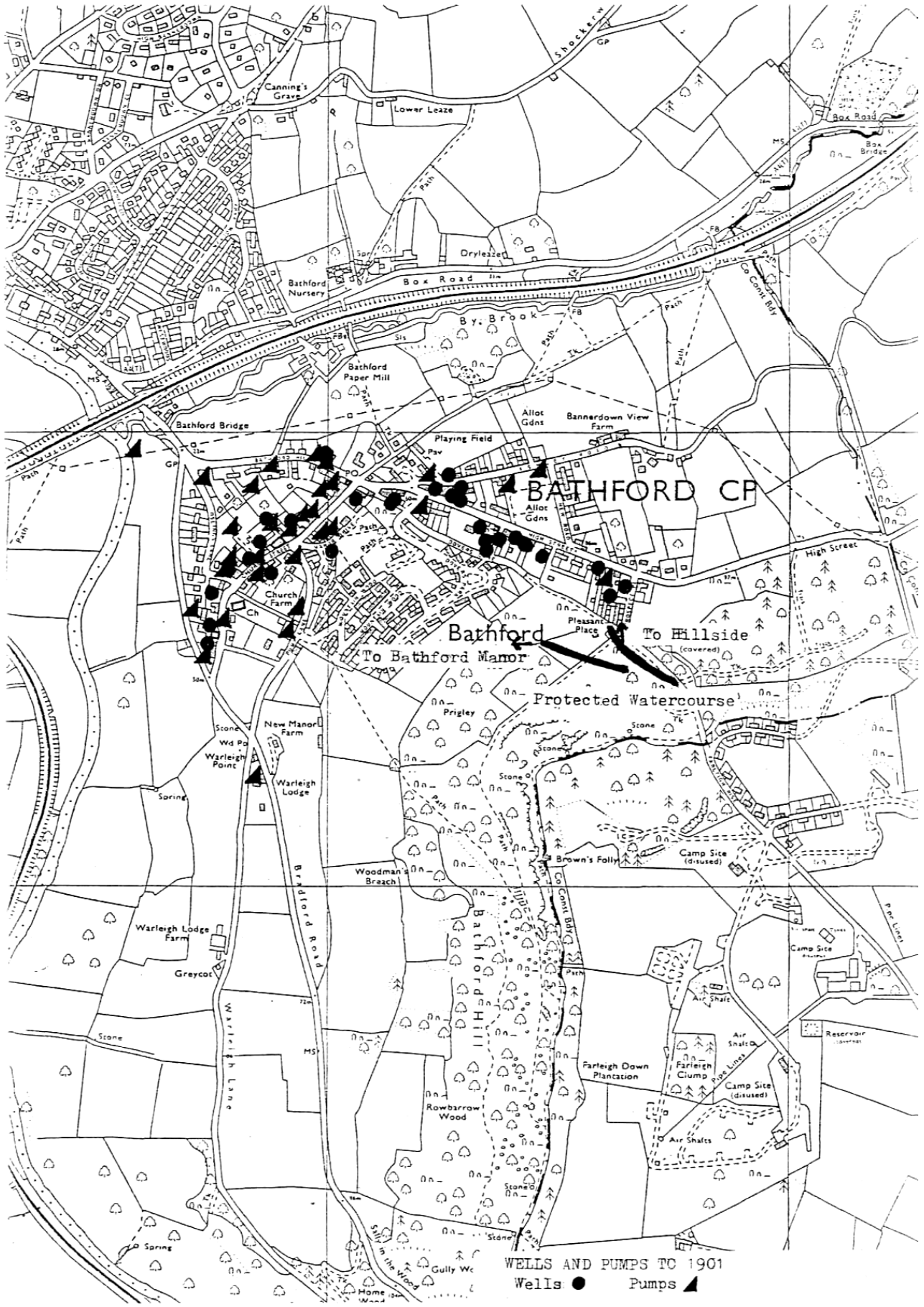
Wessex Water Authority - Malmesbury Groundwater Scheme



BATH CITY LOCATION PLAN

# DIAGRAMMATIC GEOLOGICAL SECTION





WELLS AND PUMPS TO 1901  
 Wells: ● Pumps ▲