

On Laburn's 'mystery' query – A prehistory of the Vaal River as water source of the Witwatersrand (1887-99)

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Introduction

For the greater part of the twentieth century the Vaal River played an important role in the provision of water to South Africa's economic crucible, the Witwatersrand. Yet, it took more than three decades, after the founding of Johannesburg in 1886 for a start to be made to tapping water from what is generally considered to be the country's hardest working river.¹ This peculiar state of affairs was noted by R.J. Laburn in a 1979 publication when he observed that it was a "mystery" to him that "the major river of the region, the Vaal River, was apparently not considered" as a potential source of water in the nineteenth century.² In the discussion that follows an attempt is made at shedding some light on Laburn's query. For this purpose a number of primary documents of the South African Republican (Transvaal) government were consulted. Researchers on the history of the Witwatersrand's water supply have seldom extensively consulted these sources. An attempt is thus made at giving a somewhat different perspective on especially the political conditions. Furthermore there is a consideration of the phenomenon of spontaneous growth

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 - 1. T.C. ROBERTSON, *Die riviere van Suid-Afrika* (SABC publication, P61/5A, Cape Times Limited, Johannesburg, 1961), p. 7.
 - 2. R.J. LABURN, *The Rand Water Board 75, 1903–1978: A treatise on the Rand Water Board with specific reference to its responsibilities achievements and policies during 75 years of operation* (Rand Water Board, Johannesburg, 1979), p. 7.

and its implications for the existing water resources in the case of Johannesburg as an urban environment and the mining industry in the central Witwatersrand. The main focus is however on the early history of the Vaal River.

Providing water to a gold mining town

The founding of Johannesburg in 1886 on the Transvaal Highveld in many respects placed a high premium on human ingenuity. In the hinterland of the sparsely populated interior of the southern subcontinent, provision had to be made for an urban society that was soon to set the pace for industrial development in Southern Africa. Water was to play a crucial role. Unlike most cities elsewhere in the world, Johannesburg is not situated on the banks of a river.³ This unique situation posed an interesting engineering challenge. With considerable skill local resources, stored up in the dolomite layers of the southern Witwatersrand, were exploited.⁴ The engineering fraternity, for as long as possible clung to the idea of literally capturing the water of the Witwatersrand before it flowed into the Vaal River. It was a strategy that would ultimately be exhausted by the sheer growth in consumer demand. In the end, the Vaal River, some 70 km south of Johannesburg, proved to be the only viable source of water. That realisation however only manifested itself in the twentieth century.

At first the young mining town of Johannesburg experienced no water shortages.⁵ In their preliminary investigations the pioneering Struben brothers located sufficient water sources to successfully conduct prospecting operations.⁶ The first miners to follow up on their discoveries also encountered few problems. In fact, for many who had earlier been active on the Diamond Fields of Kimberley, the Highveld with its numerous fountains must have been a veritable paradise. In the arid climatic conditions of the Northern Cape the first industrial pioneers, who came from regions in the Northern Hemisphere where water had been in abundance, acquired firsthand experience of a typical South African “water crisis”. The mining magnate, Lionel Phillips, for example explained conditions in Kimberley as follows:

3. H.T. RAMSDEN, *The status powers and duties of the Rand Water Board: A legal history and analysis*, (Ph. D., UW, 1985), p. 42.

4. W. BLELOCH, *The new South Africa: Its value and development* ([Originally published in 1901 by Doubleday, Page & Co, 1901], Negro Universities Press, New York, 1969), p. 141.

5. E.M. COSSER, *The impact and management of water scarcity in Johannesburg, 1886-1905* (MA, UW, 1990), p. 10.

6. E. CUNNINGHAM, *The Strubens and gold* (AD. Donker, Johannesburg, 1987), p. 55.

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Water, obtained solely from wells, was frightfully scarce. We were driven at times to wash in expensive soda-water, and baths were a rare luxury. Men used to ride to the Modder River, which generally harboured a few pools even in the dry season, or to the Vaal River, roughly twenty miles (32 km)⁷ distant, for a thorough cleansing.⁸

It is thus reasonable to assume that the pioneers of the Witwatersrand's mining industry took precautionary steps to secure sufficient water resources for what was to become one of the major gold producing regions in the world.

The first residents of the new mining town settled close to accessible water sources. Over the short term the Jukskei River, Natalspruit, the fountains of Doornfontein and Braamfontein, as well as the vleilands of Bertrams and Fordsburg provided in the domestic and industrial needs. Rainwater was also potted up.⁹ There were however soon water shortages.¹⁰ As early as 1887 water was selling at exorbitant prices.¹¹

From the outset it was evident that the normal procedures in the process of establishing a town in the South African Republic (Transvaal), could not be followed in the case of Johannesburg – particularly not in as far as water provision was concerned. In the pre-industrial era (up to 1886 in Transvaal) the establishment of new towns coincided with the surveying of erven and digging the customary “leivoor” which had to provide the town's residents with water.¹² In Johannesburg this was not to be the case. The development of the new town first and foremost relied on the mining industry. One of the major shortcomings was the available infrastructure for development. The government of the South African Republic was unable to play an active role. Republican politicians were still negative towards the mining fraternity which, during the early part of the 1870's in the Eastern Transvaal was responsible for a lot of political trouble.¹³ Moreover, the state was poor and the civil service basically structured to

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7. All distances in the text were converted from miles to kilometres. 1 mile = 1,6 km.
 8. L. PHILLIPS, *Some reminiscences* (Hutchinson & Co., London, n.d.), pp. 13-4.
 9. E.M. COSSER, *The impact and management of water scarcity in Johannesburg, 1886-1905* (MA, UW, 1990), p. 12.
 10. R.J. LABURN, *'n Historiese oorsig oor watervoorsiening aan die Witwatersrand* (Gepubliseerde eerste voordrag in 'n reeks gelewer aan die Johannesburg Historical Society op 26 Augustus 1970), (Walker & Snashall, g.p., g.d.), p. 2.
 11. G.R. ANDREWS, “The rise and progress of the Johannesburg waterworks, Estate and Exploration Company,” in *Proceedings of the South African Association of Engineers and Architects*, 1892-4, p. 120.
 12. F.J. POTGIETER, Die vestiging van die blanke in Transvaal (1837–1886) met spesiale verwysing na die verhouding tussen die mens en die omgewing in *Archives Yearbook for South African History*, 21(2), 1958 (Government Printer, Elsie'srivier, 1959), pp. 158-9.
 13. M.S. APPELGRYN, *Die ontwikkeling van plaaslike bestuur in Johannesburg, 1886–1899* (MA, RAU, 1971), pp. 76-9.

provide in the needs of the predominantly rural white community. The necessary know-how to provide a sophisticated water service was absent. From the start it was evident that the water needs of Johannesburg would far outstrip the existing systems of water supply available in the two major urban centres of the country - Pretoria and Potchefstroom. Under these conditions the government was literally obliged to let free market initiatives take the lead. This was by no means a trend exclusive to South Africa. Also overseas, private initiatives in the provision of water were the order of the day.¹⁴ Ultimately it led to the delay in the incorporation of the Vaal River.

Free marketeers and water

In December 1887 the government of the South African Republic granted the Cape engineer and politician, James Sivewright, a concession to provide the new town with water.¹⁵ Sivewright, a personal friend of President S.J.P. (Paul) Kruger, identified a water source in Doornfontein and was soon instrumental in the establishment of the *Johannesburg Waterworks and Exploration Company, Ltd.* - a company that sold land and specialised in the provision of water to the young mining town.¹⁶ Later Sivewright and the mining magnate Barney Barnato (1852-97) joined forces and in 1895 the waterworks company became a full subsidiary of *Johannesburg Consolidated Investments (JCI)* — one of the major gold mining companies on the Witwatersrand.¹⁷ The waterworks company was an integral part of Johannesburg's business environment in which strong competition was the order of the day. It implied that its activities would be affected by the not infrequent feuds in which the local captains of trade and industry were involved. This state of affairs had a detrimental effect on the

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14. E.M. COSSER, The impact and management of water scarcity in Johannesburg, 1886-1905, p. 35.
 15. K.E. WILBURN, "James Sivewright" in C.J. BEYERS (Ed.), *Suid-Afrikaanse biografiese woordeboek IV* (Human Sciences Research Council, Pretoria, 1981), p. 604; A. DOUCAKIS, "Southern New Doornfontein and environs: An historical survey (1) in *Between the Chains*, 11, 1990, pp. 4-5.
 16. NATIONAL ARCHIVES REPOSITORY, PRETORIA. SECTION: TRANSVAAL ARCHIVES. Forthwith: TA. P200. N. MCCORMACK, *Origins and history of the Rand Water Board* (Argus Printing Company, Johannesburg, 1912), p. 1; G.R. ANDREWS, "The rise and progress of the Johannesburg waterworks, Estate and Exploration Company," in *Proceedings of the South African Association of Engineers and Architects*, 1892-4, p. 121; H.T. RAMSDEN, The status powers and duties of the Rand Water Board: A legal history and analysis, p. 54.
 17. K.E. WILBURN, "James Sivewright" in C.J. BEYERS (Ed.), *Suid-Afrikaanse biografiese woordeboek IV*, p. 604; P. JOYCE, *A concise dictionary of South African biography* (Francolin Publishers, Cape Town, 1999), pp. 23-4; J.R. SHORTEN, *Die verhaal van Johannesburg* (Voortrekkerpers, Johannesburg, 1970), p. 167.

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provision of water to Johannesburg. Ultimately it directly affected the consumers of water.¹⁸ It also affected the plans to introduce a water supply from the Vaal River.

At the outset the water provision for Johannesburg was conducted in terms of a well executed plan. By 1888 the *Johannesburg Waterworks Estate & Explorations Company Limited*, was technically able to provide 950 000 litres of water from the Natalspruit, 1,52 million litres¹⁹ from a reservoir in the vicinity of Berea and 570 000 litres from Doornfontein.²⁰ Quality was a priority. Instead of opting for second hand material, the company imported new pipes from Britain. The work was also done at great speed. On 23 June 1888 the first domestic consumer was linked to the new waterworks scheme.²¹ The water scheme was a comprehensive undertaking. It required a substantial capital investment to get the scheme in operation. Consequently for consumers the service came at a price. According to the first annual report of the company, consumers paid “1/6 per 100 gallons” (1/6 per 380 litres).²²

The growth in consumption was phenomenal. At the end of the 1880's the *Johannesburg Waterworks Estate & Exploration Company Limited*, daily provided 212 800 litres of water to Johannesburg.²³ By 1894 it was estimated the city daily consumed between 1,8 million and 3,65 million litres.²⁴ A special commission of inquiry in 1895 pointed out that although the water supply company could provide 6,47 million litres daily, it would in time to come be necessary to provide at least 7,2 million litres daily.²⁵ It appeared as if the company was able to provide in the existing demand.

The operations of the service provider were conducted within the playing field of the gold mining town's free marketeers. Consequently many were after lucrative business opportunities a number of small companies and syndicates

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18. H.T. RAMSDEN, *The status powers and duties of the Rand Water Board: A legal history and analysis*, p. 154.
 19. In the original documentation all liquid volumes were given in gallons. For the purposes of this study the figures were converted to litres. 1 Gallon = 2,8 litres.
 20. TA, SS1654, p. 68. R5456/88 at R5340/88. Verklaring W. Dunbar, Johannesburg, 1888.06.15.
 21. E.M. COSSER, *The impact and management of water scarcity in Johannesburg, 1886-1905*, pp. 29–30.
 22. ANON., *Rand Water Board 1903–1953* (N.p., n.p., c. 1953), p. 3; R.J. LABURN, ‘n *Historiese oorsig oor watervoorsiening aan die Witwatersrand*, p. 2.
 23. E.M. COSSER, *The impact and management of water scarcity in Johannesburg, 1886-1905*, p. 30.
 24. TA, SS4379, pp. 156-7. R12420/94 at R7961/94. P. Nel, Pretoria – State Secretary, 1894.12.21.
 25. TA, SS4383, p. 50. R7961/94. Rapport in zake watervoorsiening – Johannesburg. (Commissie van 1895), Augustus ‘95.

were formed.²⁶ For example, in 1892 the *Braamfontein Water Company* was founded by the Corner House group of companies, which had started with the development of 174 erven in Parktown, Westcliff, Forest Town, The Terrace and Marienhof.²⁷ By the end of the century the company was able to provide about 380 000 litres of water daily.²⁸ The value of the real estate was directly linked to the availability of a good supply of water.²⁹ Another local water business venture was the *Vierfontein Syndicate*, discussed in greater detail below. As long as local water sources provided the needs of consumers, there was no need to look for additional water. The situation changed once rapid urban and industrial growth set in. It was then that the viability of sources further afield (such as the Vaal River) came into the picture.

Changing patterns of consumption

A preliminary consideration of some factors, which gave rise to changing patterns of water consumption, sheds some light on the development of the mining industrial centre. Moreover it appears as if the Vaal River was potentially able to play an important role in overcoming the need for more water.

Deep level mining: In 1889 Johannesburg's existing water supply was put to the test by the mining sector. Ever since the mines started operations in 1886 large quantities of water were consumed. From mid 1889 it became more difficult to extract gold. Initially the natural process of oxidation, close to the surface, made it possible to easily extract gold from the rock. As soon as the miners reached depths greater than 40 metres, it became more difficult.³⁰ Then, in 1890 the MacArthur Forester process of gold extraction was introduced. This technique, developed in Scotland, relied on cyanide to extract gold from the rock.³¹ What is more, there was a substantial increase in the number of mills used for stamping gold from the rock. In 1889 a total of 711 stamps were in operation. Ten years later, in September 1899 there were 6 000 mills in operation on the Witwatersrand. These machines could not be operated without large supplies of water. It was estimated, for example, that 1 520 litres of water could mill one

26. ANON., Rand Water Board 1903–1953, p. 4.

27. A.P. CARTWRIGHT, *The Corner House: The early history of Johannesburg* (Purnell & Son, Cape Town, 1965), pp. 186, 188–9; R.J. LABURN, 'n *Historiese oorsig oor watervoorsiening aan die Witwatersrand*, p. 3.

28. M. MCCORMACK, *Origin and history of the Rand Water Board*, p. 3.

29. E.M. COSSER, *The impact and management of water scarcity in Johannesburg, 1886-1905*, pp. 38-40.

30. C. VAN ONSELEN, *Studies in die social and economic history of the Witwatersrand 1886–1914*. Volume 1. New Babylon (Ravan Press, Johannesburg, 1982), p. 4.

31. *Ibid.*, p. 11.

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ton of gold bearing gravel.³² Between 1889 and 1898 the production of the stamp mills rose from 316 163 to 7,3 million tons.³³

Secondary industries: As from 1886 a number of secondary industries were developed in Johannesburg. Many relied extensively on water. For example by 1890 the industrial activity of doing laundry was dominated by a guild of Zulu males, known as the *AmaWasha*. Along with some indigent whites they were responsible for doing the laundry of the town's residents.³⁴ At first operations were conducted at Sans Souci in the Braamfontein Spruit. Eventually some 1 000 workers operated from eight centres - *inter alia* at Elandsfontein, Concordia and Booyens.³⁵ As a result of a pollution hazard and an increasing demand for domestic water consumption the *AmaWasha* were relocated south of Johannesburg, at Witbank, where in the month of March 1897 it was estimated they did some 150 tons of washing.³⁶ Ultimately laundry factories replaced the manual laundry system. It did not however imply lower water consumption. The new mechanised process was powered by steam. Other large industrial consumers of water included the railway industry (as from 1892), the brickmaking sector in Braamfontein,³⁷ Johannesburg's first beer brewery (founded in 1895), which produced 50 000 barrels annually by 1898,³⁸ and an ice factory which was established in Braamfontein in 1897.³⁹

Pollution: The new technological developments on the Witwatersrand held in many dangers. Toxic pollution, caused by the cyanide used in the mining

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32. TAC4/2. Water Commission W107. Statement of evidence, after p. 11. "The Vierfontein Syndicate Limited", R.N. Schumacher, Johannesburg, 1902.01.28. Appendix B.
 33. TAC4/2. Water Commission W107. Statement of evidence, p. 2. "The Vierfontein Syndicate Limited", R.N. Schumacher, Johannesburg, 1902.01.28; See also Appendix A of the submission to the commission.
 34. L. CALLINICOS, A people's history of South Africa. Volume Two. Working life 1886–1940. Factories, townships, and popular culture on the Rand (Ravan Press, Braamfontein, 1987), p. 55.
 35. *Ibid.*, p. 55.
 36. J.J. FOURIE, "Die koms van die Bantoe na die Rand en hulle posisie aldaar, 1886–1899" in *Archives Yearbook for South African history* 42(1), (Government Printers, Pretoria, 1983), pp. 244–5; E.M. COSSER, The impact and management of water scarcity in Johannesburg, 1886–1905, p. 34.
 37. J.J. FOURIE, "Deel 1, 1886–1924" in E.L.P. Stals (Ed.), *Afrikaners in die Goudstad*, pp. 51–2.
 38. <http://www.sab.co.za/mainindex.html>; Also see G–M van der Waal, *Van mynkamp tot metropolis: Die boukuns van Johannesburg 1886–1940* (Chris van Rensburg Publikasies, Melville, 1986), pp. 87–8.
 39. E. PALLESTRANT, *Johannesburg one hundred: A pictorial history* (Ad. Donker, Craighall, 1986), p. 72.

industry, was a real threat.⁴⁰ For example, in 1889 when plans were mooted for the provision of water from Vierfontein, south of Johannesburg, the indications were that the water of the Klip River was pure and of a high quality.⁴¹ Four years later conditions had changed substantially. Engineer C. Aburrow reported to the authorities:

De Kliprivier vormt het kwaliteit afvoerbekken van mynen over mynen lengten en de Oliphants Vlei oost is gelegen beneden de plek waar het den afvoer van Booyens en van mynen over 10 mylen lengte heeft opgenomen, dit moet den geheelen stroom verontreinigen en daar en boven komt de Cyanide in aanmerking die overeenkomstigde algemeen geaccepteerde denkwijze den dood veroorzaakt van het vee dat het water drinkt.⁴²

The conditions hardly improved once there was an awareness of the state of affairs. In 1895 a special commission of enquiry informed the government that one of the city's main regions of water supply, the Doornfontein Valley, was severely polluted. It was recommended that the source be completely isolated, because it could pollute other sources of water.⁴³ In February 1896 the Transvaal Medical Society warned the public in the press that, apart from the prevailing water shortage:

(T)he water at present being consumed is very detrimental to the public health.⁴⁴

Engineer Stewart, who at the time was investigating water sources in a radius of almost 50 km of Johannesburg, underscored the crisis. It was futile to use storage tanks, he explained:

Owing to mining operations and the existence of a considerable population in the transverse valleys which cut the Rand a supply of water collected from the surface and stored in reservoirs, would certainly be polluted.⁴⁵

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40. See UNION OF SOUTH AFRICA, Standing Committee (S.C.) 8 – '19, pp. 25-6. Report of the select committee on the Klip River Valley springs (Government Printer, Cape Town, 1919). Minutes of evidence, 1919.03.21: TAR Purchas Chairman of the Rand Water Board.
 41. TA, SS4380, p. 78. R1262/95 at R7961/94. C. Aburrow, Johannesburg – Water Committee of the Johannesburg Health authority, 1893.03.04.
 42. TA, SS4380, pp. 77-8. R1262/95 at R7961/94. C. Aburrow, Johannesburg – Water Committee of the Johannesburg Health authority, 1893.03.04. (Spelling in text adjusted). See also TA C4/1. W25. Johannesburg Water Works: Memorandum by Mr. W.G.R. Andrews, 1901.11.12.
 43. TA, SS4383, p. 48. R7961/94. Rapport in zake watervoorziening – Johannesburg. (Commissie van 1895), Augustus '95.
 44. TA C4/1. Water commission W 60. Water supply. Extract from "Times" of 6th., February '96. G.V. Fiddes (sekretaris) – Chairman Witwatersrand Water Supply Commission, Johannesburg, 1901.12.02.
 45. TAC4/2. Water Commission W113. Witwatersrand Water Supply Commission Minutes of evidence proposed to be given by Thomas Stewart, "Sources of supply in 1896: Investigation undertaken by the company," pp. 1–2. (Undated but c. November 1901).

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The danger of pollution did not decline before the end of the century. It is thus strange that the water of the Vaal River (which inevitably would have been less polluted) was not put to use.

Population growth: The growth of nineteenth century Johannesburg was phenomenal in terms of population increase. A small mining town, which in September 1886 had a population of about 250 people,⁴⁶ could boast with a number of 25 000 by 1889.⁴⁷ Five years later there were 41 000 people,⁴⁸ and by 1896 the city's population reached 102 000 people.⁴⁹ In 1901 conservative estimates, put the resident population of Johannesburg at 150 000 people.⁵⁰

Industrial innovation and development, pollution and population growth were a few of the dynamic forces which shaped the nature of the demand for water in Johannesburg and elsewhere along the Witwatersrand in the final decade of the nineteenth century. There were some short-sighted people who were of the opinion that the gold rush would soon be something of the past. Then everything would return to normal, making of the gold city a plain rural backwater. Fortunately there were also those farsighted people who knew that the future development of Johannesburg and its surrounding region would take place over the long term. In order to secure its future sufficient water was necessary. The Vaal River came into its own in this arena of planning.

The search for alternative sources

Literally since the founding of Johannesburg the search for viable water resources was the order of the day. It only became more intense at times of drought – as was the case particularly in the period 1894-6. Both the government and private enterprise were active in trying to locate viable water resources. It thus comes as no surprise that two potential sources of supply — the Klip River and the Vaal River — were identified at an early point in time. Chronologically the Klip River, a tributary of the Vaal, was the first to be developed.

46. M.S. APPELGRYN, Die ontwikkeling van plaaslike bestuur in Johannesburg 1886–1899, p. 28.

47. K.F. Bellairs, The Witwatersrand goldfields: A trip to Johannesburg (London, 1889) in D. Hobart Houghton and J. Dagut (Eds.), Source material on the South African economy: 1860–1970. Volume 1. 1860–1899 (Oxford University Press, Cape Town, 1972), p. 302.

48. TA, SS4379, p. 153. R12420/94 at R7961/94. Voorzitter en leden van het Gezondheidskomitee, Johannesburg C. Aburrow, 1894.12.18.

49. M. MCCORMACK, Origin and history of the Rand Water Board, p. 2.

50. E.M. COSSER, The impact and management of water scarcity in Johannesburg, 1886-1905, p. 90.

The Klip River scheme: On 15 June 1888, an engineer, L.G. Vorstman who was soon to take up the development of Pretoria's water supply scheme,⁵¹ asked the government for permission to provide Johannesburg with water from the Klip River, south of the town. He was of the opinion that there existed a need and consequently he intended installing a pumping system and a dam, which could yield as much as 11,4 million litres of water. This, he explained, would be:

genoegzaam om de stad en natuurschap (van water) te voorzien....⁵²

At the time he estimated the cost of the project in the vicinity of £150 000. Part of the river scheme included a fountain – an extremely desirable source of water especially for drinking water – on the farm Olifantsvlei.⁵³

The Klip River, which runs into the Vaal River near Vereeniging, was from the outset an option as source of water for Johannesburg. The geological dolomite formations to the south of the city, which the river passed through, had the capacity of storing vast amounts of water.⁵⁴ The fact that there was a river linked to one of the major waterways further south, only made the region more desirable as a natural water storage area. In brief: it was a logical future artery of water supply to one of the fastest growing urban regions in Southern Africa. Vorstman's proposals were backed by a petition with 460 signatures of people among who numbered the Magistrate of Johannesburg, representatives of the Medical Board, the Diggers Committee, the Health Board and representatives of various newspapers.⁵⁵

The prospects of a new or even an additional supply of water for Johannesburg was not welcomed in all circles. Especially in the business community there were rumbles. In June 1888 a group of 25 residents – in particular 10 owners of land on portions of the farm Zwartkopjes on the Klip River – declared that their agricultural activities would be affected by the proposed water scheme.⁵⁶ Although their complaint was justified, there is reason to believe other forces were also at work.

51. See ZAR, Notulen van den Eersten Volksraad der Zuid-Afrikaansche Republiek voor het jaar 1898, pp. 724–6. Art. 1010 of 1898.08.22.

52. TA, SS1654, p. 58. R5340/88. L.G. Vorstman - State President and members of the Executive Council, 1888.06.15.

53. *Ibid.*, p. 58.

54. W. BLELOCH, *The new South Africa: Its value and development*, p. 141.

55. TA, SS1654, pp. 46-55. Undated. Verzoekschrift van de ondergetekende inwoners van Johannesburg voor een voldoende en ruim voorziening van water voor Johannesburg en gebuurte. Signed by 460 people.

56. TA, SS1654, pp. 33-4. R5393/88 at R5340/88. Undated memorial C.H. de Power, J van Jaarsveld and 23 other signatories; See also TA, SS1654, p.4. Deputy State Secretary – WE Bok, 1888.06.25.

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In December 1888 Mr. William Hay, a representative of the *Vierfontein Gold Mining Company*, which conducted mining operation in the vicinity of the Klip River, explained to the government that the company's interests might be harmed by the proposed water scheme. By granting concessions to all and sundry, future developments could be subdued.⁵⁷ In the same letter he let the government know that his company was prepared to negotiate. There was a fountain on Vierfontein. If the company were granted a concession for providing water to Johannesburg, they would be prepared to pay the government £1 000 per annum.⁵⁸ By 1889 the syndicate had managed to construct a pumping station on the farm Olifantsvlei in the Klip River and was pumping water to a dam in Booyens.⁵⁹

The strongest opposition to the Klip River scheme however came from the existing water supplier, the *Johannesburg Waterworks Estate and Exploration Company Limited*. In a petition to the government it was explained that an additional water supply was unnecessary.⁶⁰ In fact, it was claimed, the waterworks company was able to extract as much as 3,8 million litres of water daily from Doornfontein.⁶¹ Even more water could be produced, should the need arise.⁶²

The government's reservation about the Klip River Scheme was that the farmers living on the Klip River would not approve of the water being tapped from their river.⁶³ This in effect proved to be no problem. By October 1888, Fieldcornet J.P. Meyer, the responsible official for the Klip River Ward, in the Heidelberg District,⁶⁴ who himself had vested interests in the mining industry,⁶⁵ was able to secure the co-operation of the majority of farmers on the banks of the Klip

57. TA, SS1654, p. 35. R11493/88 at R5340/88. W. Hay, Johannesburg – State Secretary, Pretoria, 1888.12.14.

58. *Ibid.*, p. 35.

59. R.J. LABURN, *The Rand Water Board 75, 1903–1978: A treatise on the Rand Water Board with specific reference to its responsibilities achievements and policies during 75 years of operation*, p. 2.

60. TA, SS1654, pp. 62-64. R5456/88 at R5340/88. J.P. Meyer, I.T. Lewis and others – State President and members of the Executive Council, Pretoria, 1888.06.14.

61. According to the manager, Mr. W. Dunbar, 950 000 litres water daily taken from Natalspruit, 1,52 million litres from the reserve and 570 000 litres pumped at Doornfontein. The company also had a servitude on water over a distance of almost 4 km along the Klip River. See TA, SS1654, p. 68. R5456/88 at R5340/88. Statement W. Dunbar, Johannesburg, 1888.06.15.

62. TA, SS1654, pp. 62-64. R5456/88 at R5340/88. J.P. Meyer, I.T. Lewis and others – State President and members of the Executive Council, 1888.06.14.

63. TA, SS1654, p. 4. R5340/88 at R5340/88. W.E. Bok – Deputy State Secretary, 1888.08.19.

64. Johannesburg originally resorted under the jurisdiction of the District of Heidelberg. See M.S. APPELGRYN, *Die ontwikkeling van plaaslike bestuur in Johannesburg 1886–1899*, p. 45.

65. J.J. FOURIE, “Deel 1, 1886–1924” in E.L.P. Stals (Ed.), *Afrikaners in die Goudstad*, p. 22.

River.⁶⁶ With the exception of a few (already referred to above),⁶⁷ those resident on portions of the farm Witkop (*alias* Witbank), portions of Zwartkopjes, Slangfontein and Rietfontein, approved of the proposed Klip River scheme.⁶⁸ The response was thus overwhelmingly favourable to the proposed water scheme.⁶⁹

Consequently the government in October 1888 granted a concession to Vorstman to pump water on the farm Olifantsvlei, in the Klip River for Johannesburg. Reservoirs were to be built and pipes were to be laid.⁷⁰ The concessionaire undertook to start with the job within four months. He intended completing the construction within the space of two years.⁷¹ This undertaking proved to be somewhat quixotic because even after a year nothing had come of the project.⁷²

Meanwhile, on 21 November 1888 a deed of cession was concluded between Vorstman and the *Johannesburg Waterworks Syndicate*.⁷³ The concession was ceded to the company.⁷⁴ The government was formally informed in April 1889 that the concession had been sold to a European company.⁷⁵ Conditions were

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66. TA, SS1654, p. 73. R9200/88 at R5340/88. JP Meyer, Pretoria – WE Bok, 1888.10.11.
67. TA, SS1654, pp. 79-81. R9690/88 at R5340/88 J.H. van der Merwe, distrik Heidelberg – State President and members of the Executive Council, Pretoria.
68. See TA, SS1654, pp. 29-32. R9200/88 at R5340/88. Statement C.J. van Schalkwyk, P.J. Dickie (snr), T.T. Dietrehsen, C. Schalkwyk and F.J. Deijzel; Statement J.H. van der Merwe, S.J. van der Walt, E.D. van der Merwe, J. Foos, J.C. van der Merwe, R.M. Britz, C.P. Britz and C. van der Merwe; Satement C. Verwey, J.Z. Pretorius, J.F. Pretorius, J.H.C. Pretorius, W. Stols, P.J. Mulder, M.W. Pretorius and J.L. Pretorius; M.W. Pretorius, P.J. Pretorius and G.A. Watson; See also TA, SS4380, p. 77. R1262/95 at R7961/94. C. Aburrow, Johannesburg – Water Committee, 1893.03.04.
69. By 1893 all the rights on water from the Klip River, up to the Vaal River, had either been sold or secured for the purposes of water extraction for the Witwatersrand. See TA, SS4380, p. 79. R1262/95 at R7961/94. Prokureurs and C. Aburrow, Johannesburg – M. Adolff, Waterkomitee van die Johannesburgse Gesondheidskomitee, Februarie 1893. The only problems with securing rights were experienced on the farms Alewynspoort and Zwartkopjes. The latter being one of the sources with the best supply of water.
70. TA, SS1654, p. 25. R9447/88 at R5340/88, Acte van Overeenkomst S.J.P. Kruger, W.E. Bok and L.G. Vorstman, 1888.10.18.
71. *Ibid.*, p. 26. R9447/88 at R5340/88, Artikel 7. Acte van Overeenkomst S.J.P. Kruger, W.E. Bok and L.G. Vorstman, 1888.10.18.
72. TA, SS1654, pp. 36-7. R3904/89 at R5340/88. L.G. Vorstman, Johannesburg – W.E. Bok, Pretoria, 1889.04.27.
73. The people at the helm of this syndicate were Edward Lippert, R.M. Campbell, H. Eckstein, Thomas Moir, Alois Hugo, H. Malcomess and S.L. King. See H.T. RAMSDEN, *The status powers and duties of the Rand Water Board: A legal history and analysis*, p. 120.
74. *Ibid.*, p. 120. See text and related footnote.
75. TA, SS1654, p. 8. R3904/89 at R5340/88. W.E. Bok – Government, Pretoria, 1989.04.29. *Historia*, 45(1), May 2000, pp. 88-117.

laid down to the effect that the project to supply water had to be executed within a specified period of time,⁷⁶ but little came of it. In December 1892 the rights for the development of the Klip River scheme were ceded to the Vierfontein Syndicate.⁷⁷ In future the Klip River scheme was for all intents and purposes relegated to a bargaining device if and when market forces demanded a viable water supply for Johannesburg. The Klip River was now in fact earmarked to supply the local mining industry with water. This had a direct effect on the future development of the Vaal River scheme. It will be evident in the further discussion.

The Vaal River Concession

The first proposals for supplying water to Johannesburg from the Vaal River were made to government at the start of 1889.⁷⁸ More substantive plans were tabled when an engineer, C. Schürmann and his associate, F.C. Eloff, the son in law of President Kruger, in August 1889 asked the government for a concession to supply water to Johannesburg from the Vaal River. They were aware of the Vorstman concession in respect of the Klip River and were eager to have similar terms laid down in the agreement they intended concluding with the government.⁷⁹ At the time a number of similar requests were also made to the government. Herman Eckstein of the Corner House, as well as D. Schutte and E. de Marillae, seemed to be interested.⁸⁰ The government had however made up its mind. On 27 November 1889 an agreement was concluded with F.C. Eloff and C. Schürmann to supply water from the Vaal River to Johannesburg.⁸¹

It appears as if the Vaal River concessionaires had a very specific program of action. Early in January 1890 they asked the government for a more comprehensive concession. It was clear to them that the Klip River was “insufficient” to provide Johannesburg with water. Consequently they wanted to integrate the system, so that the scheme could operate from the Vaal River.⁸² No

76. H.T. RAMSDEN, *The status powers and duties of the Rand Water Board: A legal history and analysis*, pp. 121-2.

77. *Ibid.*, p. 127.

78. R.J. LABURN, ‘n *Historiese oorsig oor watervoorsiening aan die Witwatersrand*, p. 4.

79. TA, SS4940, p. 2. R8090/89 at R7835/95. C. Schürmann and F.C. Eloff, Pretoria – State Secretary, Pretoria, 1889.08.07.

80. TA, SS4940, pp. 143, 149, 156-8. R13503a/89. H. Eckstein, Johannesburg – State Secretary, 1889.12.21; R13721/89 D. Schutte, Pretoria – State President and members of the Executive Council, 1889.12.18; E. de Marillae – State President and members of the Executive Council, Pretoria, 1890.05.27.

81. TA, SS4939, pp. 292-303. R11018/89 at R7835/95. *Concept-voorwaarden van eene waterleiding-concessie*; See also *Staatscourant der Zuid-Afrikaansche Republiek*, 1889.12.04, pp. 949-53. *Gouvernements Kennisgeving*, C. van Boeschoten, 1889.11.29.

82. TA, SS4940, pp. 25-6. R839(b)/90 at R7835/95. C. Schürmann and F.C. Eloff, Pretoria – State Secretary, Pretoria, 1890.01.21.

specific proposals were made, but the government was asked to bring the Volksraad in on the proposed scheme. The concessionaires wanted the Volksraad to formally give its approval for the Vaal River Water scheme.⁸³ At first the government ignored the request, but later in the year it responded by taking the matter to the raad where it was approved without much debate.⁸⁴

The objectives of the concessionaires with the Vaal River project can only be guessed. They wanted to get the *Johannesburg Waterworks and Exploration Company Ltd.* interested in the project. The company obviously would have wanted to eliminate potential competition. A second agreement between the government and the concessionaires, which hardly differed from the original concession, was concluded on 28 July 1890.⁸⁵

From there on the course of development of the Vaal River Scheme was similar to that of the Klip River Scheme. The concessionaires had originally agreed to submit drawings of the proposed scheme to the government within six months of the conclusion of the agreement.⁸⁶ They then asked the government for a respite. Their reason was that the financial markets in South Africa and Europe were in a state of depression. They informed the government that they had entered into an agreement with one Baron E. Oppenheim. He undertook to raise investments in Paris, London and Amsterdam to the tune of £600 000.⁸⁷ His efforts were futile because, as he reported to his associates in South Africa:

The greatest part of the public does not know even where the Transvaal is.⁸⁸

For a considerable period of time the Vaal River project was dormant. Only on 27 December 1892 were there signs of activity when Eloff and Schürmann notified the government that they had ceded their concession to *Barnato*

83. TA, SS4940, pp. 30-1; 32-3. R8090/89 at R8612/90 and R7835/95. C. Schürmann and F.C. Eloff, Pretoria – State Secretary, 1890.01.22; R1398c/90 at R8090/89 and R7835/95. C. Schürmann and F.C. Eloff, Pretoria – 1890.02.03.

84. TA, SS4940, pp. 30-1; 32-3. R8090/89 at R8612/90 and R7835/95. C. Schürmann and F.C. Eloff, Pretoria – State Secretary, 1890.01.22; R1398c/90 at R8090/89 and R7835/95. C. Schürmann and F.C. Eloff, Pretoria – 1890.02.03; TA, SS4939, p. 214. R7835/95. Copy Executive Council decision Art. 425 of 1890.06.14; TA, SS4940, p. 36. VRR565/90 at R7835/95. Copy Volksraadsbesluit Art. 380 of 1890.06.16.

85. TA, SS4939, pp. 217-221. R8090/89 at R7835/95. Copy Executive Council decision Art. 482 of 1890.07.25.

86. TA, SS4939, pp. 249-50. R7835/95. One Kuypers – Onder-Statsekretaris, 1894.06.30.

87. TA, SS4940, pp. 76-8. R628/91 at R7835/95. C. Schürmann and F.C. Eloff, Pretoria – State President and members of the Executive Council, 1891.01.16.

88. TA, SS4940, p. 79. R7835/95. E. Oppenheim, Parys – A. Roch, Pretoria, 1890.12.05.

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*Brothers*⁸⁹ – the company that owned the *Johannesburg Waterworks and Exploration Company Ltd.* The effective control over the proposed Vaal River Scheme gave the company the freedom to determine if and when Johannesburg's existing water supply needed upgrading.

The Vaal River Scheme in jeopardy

Towards the end of 1892, in view of the approaching presidential election,⁹⁰ there was a public debate about the granting of concessions in the South African Republic. On the whole public opinion, especially in Johannesburg, was strongly opposed to the government granting concessions. It was felt at the time that it was a legal form of nepotism which ultimately bred corruption. An added factor of discontent was the delay in the execution of schemes which had previously been given the green light. The Johannesburg Health Committee, in particular, wanted the government to take steps against delays in providing the city with a good water supply. At a special meeting it was decided to notify the government that the Vaal River Concession, as a result of the delays, should be shelved.⁹¹ The sense of urgency with which the matter was brought to the attention of the government, suggests that the water consuming public of the city had a point.

In the sensitive political arena the discontent also manifested itself. One of the leading opponents to the scheme was Jan F. Celliers, former editor of *De Volksstem*, who as member of the Second Volksraad, expressed his disappointment with the decision of the government to grant the concessionaire the opportunity to renew the deal. In a letter to the government he explained:

Ik dien dit protest in, niet alleen als burger der Z.A. Republiek, maar voornamelijk ook als Lid der Wetgewing en meer in het bijzonder als vertegenwoordiger in de Tweede Volksraad van de Witwatersrandsche Goudvelden en verzoek den H. Ed. Uitvoerenden Raad, dit protest aan gemelden Tweeden Volksraad te willen voorleggen.⁹²

Celliers was a respected Transvaal politician. He had been instrumental in the nationalist victory as propagandist and fiery opponent to British rule, in the period of the Annexation of Transvaal (1877-81). The government tried to deal

89. TA, SS4939, p. 250. R7835/95. One Kuypers – Deputy State Secretary, 1894.06.30; TA, SS4940, p. 82. R15086/92 at R7835/95. F.C. Eloff and C. Schürmann, Pretoria – State President and members of the Executive Council, 1892.12.27.

90. See JL Van Schaik, *History reference library 1555–1999* (CD Publication, Van Schaik's, Pretoria, 1999), C.F.J. MULLER, (Ed.), *500 Years – A History of South Africa*, (Third Edition, JL van Schaik, Pretoria, 1969).

91. TA, SS4940, p. 90. R150/93 at R7835/95. Extract minutes of meeting of the Health Committee, Johannesburg – Uitvoerende Raad, 1892.12.92.

92. TA, SS4940, p. 117. R1186/93. J.F. Celliers, Pretoria – State President and members of the Executive Council, 1893.01.26.

with the matter in a sensitive manner. The letter of protest of Celliers was submitted to the Tweede Volksraad.⁹³ The raad discussed the matter on two occasions, and tacitly approved of the government's leniency on the concessionaires.⁹⁴ Meanwhile rumours of underhand deals and corruption in securing the concession, were rife. The political atmosphere in Transvaal, at the time, was not conducive to irregularities and consequently the government tried its best to contain the levels of criticism. But it was hopeless task. Interest in the project seemed to dwindle.

Another source of opposition to the proposed Vaal River Scheme emanated from the Orange Free State. A number of members of the town council of Parys (J.P. Steytler, B. van der Hoven, W.J.J. Paulsen, Z.C. Pretorius and J. Versteeg) complained to their government in Bloemfontein about the proposed pumping of water from the Vaal. They explained that:

in de wintermaande de rivier zeer laag is, en indien zoo eene hoeveelheid water uit de rivier gehaald moet worden om Johannesburg te voorzien de oever bewoners ongetwijfeld schade zullen lijden.⁹⁵

Furthermore it was pointed out:

Dat de dorp Parys aan de rivier gelegen is en op't dorp in de winter maanden alreeds eene schaarste van water is, en in het afgeloopde jaar een aanzienlijke bedrag geld besteed aan de watervoor.⁹⁶

This opposition to the proposed Vaal River scheme was of substantial importance. Supplying water to Johannesburg, was no longer a Transvaal issue. Instead, the residents of another state expressed concern about the potential loss of water. In terms of international relations it was a sensitive issue. There was an understanding between the Transvaal and the government of the Free State that the water of the Vaal River was to be divided in half. Each state was entitled to one half of the available resources. The problem which however still persisted was that the water supply was not consistent throughout the year.⁹⁷

93. TA, SS4940, pp. 118-9. R1186/93 at R7835/95. W.J. Leyds, Pretoria – Chairman and members of the Tweede Volksraad, 1893.05.03.

94. TA, SS4940, pp. 125-6. R8174/93. Copy Tweede Volksraad decision, Art. 479 of 1893.06.30 and Art. 484 of 1893.07.03; See also ZAR, Notulen van den Tweeden Volksraad der Zuid-Afrikaansche Republiek, 1893, pp. 213-7. Arts 477–9 of 1893.06.30.

95. TA, SS4940, pp. 110-1. R6813/93 at R7835/95. J.P. Steytler, B. van der Hoven, W.J.J. Paulsen, Z.C. Pretorius and J. Versteeg, Parys – State President and members of the Executive Council, Bloemfontein. Copy dated, 1893.06.01.

96. *Ibid.* p.111.

97. ZAR, Notulen van den Eersten Volksraad der Z.A. Republiek, 1894, p. 417. Art. 1025 of 1894.07.27.

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Within the borders of the country there were also spontaneous forces which undermined the credibility of the Vaal River Scheme. One of the controversial propositions for water to the Rand was the Wonderfontein scheme,⁹⁸ a project promoted by the mining magnate George Goch.⁹⁹ His plans were first mooted in April 1890. The objective was to supply water to Johannesburg from the source of the Wonderfontein, in the Potchefstroom district.¹⁰⁰ From the outset the plan was shrouded in a cloud of controversy.¹⁰¹ Goch was an important role player in the politics of water. He had contacts high up in the government. For very transparent reasons, he was opposed to the government's leniency to extend its deadline for the development of the Vaal River scheme.¹⁰² In the public debate it increasingly became apparent that a comparison was being drawn between the viability of the Wonderfontein and the Vaal River Scheme. The major issues were: anticipated costs, and the amount of water that a source could provide.¹⁰³

The greater threat to the Vaal River Scheme was related to the development of the Klip River. In March 1893 the *Vierfontein Syndicate*, mentioned earlier, was

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98. ARCHIVES AND LIBRARY OF RAND WATER, JOHANNESBURG (RW), D. Leitch, *Preliminary report on the water supply of the Rand* (Rand Water Board, Johannesburg, 1905), p. 8.
99. A.H. SMITH, "George Henry Goch" in C.J. BEYERS and J.L. BASSON (Eds.), *Suid-Afrikaanse biografiese woordeboek, V* (Human Sciences Research Council, Pretoria, 1987), p. 310.
100. B.A. Kloppers, who first negotiated with the government, only owned a portion of the farm. He was however empowered to do so by the other owners, such as M.A.O. Oberholzer, A.P. Oberholzer, S.J. van Aswegen, J.J. Oberholzer and J. Grobler. See TA, SS4370, p. 6. R5579/90 at R7961/94. Copy Executive Council decision Art. 63 of 1891.02.09. See TA, SS4371, pp. 90-1. R5579/90 at R7961/94. Bijzondere lastgeving M.H.O. Oberholzer, A.P. Oberholzer, H.F. Oberholzer, S.J. Labuschagne, J.J. Oberholzer, C.K. Oberholzer, A.P. Oberholzer, J. Goller, Wonderfontein 1890.04.10.
101. TA, SS4370, p. 92. R5579/90 at R7961/94. B.A. Kloppers, Pretoria – Government, Pretoria, 1890.04.03; TA, SS4370, p. 93. R7923/90 at R7961/94. B.A. Kloppers, Pretoria – Government, Pretoria, 1890.05.24; TA, SS4370, p. 94. R7961/94. Konsepsbrief W.J. Leyds, Pretoria – B.A. Kloppers, (c. 6 June 1890); TA, SS4370, p. 96–8. R8600/90 at R7961/94. B.A. Kloppers, Pretoria – State Secretary, Pretoria, 1890.06.10; TA, SS4370, p. 6. R5579/90 at R7961/94. Copy Executive Council decision Art. 63 of 1891.02.09; See also TA, SS4371, pp. 87-9. R5579/90 at R7961/91. State Secretary, Pretoria – De Villiers and Ueckermann (Initials not disclosed in the source), Pretoria, 1891.02.12; TA, SS4371, p. 92. R4756/91 at R7961/94. B.A. Kloppers, Pretoria – State Secretary, Pretoria, 1891.02.27; TA, SS4371, p. 93. R2118/92 at R7961/94. B.A. Kloppers, Hartebeestfontein – State Secretary, Pretoria, 1892.02.17; TA, SS4371, p. 94. R5579/90 at R7961/94. W.J. Leyds, Pretoria – B.A. Kloppers, Hartebeestfontein, 1892.02.26; TA, SS4371, p. 95. R3753/92 at R7961/94. Telegram B.A. Kloppers, Rustenburg – President, 1892.04.01; TA, SS4371, p. 96. R8856/92 at R7961/94. B.A. Kloppers, Pretoria – State Secretary, Pretoria, 1892.08.09.
102. TA, SS4940, pp. 85-6. R7835/95. Haarhoff & Hull, Pretoria – State Secretary, Pretoria, 1892.12.28.
103. See for example, ZAR, Notulen van den Eersten Volksraad der Z.A. Republiek, 1894, p. 417. Art. 1025 of 1894.07.27.

founded,¹⁰⁴ when H. Eckstein, the *Consolidated Goldfields of South Africa Ltd.* and *S. Neumann and Co.* joined forces.¹⁰⁵ The expanded membership improved its financial strength considerably. They were now in a position to offer water to the residents of Johannesburg from a source almost seven kilometres south of the town on the farm Vierfontein. The plan was for an extensive dam wall to be constructed which could secure a storage of some 7 600 million litres.¹⁰⁶ There was also a fountain available for pumping water, but its potential was limited. One factor which did not count in the favour of the syndicate was the fact that as a rule the local authority of Johannesburg, as well as the government of the South African Republic gave preference to fountain sources over storage dams which relied on rainwater.¹⁰⁷ The *Vierfontein Syndicate* was however of the opinion that at some point in time there might be a demand for their resources. Consequently they were prepared to enter into an agreement with the government.¹⁰⁸ As a potential service provider, should there be a need for water in Johannesburg and environs, the syndicate could oppose literally any expensive scheme which was aimed at providing large quantities of water over a considerable period of time. This had an effect on the prospects of developing the Vaal River.

Barnato defends the Vaal River Scheme

In the face of stiff competition, Barney Barnato remained optimistic about the potential of the Vaal River Scheme. On 30 May 1893 he submitted the first set of plans for the water supply to the government.¹⁰⁹ The proposed project was estimated to cost about £440 000. Three pumping stations were to be erected over a distance of 58 km from “Waaldrif” to Johannesburg. An 18 inch pipe (45

104. According to F.E. Kanthack many companies in the early years bought up land in the valley. If they could not purchase the land they concluded agreements with the owners. See U. of SA, S.C. 8 – ‘19, p. 11. Report of the select committee on the Klip River Valley springs (Government Printer, Cape Town, 1919). Minutes of evidence, 1919.03.18: F.E. Kanthack Director of Irrigation for the Union of South Africa; TAC4/2. Water Commission W107. Statement of evidence, p. 1. “The Vierfontein Syndicate Limited”, R.N. Schumacher, Johannesburg, 1902.01.28.

105. TAC4/2. Water Commission W107. Statement of evidence, p. 2. “The Vierfontein Syndicate Limited”, R.N. Schumacher, Johannesburg, 1902.01.28; R.J. LABURN, *’n Historiese oorsig oor watervoorsiening aan die Witwatersrand*, p. 3.

106. TA, SS4378, p. 174. R10375/94 at R7961/94. Rapport, J.M.A. Wolmarans and S. Wierda; R.J. LABURN, *’n Historiese oorsig oor watervoorsiening aan die Witwatersrand*, p. 3.

107. TA, SS4378, p. 174. R10375/94 at R7961/94. Rapport, J.M.A. Wolmarans and S. Wierda, p. 174.

108. *Ibid.*

109. TA, SS4940, pp. 91-2. R6527/93 at R7835/95. P. Nel, Pretoria – State Secretary, Pretoria, 1893.05.30.

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cm) was to be used for pumping the water to the Witwatersrand.¹¹⁰ From a strategic point of view the plans were outstanding. The water would be taken from the confluence of the Vaal and Klip River, close to the new town of Vereeniging (founded in 1892). It was to follow a route *via* Olifantsvlei in the Klip River. On the farm Vierfontein a filtration plant was to be constructed where the water would be purified before being pumped up to Johannesburg.¹¹¹

Vereeniging, a coal mining town was situated geographically at the point where the river was the closest to Johannesburg. At the time of the plans being mooted, the industrialist, Sammy Marks, one of the founding fathers of Vereeniging and personal friend of President Paul Kruger, was strongly in favour of Barnato's project. He was convinced that the Vaal River was to be the ultimate source of water for the Witwatersrand.¹¹² History was to prove him right. Barnato's plan appealed also to the Kruger government. After some scrutiny by officials some recommendations were made. One suggestion was that the pipeline be situated adjacent to the route of the road between Vereeniging and Johannesburg, a suggestion that was taken to heart.¹¹³

Barnato went even further in preparing the way for the Vaal River Water Scheme. His company appointed T.L. Stewart, the hydraulic engineer of the Cape Colony who had been responsible for the water systems of Port Elizabeth and Cape Town.¹¹⁴ In June 1893 Stewart submitted plans which made provision for supplying Johannesburg with an estimated 11,4 million litres of water daily.¹¹⁵ As a whole the scheme, now proposed to government, could easily stand the test of experts. Barnato was confident that water shortages in Johannesburg would soon be something of the past. It was going to cost the water supply company £600 000, he explained, but it was a worthwhile

110. TA, SS4940, pp. 100-2. R7040/93 at R7835/95. General description of the waterworks to be done by the Johannesburg Waterworks, Estate and Exploration Company Limited.... R.L. McDonald, Johannesburg, 1893.06.29.

111. *Ibid.*, pp. 100-2.

112. R. MENDELSON, *Sammy Marks: 'The uncrowned king of the Transvaal'* (David Philip, Cape Town), p. 51.

113. TA, SS4939, p. 251. R7835/95. Ene Kuypers – Onder-Statsekretaris, 1894.06.30; TA, SS4940, pp. 107-8. R7835/95. W.J. Leyds, Pretoria – P. Nel, Pretoria, 1895.07.05; TA, SS4940, pp. 112-3. R1455/93 at R7835/95. W.J. Leyds, Pretoria – P. Nel, Pretoria, 1893.07.08.

114. TA, SS4939, p. 252. R7835/95. Ene Kuypers – Onder-Statsekretaris, 1894.06.30; TA, SS4940, pp. 104-5. R7882/93 at R7835/95. P. Nel, Pretoria – State Secretary, Pretoria, 1893.06.30.

115. TA, SS4940, pp. 162-8. R8090/89. T. Stewart. Johannesburg. Waterworks Company. Vaal River Scheme. Specification; TAC4/2. Water Commission W113. Witwatersrand Water Supply Commission" Minutes of evidence proposed to be given by Thomas Stewart, (Ongedateer maar c. November 1901).

investment.¹¹⁶ Barnato's aim was, in some respects, a ploy to bring the proposed Wonderfontein scheme, which the government favoured, into discredit. Overall the scheme underlined the fact of the matter, namely that in future substantial capital investments would have to be made to provide the Witwatersrand with water. It also became increasingly clear that it would in future be necessary to differentiate between two types of consumers: the mining industry and the rest.

The impact of drought conditions and local government development

In 1894 the start of severe drought conditions caused a water crisis in Johannesburg. It soon became apparent that a very specific dispensation was the order of the day. The needs of the two different groups of consumers (domestic and industrial) had to be addressed. Circumstantial evidence suggests that the southern parts of Johannesburg – in particular the Klip River area which potentially linked up the Vaal River to the Witwatersrand – had been earmarked to provide the mining industry with water. It is also interesting to note that whilst commissions of investigation were involved in locating a viable water supply for Johannesburg, not once did the Vaal River feature prominently in any recommendations.¹¹⁷

In January 1893 the Johannesburg Sanitary Committee formed a special Water Committee which had to assist the Government Commissioner in finding the most suitable sources of water for Johannesburg. From the deliberations of this committee it soon became clear that in future the search for water would go well beyond the immediate borders of Johannesburg.¹¹⁸ The government had earlier given considerable attention to potential crisis conditions. In July 1893 President Kruger told the Second Volksraad that he had held talks with the *Nederlandsche Zuid-Afrikaansche Spoorwegmaatschappij* on the viability of a plan to transport water from the Vaal River to Johannesburg.¹¹⁹ The railwayline, which connected the Orange Free State and the Transvaal in May 1892,¹²⁰ crossed Vaal River at Vereeniging. The plan of the government was thus not farfetched. The only constraint was the high cost of building the necessary

116. TA, SS4377, p. 13. Johannesburg Waterworks, Estate and Exploration Company, Limited. Director's Report and accounts of the company for the year ending 30th June 1893.

117. TA, SS4378, pp. 172-7, 178-9. R10375/94 at R7961/94. Rapport, J.M.A. Wolmarans and S. Wierda and Rapport A. Bock, 1894.09.20.

118. E.M. COSSER, *The impact and management of water scarcity in Johannesburg, 1886-1905* (MA, UW, 1990), pp. 53-4.

119. ZAR, Notulen van den Tweeden Volksraad der Z.A. Republiek, p. 220. Art. 481 of 1893.07.03.

120. R.C. DE JONG, G-M VAN DER WAAL and D.H. HEYDENRYCH, *NZASM 100: 1887-1899. The buildings steam engines and structures of the Netherlands South African Railway Company* (Chris van Rensburg Publications (Pty) Ltd, Pretoria, 1988), p. 166.

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railway wagons and constructing the necessary equipment for pumping water into the railway wagons.¹²¹ Sammy Marks meanwhile, also made some recommendations. He was of the opinion that second grade coal, mined in Vereeniging, could be used to provide power for the scheme to pump water to the Witwatersrand.¹²²

In June 1894 the Volksraad appointed a commission of enquiry into the water supply of Johannesburg. The members were J.M.A. Wolmarans, S. Wierda and A. Bock.¹²³ The objective of the government was to try and find a solution once and for all to the chronic water shortage experienced in the city. Since 1893 there had been attempts by the local authority of Johannesburg to become a service provider.¹²⁴ In business quarters this was seen as an attempt by the government to interfere in the operations of the free market. Lobbyists made the plans suspect by means of rumours that the role of government in the service of providing water, would merely push up taxes.

The commission submitted two reports to the Volksraad on 21 September 1894. In the first drawn up by Wolmarans and Wierda the overall recommendation was that consideration be given, to enabling the Johannesburg Health Committee ultimately to take over the water service. A number of potential sources were considered. These included Rooikop, Klipfontein which made out part of the Jukskei River, Gembokfontein, Klipspruit, Alewijnspoor, Wonderfontein, Rietfontein, Olifantsfontein, the sources of the Vierfontein Syndicate as well as the sources of the *Johannesburg Waterworks Estate and Exploration Company Ltd.*¹²⁵ They further recommended that taxes be levied from local landholders to pay for the service.¹²⁶ In his minority report A. Bock recommended that government should be careful of embarking on a plan to take over all the water resources. It would imply that higher taxes had to be levied. It was overall an investment which could be costly, without necessarily bringing in profits. He was opposed the Wonderfontein scheme because it would be expensive.¹²⁷

121. ZAR, Notulen van den Tweeden Volksraad der Z.A. Republiek, p. 220. Art. 481 of 1893.07.03.

122. R. MENDELSON, *Sammy Marks: 'The uncrowned king of the Transvaal'* (David Philip, Cape Town), p. 51.

123. TA, SS4378, p. 172. R10375/94 at R7961/94. Rapport J.M.A. Wolmarans and S. Wierda; H.T. RAMSDEN, *The status powers and duties of the Rand Water Board: A legal history and analysis*, p. 140.

124. H.T. RAMSDEN, *The status powers and duties of the Rand Water Board: A legal history and analysis*, pp. 129–36.

125. TA, SS4378, pp. 172-7. R10375/94 at R7961/94. Rapport J.M.A. Wolmarans and S. Wierda.

126. *Ibid.*, pp. 176–7.

127. TA, SS4378, pp. 177-8. R10375/94 at R7961/94. Rapport A. Bock, Pretoria, 20 September 1894.

The First Volksraad on the surface tended to be in favour of the commission's proposals for government playing a leading role in providing water. However, when it was decided on 22 September 1894 that President Kruger's executive and the Health Committee of Johannesburg should carry on with plans to try and find a solution to the water situation,¹²⁸ the whole plan was in fact a deadletter.

Barney Barnato ensured, well in advance, that all possible steps be taken to undermine any plans the government might have had. It is evident from the following. In September 1894 Lionel Phillips wrote to J. Wernher in London:

(T)he Barnatos are ready to put up a large sum. It seems they have spent £35 000 to crush the Wonderfontein Scheme.... (A)ltho' the money was not paid directly to kill the Scheme, it was so in effect.¹²⁹

The discontent in Johannesburg was rising. In the First Volksraad the representative for Johannesburg, Carl Jeppe, explained that the memorials to the government, signed by more than 4 000 residents of Johannesburg, were symptomatic of the discontent with the prevailing state of affairs.¹³⁰ At the time water was transported by means of carts to different parts of the city. It was then sold at exorbitant prices.

In communications with the government the *Johannesburg Waterworks Estate and Exploration Company Ltd.* reminded the executive they were still capable of providing in all the water needs of Johannesburg. Moreover, should there be an even greater need for water, they would be able to make use of the Vaal River.¹³¹ One proviso was that the company would require of the government to allow them to be the sole supplier of water to Johannesburg.¹³² It made sense. The development of a water scheme, like the Vaal River, would be expensive. The fact that Johannesburg did not have a formally constituted municipality, prevented the existing local authority from entering into loan agreements to raise funds for the development of an expensive water supply scheme, such as

128. Eerste Volksraadsbesluit Art. 1820 of 1894.09.22. in ZAR, H.J. Coster (Compiler), *De locale wetten en Volksraadsbesluiten der Zuid-Afr. Republiek benevens de Proclamaties van ZHEd. Den Staatspresident en de belangrijke Gouvernements-Kennisgevingen, gedurende het jaar 1894* (Staatsdrukkerij, Pretoria, 1895), pp. 334-5.

129. L. Phillips, Johannesburg – J. Wernher, Londen, 1894.09.16 in M. FRASER and A. JEEVES (Eds.), *All that glittered: selected correspondence of Lionel Phillips, 1890–1924* (Oxford University Press, Cape Town, 1977), p. 84.

130. ZAR, Notulen van den Eersten Volksraad der Z.A. Republiek, 1894, p. 416. Art. 1025 of 1894.07.27.

131. TA, SS4378, p. 136. T9606/94 at R7961/94. P. Nel, Pretoria – Regeering der Z.A. Republiek, 1894.09.17.

132. TA, SS4383, p. 51. R7961/94. Rapport in zake watervoorziening – Johannesburg. (Commissie van 1895), Augustus '95.

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that proposed with the development of the Vaal River. The government of the ZAR was also hesitant to invest large sums in an infrastructural service which was not in the interest of the population of the country as a whole.¹³³

In political circles it was stated that a major problem was that the Vaal River was “net afloopend water” and not fountain water.¹³⁴ It was also argued that the water of the Vaal River was not consistent throughout the year.¹³⁵ There were also claims that the quality of the Vaal River’s water was inferior to that found in the dolomitic areas adjacent to the Witwatersrand.¹³⁶ Under these circumstances it appeared as if the political climate in the country and particularly in financial circles which would ultimately have to sponsor a comprehensive water project, were not entirely in favour of the Vaal River scheme. Consequently the focus shifted to other sources of water.

The Zuurbekom and a revived Vaal River initiative

In 1897 a new development took place which, for a brief interlude appeared to finally sink all the prospects of the Vaal River scheme. Since 1894 water had been extracted from the farms Klipriviersoog and Zuurbekom which belonged to F.G.C. le Roux. It was situated at source of the Klip River some 27 kilometres southwest of Johannesburg. The first discovery of the source had been made by the geologist, David Draper. In July 1896 Barnato Brothers – part of the *Johannesburg Waterworks Estate and Exploration company Ltd.* – acquired the source of water. In order to accommodate all the shareholders who had been in on the undertaking since 1894, the *Zuurbekom Water Company Ltd.* was formed. After considerable consolidation of interests the company was incorporated into the *Johannesburg Waterworks Estate and Exploration company Ltd.* in December 1897.¹³⁷ In 1898 temporary pumps were in use and by 1899 when the pumping station at Zuurbekom was completed, the source

133. A Volksraad decision of 1894 outlines the administrative and political problems which prevented the existing local authority and the government of the ZAR from introducing a central water supply to Johannesburg. See ZAR, Notulen van den Eersten Volksraad der Z.A. Republiek, 1894, pp. 693-4. Eerste Volksraadsbesluit Art. 1820 of 1894.09.22.

134. Observation by President S.J.P. Kruger to the First Volksraad. See ZAR, Notulen van den Eersten Volksraad der Z.A. Republiek, 1894, p. 417. Art. 1025 of 1894.07.27.

135. ZAR, Notulen van den Eersten Volksraad der Z.A. Republiek, 1894, p. 417. Art. 1025 of 1894.07.27.

136. TAC4/3. W75/02. Draft report of Comm. Report of the Witwatersrand water supply commission, 1901–1902. With minutes of proceedings and minutes of evidence. (Government Printer, Pretoria, 1902), p. viii.

137. H.T. RAMSDEN, *The status powers and duties of the Rand Water Board: A legal history and analysis*, pp. 89–99; W. BLELOCH, *The new South Africa: Its value and development*, pp. 140-1.

could provide in all the existing needs of Johannesburg.¹³⁸ Moreover the source provided clear water which under no circumstances were pumped from surface storage reservoirs or dams. For all intents and purposes it appeared as if the proposed Vaal River project would finally shelved. This was however not to be.

Despite the prospect of an abundant supply of water in the not too distant future, an engineer, Michael Whitty, in April 1898 explained to the government that the mining industry on the Witwatersrand would soon face severe water shortages. The Vaal River was the only source of water which could possibly provide in the need.¹³⁹ He let the government know that he was the representative of a group of American and European entrepreneurs who had sufficient resources to take on projects of this nature. He also seemed to be informed on the state of affairs on the mines. Whitty was, for example, aware of the fact that the East Rand Proprietary Mines Gold Mining Company at that point in time only had 80 of their 120 ore stamping machines in operation as a result of water shortages.¹⁴⁰ At the time the major task of the *Vierfontein Syndicate*, one of the major suppliers of water to the industry, provided 23 mines on the Witwatersrand, with water. These mines had approximately 2 500 stamp mills which relied on a liberal supply of water.¹⁴¹ The prevailing growth trend suggested that more large quantities of water – presumably from the Vaal River – would become essential in the near future.

At the time of the apparently revived interest in the Vaal River scheme, the Pretoria based firm of *Lewis & Marks* in April 1898, informed the government that they were aware of a dire water shortage developing on the Witwatersrand. The company, of which the entrepreneur, Sammy Marks, was the leading figure, requested permission from the government to provide a service with water from the Vaal River. The company was prepared to invest up to £600 000 on the project. It would put up its farms Klipfontein 562, Leeuwkuil 187, Klipplaatdrif 336, Uitvlucht 307, Panfontein 133 and Vischgat 318 for the development.¹⁴² At the time there were also other propositions made to the government, but it appeared as if *Lewis & Marks* were in the best position to let the project materialise. By June 1898 the company's engineers were busy

138. R.J. LABURN, *The Rand Water Board 75, 1903–1978: A treatise on the Rand Water Board with specific reference to its responsibilities achievements and policies during 75 years of operation*, p. 3.

139. TA, SS7164, p. 61. R5115/98. M. Whitty, Pretoria – State Secretary, Pretoria, 1898.04.20.

140. *Ibid.*, p. 61.

141. M. MCCORMACK, *Origin and history of the Rand Water Board*, p. 2.

142. TA, SS7164, pp. 75-6. R5472/98 at R5115/98. A. Crawford, Pretoria – State President and Members of the Executive Council, Pretoria, 1898.04.30.

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surveying the route along which the pipeline was to be laid between the Vaal River and Johannesburg.¹⁴³

Also in mining circles there were signs of interest. On 27 May 1898 a delegation of the Chamber of Mines held talks with the government in Pretoria.¹⁴⁴ Earlier on the chamber indicated that the provision of water from any proposed scheme, had first of all to be cost effective.¹⁴⁵ It was explained that a number of mines were facing an imminent closure as a result of water shortages. The Chamber wanted the government to assist them in locating satisfactory resources.¹⁴⁶ By 8 July an agreement had been reached.¹⁴⁷ For a while it appeared as if the scheme would go through. The major stakeholders in the project (the mining companies and a respect entrepreneurial firm, *Lewis & Marks*) were well focused on their ultimate objective. They did however not keep track of public opinion.

On 12 August 1898, the first of several memorials reached Pretoria. In the document, dated 1 August, and emanating from the ward Vaal River of the Potchefstroom District J.J. van Zyl and 42 other farmers resident in the region protested against yet another attempt at pumping water from the Vaal River for the Witwatersrand. They requested the government not to allow the plan to go through.¹⁴⁸ A similar memorial was sent to the government of the Orange Free State by residents of Lindequesfontein, situated on the banks of the Vaal River, in the district of Kroonstad.¹⁴⁹

For the first time, since the early 1890's it appeared as if the government was determined to go so far as to resist the wishes of the burghers. In 1893, as explained above, protests from farmers along the Vaal River forced the government to take a soft line towards the development of the Vaal River Scheme. The government was also wary of treading on the toes of a neighbouring government. Now, for the first time, it appeared as if the government was prepared to act (in the face of possible criticism) in the general

143. TA, SS7164, pp. 83-4. R5115/98. A. Crawford, Pretoria – State Secretary, 1898.06.03.

144. TA, SS7164, pp. 88-90. R6213/98 at R5115/98. Internal note State Secretary – Assistant State Secretary, 1898.05.28.

145. TA, SS7164, pp. 92-3. R6213/98 at R5115/98. A. Golding, Chamber of Mines, Johannesburg – State Secretary, Pretoria, 1898.05.18.

146. TA, SS7164, pp. 88-90. R6213/98 at R5115/98. Internal note State Secretary – Assistant State Secretary, 1898.05.28.

147. TA, SS7164, pp. 101-2. R6213/98 at R5115/98. A. Golding, Johannesburg – State Secretary, Pretoria, 1898.07.08.

148. TA, SS7164, pp. 105-9. R10277/98 at R5115/98. J.J. van Zyl and 42 others, Ward Vaal River – Government of the South African Republic, Pretoria, 1898.08.01.

149. TA, SS7164, pp. 114-5. R10732/98 at R5115/98. D.H. Marx, Lindequesfontein – State President and members of the Executive Council, Bloemfontein, 1898.08.08.

interest of the country.¹⁵⁰ In February 1899 the firm of *Lewis & Marks* were asked by State Secretary F.W. Reitz, if and when they would be interested in drawing up a contract for the Vaal River water project.¹⁵¹ The company informed the government that its chief executive official, Sammy Marks, was in Europe. He would be back in due time. The negotiations could then be taken up.¹⁵² In June 1899 Reitz once again corresponded with the company. The government, he explained, was aware that Marks had returned from Europe and now wanted to continue with the planning of the project of water from the Vaal River.¹⁵³

The response of the company was prophetic, accurately reflecting the political climate in the South African Republic at the time. Crawford, on behalf of *Lewis & Marks* explained that they were sorry to inform the government that:

Wegens den tegenwoordigen toestand van zaken, onze vrienden in Europa niet geneigd zijn zich op het oogenblik met nieuwe zaken in te laten.¹⁵⁴

The company would be prepared to co-operate in any initiative to develop the scheme, and expressed the hope that in time to come it would be possible to implement the plan. In what was without a doubt also a personal observation of Sammy Marks in the letter, reference was made to the fact that ever since 1892 there was the conviction that the Vaal River ultimately had to be the source of water for the Witwatersrand.¹⁵⁵ The time was however not yet ripe for the fruition of an important water scheme for the Witwatersrand. After July 1899 it was to take 15 years for a proposed Vaal River Water scheme to once again enjoy recognition for its potential. At that point in time South Africa was faced with yet another imminent crisis – the outbreak of World War 1 (1914-8), which would further delay the construction of the scheme. What did however present itself as a *fait accompli* was that without the water of the Vaal River, the Witwatersrand could not become the economic hub of South Africa in the twentieth century.

150. Debates in the Eerste Volksraad in 1898 suggested that the government had to give priority to taking the initiative in providing water services to towns in the country. See For example ZAR, Notulen van den Eersten Volksraad der Zuid-Afrikaansche Republiek voor het jaar 1898, pp. 1032–5. Arts. 1552 and 1553 of 1898.11.03.

151. TA, SS7164, p. 123. R5115/98. F.W. Reitz, Pretoria – Lewis & Marks, Pretoria, 1899.02.10.

152. TA, SS7164, p. 124. R3035/99 at R5115/98. H. Crawford, Pretoria – State Secretary, Pretoria, 1899.02.24.

153. TA, SS7164, p. 129. R5115/98. F.W. Reitz, Pretoria – Lewis & Marks, Pretoria, 1899.06.20.

154. TA, SS7164, p. 130. R9404/99 at R5115/98. H. Crawford, Pretoria – State Secretary, 1899.07.01.

155. *Ibid.*, p. 130.

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Conclusion

From the above exposition it appears as if Laburn's "mystery" query, has two dimensions. The first, from a realistic perspective, is that the prevailing conditions on the Witwatersrand in the period 1886-99 made the construction of the Vaal River water scheme impractical. It was expensive. Conservative estimates between 1891 and 1898 suggested about £600 000 would be required.¹⁵⁶ Neither the free market, nor the state could afford to finance a project of such immense proportions. Furthermore, a principle of spontaneous urban development suggests that when an area is in the process of growth, the demand for water would first and foremost be satisfied from the available local resources. Only once these resources are exhausted would the search for water be undertaken further afield. This was the state of affairs in Johannesburg during the nineteenth century. It delayed the exploitation of the Vaal River.

The second dimension of Laburn's "mystery" query must be perceived from the perspective of political history. The political forces of the day – capitalist interests in Johannesburg and the republican government in Pretoria – were constantly at loggerheads. The government of President Paul Kruger was first and foremost interested in promoting the interests of the citizens of the state. It was also critical of an urban society which apparently intent on undermining the legitimacy of the existing political dispensation. The capitalists of the Witwatersrand wanted to reap profits in a dynamic mining industrial environment. Conflicting interests and political in-fighting gave rise to a situation in which short term solutions to problems of infrastructure – such as a water supply system – were the order of the day. Farsighted ideals for future developments could not be realised. There was little room for the politics of consensus and idealism. The outbreak of the Anglo Boer War in 1899 proved the point.

Opsomming

Oor Laburn se 'misterie'-vraag – 'n Voorgeskiedenis van die Vaalrivier as waterbron van die Witwatersrand (1887-99)

Die ontdekking van goud en die daaropvolgende ontwikkeling van Johannesburg en die Witwatersrand vanaf 1886, het tot 'n aansienlike vraag na water aanleiding

156. TA, SS4940, pp. 76-8. R628/91 at R7835/95. C. Schürmann and F.C. Eloff, Pretoria – State President and members of the Executive Council, 1891.01.16; TA, SS4377, p. 13. Johannesburg Waterworks, Estate and Exploration Company, Limited. Director's Report and accounts of the company for the year ending 30th June 1893; TA, SS7164, pp. 75-6. R5472/98 at R5115/98. A. Crawford, Pretoria – State President and Members of the Executive Council, Pretoria, 1898.04.30.

Prehistory of the Vaal River

gegee. In 'n 1979-publikasie het R.J. Laburn verklaar dat dit 'n "misterie" was dat die Vaalrivier nie reeds in die negentiende eeu ingespan is om die grootste industriële konnurbasie in Suider-Afrika van water te voorsien nie. In die studie word gepoog om sekere antwoorde te gee.

Dit wil voorkom asof praktiese oorweginge verhoed het dat die Vaalrivier oorweeg word. Die rivier het juis gedurende die twintigste eeu die belangrikste verskaffer van water aan die Witwatersrand geword. Een rede is dat dit 'n duur onderneming sou wees. Daar was egter ook 'n aantal politieke faktore wat beplanning vanaf 1889 verydel het. In die studie word daarop ingegaan.